LibreOffice

LibreOffice Documentation Team

Getting Started Guide

6.4

Writer Calc Impress Draw Base Math

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LibreOffice

Getting Started Guide

Preface

Who is this book for?

Anyone who wants to get up to speed quickly with LibreOffice will find this Getting Started Guide valuable. You may be new to office software, or you may be familiar with another office suite.

What's in this book?

This book introduces the main components of LibreOffice:

- Writer (word processing)
- Calc (spreadsheets)
- Impress (presentations)
- Draw (vector graphics)
- Base (database)
- Math (equation editor)

It also covers some of the features common to all components, including setup and customization, styles and templates, macro recording, and printing. For more detail, see the user guides for the individual components.

Where to get more help

This book, the other LibreOffice user guides, the built-in Help system, and user support systems assume that you are familiar with your computer and basic functions such as starting a program, opening and saving files.

Help system

LibreOffice comes with an extensive Help system. This is the first line of support for using LibreOffice. Windows and Linux users can choose to download and install the offline Help for use when not connected to the Internet; the offline Help is installed with the program on macOS.

To display the Help system, press *F1* or select **LibreOffice Help** from the Help menu. If you do not have the offline help installed on your computer and you are connected to the Internet, your default browser will open the online Help pages on the LibreOffice website.

The Help menu also includes links to other LibreOffice information and support facilities.

> **Note**
>
> The following options shown here prefixed by a ‡ sign are only accessible if your computer is connected to the Internet.

- **What's This?** For quick tips when a toolbar is visible, place the mouse pointer over any of the icons to see a small box ("tooltip") with a brief explanation of the icon's function. For a more detailed explanation, select **Help > What's This?** and hold the pointer over the icon. In addition, you can choose whether to activate Extended Tips using **Tools > Options > LibreOffice > General**.

- **User Guides** ‡ Opens your default browser at the Documentation page of the LibreOffice website, https://documentation.libreoffice.org/en/english-documentation/. There you will find copies of User Guides and other useful information.

- **Show Tip-of-the-Day** Opens a small window with a random tip on how to use LibreOffice.

- **Get Help Online** ‡ Opens your default browser at the Ask LibreOffice forum of questions and answers from the LibreOffice community, https://ask.libreoffice.org/en/questions/.

- **Send Feedback** ‡ Opens your default browser at the Feedback page of the LibreOffice website, https://www.libreoffice.org/get-help/feedback/. From there you can report bugs, suggest new features and communicate with others in the LibreOffice community.

- **Restart in Safe Mode** Opens a dialog window where you will have the option to restart LibreOffice and reset the software to its default settings.

- **Get Involved** ‡ Opens your default browser at the Get Involved page of the LibreOffice website, https://www.libreoffice.org/community/get-involved/. There you can choose a topic of interest to help improve the program.

- **Donate to LibreOffice** ‡ Opens your default browser at the Donation page of the LibreOffice website, https://donate.libreoffice.org/. There you can choose to make a donation to support LibreOffice.

- **License Information** Outlines the licenses under which LibreOffice is made available.

- **Check for Updates** ‡ Opens a dialog window and checks the LibreOffice website for updates to your version of the software.

- **About LibreOffice** Opens a dialog window and displays information about the version of LibreOffice and the operating system you are using. This information will often be requested if you ask the community for help or assistance with the software. (On macOS this item is under the LibreOffice menu.)

Other free online support

The LibreOffice community not only develops software, but provides free, volunteer-based support. In addition to the Help menu links above, there are other online community support options available, see the table below.

Free LibreOffice support	
FAQs	Answers to frequently asked questions https://wiki.documentfoundation.org/Faq
Mailing lists	Free community support is provided by a network of experienced users https://www.libreoffice.org/get-help/mailing-lists/
Questions & Answers and Knowledge Base	Free community assistance is provided in a Question & Answer formatted web service. Search similar topics or open a new one in https://ask.libreoffice.org/en/questions The service is available in several other languages; just replace /en/ with de, es, fr, ja, ko, nl, pt, tr, and many others in the web address above.
Native language support	The LibreOffice website in various languages https://www.libreoffice.org/community/nlc/ Mailing lists for native languages https://wiki.documentfoundation.org/Local_Mailing_Lists Information about social networking https://wiki.documentfoundation.org/Website/Web_Sites_services
Accessibility options	Information about available accessibility options https://www.libreoffice.org/get-help/accessibility/
OpenOffice Forum	Another forum that provides support for LibreOffice, among other open source office suites https://forum.openoffice.org/en/forum/

Paid support and training

You can also pay for support through service contracts from a vendor or consulting firm specializing in LibreOffice. For information about certified professional support, see The Document Foundation's website: https://www.documentfoundation.org/gethelp/support/

What you see may be different

Illustrations

LibreOffice runs on Windows, Linux, and macOS operating systems, each of which has several versions and can be customized by users (fonts, colors, themes, window managers). The illustrations in this guide were taken from a variety of computers and operating systems. Therefore, some illustrations will not look exactly like what you see on your computer display.

Also, some of the dialogs may be different because of the settings selected in LibreOffice. You can either use dialogs from your computer's operating system or from LibreOffice. The differences affect mainly Open, Save, and Print dialogs. To change which dialogs are used, go to **Tools > Options > LibreOffice > General** and select or deselect the option **Use LibreOffice dialogs**.

Icons

The LibreOffice community has created icons for several icon sets:, Breeze, Breeze (SVG), Breeze (dark), Colibre, Colibre (SVG), Elementary, Elementary (SVG), Karasa Jaga, Sifr, Sifr (dark), and Tango. Each user can select a preferred set. The icons in this guide have been taken from a variety of LibreOffice installations that use different sets of icons. The icons for some of the many tools available in LibreOffice may then differ from the ones used in this guide.

To change the icon set used, go to **Tools > Options > LibreOffice > View**. In the *Icon style* section, choose from the drop-down list.

📝	**Notes**

Some Linux distributions include LibreOffice as part of the installation and may not include all the icon sets mentioned above. You should be able to download other icon sets from the software repository for your Linux distribution if you wish to use them.

The Galaxy and Oxygen icon sets are no longer included as part of the standard installation package. They can be added back by downloading and installing the following extensions:
https://extensions.libreoffice.org/extensions/galaxy-icon-theme
https://extensions.libreoffice.org/extensions/oxygen-icon-theme
Some of the previously included gallery backgrounds are now only available as an extension from https://extensions.libreoffice.org/extensions/legacy-gallery-backgrounds

Using LibreOffice on macOS

Some keystrokes and menu items are different on macOS from those used in Windows and Linux. The table below gives some common substitutions for the instructions in this book. For a more detailed list, see the application Help.

Windows or Linux	macOS equivalent	Effect
Tools > Options menu	**LibreOffice > Preferences**	Access setup options
Right-click	Control+click and/or right-click depending on computer setup	Open a context menu
Ctrl (Control)	⌘ (Command)	Used with other keys
F5	*Shift+⌘+F5*	Open the Navigator
F11	*⌘+T*	Open the sidebar Styles deck

What are all these things called?

The terms used in LibreOffice for most parts of the user interface (the parts of the program you see and use, in contrast to the behind-the-scenes code that actually makes it work) are the same as for most other programs.

A dialog is a special type of window. Its purpose is to inform you of something, or request input from you, or both. It provides controls to use to specify how to carry out an action. The technical names for common controls are shown in Figure 1. In most cases the technical terms are not used in this book, but it is useful to know them because the Help and other sources of information often use them.
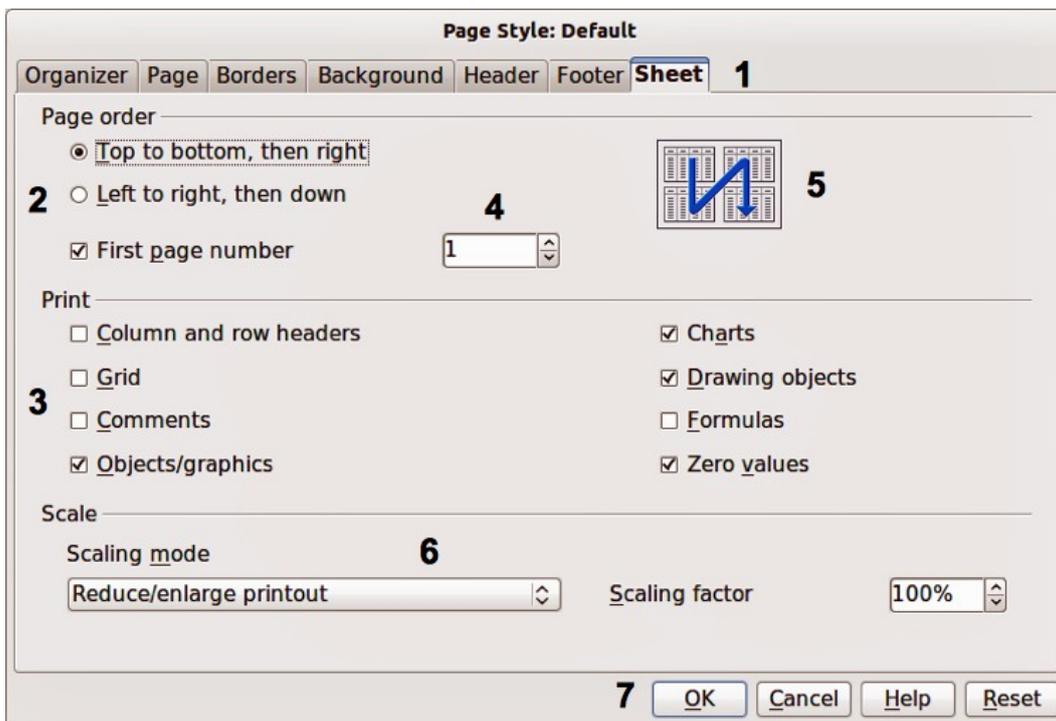
Figure 1: Dialog showing common controls

1) Tabbed page (not strictly speaking a control).
2) Radio buttons (only one can be selected at a time).
3) Checkbox (more than one can be selected at a time).
4) Spin box (click the up and down arrows to change the number shown in the adjacent text box, or type in the text box).
5) Thumbnail or preview.
6) Drop-down list from which to select an item.
7) Push buttons.

In most cases, you can interact only with the dialog (not the document itself) as long as the dialog remains open. When you close the dialog after use (usually, clicking **OK** or another button saves your changes and closes the dialog), then you can again work with your document.

Some dialogs can be left open as you work, so you can switch back and forth between the dialog and the document. An example of this type is the Find & Replace dialog.

Frequently asked questions

How is LibreOffice licensed?

LibreOffice is distributed under the Open Source Initiative (OSI) approved Mozilla Public License (MPL). See https://www.libreoffice.org/about-us/licenses/

It is based on code from Apache OpenOffice made available under the Apache License 2.0 but also includes software that differs from version to version under a variety of other Open Source licenses. New code is available under LGPL 3.0 and MPL 2.0.

May I distribute LibreOffice to anyone? May I sell it? May I use it in my business?

Yes.

How many computers may I install it on?

As many as you like.

Is LibreOffice available in my language?

LibreOffice has been translated (localized) into over 40 languages, so your language probably is supported. Additionally, there are over 70 spelling, hyphenation, and thesaurus dictionaries available for languages, and dialects that do not have a localized program interface. The dictionaries are available from the LibreOffice website at: www.libreoffice.org.

How can you make it for free?

LibreOffice is developed and maintained by volunteers and has the backing of several organizations.

I am writing a software application. May I use programming code from LibreOffice in my program?

You may, within the parameters set in the MPL and/or LGPL. Read the licenses: https://www.mozilla.org/MPL/2.0/.

Why do I need Java to run LibreOffice? Is it written in Java?

LibreOffice is not written in Java; it is written in the C++ language. Java is one of several languages that can be used to extend the software. The Java JDK/JRE is only required for some features. The most notable one is the HSQLDB relational database engine.

Java is available at no cost. More information and download links to the appropriate edition for your operating system can be found at: https://java.com/en/download/manual.jsp

Note

If you want to use LibreOffice features that require Java, it is important that the correct 32-bit or 64-bit edition matches the installed version of LibreOffice. See the Advanced Options in Chapter 2 of this guide. If you do not want to use Java, you can still use nearly all of the LibreOffice features.

How can I contribute to LibreOffice?

You can help with the development and user support of LibreOffice in many ways, and you do not need to be a programmer. To start, check out this webpage: https://www.libreoffice.org/community/get-involved/

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Donate to LibreOffice: https://www.libreoffice.org/donate/

LibreOffice

Getting Started Guide

Chapter 1
Introducing LibreOffice

What is LibreOffice?

LibreOffice is a freely available, fully-featured office productivity suite. Its native file format is Open Document Format (ODF), an open standard format that is being adopted by governments worldwide as a required file format for publishing and accepting documents. LibreOffice can also open and save documents in many other formats, including those used by several versions of Microsoft Office.

LibreOffice includes the following components.

Writer (word processor)

Writer is a feature-rich tool for creating letters, books, reports, newsletters, brochures, and other documents. You can insert graphics and objects from other components into Writer documents. Writer can export files to HTML, XHTML, XML, Adobe Portable Document Format (PDF), EPUB, and several versions of Microsoft Word files. It also connects to your email client.

Calc (spreadsheet)

Calc has all of the advanced analysis, charting, and decision making features expected from a high-end spreadsheet. It includes over 500 functions for financial, statistical, and mathematical operations, among others. The Scenario Manager provides "what if" analysis. Calc generates 2D and 3D charts, which can be integrated into other LibreOffice documents. You can also open and work with Microsoft Excel workbooks and save them in Excel format. Calc can also export spreadsheets in several formats, including for example Comma Separated Value (CSV), Adobe PDF and HTML formats.

Impress (presentations)

Impress provides all the common multimedia presentation tools, such as special effects, animation, and drawing tools. It is integrated with the advanced graphics capabilities of LibreOffice Draw and Math components. Slideshows can be further enhanced using Fontwork special effects text, as well as sound and video clips. Impress is compatible with Microsoft PowerPoint file format and can also save your work in numerous graphics formats.

Draw (vector graphics)

Draw is a vector drawing tool that can produce everything from simple diagrams or flowcharts to 3D artwork. Its Smart Connectors feature allows you to define your own connection points. You can use Draw to create drawings for use in any of the LibreOffice components, and you can create your own clip art and then add it to the Gallery. Draw can import graphics from many common formats and save them in many formats, including PNG, GIF, JPEG, BMP, TIFF, SVG, HTML and PDF.

Base (database)

Base provides tools for day-to-day database work within a simple interface. It can create and edit forms, reports, queries, tables, views, and relations, so that managing a relational database is much the same as in other popular database applications. Base provides many new features, such as the ability to analyze and edit relationships from a diagram view. Base incorporates two relational database engines, HSQLDB and Firebird. It can also use PostgreSQL, dBASE, Microsoft Access, MySQL, Oracle, or any ODBC compliant or JDBC compliant database. Base also provides support for a subset of ANSI-92 SQL.

Math (formula editor)

Math is the LibreOffice formula or equation editor. You can use it to create complex equations that include symbols or characters not available in standard font sets. While it is most commonly used to create formulas in other documents, such as Writer and Impress files, Math can also work as a standalone tool. You can save formulas in the standard Mathematical Markup Language (MathML) format for inclusion in web pages and other documents not created by LibreOffice.

Advantages of LibreOffice

Here are some of the advantages of LibreOffice over other office suites:

- **No licensing fees.** LibreOffice is free for anyone to use and distribute at no cost. Many features that are available as extra cost add-ins in other office suites (like PDF export) are free with LibreOffice. There are no hidden charges now or in the future.
- **Open source.** You can distribute, copy, and modify the software as much as you wish, in accordance with the LibreOffice Open Source licenses.
- **Cross-platform.** LibreOffice runs on several hardware architectures and under multiple operating systems, such as Microsoft Windows, macOS, and Linux.
- **Extensive language support.** The LibreOffice user interface, including spelling, hyphenation, and thesaurus dictionaries, is available in over 100 languages and dialects. LibreOffice also provides support for both Complex Text Layout (CTL) and Right to Left (RTL) layout languages (such as Urdu, Hebrew, and Arabic).
- **Consistent user interface.** All the components have a similar "look and feel", making them easy to use and master.
- **Integration.** The components of LibreOffice are well integrated with one another.
  - All the components share a common spelling checker and other tools, which are used consistently across the suite. For example, the drawing tools available in Writer are also found in Calc, with similar but enhanced versions in Impress and Draw.
  - You do not need to know which application was used to create a particular file. For example, you can open a Draw file from Writer; it will open automatically in Draw.
- **Granularity.** Usually, if you change an option, it affects all components. However, LibreOffice options can be set at a component level or even at document level.
- **File compatibility.** In addition to its native OpenDocument formats, LibreOffice includes support for opening and saving files in many common formats including Microsoft Office, HTML, XML, WordPerfect, Lotus 1-2-3, and PDF.
- **No vendor lock-in.** LibreOffice uses OpenDocument, an XML (eXtensible Markup Language) file format developed as an industry standard by OASIS (Organization for the Advancement of Structured Information Standards). These files can easily be unzipped and read by any text editor, and their framework is open and published.
- **You have a voice.** Enhancements, software fixes, and release dates are community-driven. You can join the community and affect the course of the product you use.

You can read more about LibreOffice and The Document Foundation on their websites at https://www.libreoffice.org/ and https://www.documentfoundation.org/.

Minimum requirements

LibreOffice 6.4 requires one of the following operating systems:

- Microsoft Windows: Windows 7 SP1, Windows 8, Windows Server 2012, or Windows 10; Administrator rights are needed for the installation process.

- GNU/Linux: Kernel version 3.10 or higher and glibc2 v2.17 or higher.
- macOS 10.10 (Yosemite) or higher.

Some LibreOffice features (wizards and the HSQLDB database engine) require that the Java Runtime Environment (JRE) (or, for macOS, the Java Development Kit (JDK)) is installed on your computer. Although LibreOffice will work without Java support, some features will not be available.

Java is available at no cost. More information and download links to the appropriate edition for your operating system can be found at: https://java.com/en/download/manual.jsp

> **Note**
>
> If you want to use LibreOffice features that require Java, it is important that the correct 32-bit or 64-bit edition matches the installed version of LibreOffice. See the Advanced Options in Chapter 2 of this guide.

For a more detailed listing of hardware and software requirements, see the LibreOffice website, https://www.libreoffice.org/get-help/system-requirements/.

How to get the software

Versions of LibreOffice for Windows, Linux, and macOS can be downloaded free from https://www.libreoffice.org/download. You can also download the software by using a Peer-to-Peer client, such as BitTorrent, at the same address.

Linux users will also find LibreOffice included in many of the latest Linux distributions; Ubuntu is just one example.

macOS users can also get two versions of LibreOffice from the App Store for a small fee: LibreOffice Vanilla and Collabora Office (an enterprise-ready version).

Windows users can also get LibreOffice Vanilla from the Microsoft Store for a small fee.

How to install the software

Information on installing and setting up LibreOffice on the various supported operating systems is given here: https://www.libreoffice.org/get-help/install-howto/.

Extensions and add-ons

Extensions and add-ons are available to enhance LibreOffice. Several extensions are installed with the program and you can get others from the official extensions repository, https://extensions.libreoffice.org/. See Chapter 14, Customizing LibreOffice, for more information on installing extensions and add-ons.

Starting LibreOffice

In general, you start LibreOffice the same way you start any other program on your computer.

On Windows and Linux, entries for LibreOffice and each of its components appear in the system menu of your computer. On macOS, only an entry for LibreOffice is added to the Applications menu. You can make a desktop icon for LibreOffice or a component in the same way you can make a desktop icon for any other program; see your operating system's help for how to do this.

Clicking on the LibreOffice menu entry, desktop icon, or tile opens the LibreOffice Start Center (Figure 2) from where you can select the individual components of LibreOffice. You can also

choose to open an existing file or use a template. The thumbnails in the Start Center include an icon showing the type of file (text, spreadsheet, drawing, presentation).
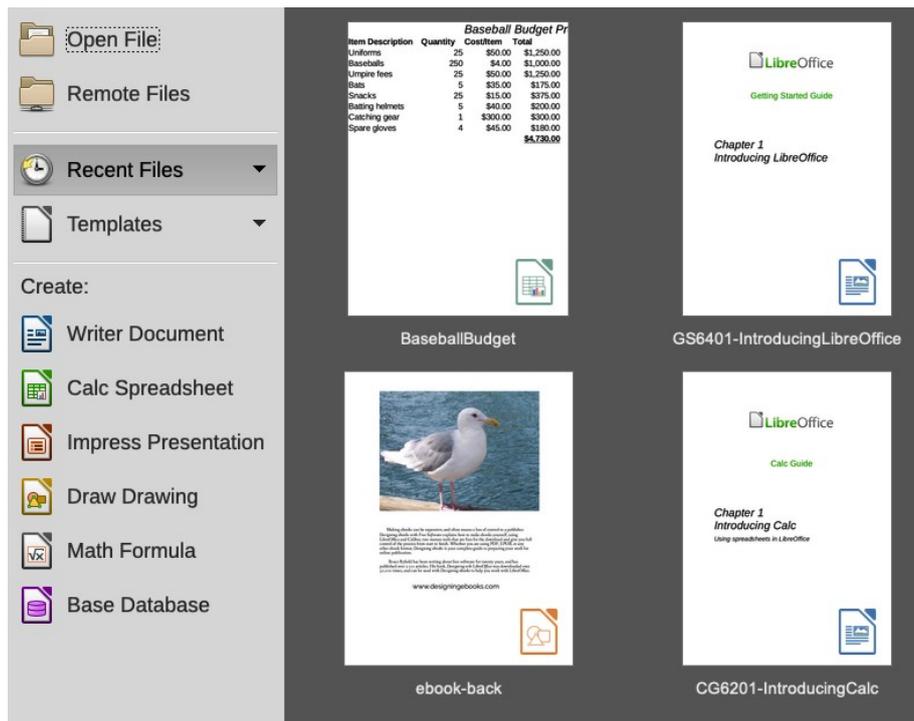
Figure 2: LibreOffice Start Center

Opening an existing document before starting LibreOffice

You can start LibreOffice by double-clicking the filename of an ODF document on the desktop, or in a file manager such as Windows Explorer or macOS Finder. The appropriate component of LibreOffice will start and the document will be loaded.

You can also open files stored in remote servers running Content Management Interoperability Services (CMIS). CMIS, like OpenDocument Format, is an OASIS standard. When using CMIS servers, the service will ask you for the necessary credentials for file access.

If you do not have Microsoft Office installed on your computer, or if Microsoft Office is installed but you have associated Microsoft Office file types with LibreOffice, then when you double-click on the following files, they open in LibreOffice:

- A Word file (*.doc or *.docx) opens in Writer.
- An Excel file (*.xls or *.xlsx) opens in Calc.
- A PowerPoint file (*.ppt or *.pptx) opens in Impress.

If you did not associate the file types and Microsoft Office is installed on your computer, then when you double-click on a Microsoft Office file, it opens using the appropriate Microsoft Office component.

For more information on opening files, see "Opening existing documents" on page 26.

Parts of the main window

The main window is similar for each component of LibreOffice, although some details vary. See the relevant chapters in this guide about Writer, Calc, Draw, Impress, Base, and Math for descriptions of those details.

Common features include the Menu bar, standard toolbar, and formatting toolbar (Writer and Calc only) at the top of the window and the status bar at the bottom.

Menu bar

The Menu bar is located across the top of the LibreOffice window, just below the title bar. When you select one of the menus listed below, a sub-menu drops down to show commands. Below is the case for Writer:

- **File** – commands that apply to the entire document such as Open, Save, and Export as PDF.
- **Edit** – commands for editing the document such as Undo, Find & Replace, Cut, Copy, Paste, and Track Changes.
- **View** – commands for controlling the display of the document such as Toolbars, Text Boundaries, and Zoom.
- **Insert** – commands for inserting elements into your document such as Header, Footer, and Image.
- **Format** – commands for formatting the layout of your document.
- **Styles** – commands for quickly applying common styles; for editing, loading, and creating new styles; and for accessing the Styles deck in the Sidebar.
- **Table** – commands to insert and edit a table in a text document.
- **Form** – commands to create fill-in forms.
- **Tools** – functions such as Spelling, AutoCorrect, Customize, and Options.
- **Window** – commands for the display window.
- **Help** – links to the LibreOffice Help file, What's This?, and information about the program.

Toolbars

LibreOffice has two types of toolbars: docked (fixed in place) and floating. Docked toolbars can be moved to different locations or made to float, and floating toolbars can be docked.

In a default LibreOffice installation, the top docked toolbar, just under the Menu bar, is called the Standard toolbar. It is consistent across the LibreOffice applications.

The second toolbar at the top for Writer and Calc, in a default LibreOffice installation, is the Formatting bar. It is context-sensitive; that is, it shows the tools relevant to the current position of the cursor or the object selected. For example, when the cursor is on a graphic, the Formatting bar provides tools for formatting graphics; when the cursor is in text, the tools are for formatting text.

In some cases it is convenient to reduce the number of toolbars displayed and get more space for the document. LibreOffice provides a single-toolbar alternative to the default double-toolbar setup. It contains the most-used commands. To activate it, enable **View > User Interface > Single Toolbar**.

Other variations include Tabbed and Groupedbar Compact, both accessed from **View > User Interface**. These provide a collection of tools at the top of the workspace, grouped in various ways that may be familiar to users of Microsoft Office (the "ribbon").

Displaying or hiding toolbars

To display or hide toolbars in a standard setup, go to **View > Toolbars** on the Menu bar, then click on the name of a toolbar from the drop-down list. An active toolbar shows a check-mark beside its name. Toolbars created from tool palettes are not listed in the View menu.

To close a toolbar, go to **View > Toolbars** on the Menu bar and deselect the toolbar, or right-click in an empty space between the icons on a toolbar and select **Close Toolbar** from the context menu.

Sub-menus and tool palettes

Toolbar icons with a small triangle to the right will display sub-menus, tool palettes, and alternative methods of selecting items, depending on the icon.

Tool palettes can be made into a floating toolbar. Figure 3 shows an example of a tool palette from the Drawing toolbar made into a floating toolbar. See "Moving toolbars" and "Floating toolbars" below for more information on moving and floating these toolbars created from tool palettes.
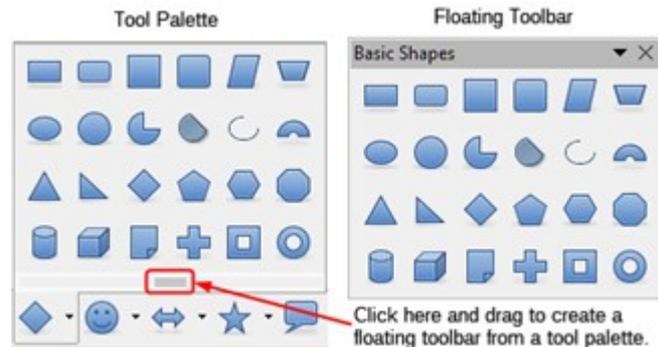
Figure 3: Example of tearing off a tool palette

Moving toolbars

Docked toolbars can be undocked and moved to a new docked position or left as a floating toolbar.

1) Move the mouse cursor over the toolbar handle, which is the small vertical bar to the left of a docked toolbar and highlighted in Figure 4.

2) Hold down the left mouse button and drag the toolbar to the new location. The toolbar can be docked in a new position at the top, sides or bottom of the main window, or left as a floating toolbar.

3) Release the mouse button.

To move a floating toolbar, click on its title bar and drag it to a new floating location or dock the toolbar at the top or bottom of the main window.
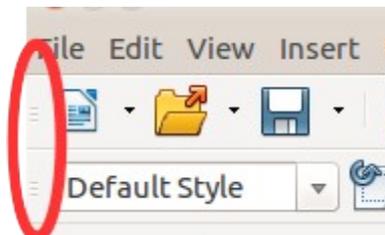
Figure 4: Toolbar handles

Floating toolbars

LibreOffice includes several additional toolbars, whose default settings have them appear as floating toolbars in response to the current position of the cursor or selection. You can dock these toolbars to the top or bottom of the main window, or reposition them on your computer display (see "Moving toolbars" above).

Some of these additional toolbars are context sensitive and will automatically appear depending on the position of the cursor. For example, when the cursor is in a table, a Table toolbar appears, and when the cursor is in a numbered or bullet list, the Bullets and Numbering toolbar appears.

Customizing toolbars

You can customize toolbars in several ways, including choosing which icons are visible and locking the position of a docked toolbar. You can also add icons and create new toolbars, as described in Chapter 14, Customizing LibreOffice. To access the customization options for a toolbar, right-click in an empty space between the icons on a toolbar to open a context menu as follows:

- To show or hide icons defined for the selected toolbar, point to **Visible Buttons**. Visible icons on a toolbar are indicated by an outline around the icon (Figure 5) or by a check mark beside the icon, depending on your operating system. Select or deselect icons to hide or show them on the toolbar.
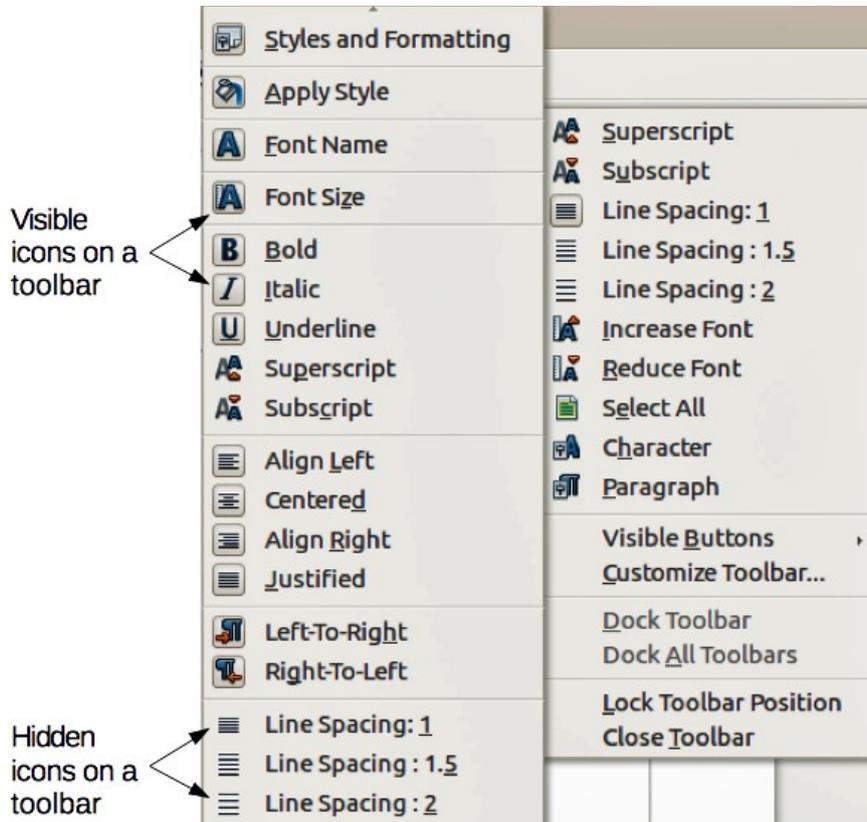
Figure 5: Selection of visible toolbar icons

- Click **Customize Toolbar** to open the Customize dialog; See Chapter 14, Customizing LibreOffice, for more information.

- Click **Dock Toolbar** to dock the selected floating toolbar. You can reposition the toolbar to a different docked position. See "Moving toolbars" on page 21.

- Click **Dock All Toolbars** to dock all floating toolbars. You can reposition the toolbars to different docked positions. See "Moving toolbars" on page 21.

- Click **Lock Toolbar Position** to lock a docked toolbar into its docked position.

- Click **Close Toolbar** to close the selected toolbar.

Context menus

Context menus provide quick access to many menu functions. They are opened by right-clicking on a paragraph, graphic, or other object. When a context menu opens, the functions or options available will depend on the object that has been selected. A context menu can be the easiest way to reach a function, especially if you are not sure where the function is located in the menus or toolbars. Context menus may display an applicable keyboard shortcut if one has been set; you can toggle this visibility off or on in **Tools > Options > LibreOffice > View > Visibility**.
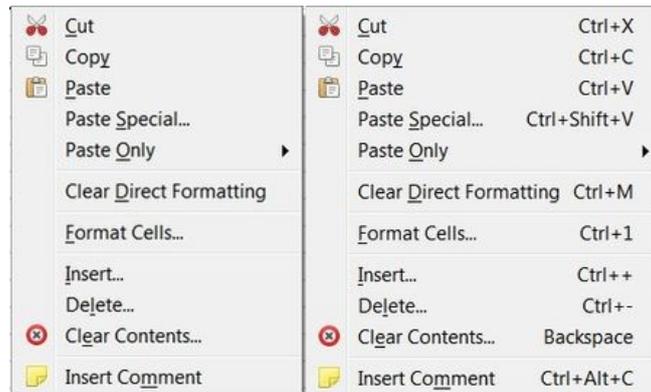
Figure 6: Keyboard shortcuts in context menus

Status bar

The status bar is located at the bottom of the workspace. It provides information about the document and convenient ways to change some features quickly. It is similar in Writer, Calc, Impress, and Draw, but each LibreOffice component includes some component-specific items. An example of the Writer status bar is shown in Figure 7.
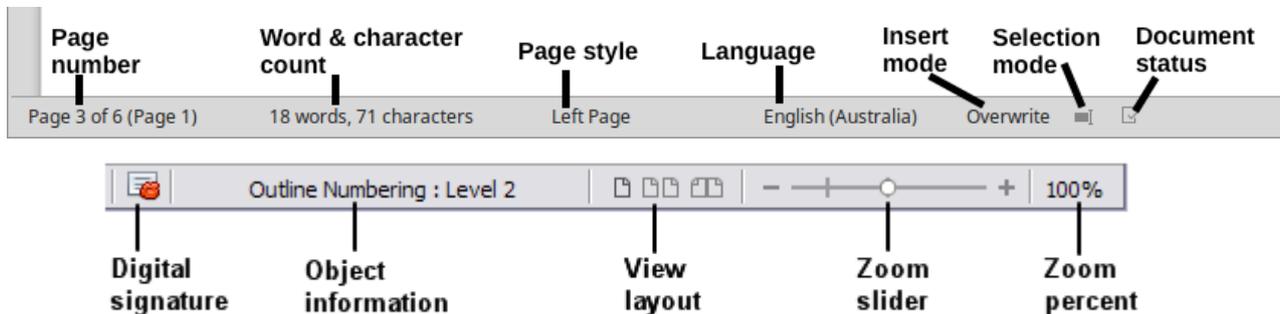
Figure 7: Example status bar from Writer

Page, sheet, or slide number and page count
Shows the current page, sheet, or slide number and the total number of pages, sheets, or slides in the document. Click on this field to open the Go to Page dialog. Other uses of this field depend on the LibreOffice component.

Word & character count
Shows the total number of words and characters in the document or in the selection.

Page style or slide design
Shows the current page style or slide design. To edit the current page style or slide design, double-click on this field. To choose a different page style or slide design, right-click on this field and select from the list that pops up.

Language
Shows the current language of the text at the current cursor position.

Insert mode
Shows the type of insert mode the program is in. This field is blank if the program is in Insert mode. Each time the *Ins* key is pressed, or this field is clicked, the mode toggles between Insert and Overwrite.

Selection mode
Click to choose different selection modes. The icon does not change, but when you hover the mouse pointer over this field, a tooltip indicates which mode is active.

Unsaved changes
The icon shown here is different when changes to the document have not been saved.

Digital signature

If the document has been digitally signed, an icon shows here. You can click the icon to sign the document, or to view the existing certificate.

Object information

Displays information relevant to the position of the cursor or the selected element of the document.

View layout

Select between Single-page view, Multiple-page view, and Book view to change how your document is displayed.

Zoom slider

Drag the Zoom slider, or click on the + and – signs to change the view magnification of your document.

Zoom percentage

Indicates the magnification level of the document. Right-click on the percentage figure to open a list of magnification values from which to choose. Cicking on this percentage figure opens the Zoom & View Layout dialog.

Sidebar

To activate the Sidebar, select **View > Sidebar** from the Menu bar. The Sidebar (Figure 8) is located on the right side of the edit views of Writer, Calc, Impress, and Draw. It contains one or more decks, based on the current document context. Decks are organized into panels. A tab bar on the right side of the sidebar allows you to switch between different decks.
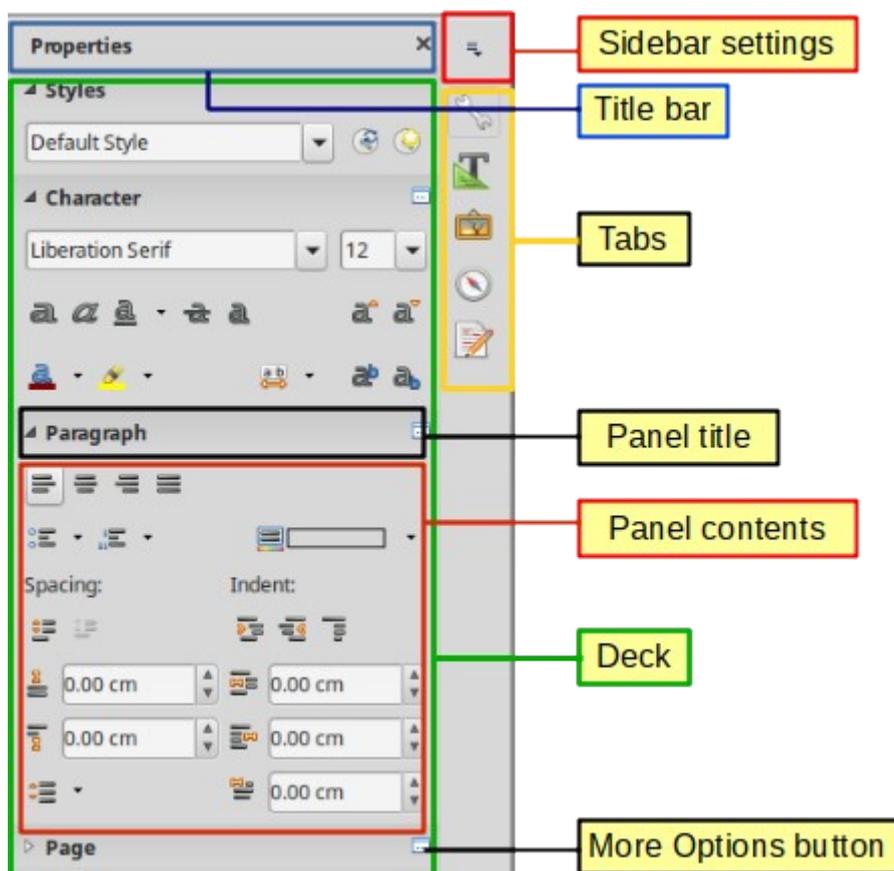
Figure 8: Properties panel of Sidebar in Writer

All four components contain the Properties, Styles, Gallery, and Navigator decks. Some components have additional decks, such as Page for Writer; Master Slides, Animation, and Slide Transition for Impress; Shapes for Draw; and Functions for Calc.

A panel is like a combination of a toolbar and a dialog. For example, you can freely mix working in the main edit window to enter text and use the Properties panel in the sidebar to change text attributes.

Toolbars and Sidebar panels share many functions. For example, the buttons for making text bold or italic exist in both the Formatting toolbar and the Properties panel.

For more detail, see the Sidebar explanation in the relevant LibreOffice component's user guide.

To hide the Sidebar, click on the gray Hide button on the left. Click on the same button to show the Sidebar again.

To undock the Sidebar and make it floating, and to dock a floating Sidebar, use the Sidebar settings drop-down list at the top of the tab bar (see Figure 9). From the same list you can choose which items to show in the Sidebar.
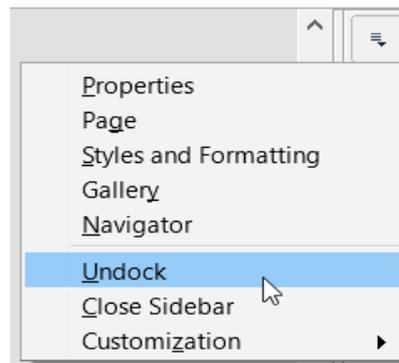
Figure 9: Floating (undocking) or docking the Sidebar

Starting new documents

You can start a new, blank document in LibreOffice in several ways.

When LibreOffice is running but no document is open, the Start Center (Figure 2 on page 19) is shown. Click one of the icons to open a new document of that type, or click the Templates icon to start a new document using a template.

You can also start a new document in one of the following ways:

- Use **File > New** on the Menu bar and select the type of document from the context menu.
- Use the keyboard shortcut *Ctrl+N* to create a new document. The type of document created depends on which LibreOffice component is open and active. For example, if Calc is open and active, a new spreadsheet is created.
- Use **File > Wizards** on the Menu bar and select the type of document from the context menu.
- If a document is already open in LibreOffice, click the **New** icon on the Standard toolbar and a new document of the same type is created in a new window. For example, if Calc is open and active, a new spreadsheet is created. The **New** icon changes depending on which component of LibreOffice is open.
- If a document is already open in LibreOffice, click on the small triangle to the right of the **New** icon on the Standard toolbar and select the type of document from the context menu that opens.

> **Note**
>
> If all documents are closed without exiting from LibreOffice, then the Start Center will be displayed.

Opening existing documents

You can also open an existing document in one of the following ways:

- When no document is open, click **Open File** or **Remote Files** in the Start Center to reach the corresponding open dialog.
- Go to **File > Open** or **File > Open Remote** on the Menu bar to reach the corresponding open dialog.
- Use the keyboard shortcut *Ctrl+O* to reach the Open dialog.
- If a document is already open, click the **Open** icon on the Standard toolbar and select from a list of available documents from the Open dialog.
- Click the small triangle to the right of the **Open** icon and select from a list of recently opened documents, click **Open Template** to select a template, or click **Open Remote File** to open a remote file.
- When no document is open, click on a thumbnail of recently opened documents displayed in the Start Center. You can scroll up or down in the Start Center to locate a recently opened document.

When using the Open dialog, navigate to the folder you want, select the file you want, and then click **Open**. If a document is already open in LibreOffice, the second document opens in a new window.

In the Open dialog, you can reduce the list of files by selecting the type of file you are looking for. For example, if you choose Text documents as the file type, you will only see documents Writer can open (including .odt, .doc, .txt); if you choose Spreadsheets, you will see .ods, .xls, and other files that Calc opens.

You can also open an existing document that is in a format that LibreOffice recognizes by double-clicking on the file icon on the desktop or in a file manager such as Windows Explorer. LibreOffice has to be associated with file types that are not ODF files for the appropriate LibreOffice component to open.

> **Note**
>
> When opening files stored in a remote server, you may be asked to enter your user name and password to log in the server.

Saving documents

You can save documents as follows:

- **Save** – use if you are keeping the document, its current filename and location.
- **Save Remote** – use if your document is already stored in a remote server or will be stored in a remote server.
- **Save As** – use to create a new document, or change the filename and/or file format, or save the file in a different location on your computer.
- **Save a Copy** – use to save a copy of your current document and keep it open for more editing.
- **Save All** – use to save all the files open in your current session.

Save command

To save a document if you are keeping the document's current filename and location, do one of the following:

- Use the menu option **File > Save**.
- Use the keyboard shortcut *Ctrl+S*.
- Click the **Save** icon on the Standard toolbar.
- Use the menu option **File > Save All**.
- Use the menu option **File > Save Remote**.
- Use the menu option **File > Save a Copy** (similar to the Save As command).

Using the Save command will immediately overwrite the last saved version of the file.

Save As command
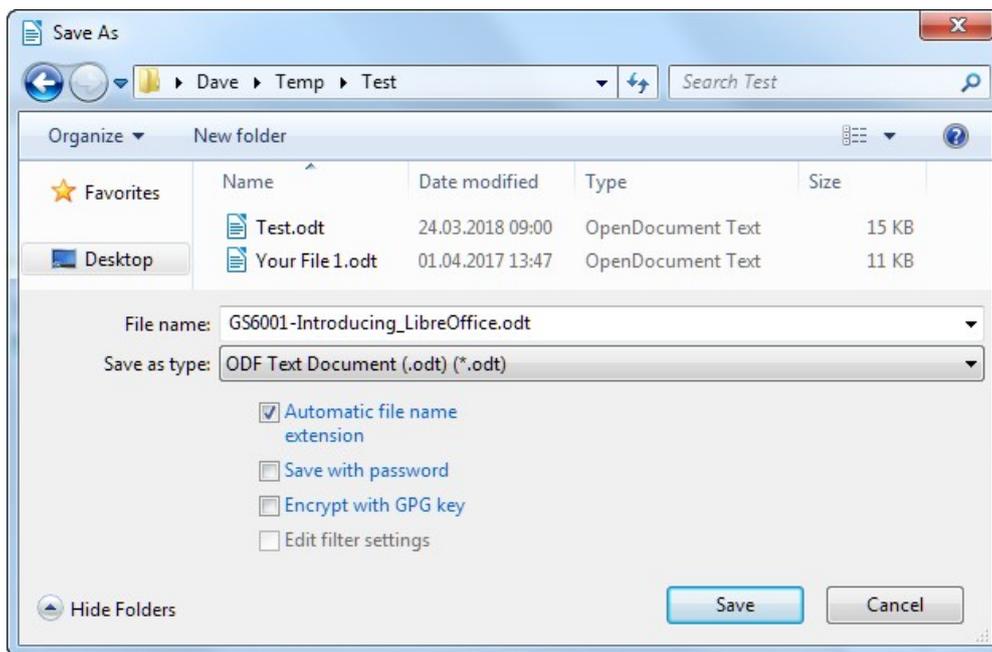
Figure 10: Example of LibreOffice Save As dialog

If you want to create a new document file, change the filename and/or file format, or save the file in a different location on your computer:

- Use the keyboard shortcut *Ctrl+Shift+S*.
- Use the menu option **File > Save As**.

When the Save As dialog (Figure 10) or Save dialog opens, enter the file name, change the file type (if applicable), navigate to a new location (if applicable), and click **Save**.

Password protection

To restrict who can open and read a document, or open and edit the document, use password protection.

1) Using the Save As command above, select the **Save with password** option in the Save As dialog or Save dialog.
2) Click **Save** and the Set Password dialog opens (Figure 11).
3) In *File Encryption Password*, enter a password to open the document and then enter the same password as confirmation.

4) To restrict who can edit the document, click **Options**.

5) In *File Sharing Password*, select **Open file read-only**, enter a password to allow editing, and then enter the same password as confirmation.

6) Click **OK** and the dialog closes. If the passwords match, the document is saved password-protected. If the passwords do not match, you receive an error message.

Figure 11: Set Password dialog

> ⚠️ **Caution**
>
> LibreOffice uses a very strong encryption mechanism that makes it almost impossible to recover the contents of a document if you lose or forget the password.

Changing the password

When a document is password-protected, you can change the password while the document is open. Go to **File > Properties > General** on the Menu bar and click the **Change Password** button. This opens the Set Password dialog where you can enter a new password.

Saving documents automatically

LibreOffice can save files automatically as part of the AutoRecovery feature. Automatic saving, like manual saving, overwrites the last saved state of the file.

To set up automatic file saving:

1) Go to **Tools > Options > Load/Save > General** on the Menu bar.

2) Select **Save AutoRecovery information every** and set the time interval.

3) Click **OK**.

Opening and saving files on remote servers

LibreOffice can open and save files stored on remote servers. Keeping files on remote servers allows you to work with the documents using different computers. For example, you can work on a document in the office during the day and edit it at home for last-minute changes. Storing files on a remote server also backs up documents from computer loss or hard disk failure. Some servers are also able to check-in and check-out files, thus controlling their usage and access.

LibreOffice supports many document servers that use well known network protocols such as FTP, WebDav, Windows share, and SSH. It also supports popular services like Google Drive and Microsoft OneNote, as well as commercial and open source servers that implement the OASIS CMIS standard.

To enable a remote server connection, use one of these methods:

- Click on the **Remote Files** button in the Start Center.
- Select **File > Open Remote** in any open document.
- Select **File > Save Remote** in any open document.

On the Remote Files dialog (Figure 13), click **Manage Services > Add Service** button in the upper right to open the File Services dialog (Figure 12). Depending on the type of file service you choose in the Type listbox, different parameters are necessary to fully qualify the connection to the remote server.
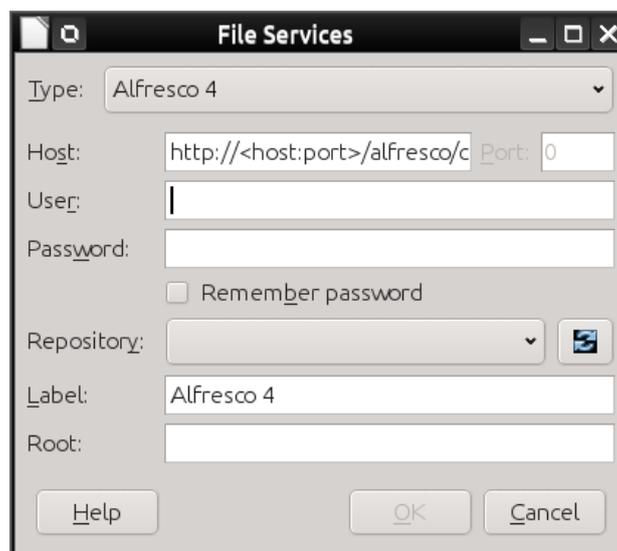
Figure 12: Remote server configuration

Once the connection is defined, click **OK** to connect. The dialog will dim until the connection is established with the server. A dialog asking for the user name and the password may pop up to let you log in the server. Proceed entering your credentials.

The Remote Files dialog (Figure 13) which then appears has many parts. The upper list box contains the list of remote servers you have previously defined. The line below the list box shows the path to access the folder. On the left is the folder structure of the user space in the server. The main pane displays the files in the remote folder. Click the **Open** or **Save** button to proceed.
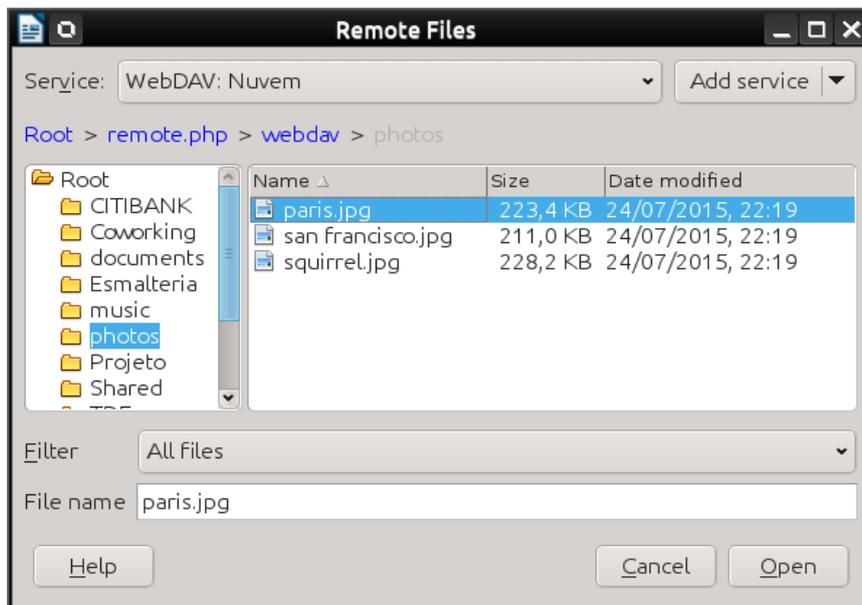
Figure 13: Remote Files dialog when connected to a server

Using the Navigator

The LibreOffice Navigator lists objects contained within a document, collected into categories. For example, in Writer it shows Headings, Tables, Frames, Comments, Images, Bookmarks, and other items, as shown in Figure 14. In Calc it shows Sheets, Range names, Database ranges, Images, Drawing objects, and other items. In Impress and Draw it shows Slides, Pages, and other items.

To open the Navigator, press the *F5* key, or go to **View > Navigator** on the Menu bar, or click the **Navigator** icon in the Sidebar.

Click the marker (+ or triangle) by any of the categories to display the list of objects in that category.

The Navigator provides several convenient ways to move around a document and find items in it:

- When a category is showing the list of objects in it, double-click on an object to jump directly to that object's location in the document.

- Objects are much easier to find if you have given them recognizable names when creating them, instead of keeping the default names such as Sheet1, Table1, or Table2. The default names may not correspond to the actual position of the object in the document.

- Navigator also provides the facility to move, promote, demote items within a document.

- Each Navigator in the individual LibreOffice components has a different range of functions. These functions are further explained in the user guide for each LibreOffice component.
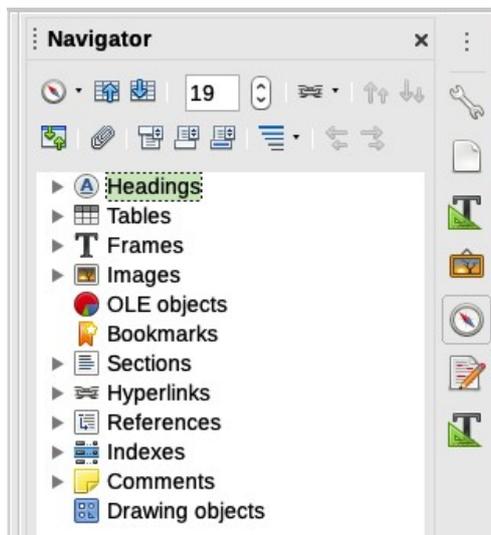
Figure 14: Navigator in Writer

Undoing and redoing changes

To undo the most recent unsaved change in a document, use the keyboard shortcut *Ctrl+Z*, or click the **Undo** icon on the Standard toolbar, or go to **Edit > Undo** on the Menu bar. Click the small triangle to the right of the **Undo** icon to get a list of all the changes that can be undone. You can select multiple changes and undo them at the same time.

After changes have been undone, you can redo changes. To redo a change use the keyboard shortcut *Ctrl+Y*, or click the **Redo** icon, or go to **Edit > Redo** on the Menu bar. As with Undo, click on the triangle to the right of the **Redo** icon to get a list of the changes that can be reapplied.

To repeat the last command applied to your document, use the shortcut *Ctrl+Shift+Y*. This can save several repetitive menu navigation clicks or keyboard shortcuts, especially when the command is taken from a secondary menu.

Reloading a document

Reloading is useful in two situations.

- You may want to discard all the changes made in an editing session after the last document save.
- You may have made some formatting changes that do not show until the document has been closed and reopened; reloading has the same result.

To reload a document, go to **File > Reload** on the Menu bar. If you have made changes to a file since the last save, a confirmation dialog will warn you that reloading will discard your last changes. Choose whether to save or discard the changes.

On reloading the document, the File dialog does not open, because the file is already selected.

Using document properties

To open the Properties dialog for a document, go to **File > Properties** on the Menu bar. The Properties dialog provides information about the document and allows you to set some of its properties. The dialog and its tabs are described below.

General

Contains basic information about the current file: file name and type; storage location; file size; date, time, and author of file creation and last modification; template used to create the file; date, time, and author of digital signature; date, time, and user name when the file was last printed; total editing time; and revision number.

Controls available:

- **Change Password** – opens a dialog to change the password. It is only active if a password has been set for the file.
- **Digital Signatures** – opens the Digital Signatures dialog where you can manage digital signatures for the current document.
- **Apply user data** – saves the full name of the user with the file. You can edit the name by going to **Tools > Options > LibreOffice > User Data** on the Menu bar.
- **Save preview image with this document** – saves a thumbnail.png inside the document. These images may be used by a file manager under certain conditions.
- **Reset Properties** – resets the editing time to zero, the creation date to the current date and time, and the version number to 1. The modification and printing dates are also deleted.

Description

Contains optional editable descriptive information about the document, which may be exported as metadata to other file formats.

- **Title** – enter a title for the document.
- **Subject** – enter a subject for the document. You can use a subject to group documents with similar contents.
- **Keywords** – enter the words that you want to use to index the content of the document. Keywords must be separated by commas. A keyword can contain white space characters or semicolons.
- **Comments** – enter comments to help identify the document.

Custom Properties

Use this page to assign custom information fields to the document. In a new document, this page may be blank. If the new document is based on a template, this page may contain fields.You can change the name, type, and contents of each row. The information in the fields will be exported as metadata to other file formats.

Click **Add Property** to add a new custom property. Click **Reset** to delete all custom properties.

CMIS Properties

Used for documents stored on remote servers. See the Help for more information.

Security

Enables two password-protected security options.

- **Open file read-only** – select to allow this document to be opened only in read-only mode. This file sharing option protects the document against accidental changes. It is still possible to edit a copy of the document and save that copy with the same name as the original.
- **Record changes** – select to require that all changes be recorded. To protect the recording state with a password, click **Protect** and enter a password. This is similar to **Edit > Track Changes > Record** on the Menu bar. However, while other users of this document can apply their changes, they cannot disable change recording without knowing the password.

- **Protect** or **Unprotect** – protects the change recording state with a password. If change recording is protected for the current document, the button is named **Unprotect**. Click **Unprotect** and type the correct password to disable the protection.

Font

When **Embed fonts in the document** is selected, any fonts used in the document will be embedded into the document when it is saved. This may be useful if you are creating a PDF and want to control how it will look on other computer systems.

Only embed fonts that are used in documents – If fonts have been defined for the document (for example, in the template), but have not been used, select this option to not embed them.

Font scripts to embed – You can choose which types of fonts are embedded: Latin, Asian, Complex.

Statistics

Displays statistics for the current file, such as the number of pages, words, and characters.

Closing a document

If only one document is open and you want to close that document, go to **File > Close** on the Menu bar or click on the X on the right or left end of the Menu bar. On Windows and Linux, the document closes and the LibreOffice Start Center opens. On macOS, the document closes and only the Menu bar remains at the top of the screen.

If more than one document is open and you want to close one of them, go to **File > Close** on the Menu bar or click on the X on the title bar of that document's window. The X may be located on either the right or left end of the title bar.

If the document has not been saved since the last change, a message box is displayed. Choose whether to save or discard your changes.

> ⚠️ **Caution**
>
> Not saving your document could result in the loss of recently made changes, or worse still, the entire file.

Closing LibreOffice

To close LibreOffice completely, go to **File > Exit LibreOffice** on the Menu bar on Windows and Linux. On macOS, go to **LibreOffice > Quit LibreOffice** on the Menu bar.

On Windows and Linux, when you close the last document using the X on the title bar of the window, then LibreOffice will close completely. On macOS, you need to use **LibreOffice > Quit LibreOffice.**

You can also use a keyboard shortcut as follows:

- In Windows and Linux – *Ctrl+Q*
- In macOS – *Command ⌘+Q*

If any documents have not been saved since the last change, a message box is displayed. Choose whether to save or discard your changes.

Troubleshooting LibreOffice in Safe Mode

You can use Safe Mode to help restore an instance of LibreOffice that has become corrupted and stopped working or fails to launch.

To access Safe Mode, do one of the following:

- Choose **Help > Restart in Safe Mode** from the Menu bar.
- Start LibreOffice from the command line with the `--safe-mode` option.
- In Windows only, choose **LibreOffice (Safe Mode)** from the Start Menu.
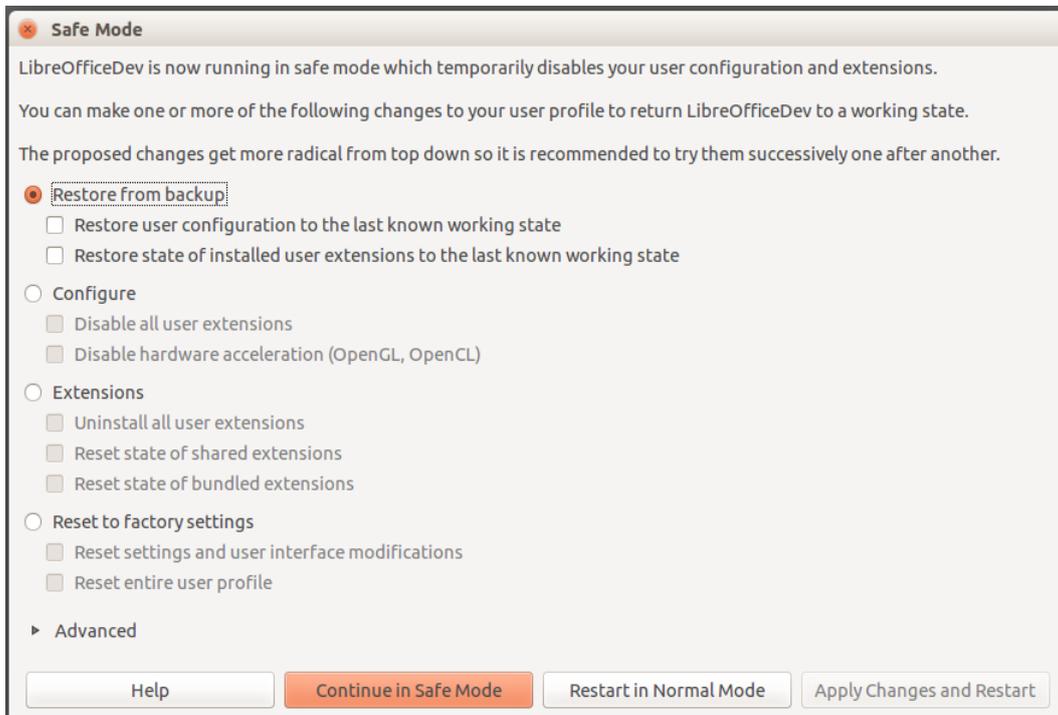
Figure 15: LibreOffice Safe Mode

The following Safe Mode options get more extreme from the top down, so it is recommended that you try them successively.

- **Restore from backup** – LibreOffice keeps backups of previous configurations and activated extensions. Use this option to restore the user configuration, installed extensions, or both, to a previous known working state if you suspect that your problems were caused by recent changes to either.
- **Configure** – Use this option to disable all user extensions, hardware acceleration, or both. This is a good choice if you are experiencing crashes on startup or visual glitches that are often related to hardware acceleration.
- **Extensions** – If you suspect that a corrupted extension is blocking or causing LibreOffice to crash, you can use this option to uninstall all user extensions and reset the state of any shared or bundled extensions. In the case of shared or bundled extensions, the option will only work if you have the proper system access rights. It should be exercised with caution.
- **Reset to factory settings** – If all of the above fails, you can reset your settings and your user interface modifications, or your entire profile back to factory defaults.
  - **Reset settings and user interface modifications** – this will reset your User Interface and configuration changes, but keep things like your personal dictionary, templates, etc.
  - **Reset entire user profile** – this will erase all customized options and return your user profile to the factory default state.

- **Continue in Safe Mode** – Continuing in Safe Mode will allow you to work in LibreOffice, using a temporary profile that was created on startup. Any extensions or configuration options you had set up previously will have to be reconfigured in order to be used, bearing in mind that any changes made to the temporary user profile will be lost after any restart.

- **Restart in Normal Mode** – If you arrived in Safe Mode accidentally, this option will discard any changes, terminate Safe Mode, and restart LibreOffice normally.

- **Apply Changes and Restart** – Choose this option to apply any of the above changes and restart LibreOffice.

> **Note**
>
> If you are unable to solve your problem using Safe Mode, the Advanced tab provides instructions on receiving further aid.
>
> In the Advanced tab you can also create a .zip file of your corrupted user profile which can then be uploaded to the bug tracking system where it can be further investigated by the developers.
>
> However, be aware that your uploaded user profile may contain sensitive information such as installed extensions, personal dictionaries, and settings.

Getting Started Guide

Chapter 2
Setting up LibreOffice

Choosing options to suit the way you work

Introduction

This chapter briefly presents some of the setup options found under **Tools > Options** on the Menu bar (**LibreOffice > Preferences** on macOS). Additional options, and more details about the ones given here, are covered in the Help.

> 💡 **Tip**
>
> Many options are intended for power users and programmers. If you don't understand what an option does, it's usually best to leave it on the default setting unless instructions in this book recommend changing the setting.

Choosing options for all of LibreOffice

This section covers some of the settings that apply to all the components of LibreOffice. For information on settings not discussed here, see the Help.

Click **Tools > Options** (**LibreOffice > Preferences** on macOS). The list in the left-hand box of the Options – LibreOffice dialog varies depending on which component of LibreOffice is open. The illustrations in this chapter show the list as it appears when a Writer document is open. If you are using a version of LibreOffice other than US English, some field labels may be different from those shown in the illustrations.

Click the expansion symbol (+ or triangle) next to **LibreOffice**. A list of subsections drops down. Select an item in the list to display the relevant page on the right-hand side of the dialog.
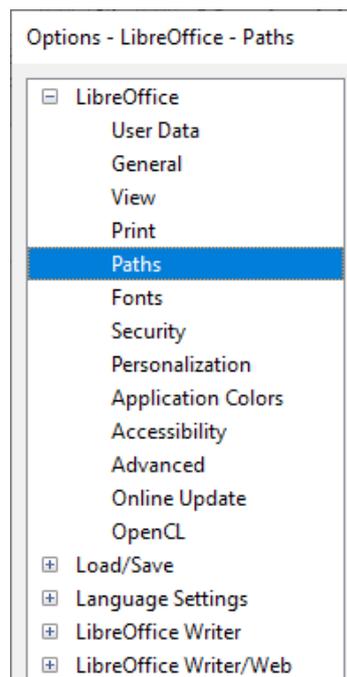
Figure 16: LibreOffice options

> 📝 **Note**
>
> The **Reset** button, located in the lower right of the full Options dialog, resets the values on that page to the values that were in place when you opened the dialog. It may be called **Revert** on some installations.

User Data

Because LibreOffice can use the name or initials stored in the LibreOffice – User Data page for several things – including document properties ('created by' and 'last edited by' information), the name of the author of comments and changes, and the sender address in mailing lists – you will want to ensure that the correct information appears here.

Fill in the form, or amend or delete any existing information. If you do not want user data to be part of the document's properties, deselect **Use data for document properties**.

Figure 17: User Data dialog

In the Cryptography section, you can set the preferred public key for OpenPGP encryption and digital signature. These preferred keys will be pre-selected in the key selection dialog when you sign or encrypt a document (see Chapter 10, Printing, Exporting, Emailing, and Signing Documents).

General

The options on the LibreOffice – General page (Figure 18) are described below.

Help – Extended tips
When Extended tips is active, a brief description of the function of a particular icon or menu command or a field on a dialog appears when you hold the mouse pointer over that item.

Help – Show "No offline help installed" popup
Deselect to disable this popup dialog when you select Help, if offline help is not installed.

Help – Show "Tip of the Day" dialog on start-up
Deselect to disable the "Tip of the Day" dialog. You can also disable this from the dialog.

Open/Save Dialogs – Use LibreOffice dialogs
Select this option to use the Open and Save dialogs supplied with LibreOffice. Deselect to use the standard Open and Save dialogs for your operating system. This book uses the LibreOffice Open and Save dialogs in illustrations.

Document Status – Printing sets "document modified" status

    If this option is selected, then the next time you close the document after printing, the print date is recorded in the document properties as a change and you will be prompted to save the document again, even if you did not make any other changes.
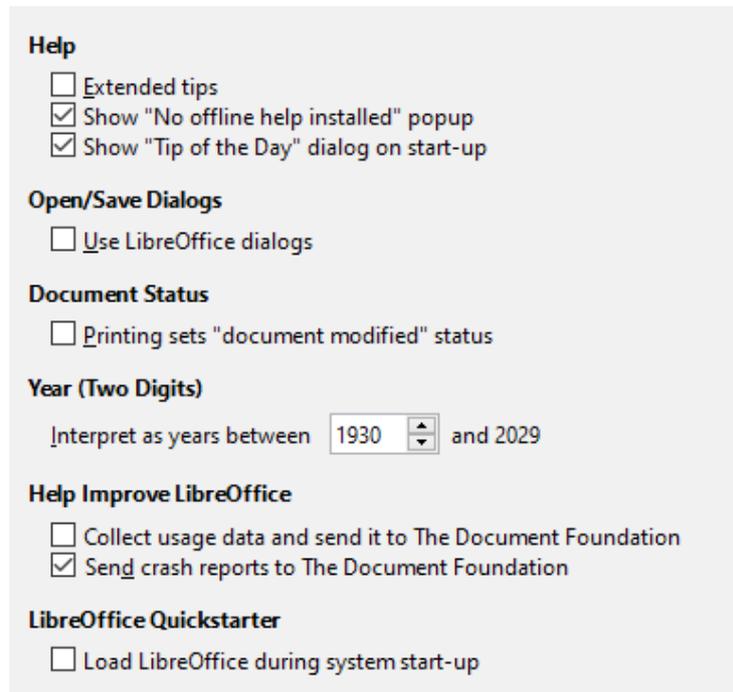
Figure 18: Setting general options for LibreOffice

Year (Two Digits)

    Specifies how two-digit years are interpreted. For example, if the two-digit year is set to 1930, and you enter a date of 1/1/30 or later into your document, the date is interpreted as 1/1/1930 or later. An "earlier" date is interpreted as being in the following century; that is, 1/1/20 is interpreted as 1/1/2020.

Help Improve LibreOffice – Collect usage data and send it to The Document Foundation

    Send usage data to help The Document Foundation improve usability of the software. The usage data is sent anonymously and carries no document contents, only the commands used.

Help Improve LibreOffice – Send crash reports to The Document Foundation

    (Windows only.) If this option is selected, the Error Report Tool starts automatically when a program crash occurs. The tool gathers all necessary information that can help the program developers to improve the code. You can include some additional information that may help the developers to localize the error. For more information, see the Help.

LibreOffice Quickstarter – Load LibreOffice during system start-up

    When this option is selected, the necessary library files are loaded when the computer is started, resulting in a shorter startup time for LibreOffice components. The old menu in the system tray is no longer used. Not available on macOS.

View

The options on the LibreOffice – View page affect how the document window looks and behaves. Some of these options are described below Figure 19. Set them to suit your personal preferences. Some of the available options vary with your computer's operating system; the figure below shows the options on Windows 10.
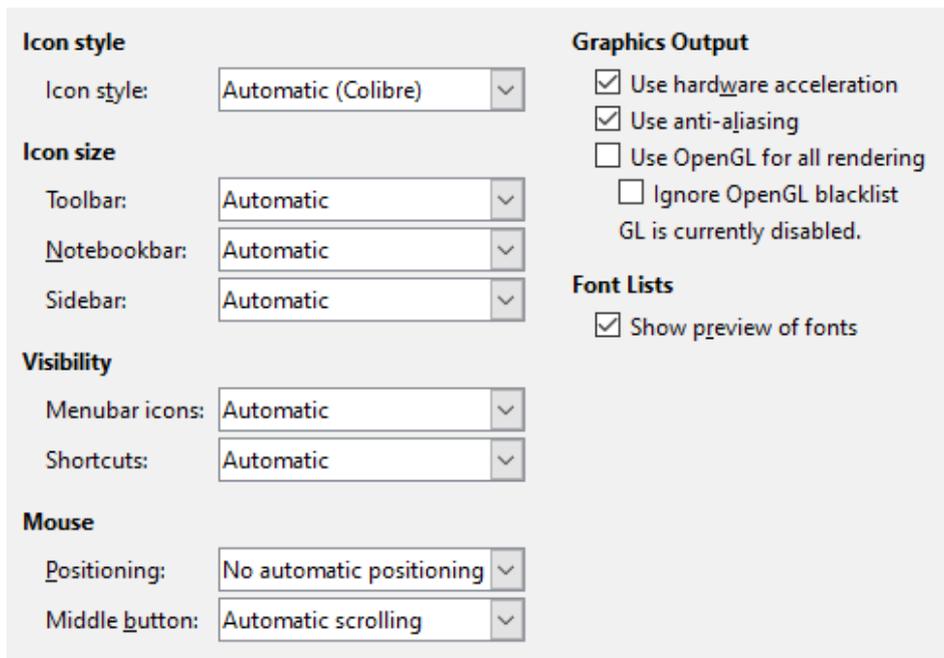
Figure 19: Choosing View options for LibreOffice applications

Icon style

This box specifies the icon style used in toolbars and dialogs. The Automatic option uses an icon set compatible with your operating system and choice of desktop. Several other icon sets are available: Colibre, Breeze, Breeze Dark, Elementary, Karasa Jaga, Sifr, Sifr Dark, and Tango. You can add other icon sets using extensions; see Chapter 14, Customizing LibreOffice.

Icon size – Toolbar, Notebookbar, Sidebar

This box specifies the display size of toolbar icons (Automatic, Small, Large). The Automatic icon size option uses the setting for your operating system. The toolbars, sidebar, and notebookbar (tabbed, grouped, and contextual versions) can have different settings.

Visibility – Menubar icons, Shortcuts

You can choose to hide or show icons as well as text on Menu bar and context menu items.

Mouse – Positioning

Specifies if and how the mouse pointer will be positioned in newly opened dialogs.

Mouse – Middle button

Defines the function of the middle mouse button (if present).

– Automatic scrolling – dragging while pressing the middle mouse button shifts the view.

– Paste clipboard – pressing the middle mouse button inserts the contents of the "Selection clipboard" at the cursor position.

The "Selection clipboard" is independent of the normal clipboard that you use by **Edit > Copy/Cut/Paste** or their respective keyboard shortcuts. Clipboard and "Selection clipboard" can contain different contents at the same time.

Function	*Clipboard*	*Selection clipboard*
Copy content	**Edit > Copy** *Ctrl+C*	Select text, table, or object.
Paste content	**Edit > Paste** *Ctrl+V* pastes at the cursor position.	Clicking the middle mouse button pastes at the mouse pointer position.
Pasting into another document	No effect on the clipboard contents.	The last marked selection is the content of the selection clipboard.

Graphics Output – Use hardware acceleration

Directly accesses hardware features of the graphical display adapter to improve the screen display. Not supported on all operating systems and LibreOffice distributions.

Graphics Output – Use anti-aliasing

Enables and disables anti-aliasing, which makes the display of most graphical objects look smoother and with fewer artifacts. Not supported on all operating systems and LibreOffice distributions.

> ### 💡 Tip
>
> Press *Shift+Ctrl+R* to restore or refresh the view of the current document after changing the anti-aliasing settings, to see the effect.

Graphics Output – Use OpenGL for all rendering

Enables and disables the use of the 3D graphics language OpenGL. Not supported on all operating systems and LibreOffice distributions.

Graphics Output – Ignore OpenGL blacklist

Forces the use of OpenGL even if the graphics device is blacklisted. A device is blacklisted when it is buggy or may render graphics with poor quality. Not supported on all operating systems and LibreOffice distributions.

Font Lists – Show preview of fonts

Causes the font list to look like Figure 20, Left, with the font names shown as an example of the font; with the option deselected, the font list shows only the font names, not their formatting (Figure 20, Right). The fonts you will see listed are those that are installed on your system. Fonts which are tuned for use with a specific script, such as Arabic, Hebrew, Malayalam, and so on, show an additional preview of some sample text in the target script.

Font lists – Screen font anti-aliasing

(Not available in Windows.) Select this option to smooth the screen appearance of text. Enter the smallest font size to apply anti-aliasing.
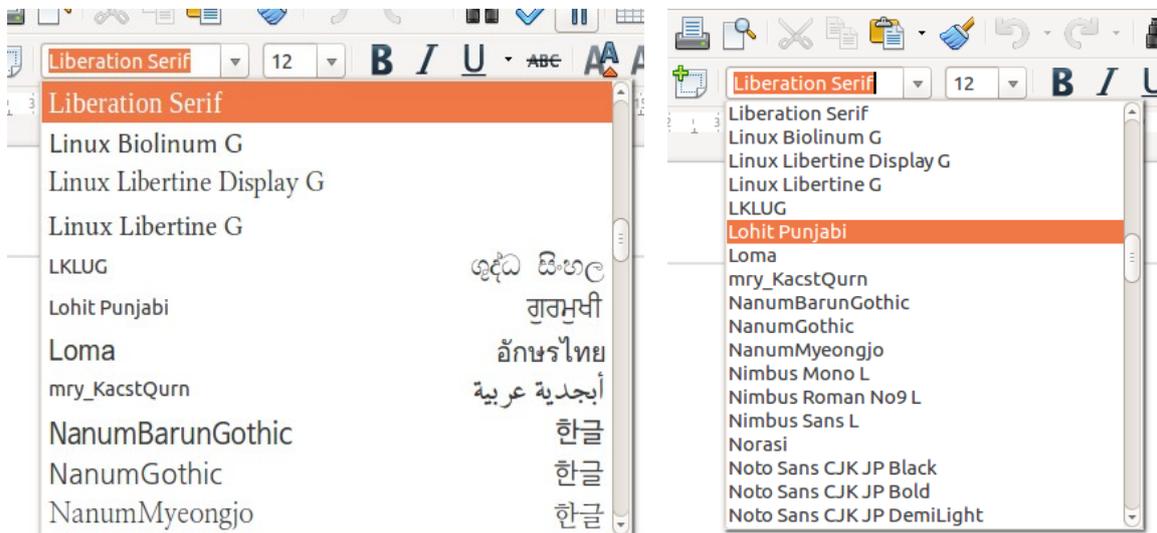
Figure 20: Font list (Left) with preview; (Right) without preview

Print

On the LibreOffice – Print page, you can set the print options to suit your default printer and your most common printing method. Most of these options should be self-explanatory.

Figure 21: Choosing general printing options for all components

In the Warnings section, you can choose whether to be warned if the paper size or orientation specified in your document does not match the paper size or orientation available for your printer. Having these warnings turned on can be quite helpful, particularly if you work with documents produced by people in other countries where the standard paper size is different from yours.

Tip

If your printouts are incorrectly placed on the page or chopped off at the top, bottom, or sides, or the printer is refusing to print, the most likely cause is page size incompatibility.

Note

Linux installations have an extra option (not shown in Figure 21): PDF as Standard Print Job Format. Select this option to change the internal print job format from a Postscript document description to a PDF description. This format has a number of advantages over Postscript. For more information, see https://www.linuxfoundation.org/collaborate/workgroups/openprinting/pdf_as_standard_print_job_format

Deselecting this option reverts to the Postscript document workflow system.

Paths

On the LibreOffice – Paths page, you can change the location of files associated with, or used by, LibreOffice to suit your working situation. For example, you might want to store documents by default somewhere other than My Documents.

To make changes, select an item in the list shown in Figure 22 and click **Edit**. On the Select Paths dialog (not shown; may also be titled Edit Paths), add or delete folders as required, and then click

OK to return to the Options dialog. Some items can have at least two paths listed: the User Path is to a user-specific folder (normally on the user's personal computer) and the Internal Path is to a shared folder where LibreOffice is installed (which might be on a network).

> 💡 **Tip**
>
> You can use the entries on the LibreOffice – Paths page to compile a list of files, such as those containing AutoText, that you need to back up or copy to another computer.

Figure 22: Viewing the paths of files used by LibreOffice

Fonts

You can define replacements for any fonts that might appear in your documents. If you receive from someone else a document containing fonts that you do not have on your system, LibreOffice will substitute fonts for those it does not find. You might prefer to specify a different font from the one that the program chooses.

> 📝 **Note**
>
> These choices do not affect the default font for your documents. To do that, you need to change the default template for documents, as described in Chapter 3, Using Styles and Templates.

On the LibreOffice – Fonts page:

1) Select the **Apply replacement table** option.

2) Select or type the name of the font to be replaced in the **Font** box. (If you do not have this font on your system, it will not appear in the drop-down list in this box, so you need to type it in.)

3) In the **Replace with** box, select a suitable font from the drop-down list of fonts installed on your computer.

4) Click on the tick icon to the right of the *Replace with* box. A row of information now appears in the larger box below the input boxes. Select **Always** to replace the font, even if the original font is installed on your system. Select **Screen only** to replace the screen font only and never replace the font for printing. The results of combining these selections are given in Table 1.

5) In the bottom section of the page, you can change the typeface and size of the font used to display source code such as HTML and Basic (in macros).
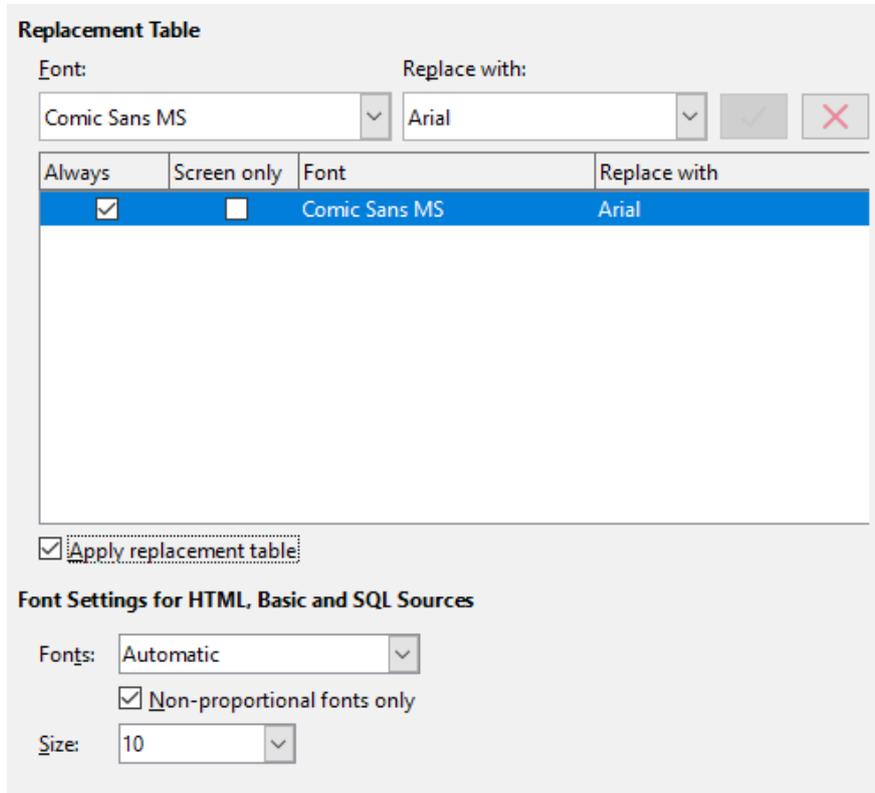
Figure 23: Defining a font to be substituted for another font

Table 1. Font substitution replacement actions

Always checkbox	Screen only checkbox	Replacement action
checked	blank	Font replacement on screen and when printing, whether the font is installed or not.
checked	checked	Font replacement only on screen, whether the font is installed or not.
blank	checked	Font replacement only on screen, but only if font is not available.
blank	blank	Font replacement on screen and when printing, but only if font is not available.

Security

Use the LibreOffice – Security page to choose security options for saving documents and for opening documents that contain macros.

Security Options and Warnings

If you record changes, save multiple versions, or include hidden information or notes in your documents, and you do not want some of the recipients to see that information, you can set warnings to remind you to remove it, or you can have LibreOffice remove some of it automatically. Note that (unless removed) much of this information is retained in a file

whether the file is in LibreOffice's default OpenDocument format, or has been saved to other formats, including PDF.

Click the **Options** button to open a separate dialog with specific choices (Figure 25). See "Security options and warnings" on page 46.
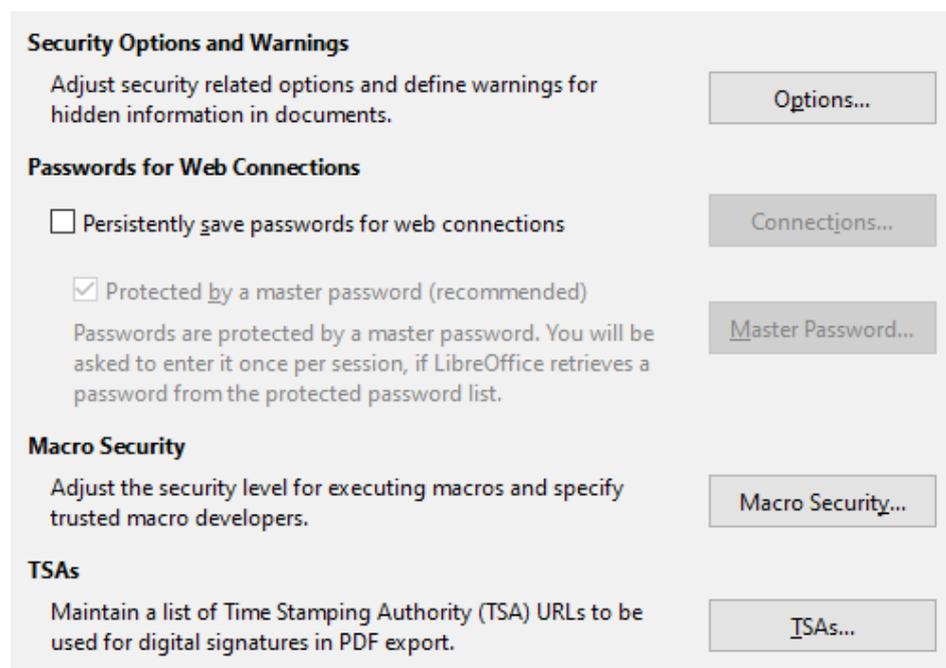
Figure 24: Choosing security options for opening and saving documents

Passwords for web connections
You can enter a master password to enable easy access to websites that require a user name and password. LibreOffice will securely store all passwords that you use to access files from web servers. You can retrieve the passwords from the list after you enter the master password.

Macro security
Click the **Macro Security** button to open the Macro Security dialog (not shown here), where you can adjust the security level for executing macros and specify trusted sources.

Certificate Path
Users can digitally sign documents using LibreOffice. A digital signature requires a personal signing certificate. Most operating systems can generate a self-signed certificate. However, a personal certificate issued by an outside agency (after verifying an individual's identity) has a higher degree of trust associated with it than does a self-signed certificate. LibreOffice does not provide a secure method of storing these certificates, but it can access certificates that have been saved using other programs. Click the **Certificate** button and select which certificate store to use. Not available on Windows; LibreOffice uses the default Windows location for storing and retrieving certificates.

TSAs –Time Stamping Authorities
You can optionally select a Time Stamping Authority (TSA) URL for PDF documents created by LibreOffice. Recipients of PDF documents with a trusted timestamp can verify when the document was digitally or electronically signed, as well as verify that the document was not altered after the date the timestamp vouches for.

Security options and warnings

Most of the options on the Security Options and Warnings dialog (Figure 25) should be self-explanatory.
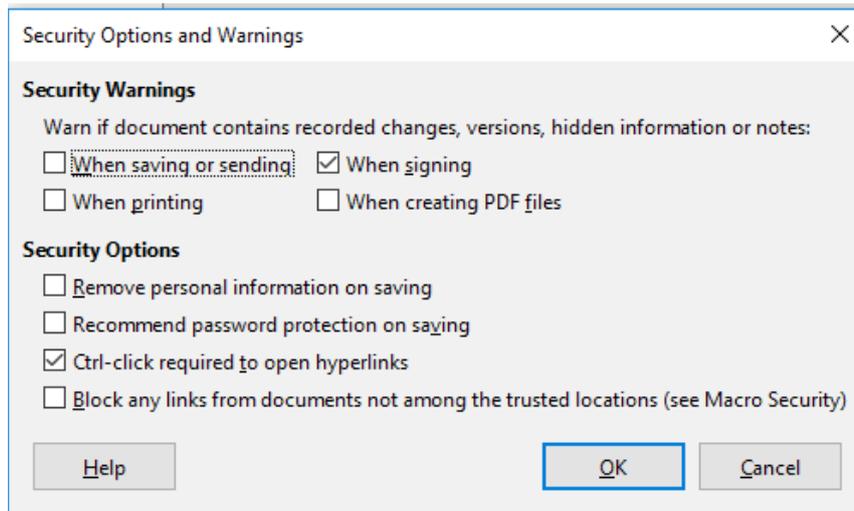
Figure 25: Security Options and Warnings dialog

Remove personal information on saving

> Select this option to always remove user data from the file properties when saving the file. To manually remove personal information from specific documents, deselect this option.

Ctrl-click required to open hyperlinks

> The default behavior in LibreOffice is to *Ctrl+click* on a hyperlink to open the linked document. Many people find creation and editing of documents easier when accidental clicks on links do not activate the links. To set LibreOffice to activate hyperlinks using an ordinary click, deselect this option.

Personalization

You can customize the overall appearance of LibreOffice with themes.

On the LibreOffice – Personalization page, select **Preinstalled Theme** and then click on a theme thumbnail and click **Apply**. After a brief pause the appearance of LibreOffice will refresh and reflect the selected theme.
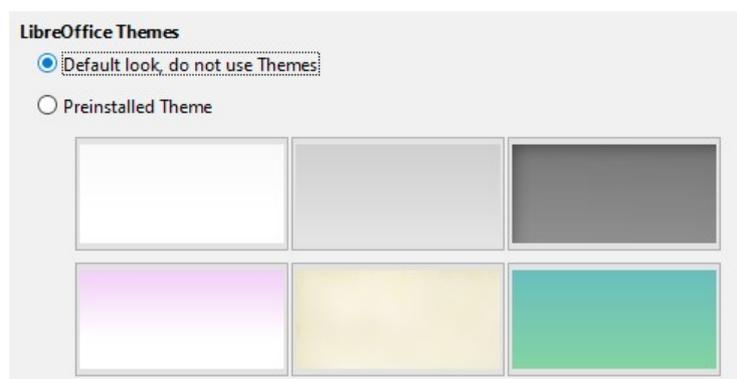
Figure 26: Selecting a preinstalled theme

Application colors

Writing, editing, and (especially) page layout are often easier when you can see the page margins (text boundaries), the boundaries of tables and sections (in Writer documents), page breaks in Calc, grid lines in Draw or Writer, and other features. In addition, you might prefer to use colors that are different from LibreOffice's defaults for such items as comment indicators or field shadings.

On the LibreOffice – Application Colors page (Figure 27), you can specify which items are visible and the colors used to display various items.

- To show or hide items such as text boundaries, select or deselect the options next to the names of the items.

- To change the default colors for items, click the down-arrow in the *Color setting* column by the name of the item and select a color from the list box. Note that you can change the list of available colors selecting other available palettes.

- To save your color changes as a color scheme, click **Save**, type a name in the *Name of color scheme* box in the popup dialog (not shown), and then click **OK**.
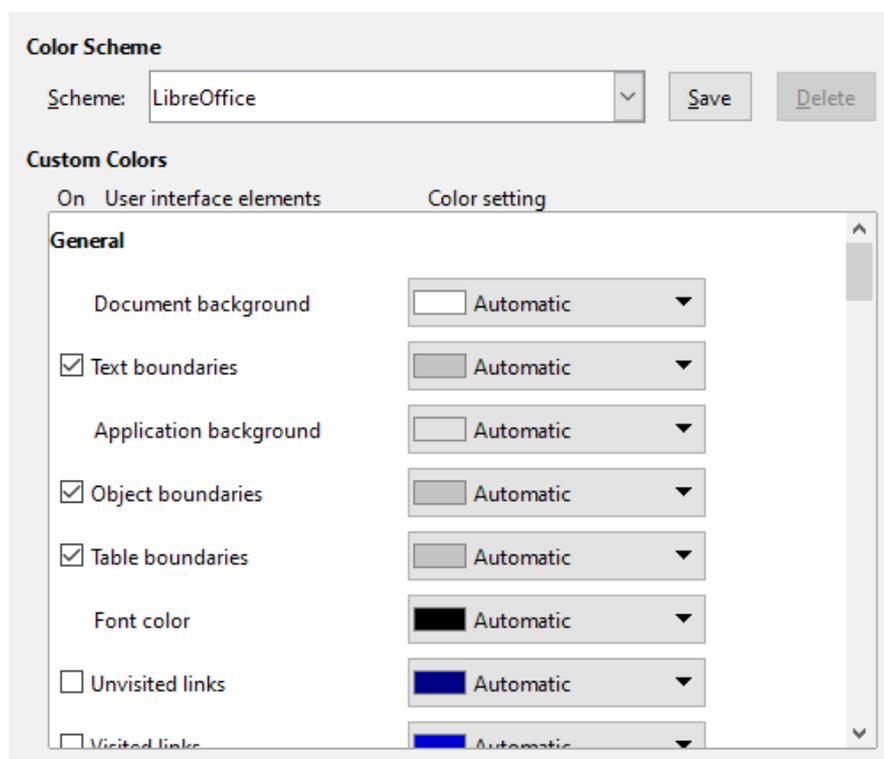
Figure 27: Showing or hiding text, object, and table boundaries

Accessibility

Accessibility options include whether to allow animated graphics or text, some options for high contrast display, and a way to change the font for the LibreOffice user interface.

Accessibility support relies on the Java Runtime Environment for communication with assistive technology tools. The **Support assistive technology tools** option is not shown on all LibreOffice installations. See *Assistive Tools in LibreOffice* in the Help for other requirements and information.

Select or deselect the options as required.
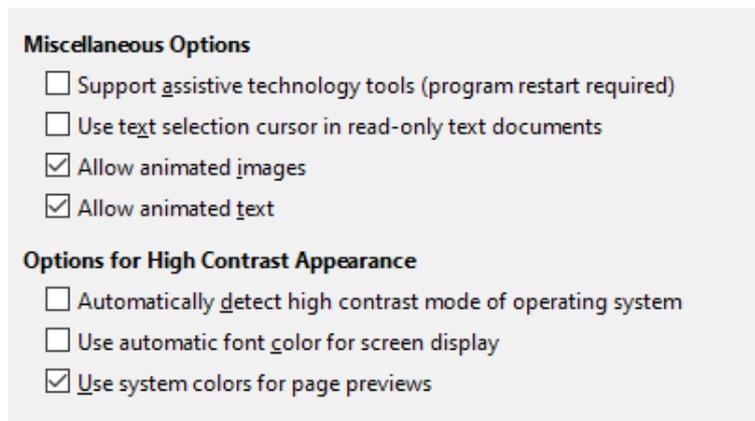
Figure 28: Choosing accessibility options

Advanced

LibreOffice needs Java to run several wizards, the Mediawiki Publisher (if available; see page 59), and some functions in the Base component.
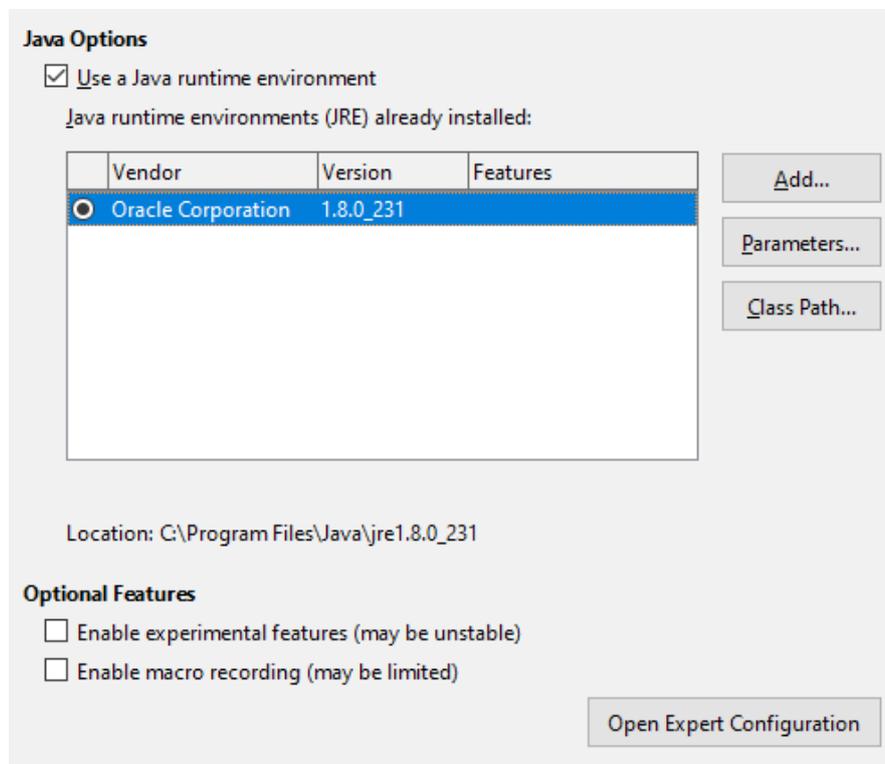
Figure 29: Choosing a Java runtime environment

Java options

If you install or update a Java Runtime Environment (JRE) after you install LibreOffice, or if you have more than one JRE installed on your computer, you can use the LibreOffice – Advanced options page to choose the JRE for LibreOffice to use.

If LibreOffice finds one or more JREs on your computer, it will display them in the large box. You can then choose one of the JREs listed.

If you are a system administrator, programmer, or other person who customizes JRE installations, you can use the Parameters and Class Path dialogs (reached using the buttons in the Java Options area) to specify this information.

Optional Features

Enable experimental features (may be unstable)
Select this option to enable features that are not yet complete or contain known bugs. The list of these features is different version by version.

Enable macro recording (may be limited)
This option enables macro recording, with some limitations. Opening a window, switching between windows, and recording in a different window to that in which the recording began, are not supported. Only actions relating to document contents are recordable, so changes in options or customizing menus are not supported. For more about macro recording, see Chapter 13, Getting Started with Macros.

Open Expert Configuration
Most users will have no need to use this. Click this button to open a new dialog in which you can fine-tune the LibreOffice installation. The dialog offers detailed configuration options for many aspects of LibreOffice's appearance and performance. Double-click on a listed preference to enter a value to configure the preference.

> ⚠️ **Caution**
>
> The Expert Configuration dialog lets you access, edit, and save configuration preferences that can turn the user profile of LibreOffice unstable, inconsistent, or even unusable.

Online Update

On the LibreOffice – Online Update page (Figure 30), you can choose whether and how often to have the program check the LibreOffice website for program updates. If the **Check for updates automatically** option is selected, an icon appears at the right-hand end of the menu bar when an update is available. Click this icon to open a dialog where you can choose to download the update.

If the **Download updates automatically** option is selected, the download starts when you click the icon. To change the download destination, click the **Change** button and select the required folder in the file browser window.

If the **Send OS version and basic hardware information** option is selected, information about the computer architecture and operating system will be sent to the server for statistics collection.

Figure 30: Online update options

OpenCL

OpenCL (Open Computing Language) is a software architecture used to write programs that run in different processors of the computer, such as the CPU and GPU (graphics processing unit) of the video card. With OpenCL enabled, LibreOffice can benefit from the very fast numerical calculations performed in the GPU, which is especially useful in very large spreadsheets with extensive calculations. The computer video card driver must have support for OpenCL to use this feature.

Choosing options for loading and saving documents

You can set the options for loading and saving documents to suit the way you work.

If the Options dialog is not already open, click **Tools > Options**. Click the expansion symbol (+ or triangle) to the left of **Load/Save**.

General

Most of the choices on the Load/Save – General page are familiar to users of other office suites. Some items of interest are described below.
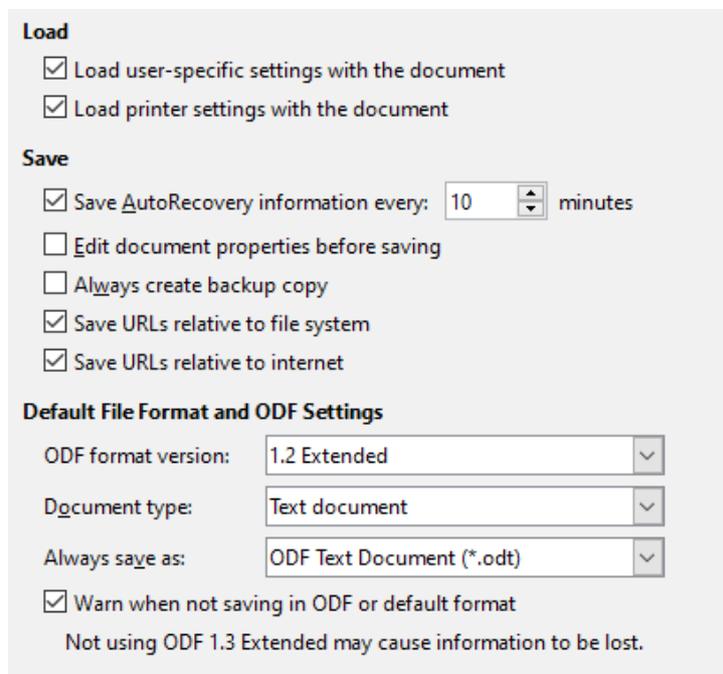
Figure 31: Choosing Load and Save options

Load user-specific settings with the document

> A LibreOffice document contains certain settings that are read from the user's system. When you save a document, these settings are saved with it. Select this option so that when a document loads, it ignores the stored settings in favor of the settings on your computer.

> Even if you do not select this option, some settings are taken from your LibreOffice installation:

- Print settings
- Name of Fax
- Spacing options for paragraphs before text tables
- Information about automatic updating for links, field functions and charts
- Information about working with Asian character formats.

The following setting is always loaded with a document, whether or not this option is marked:

• Data source linked to the document and its view

If you deselect this option, the user's personal settings do not overrule the settings in the document. For example, your choice (in the options for LibreOffice Writer) of how to update links is affected by the *Load user-specific settings with the document* option.

Load printer settings with the document
If enabled, the printer settings will be loaded with the document. This can cause a document to be printed on a distant printer (perhaps in an office setting), if you do not change the printer manually in the Print dialog. If disabled, your standard printer will be used to print this document. The current printer settings will be stored with the document whether or not this option is selected.

Save AutoRecovery information every __ minutes
Choose whether to enable AutoRecovery and how often to save the information used by the AutoRecovery process. AutoRecovery in LibreOffice saves the information needed to restore all open documents in case of a crash. If you have this option set, recovering your document after a system crash will be easier.

Edit document properties before saving
If you select this option, the Document Properties dialog pops up to prompt you to enter relevant information the first time you save a new document (or whenever you use Save As).

Always create backup copy
Saves the previous version of a document as a backup copy whenever you save a document. Every time LibreOffice creates a backup copy, the previous backup copy is replaced. The backup copy gets the extension BAK. Authors whose work may be very lengthy should always consider using this option.

Save URLs relative to file system / internet
Use these options to select the default for relative addressing of URLs in the file system and on the Internet. Relative addressing is only possible if the source document and the referenced document are both on the same drive.

A relative address always starts from the directory in which the current document is located. In contrast, absolute addressing always starts from a root directory. The following table demonstrates the difference in syntax between relative and absolute referencing.

Examples	*File system*	*Internet*
relative	../images/img.jpg	../images/img.jpg
absolute	file:///c|/work/images/img.jpg	http://myserver.com/work/images/img.jpg

If you choose to save relatively, the references to embedded graphics or other objects in your document will be saved relative to the location in the file system. In this case, it does not matter where the referenced directory structure is recorded. The files will be found regardless of location, as long as the reference remains on the same drive or volume. This is important if you want to make the document available to other computers that may have a completely different directory structure, drive or volume names. It is also recommended to save relatively if you want to create a directory structure on an Internet server.

If you prefer absolute saving, all references to other files will also be defined as absolute, based on the respective drive, volume or root directory. The advantage is that the document containing the references can be moved to other directories or folders, and the references remain valid.

Default File Format and ODF Settings

ODF format version. LibreOffice by default saves documents in OpenDocument Format (ODF) version 1.2 Extended. While this allows for improved functionality, there may be backwards compatibility issues. When a file saved in ODF 1.2 Extended is opened in an editor that uses earlier versions of ODF (1.0/1.1), some of the advanced features may be lost. Two notable examples are cross-references to headings and the formatting of numbered lists. If you plan to share documents with people who use editors that use older versions of ODF, you may wish to save the document using ODF version 1.0/1.1.

Document type. If you routinely share documents with users of Microsoft Office, you might want to change the **Always save as** attribute for documents to the Microsoft Office formats. Current versions of Microsoft Word can open ODT files, so this may no longer be needed.

VBA Properties

On the VBA Properties page, you can choose whether to keep any macros in Microsoft Office documents that are opened in LibreOffice.

If you choose **Load Basic code**, you can edit the macros in LibreOffice. The changed code is saved in an ODF document but is not retained if you save into a Microsoft Office format.

If you choose **Save original Basic code**, the macros will not work in LibreOffice but are retained unchanged if you save the file into Microsoft Office format.

If you are importing a Microsoft Word or Excel file containing VBA code, you can select the option **Executable code**. Whereas normally the code is preserved but rendered inactive (if you inspect it with the Basic IDE you will notice that it is all commented), with this option the code is ready to be executed.
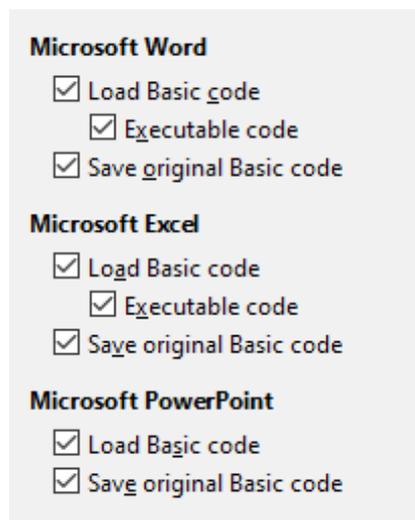
Figure 32: Choosing Load/Save VBA Properties

Save original Basic code takes precedence over **Load Basic code**. If both options are selected and you edit the disabled code in LibreOffice, the original Microsoft Basic code will be saved when saving in a Microsoft Office format.

To remove any possible macro viruses from the Microsoft Office document, deselect **Save original Basic code**. The document will be saved without the Microsoft Basic code.

Microsoft Office

On the Load/Save – Microsoft Office page (Figure 33), you can choose what to do when importing and exporting Microsoft Office OLE objects (linked or embed ded objects or documents such as spreadsheets or equations).

The Embedded Objects section specifies how to import and export Microsoft Office OLE objects. These settings are valid when no Microsoft OLE server exists (for example, in UNIX) or when there is no LibreOffice OLE server ready for editing the OLE objects. If an OLE server is active for the embedded object, then the OLE server will be used to handle the object.

Select the [L] options to convert Microsoft OLE objects into the corresponding LibreOffice OLE objects when a Microsoft document is loaded into LibreOffice (mnemonic: "L" for "load").

Select the [S] options to convert LibreOffice OLE objects into the corresponding Microsoft OLE objects when a document is saved in a Microsoft format (mnemonic: "S" for "save"). Linux installations may include selectable [S] options not shown in the illustration for the last three items.

Embedded Objects

[L]	[S]	
☑	☑	MathType to LibreOffice Math or reverse
☑	☑	WinWord to LibreOffice Writer or reverse
☑	☑	Excel to LibreOffice Calc or reverse
☑	☑	PowerPoint to LibreOffice Impress or reverse
☐		SmartArt to LibreOffice shapes or reverse
☑		Visio to LibreOffice Draw or reverse
☑		PDF to LibreOffice Draw or reverse

[L]: Load and convert the object   [S]: Convert and save the object

Character Highlighting

Export as: ⦿ Highlighting ○ Shading

Lock files

☐ Create MSO lock file

Figure 33: Choosing Load/Save Microsoft Office options

Character Hightlighting – Export as
> Microsoft Office has two character attributes similar to LibreOffice character background. Select the appropriate attribute (Highlighting or Shading) which you would like to use during export to Microsoft Office file formats.

Lock files – Create MSO lock file
> LibreOffice can report which Microsoft Office user has locked a document by reading the lock files generated by MSO; and when the **Create MSO lock file** option is selected, LibreOffice will generate such files in addition to its own lock files, so MSO users can know who has locked a document.

HTML compatibility

Choices made on the Load/Save – HTML Compatibility page (Figure 34) affect HTML pages imported into LibreOffice and those exported from LibreOffice. See *HTML documents; importing/exporting* in the Help for more information.
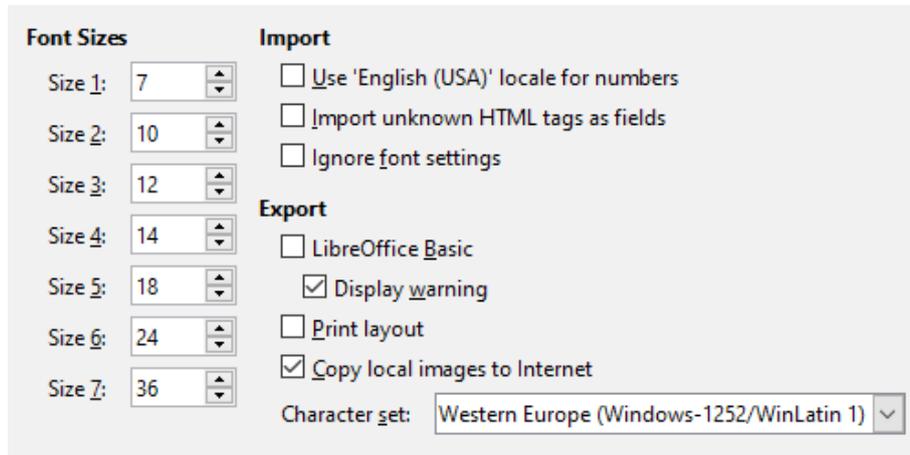
Figure 34: Choosing HTML compatibility options

Font Sizes

Use these fields to define the respective font sizes for the HTML <font size="1"> to <font size="7"> tags, if they are used in the HTML pages. (Many pages no longer use these tags.)

Import – Use 'English (USA)' locale for numbers

When importing numbers from an HTML page, the decimal and thousands separator characters differ according to the locale of the HTML page. The clipboard, however, contains no information about the locale. If this option is not selected, numbers will be interpreted according to the *Locale setting* in **Tools > Options > Language Settings > Languages** (see page 55). If this option is selected, numbers will be interpreted as for the English (USA) locale.

Import – Import unknown HTML tags as fields

Select this option if you want tags that are not recognized by LibreOffice to be imported as fields. For an opening tag, an HTML_ON field will be created with the value of the tag name. For a closing tag, an HTML_OFF will be created. These fields will be converted to tags in the HTML export.

Import – Ignore font settings

Select this option to have LibreOffice ignore all font settings when importing. The fonts that were defined in the HTML page style will be used.

Export – LibreOffice Basic

Select this option to include LibreOffice Basic macros (scripts) when exporting to HTML format. You must activate this option before you create the LibreOffice Basic macro; otherwise the script will not be inserted. LibreOffice Basic macros must be located in the header of the HTML document. Once you have created the macro in the LibreOffice Basic IDE, it appears in the source text of the HTML document in the header.

If you want the macro to run automatically when the HTML document is opened, choose **Tools > Customize > Events**. See Chapter 13, Getting Started with Macros, for more information.

Export – Display warning

When the **LibreOffice Basic** option (see above) is not selected, the **Display warning** option becomes available. If the **Display warning** option is selected, then when exporting to HTML a warning is shown that LibreOffice Basic macros will be lost.

Export – Print layout

Select this option to export the print layout of the current document as well. The HTML filter supports CSS2 (Cascading Style Sheets Level 2) for printing documents. These capabilities are only effective if print layout export is activated.

Export – Copy local images to Internet

Select this option to automatically upload the embedded pictures to the Internet server when uploading using FTP.

Export – Character set

Select the appropriate character set for the export.

Choosing language settings

To customize the language settings in LibreOffice, you can do any of the following:

- Install the required dictionaries
- Change some locale and language settings
- Choose spelling options

Install the required dictionaries

LibreOffice automatically installs many dictionaries with the program. To add other dictionaries, be sure you are connected to the Internet, and then choose **Tools > Language > More Dictionaries Online**. LibreOffice will open your default web browser to a page containing links to additional dictionaries that you can install. Follow the prompts to select and install the ones you want.

Change some locale and language settings

You can change some details of the locale and language settings that LibreOffice uses for all documents, or for specific documents.

In the Options dialog, click the expansion symbol (+ or triangle) by **Language Settings**. The exact list shown depends on the language support settings (see Figure 36).
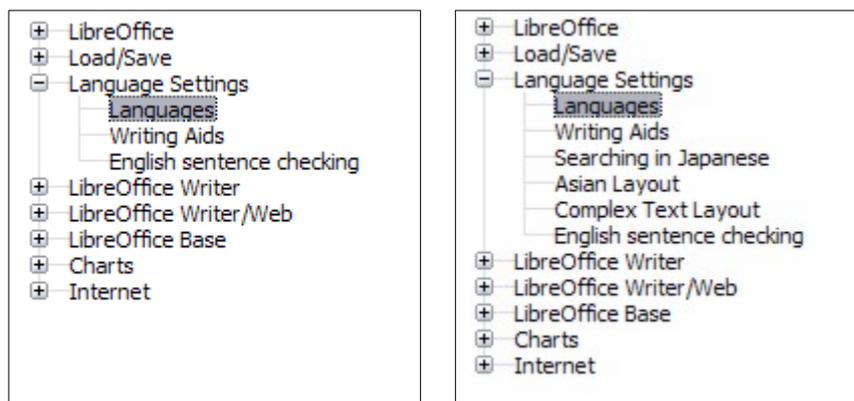
Figure 35: LibreOffice language options, without and with Asian and CTL options enabled

On the right-hand side of the Language Settings – Languages page, change the *User interface*, *Locale setting*, *Default currency*, and *Default Languages for Documents* as required. In the example, English (USA) has been chosen for all the appropriate settings.

Figure 36: Choosing language options

User interface

The language of the user interface is usually set at the time LibreOffice is installed to match the language of the operating system. If more than one language has been installed for LibreOffice, you can select which language will be used for menus, dialogs, and help files.

Locale setting

The locale setting is the basis for many other settings within LibreOffice, for example defaults for numbering, currency, and units of measure. Unless you select something else here, the locale of the operating system will be set as default.

Decimal separator key

If the *Decimal separator key* – **Same as locale setting** option is selected, LibreOffice uses the character defined by the default locale. If this option is not selected, the keyboard driver defines the character used.

Default currency

The default currency is that used in the country entered as locale. The default currency determines the proper formatting of fields formatted as currency. If the locale setting is changed, the default currency changes automatically. If the default currency is changed, all dialogs involving currency and all currency icons will be changed in all open documents. Documents that were saved with one currency as the default will open using the new currency defaults.

Date acceptance patterns

Date acceptance patterns define how LibreOffice recognizes input as dates. Locale also defines the default expression of dates. You can define additional date patterns, separated by semicolons, using Y, M, & D for Year, Month, and Day. LibreOffice will always correctly interpret dates entered in ISO 8601 format as Y-M-D and YYYY-MM-DD.

> ⚠️ **Caution**
>
> Data entered into a Calc spreadsheet or a Writer table must be entered in a format defined by locale in order to be recognized as dates.

Default Languages for Documents

Select the languages used for the spelling checker, thesaurus, and hyphenation features of LibreOffice. If these options are only for the current document, select **For the current document only**.

If necessary, select the options to enable support for Asian languages (Chinese, Japanese, Korean) and support for CTL (complex text layout) languages such as Urdu, Thai, Hebrew, and Arabic. If you choose either of these options, the next time you open this dialog, you will see some extra choices under Language Settings, as shown in Figure 35. These choices (**Searching in Japanese**, **Asian Layout**, and **Complex Text Layout**) are not discussed here.

> **Note**
>
> An ABC icon in front of a language indicates that a spelling dictionary, thesaurus, and hyphenation dictionary are activated for this language.

Enhanced Language Support – Ignore system input language

Default language settings depend on the locale setting. The default locale is based on that of the computer's operating system. A keyboard layout is normally based on the language used by the operating system but can be changed by the user. If this option is not selected, and there is a change in keyboard layout, input from the keyboard will be different from what is expected.

Choose spelling options

To choose the options for checking spelling, click **Language Settings > Writing Aids**.

For details on using the Available Language Modules and User-defined dictionaries sections, please see the Help.

In the Options section of the page (Figure 37), choose the settings that are useful for you.
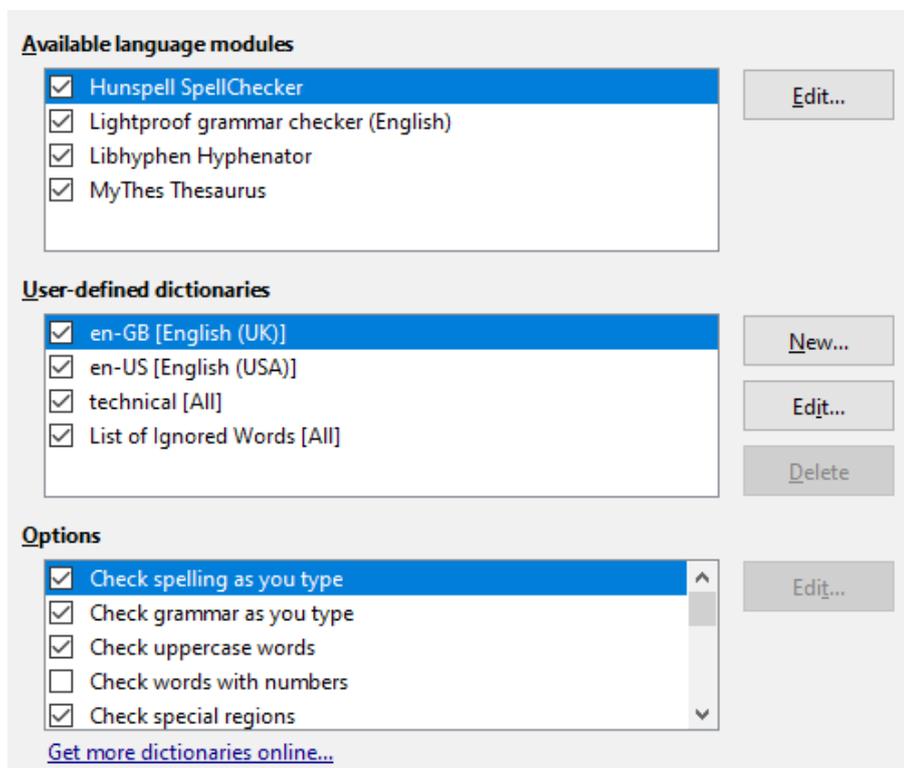
Figure 37: Choosing languages, dictionaries, and options for checking spelling

Some considerations:

- If you do not want spelling checked while you type, deselect **Check spelling as you type**.
- If you want grammar to be checked as you type, you must have **Check grammar as you type** enabled too.
- If you use a custom dictionary that includes words in all uppercase and words with numbers (for example, AS/400), select **Check uppercase words** and **Check words with numbers**.
- **Check special regions** includes headers, footers, frames, and tables when checking spelling.

Here you can also select which user-defined (custom) dictionaries are active by default, and add or remove user-installed dictionaries, by clicking the **New** or **Delete** buttons. Dictionaries installed by the system cannot be deleted.

English sentence checking

On the Language Settings – English Sentence Checking page, you can choose which items are checked for, reported to you, or converted automatically. This menu is also found in the English dictionaries extension installed by default by LibreOffice. Select **Tools > Extension Manager**, select the English spelling dictionaries and click the **Options** button to reveal the menu. Select which of the optional features you wish to check.

After selecting the additional grammar checks, you must restart LibreOffice, or reload the document, for them to take effect.

Figure 38: Choosing options for checking sentences in English
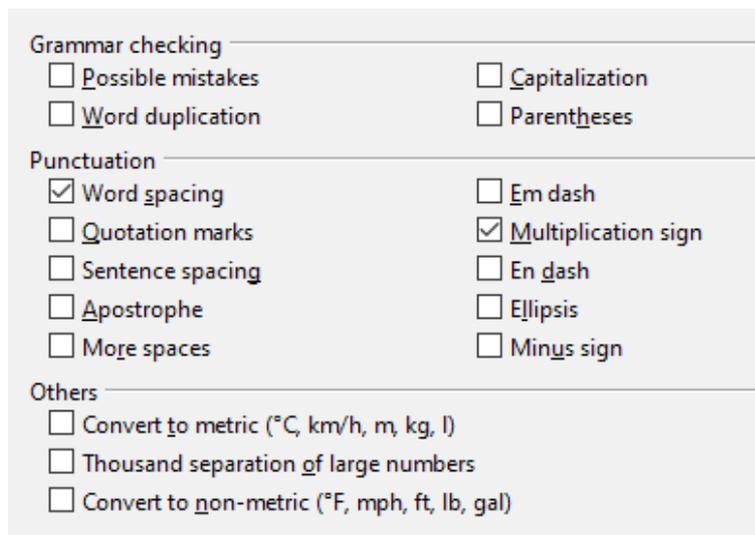
Grammar checking

Possible mistakes
Checks for things such as; with it's, he don't, this things and so on.

Capitalization
Checks for the capitalization of sentences. The sentence boundary detection depends on abbreviations.

Word duplication
Checks for all word duplication, rather than just the default words 'and', 'or', 'for', and 'the'.

Parentheses
Checks for pairs of parentheses and quotation marks.

Punctuation

Word spacing

This option is selected by default. It checks for single spaces between words, indicating instances of double or triple spaces, but not of more spaces than that.

Quotation marks

Checks for correct typographical double quotation marks.

Sentence spacing

Checks for a single space between sentences, indicating when one or two extra spaces are found.

Apostrophe

Replaces an apostrophe with the correct typographical character.

More spaces

Checks word and sentence spacing for more than two extra spaces.

Em dash; En dash

These options force a non-spaced em dash to replace a spaced en dash, or force a spaced en dash to replace a non-spaced em dash.

Multiplication sign

This option is selected by default. It replaces an 'x' used as a multiplication symbol with the correct typographical symbol.

Ellipsis

Replaces three consecutive periods (full stops) with the correct typographical symbol.

Minus sign

Replaces a hyphen with the correct minus typographical character.

Others

Convert to metric; Convert to non-metric

Converts quantities in a given type of unit to quantities in the other type of unit: metric to imperial or imperial to metric.

Thousands separation of large numbers

Converts a number with five or more significant digits to a common format, that is one which uses the comma as a thousands separator, or to the ISO format which uses a narrow space as a separator, depending on the locale setting for the document.

Other languages sentence checking

LibreOffice can also check sentences in other languages, notably Hungarian, Russian, and Brazilian Portuguese. These checkers are enabled by default if the language is the computer's default language. The set of rules available for these sentence checkers depends on the language.

Choosing Internet options

The Internet options available depend on your operating system.

Use the Proxy page (if available) to save proxy settings for use with LibreOffice.

If you are using Linux or macOS, an additional page of Email options is available, where you can specify the program to use when you send the current document as email. Under Windows, your default email program is always used.

To suppress (not include) hidden elements such as tracked changes, hidden sections, hidden tabs in a spreadsheet, or hidden layers in a drawing, select the **Suppress hidden elements of documents** option.
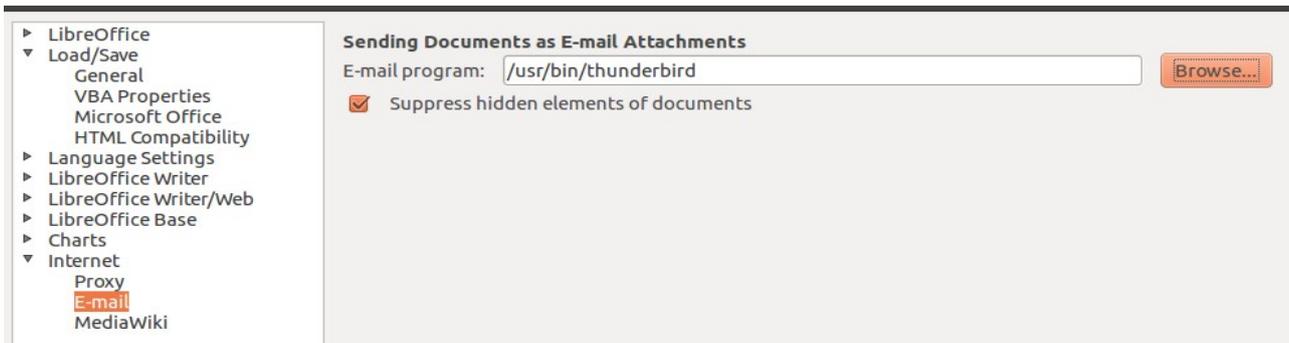
Figure 39: Internet options, showing E-mail page available to Linux users

A MediaWiki publisher is included on Windows and Linux. To enable it, select **MediaWiki** in the Internet options, then click the **Add** button to open a dialog where you can specify the address (URL) and login information for a wiki. You can add several wikis to the list. A JRE (Java Runtime Environment) is needed for this feature to work.

Controlling LibreOffice's AutoCorrect functions

Some people find some or all of the items in LibreOffice's AutoCorrect function annoying because they change what you type when you do not want it changed. Many people find some of the AutoCorrect functions quite helpful; if you do, then select the relevant options. But if you find unexplained changes appearing in your document, this is a good place to look to find the cause.

To open the AutoCorrect dialog, click **Tools > AutoCorrect > AutoCorrect Options**. (You need to have a document open for this menu item to appear.) In Writer, this dialog has five tabs. In other components of LibreOffice, the dialog has only four tabs. More details are given in the component guides.

Getting Started Guide

Chapter 3
Using Styles and Templates

Using consistent formatting in your documents

Introduction

There are two basic ways to format text and other elements. Understanding these two alternatives is essential for unlocking the power of LibreOffice:

Direct (or manual) formatting
> Applies formatting directly to specific paragraphs, characters, pages, frames, lists, tables, cells, and other elements. For example, you can select a word, then click on a button on the Formatting toolbar to format the text as bold or italic.

Styles
> Bundles formatting options under one name. For example, a paragraph style defines numerous settings for options such as font type and size, whether paragraphs should be indented, the space between lines, how paragraphs should be aligned on the page, and many others.

Using styles is highly recommended

LibreOffice is designed to be a style-based program. This means that it may work somewhat differently from other programs you are familiar with. It requires some planning but the time spent in planning can save time and frustration over the longer term.

Because styles apply whole groups of formats at the same time, they enable you to easily format a document consistently and to change the formatting of an entire document with minimal effort. In addition, styles are used by LibreOffice for many processes, even if you are not aware of them. For example, Writer relies on heading styles (or other styles you specify) when it compiles a table of contents. Some common examples of style use are given in "Examples of style use" on page 79.

What are styles?

A style is a set of formats that you can apply to selected elements such as pages, text, frames, cells, and others in a document to quickly set or change their appearance. Applying a style often means applying a group of formats at the same time.

Many people manually format paragraphs, words, tables, page layouts, and other parts of their documents without paying any attention to styles. They are accustomed to manually applying attributes such as the font family, font size, and any formatting such as **bold** or *italic*.

Using styles means that instead of applying "font size 14pt, Times New Roman, bold, centered" you can apply (for example) a "Title" style, because you have defined the "Title" style to have those characteristics. In other words, using styles means that you shift the emphasis from what the text (or page, or other element) looks like, to what the text is.

> **Note**
>
> Direct formatting overrides styles. You cannot remove manual formatting by applying a style to it. To remove direct formatting, select the text, right-click, and choose **Clear Direct Formatting** from the context menu. Alternatively you can clear direct formatting from selected text by pressing *Ctrl+M (Ctrl+Shift+M* in Impress), by selecting **Format > Clear Direct Formatting** in the Menu bar, by selecting the **Clear Direct Formatting** icon in Writer's Formatting toolbar, or by selecting the **Clear Direct Formatting** icon in Calc's Standard toolbar.

Types of styles in LibreOffice

LibreOffice supports the following types of styles:

- **Page styles** include margins, headers and footers, borders and backgrounds. In Calc, page styles also define the sequence for printing sheets.
- **Paragraph styles** control all aspects of a paragraph's appearance, such as text alignment, tab stops, line spacing, and borders, and can include character formatting.
- **Character styles** affect selected text within a paragraph, such as the font and size of text, or bold and italic formats.
- **Table styles** apply predefined formats to tables and table elements in a text document.
- **Frame styles** are used to format graphic and text frames, including text wrap, borders, backgrounds, and columns.
- **List styles** allow you to select, format, and position numbers or bullets in lists.
- **Cell styles** include fonts, alignment, borders, background, number formats (for example, currency, date, number), and cell protection.
- **Drawing styles** in drawings and presentations include line, area, shadowing, transparency, font, connectors, dimensioning, and other attributes.
- **Presentation styles** include attributes for font, indents, spacing, alignment, and tabs.

Different styles are available in the various components of LibreOffice, as listed in Table 2. Details are given in the user guide for each component.

LibreOffice comes with many predefined styles. You can use the styles as provided, modify them, or create new styles, as described in this chapter.

Table 2. Styles available in LibreOffice components

Style Type	*Writer*	*Calc*	*Draw*	*Impress*
Page	X	X		
Paragraph	X			
Character	X			
Frame	X			
List	X			
Table	X			
Cell		X		
Presentation			X	X
Drawing			X	X

Applying styles

LibreOffice provides several ways for you to select and apply styles:

- The Styles deck in the Sidebar
- Fill Format Mode
- The Styles menu (Writer and Calc)
- The Paragraph Style list (Writer) and Apply Style list (Calc) in the Formatting toolbar
- Keyboard shortcuts

The Styles deck in the Sidebar

The Styles deck includes the most complete set of tools for styles. To use it for applying styles:

1) Select **View > Styles** or **Styles > Manage Styles** in the Menu bar, or press *F11* (⌘*+T* on a Mac), or click the **Styles** tab in the Sidebar (**View > Sidebar** to open it).

   The Styles deck optionally shows previews of the styles available. Figure 40 shows the panel for Writer, with Paragraph Styles visible and with previews off.

2) Select one of the buttons at the top left of the Styles deck to display a list of styles in that category.

3) To apply an existing style, position the insertion point in the paragraph, frame, page, or word, and then double-click the name of the style in one of these lists. To apply a character style to more than one word, select the characters first.

> 💡 **Tip**
>
> At the bottom of the Styles deck is a drop-down list. In Figure 40 the list shows *All Styles* defined for the document. It could show *Applied Styles* (only the styles used in the document) or other groups of styles, for example *Custom Styles.*
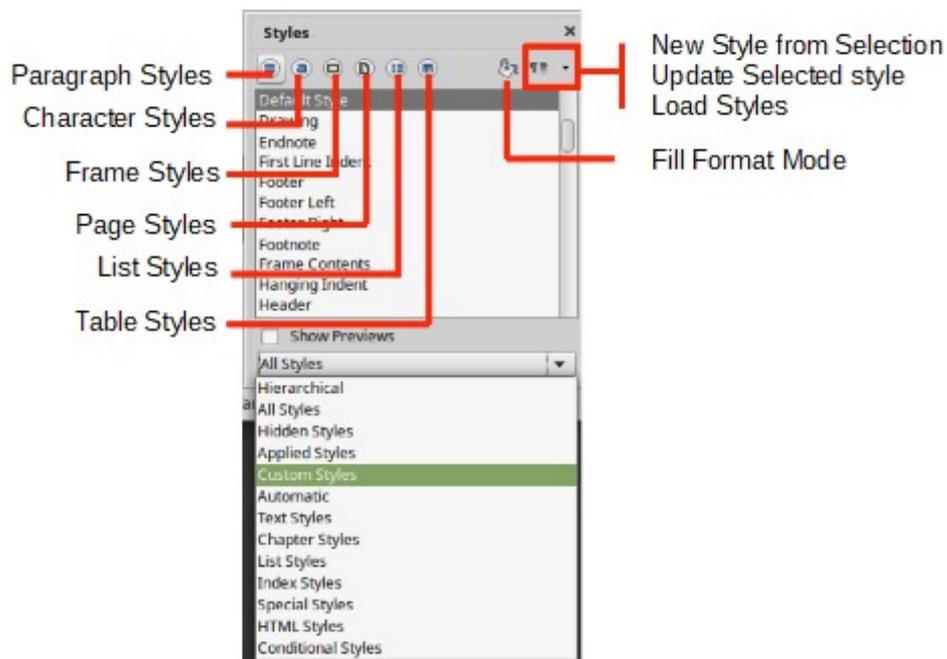
Figure 40: The Styles deck for Writer, showing paragraph styles and filter

Fill Format Mode

Use Fill Format to apply a style to many different areas quickly without having to go back to the Styles deck and double-click every time. This method is quite useful when you need to format many scattered paragraphs, cells, or other items with the same style:

1) Open the Styles deck and select the style you want to apply.

2) Click the **Fill Format Mode** button at the top of the Styles deck.

3) To apply a paragraph, page, or frame style, hover the mouse over the paragraph, page, or frame and click. To apply a character style, hold down the mouse button while selecting the characters. Clicking a word applies the character style for that word.

4) Repeat step 3 until you have made all the changes for that style.

5) To quit Fill Format mode, click the **Fill Format Mode** button again or press the *Esc* key.

> ⚠️ **Caution**
>
> When this mode is active, a right-click anywhere in the document undoes the last Fill Format action. Be careful not to accidentally right-click and undo actions you want to keep.

Styles menu (Writer and Calc)

In Writer, the Styles menu has the most commonly used paragraph, character, and list styles for text documents, as well as entries for style management. The Styles menu does not have styles for frames, pages, or tables.

To apply a paragraph style, position the cursor anywhere in the paragraph, and then select one of the paragraph styles in the Styles menu. To apply a character style to several characters or more than one word, select the characters first and apply the character style from the menu.

In Calc, the Styles menu has cell styles and style management entries. To apply a cell style, select the cell or group of cells to be formatted, and then select the required style.

Set Paragraph Style list (Writer) and Apply Style list (Calc)

In Writer, after you have used a paragraph style at least once in a document, the style name appears in the Set Paragraph Style list at the left-hand end of the Formatting toolbar.

In Calc, after you have used a cell style at least once in a spreadsheet, the style name appears in the Apply Style list at the left-hand end of the Formatting toolbar. When you install Calc, the initial default is for the Apply Style list to be hidden; use **Tools > Customize** in the Menu bar to enable the display of the Apply Style list in Calc's Formatting toolbar.

You can open this list and click the style you want, or you can use the up and down arrow keys to move through the list and then press *Enter* to apply the highlighted style.

> 💡 **Tip**
>
> Select **More Styles** at the bottom of the list to open the Styles deck in the Sidebar.
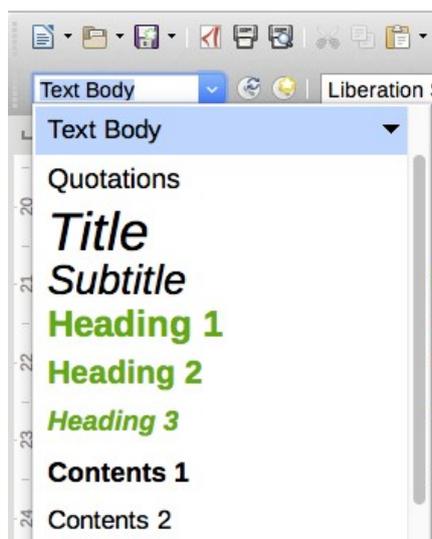
Figure 41: The Set Paragraph Style list in Writer

Keyboard shortcuts

Some keyboard shortcuts for applying styles are predefined. For example, in Writer *Ctrl+0* applies the Text Body style, *Ctrl+1* applies the Heading 1 style, and *Ctrl+2* applies the Heading 2 style. You can modify these shortcuts and create your own; see Chapter 14, Customizing LibreOffice, for more details.

Creating and modifying styles

LibreOffice includes some predefined styles, but you can also create custom styles. You can modify both predefined and custom styles in several ways:

- Change a style using the Styles deck
- Update a style from a selection
- Use AutoUpdate (paragraph and frame styles only)
- Load styles from another document or template

Note

Any changes you make to a style are effective only in the current document. To change styles in more than one document, you need to change the template.

Changing a style using the Styles deck

To change an existing style using the Styles deck in the Sidebar, right-click on the required style and select **Modify** from the context menu.

A Style dialog is displayed with title, content, and layout dependent on the type of style selected. Each variant of the dialog has several tabs. See the chapters on styles in the component user guides for more information.

Tip

You can also access the relevant Style dialogs through the Set Paragraph Style (Writer) and Apply Style (Calc) lists. Click the arrow at the right of the entry for the style to be modified and select **Edit Style** from the context menu. You can access the appropriate Style dialog for the current style by selecting **Styles > Edit Style** from the Menu bar.

Updating a style from a selection

To update a style from a selection:

1) Open the Styles deck in the Sidebar.
2) In the document, select an item that has the format you want to adopt as a style.

Caution

When updating a paragraph style, make sure that the selected paragraph contains unique properties. If it mixes font sizes or font styles, those mixed properties will remain the same as before.

3) In the Styles deck, select the style to update, then click on the arrow next to the **Styles actions** icon and select **Update Selected Style**.
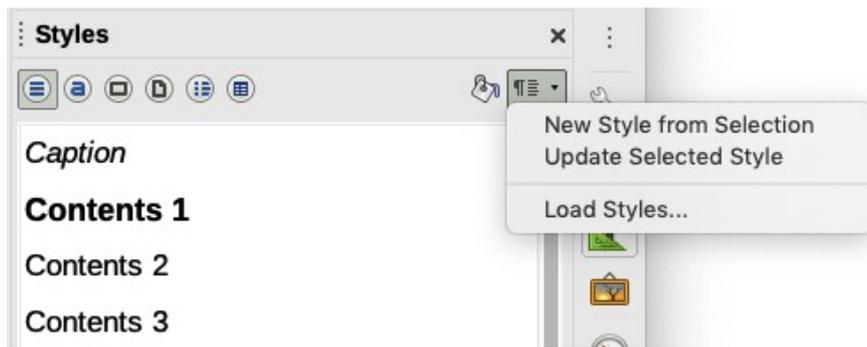
Figure 42: Updating a style from a selection

> **Tip**
>
> You can also modify the current style by pressing *Ctrl+Shift+F11* (Writer), or by selecting **Styles > Update Selected Style** in the Menu bar (Writer and Calc), or by pressing the **Update Selected Style** icon in the Formatting toolbar (Writer).

> **Tip**
>
> You can also modify a style through the Set Paragraph Style (Writer) and Apply Style (Calc) lists. Click the arrow at the right of the entry for the style to be modified and select **Update to Match Selection** from the drop-down menu (see Figure 43).
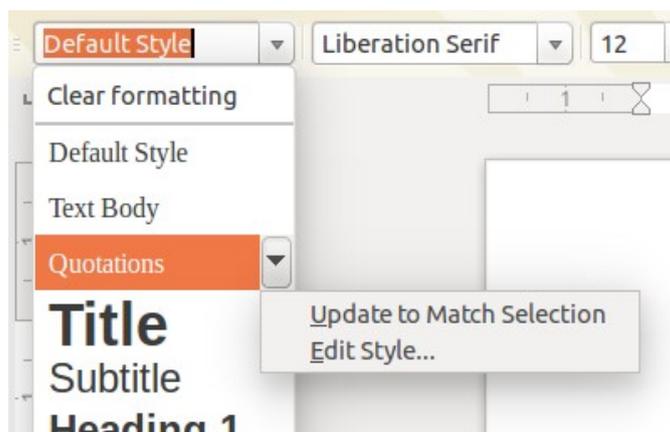
Figure 43: Modifying a style from the Set Paragraph Style list

Using AutoUpdate (Writer)

AutoUpdate applies to paragraph and frame styles only. If the **AutoUpdate** option is selected on the *Organizer* page of the Paragraph Style or Frame Style dialog, applying direct formatting to a paragraph or frame using this style in the document automatically updates the style itself.

> **Tip**
>
> If you are in the habit of manually overriding styles in your document, be sure that AutoUpdate is **not** enabled.

Creating new (custom) styles

You may want to add some new styles. You can do this by using the Style dialog, or the New Style from Selection tool, or by dragging and dropping.

Creating a new style using the Style dialog

To create a new style using the Style dialog, open the Sidebar Styles deck and select the category of the style you wish to create by clicking one of the icons at the top of the deck. Then right-click on any style name (or *Default Style*) and select **New** from the pop-up menu.

The new style will inherit characteristics from the style that you selected. If you later change the base style (for example, by changing the font from Times to Helvetica), all the linked styles will change as well. Sometimes this is exactly what you want; other times you do not want the changes to apply to all the linked styles. You can change any of those characteristics using the Style dialog.

The dialogs and choices are the same for defining new styles and for modifying existing styles. See the chapters on styles in the user guides for details.

Creating a new style from a selection

You can create a new style by copying an existing manual format. This new style applies only to this document; it will not be saved in the template.

1) Open the Styles deck and choose the category of style you want to create.
2) In the document, select the item you want to save as a style.
3) In the Styles deck, click on the **New Style from Selection** menu item in Writer or icon in Calc, Draw, and Impress.
4) In the Create Style dialog, type a name for the new style. The list shows the names of existing custom styles of the selected category. Click **OK** to save the new style.
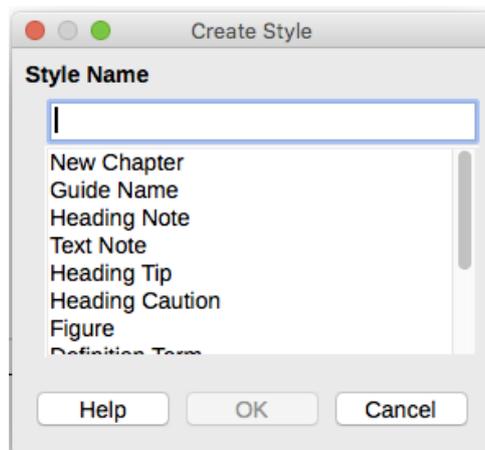
Figure 44: Naming a new style created from a selection

> 💡 **Tip**
>
> You can also create a new style from a selection by pressing *Shift+F11* (Writer), or by selecting **Styles > New Style from Selection** (Writer and Calc), or by pressing the **New Style from Selection** icon on the Formatting toolbar (Writer).

Dragging and dropping to create a style

You can drag and drop a selection into the Styles deck to create a new style. The element to drag depends upon the LibreOffice application.

Writer
>   Select some text and drag it to the Styles deck. If Paragraph Styles are active, the paragraph style will be added to the list. If Character Styles are active, the character style will be added to the list.

Calc
>   Drag a cell selection to the Styles deck to create a cell style. (*Click* and then *Shift+Click* to select the cell).

Draw/Impress
>   Select and drag a drawing object to the Styles deck to create a drawing style.

Adding table styles in Writer

Table styles are stored in the LibreOffice user profile, and are available to all Writer documents. You can define new table styles following these steps:

1)   Create a table and apply formatting for cells, backgrounds, borders, and more.

2)   Select the whole table.

3)   Drag the table and drop it in the Table Styles category of the Styles deck in the Sidebar.

Alternatively,

1)   Click in the table and select **Table > AutoFormat Styles** from the Menu bar. On the AutoFormat dialog (Figure 45), click the **Add** button.

2)   In the pop-up dialog, enter a name for the new table style, and then click **OK**.

3)   The new table style is now listed in the left pane of the AutoFormat dialog. Click **OK** again to close the dialog.

The new table style can be applied to tables as described in "Applying styles" on page 63.
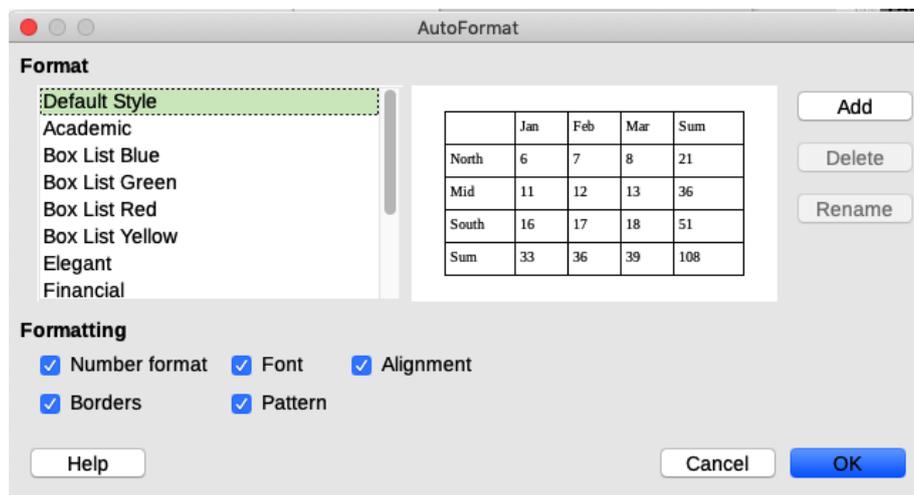
Figure 45: Table AutoFormat styles

Copying styles from a template or document (Writer)

You can copy styles into a document by loading them from a template or from another document:

1) Open the document you want to copy styles into.

2) In the Styles deck, click the **Style actions** icon, and then select **Load Styles**.

3) On the Load Styles dialog (Figure 46), find either a template or an ordinary document from which to copy styles. To select the required document. click the **From File** button to open a file selection dialog.

4) Select the categories of styles to copy from the checkboxes at the bottom of the Load Styles dialog.

5) Select **Overwrite** if you want to replace styles in the original document that have the same name as styles in the document from which you are importing styles. If this box is not selected, you will only copy styles whose names are not used in the original document.

6) Click **OK** to copy the styles.
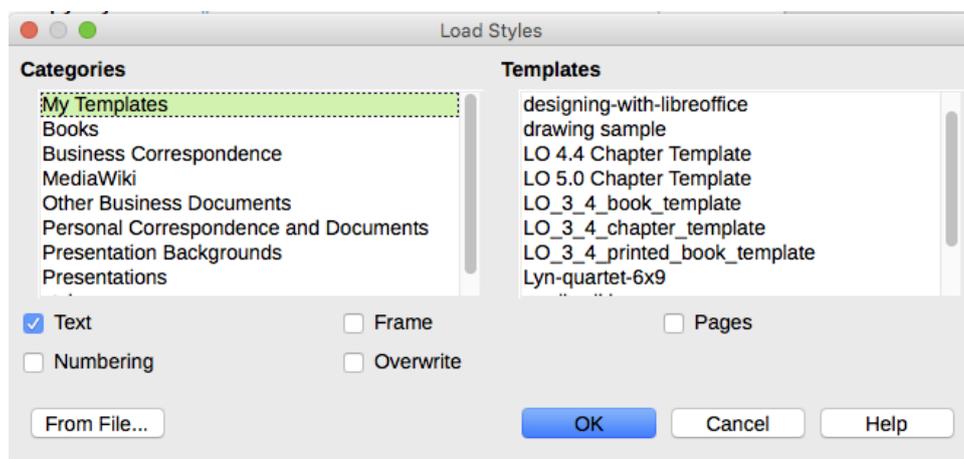
Figure 46: Copying styles from a template into the open document

> ### 💡 Tip
>
> You can also access the Load Styles dialog by selecting **Styles > Load Styles** in the Menu bar.

Deleting styles

You cannot remove (delete) any of LibreOffice's predefined styles from a document or template, even if they are not in use.

You can remove any user-defined (custom) styles; but before you do, you should make sure the styles are not in use in the current document.

To delete any unwanted styles, in the Styles deck select each one to be deleted (hold down the *Control* key while selecting multiple styles), and then right-click on a selected style and select **Delete** on the context menu.

If the style is not in use, it is deleted immediately without confirmation. If the style is in use, you receive a warning message asking you to confirm deletion. Select **Yes** to continue with the deletion.

> ⚠️ **Caution**
>
> If you delete a style that is in use, all objects with that style will return to the default style.

What are templates? Why use them?

A template is a model document that you use to create other documents. For example, you can create a template for business reports that has your company's logo on the first page. New documents created from this template will always have your company's logo on the first page.

Templates can contain anything that regular documents can contain, such as text, graphics, a set of styles, and user-specific setup information such as measurement units, language, the default printer, and toolbar and menu customization.

All documents in LibreOffice are based on templates. You can create, or download and install, as many templates as you wish, and you can specify a template as the default for each type of document (text, spreadsheet, drawing, presentation). If you do not choose a template when you start a new document, then the new document is based on the default template for that type of document. If you have not specified a default template, LibreOffice uses the blank template for that type of document that is installed with LibreOffice. See "Setting a default template" on page 75 for more information.

In Writer, you can create templates for master documents as well as for ordinary documents.

Creating a document from a template

A new installation of LibreOffice may not include many templates, but you can create your own (see "Creating a template" on page 72) or install templates obtained from other sources (see "Adding templates obtained from other sources" on page 74).

To create a document from a template:

1) Select **File > New > Templates** in the Menu bar, or select **File > Templates > Manage Templates** in the Menu bar, or press *Ctrl+Shift+N*, or click on the small arrow next to the **New** icon in the Standard toolbar and select **Templates** from the drop-down menu, or select **Templates > Manage Templates** in the Start Center. The Templates dialog opens.

2) From the *Filter* lists at the top of the Templates dialog, you can select the type and category of template you want to use. All the templates contained in that folder are listed on the page (as shown in Figure 47).

3) Select the required template and click **Open**, or double-click on the selected template. A new document based on the template opens in LibreOffice.

> 💡 **Tip**
>
> You can also open a template by double-clicking it in the system's file explorer window.

The template the document is based upon is listed in **File > Properties > General**. The connection between the template and the document remains until the template is modified and, the next time that the document is opened, you choose not to update it to match the template.
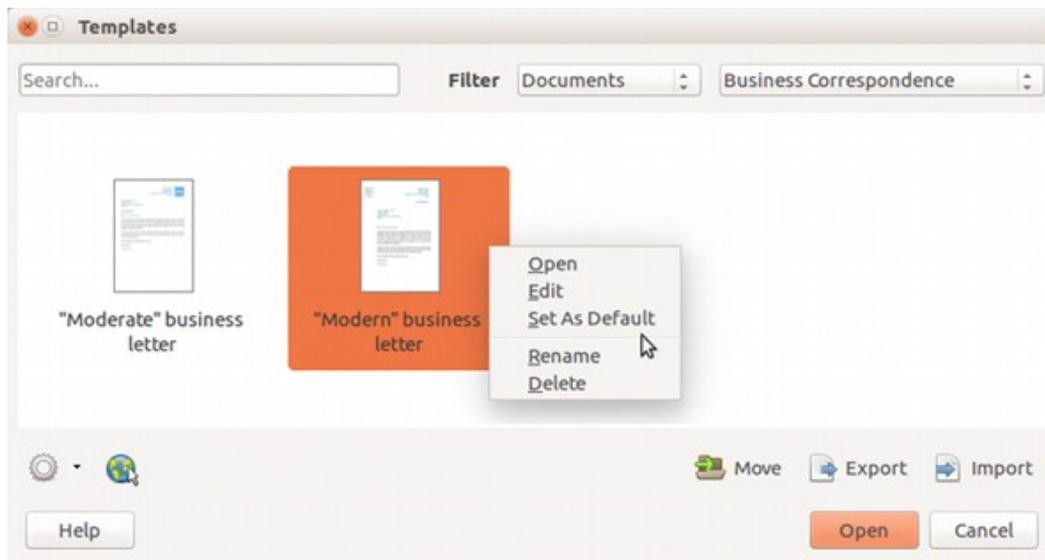
Figure 47: Templates dialog, showing context menu for a selected template

> 💡 **Tip**
>
> On the Start Center, click on the Templates button to view the available templates without opening the Templates dialog. Click on the required template to create a new document.

Creating a template

You can create templates by saving a document as a template or (in Writer) by using a wizard.

Creating a template from a document

In addition to formatting, any settings that can be added to or modified in a document can be saved within a template. For example, you can also save printer settings, and general behaviors set from **Tools > Options**, such as paths and colors.

Templates can also contain predefined text, saving you from having to type it every time you create a new document. For example, a letter template may contain your name, address, and salutation.

You can also save menu and toolbar customization in templates; see Chapter 14, Customizing LibreOffice, for more information.

To create a template from a document:

1) Open a new or existing document of the type you want to make into a template (text document, spreadsheet, drawing, or presentation).

2) Add any content that you want to appear in any document you create from the new template, for example company logo, copyright statement, and so on.

3) Create or modify any styles that you want to use in the new template.

4) From the Menu bar, choose **File > Templates > Save as Template**. The Save As Template dialog (Figure 48) opens, displaying the existing categories and a name box.

5) Optionally select a Template category, such as *My Templates* or *Business Correspondence*. You can also set this template as a default template at this time or do it later.

6) Click **Save**. The template is saved and the dialog closes.
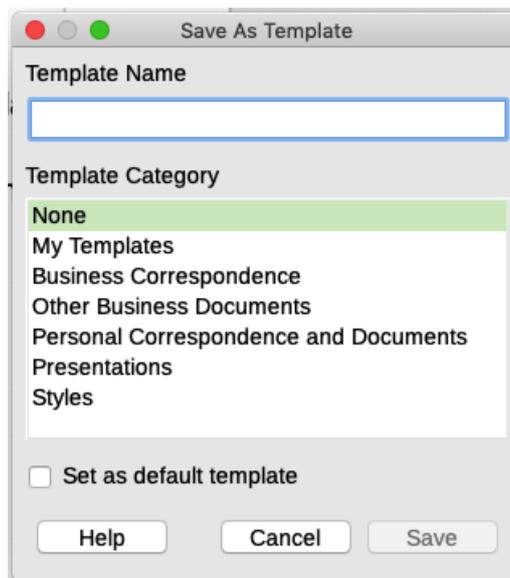
Figure 48: Save As Template dialog

Creating a template using a wizard

You can use wizards to create templates for letters, faxes, and agendas.

For example, the Fax Wizard guides you through the following choices:

- Type of fax (business or personal)
- Document elements like the date, subject line (business fax), salutation, and complimentary close
- Options for sender and recipient information (business fax)
- Text to include in the footer (business fax)

To create a template using a wizard:

1) From the Menu bar, choose **File > Wizards > [type of template required]** (see Figure 49).

2) Follow the instructions on the pages of the wizard. This process is slightly different for each type of template, but the format is very similar.
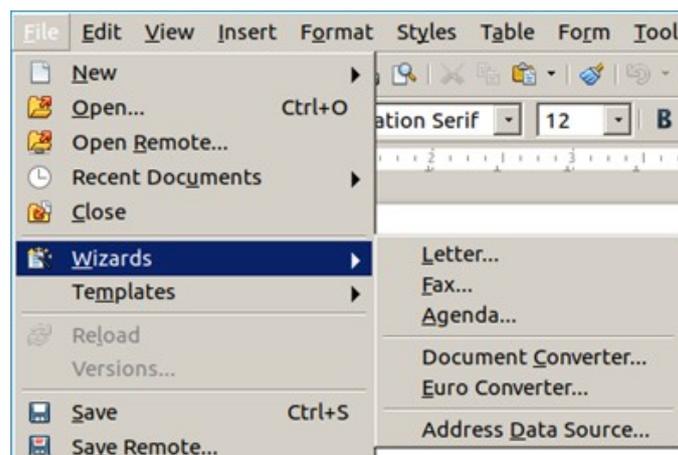
Figure 49: Creating a template using a wizard

3) In the last section of the wizard, you can specify the template name that will show in the Templates dialog, and also the name and location for saving the template. The two names can be different but this may later cause confusion. The default location is your user templates directory, but you can choose a different location.

4) To set the file name or change the directory, select the **Path** button (the three dots to the right of the location). The Save As dialog opens. Make your selections and click **Save** to close the dialog.

5) Finally, you can choose whether to create a new document from the template immediately, or manually change the template, and then click **Finish** to save the template. For future documents, you can re-use the template created by the wizard, just like any other template.

Editing a template

You can edit a template's styles and content, and then, if you wish, you can reapply the template's styles to documents that were created from that template. You cannot reapply content.

To edit a template:

1) Open the Templates dialog, as described in step 1 of "Creating a document from a template" on page 71.

2) In the Templates dialog, find the template that you want to edit. Right-click on it to open the context menu, then click **Edit** (see Figure 47). The template opens in LibreOffice.

3) Edit the template and save your changes as you would for any other document.

Updating a document from a changed template

If you make any changes to a template and it's styles, the next time you open a document that was created from the template before the changes, a confirmation message is displayed.

To update the document:

1) Click **Update Styles** to apply the changed styles in the template to the document.

2) Select **Keep Old Styles** if you do not want to apply the changed styles in the template to the document (but see the Caution notice below).

⚠️ **Caution**

If you choose **Keep Old Styles**, the document is no longer connected to the template, even though the template is still listed under **File > Properties > General**.

Adding templates obtained from other sources

LibreOffice refers to sources for templates as repositories. A repository can be local (a directory on your computer to which you have downloaded templates) or remote (a URL from which you can download templates).

You can get to the official template repository by using the **Browse Online Templates** button at the lower left-hand end of the Templates dialog, as shown in Figure 50, or by typing https://extensions.libreoffice.org/templates in your browser's address bar.

On other websites you may find collections of templates that have been packaged into extension (OXT) files. These are installed a little differently, as described below.
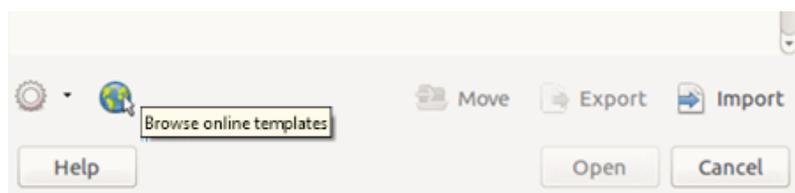
Figure 50: Getting more templates for LibreOffice

Installing individual templates

To install individual templates:

1) Download the template and save it anywhere on your computer.

2) In the Templates dialog, click the **Import** button on the bottom right. The Select Category dialog appears.

3) Find and select the category where you want to import the template and click **OK**. A standard file browser window opens.

4) Find and select the template that you want to import and click **Open**. The file browser window closes and the template appears in the selected category.

> **Tip**
>
> You can manually copy new templates into the template folders. The location varies with your computer's operating system. To learn where the template folders are stored on your computer, go to **Tools > Options > LibreOffice > Paths**.

Installing collections of templates

The Extension Manager provides an easy way to install collections of templates that have been packaged as extensions. Follow these steps:

1) Download the extension package (.OXT file) and save it anywhere on your computer.

2) In LibreOffice, select **Tools > Extension Manager** from the Menu bar. In the Extension Manager dialog, click **Add** to open a file browser window.

3) Find and select the package of templates you want to install and click **Open**. The package begins installing. You may be asked to accept a license agreement.

4) When the package installation is complete, restart LibreOffice. The templates are available for use through the Templates dialog and the extension is listed in the Extension Manager.

See Chapter 14, Customizing LibreOffice, for more about the Extension Manager.

Setting a default template

If you create a Writer, Calc, Impress, or Draw document by choosing **File > New > [Type of Document]** from the Menu bar, or by selecting one of the buttons in the *Create* area of the Start Center, LibreOffice creates the document from the default template for that type of document. You can, however, change the default whenever you choose.

Setting a template as the default

Most default settings, such as page size and page margins, can be changed in **Tools > Options**, but those changes apply only to the document you are working on. To make those changes the default settings for that document type, you need to replace the default template with a new one.

You can set any template displayed in the Templates dialog to be the default for that document type:

1) Open the Templates dialog, as described in step 1 of "Creating a document from a template" on page 71.

2) In the Templates dialog, open the category containing the template that you want to set as the default, then select the template.

3) Right-click on the selected template and click **Set As Default** (see Figure 47).

The default template is indicated by a green tick mark. The next time that you create a document of that type by choosing **File > New** (or equivalent), the document will be created from this template.

Resetting the default template

To re-enable LibreOffice's original default template for a document type as the default for that type:

1) In the Templates dialog, click the **Settings** icon on the bottom left (Figure 51).
2) Point to **Reset Default Template** on the drop-down menu, and click **Text Document** (or other template type).

These choices do not appear unless a custom template has been set as the default, as described in the previous section.

You can also reset the default template as follows:

1) Go to the Templates dialog and open the category containing the template you set as default. It is indicated by a green check mark.
2) Right-click on this template and select **Reset Default** from the context menu.

The next time that you create a document by choosing **File > New** (or equivalent), the document will be created from the original default template for the document type.
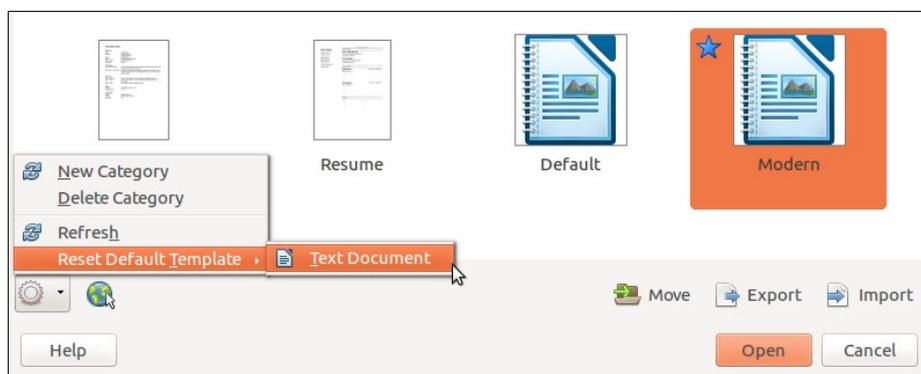
Figure 51: Resetting the default template for text documents

Organizing templates

LibreOffice can manage only those templates that are in its template folders (categories), although you can create a document from a template that is not in one of these folders. You can create new template categories and use them to organize your templates. For example, you might have one template category for report templates and another for letter templates. You can also import and export templates.

> 💡 **Tip**
>
> The location of template folders in LibreOffice depends on the operating system of your computer. If you want to know where the template folders are located, go to **Tools > Options > LibreOffice > Paths**.

To begin, open the Templates dialog as described in step 1 of "Creating a document from a template" on page 71.

Creating a template category

To create a template category:

1) Click the **Settings** button in the lower left of the Templates dialog.
2) Click **New Category** on the context menu (see Figure 52).
3) In the pop-up dialog, type a name for the new category and click **OK**. The new category now appears in the list of categories.
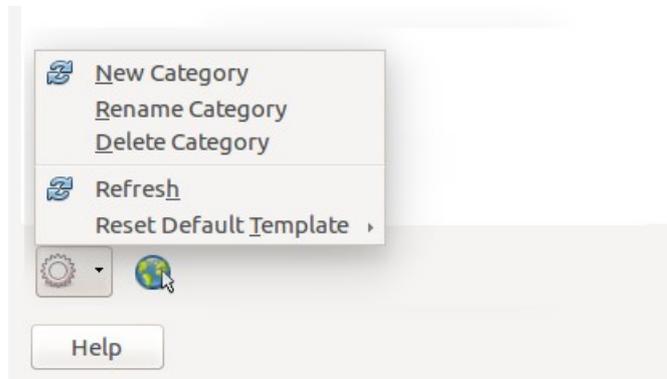
Figure 52: Creating a new template category

> **Note**
>
> You cannot create a sub-category inside a template category in LibreOffice.

Deleting a template category

You cannot delete template categories supplied with LibreOffice. Nor can you delete any categories added by the Extension Manager unless you first remove the extension that installed them.

However, you can delete a category that you created. Open the Templates dialog, click the **Settings** button and select **Delete Category** from the pop-up menu (see Figure 52). On the Delete Category dialog, select the category to be deleted and press the **OK** button. When a message box appears asking you to confirm the deletion, click **Yes**.

Moving a template

To move a template from one template category to another, select it in the Templates dialog, and click the **Move** button near the bottom of the dialog. In the Select Category dialog (Figure 53), select the destination category and click **OK**. The selected template is moved to the folder. You can also create a new category into which to move the template.
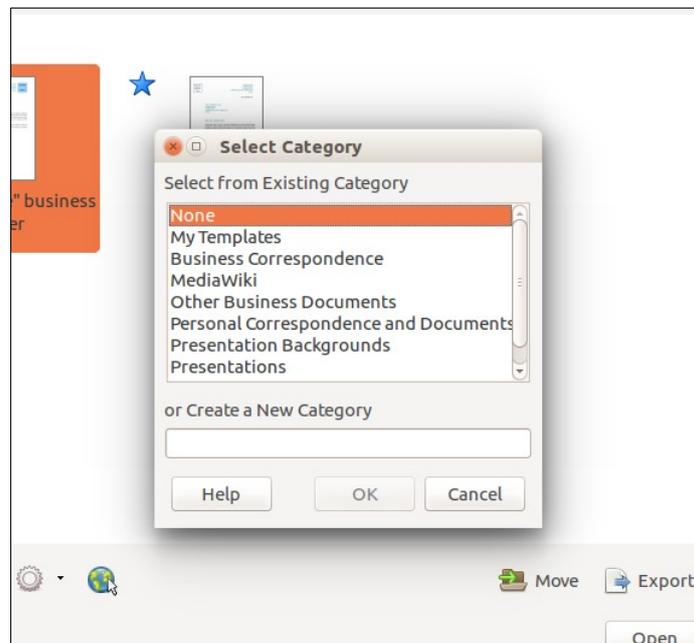
Figure 53: Moving templates to another category

Renaming a template

You can also rename a template if the current name does not match it's purpose. To rename a template, right click a template and select **Rename** in the pop up menu. The Enter New Name dialog opens. Type a name in the Enter New Name text box and click **OK**.

Deleting a template

You cannot delete templates supplied with LibreOffice. Nor can you delete any templates installed by the Extension Manager except by removing the extension that installed them.

However, you can delete templates that you have created or imported:

1) From the *Filter* drop-down lists at the top of the Templates dialog, select the category that contains the template you want to delete.

2) Select the template to delete.

3) Right-click on the template to open the context menu and click **Delete** (Figure 47).

4) A message box appears and asks you to confirm the deletion. Click **Yes**.

> ### Tip
>
> You can also press the **Delete** button on the keyboard to delete the selected template on the Templates dialog.

Exporting a template

To export a template from a template category to another location in your computer or network:

1) In the Templates dialog, locate the category that contains the template to export.

2) Select the template that you want to export.

3) Click the **Export** button in the bottom right of the dialog. The Select Folder or Select Path dialog opens.

4) Find the folder into which you want to export the template and select **Select Folder** or **OK**.

5) Press **OK** on the displayed information dialog.

> **Note**
>
> Exporting a template does not remove it from the Templates dialog. The action places a copy of the template in the location you specify.

Examples of style use

The following examples of common use of page and paragraph styles are taken from Writer. There are many other ways to use styles; see the guides for the various components for details.

Defining a different first page for a document

Many documents, such as letters and reports, have a first page that is different from the other pages in the document. For example, the first page of a letterhead typically has a different header, or the first page of a report might have no header or footer, while the other pages do. With LibreOffice, you can define the page style for the first page and specify the style for the following pages to be applied automatically.

As an example, we can use the First Page and Default Style page styles that come with LibreOffice. Figure 54 shows what we want to happen: the first page is to be followed by the default page, and all the following pages are to be in the default page style. Details are in Chapter 5, Formatting Pages: Basics, in the *Writer Guide*.
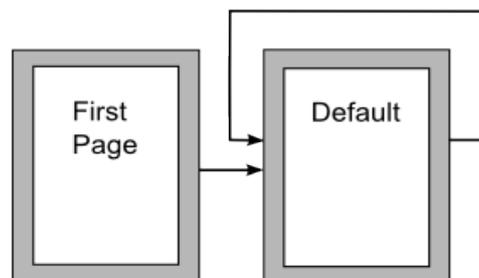
Figure 54: Flow of page styles

Dividing a document into chapters

In a similar way, you can divide a document into chapters. Each chapter might start with the First Page style, with the following pages using the Default Style page style, as above. At the end of the chapter, insert a manual page break and specify the next page to have the First Page style to start the next chapter, as shown in Figure 55.
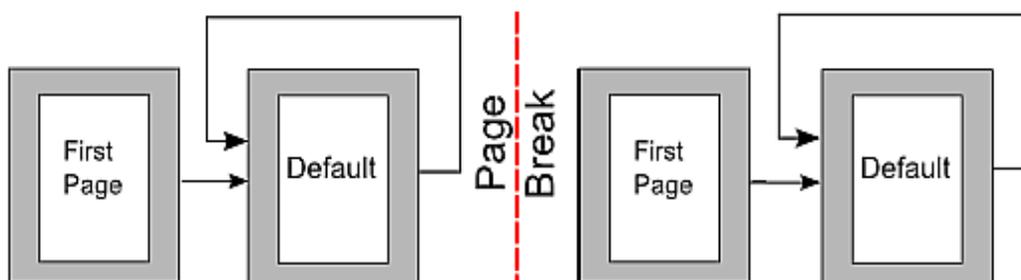
Figure 55: Dividing a document into chapters using page styles

Changing page orientation within a document

A Writer document can contain pages in more than one orientation. A common scenario is to have a landscape page in the middle of a document, whereas the other pages are in a portrait orientation. This setup can also be created with page breaks and page styles.

To insert a landscape page in the middle of your document, insert a page break and select a page style with the landscape orientation on. LibreOffice default landscape page style is Landscape. You may have to adjust the other page properties such as headers, footers, and page numbering of the landscape style. To go back to the portrait page style, insert another page break and select the default portrait page style of your document.

Controlling page breaks automatically

Writer automatically flows text from one page to the next. If you do not like the default settings, you can change them. For example, you can require a paragraph to start on a new page or column and specify the style of the new page. A typical use is for chapter titles to always start on a new right-hand (odd-numbered) page.

Compiling an automatic table of contents

To compile an automatic table of contents, first apply styles to the headings you want to appear in the contents list, then use **Tools > Chapter Numbering** to tell Writer which styles go with which level in the table of contents. By default, tables of contents use Heading styles, but you can use whatever combination of styles you prefer. See Chapter 4 in this guide for more information.

Defining a sequence of paragraph styles

You can set up one paragraph style so that when you press Enter at the end of that paragraph, the following paragraph automatically has the style you wish applied to it. For example, you could define a Heading 1 paragraph to be followed by a Text Body paragraph. A more complex example would be: Title followed by Author followed by Abstract followed by Heading 1 followed by Text Body. By setting up these sequences, you can usually avoid having to apply styles manually.

Getting Started Guide

Chapter 4
Getting Started with Writer

Word processing with LibreOffice

What is Writer?

Writer is the word processor component of LibreOffice. In addition to the usual features of a word processor (spelling check, thesaurus, hyphenation, autocorrect, find and replace, automatic generation of tables of contents and indexes, mail merge, and others), Writer provides these important features, which are covered in detail in the *Writer Guide*:

- Templates and styles (see Chapter 3)
- Page layout methods, including styles, frames, columns, and tables
- Automated tables of contents and indexes
- Embedding or linking of images, equations, spreadsheets, and other objects
- Built-in drawing tools
- Master documents, to group a collection of documents into a single document
- Change tracking during revisions
- Lists
- Tables of data
- Database integration, including a bibliography database
- Mail merge
- Export to PDF and ePub (see Chapter 10)
- Document digital signatures
- Form design and filling
- And many more

The Writer interface

The main Writer workspace is shown in Figure 56. The menus and toolbars are described in Chapter 1, Introducing LibreOffice. Some other features of the Writer interface are covered in this chapter.
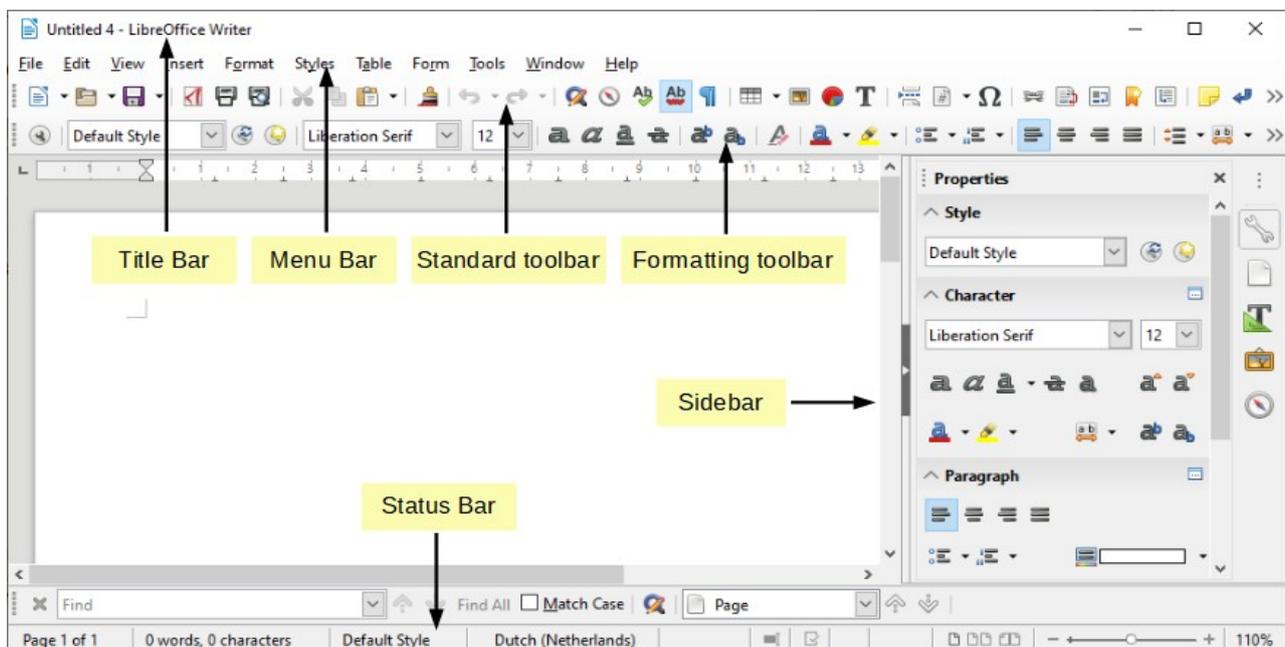
Figure 56: The main Writer workspace

Status Bar

The Writer Status Bar provides information about the document and convenient ways to change some document features quickly.
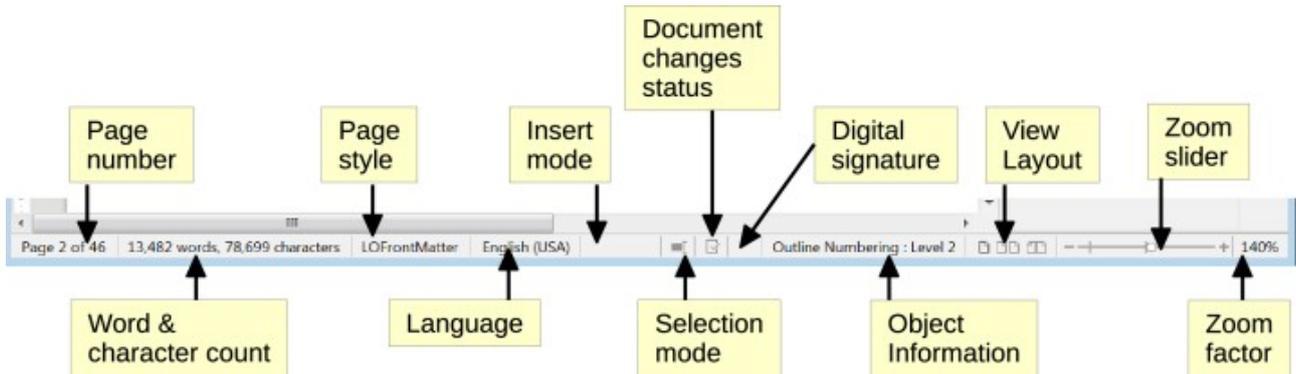
Figure 57: Status Bar components

Page number

Shows the current page number, the sequence number of the current page (if different), and the total number of pages in the document. For example, if you restarted page numbering at 1 on the third page, its page number is 1 and its sequence number is 3.

If any bookmarks have been defined in the document, a right-click on this field pops up a list of bookmarks; click on one to go to that location.

To jump to a specific page in the document, click on this field. A small Go to Page dialog pops up. Type the required page number and press the **OK** button or *Enter*.

Word and character count

The word and character counts of the document are shown in the Status Bar, and are kept up to date as you edit. When text is selected, the word and character counts for the selection will appear here.

By default, the character count includes spaces. To display a dialog showing the character count excluding spaces, click the word count in the Status Bar, or choose **Tools > Word Count**.

You can also see the number of words and characters (and other information including the number of pages, tables, and graphics) in the entire document in **File > Properties > Statistics**.

Page style

Shows the style of the current page. To select a different page style, right-click on this field. A list of page styles pops up; choose a different style by clicking on it. To edit the current page style, click on this field. The Page Style dialog opens.

> ⚠ **Caution**
>
> Changing the page style here may affect the styles of following pages, depending on how the page styles are set up. See the *Writer Guide* for details.

Language

Shows the language at the cursor position, or for the selected text, that is used for checking spelling and grammar as well as for hyphenation and thesaurus dictionaries.

Click to open a menu where you can choose another language for the selected text or for the paragraph where the cursor is located. You can also choose **None (Do not check spelling)** to exclude the text from a spelling check or choose **More** to open the Character dialog. Any directly formatted language settings can be reset to the default language from this menu.

Insert mode

This area is blank when in Insert mode. Click to change to Overwrite mode; click again to return to Insert mode. In Insert mode, any text after the cursor position moves forward to make room for the text you type; in Overwrite mode, text after the cursor position is replaced by the text you type. This feature is disabled when in Record Changes mode.

Selection mode

Click to cycle between the different selection modes, right-click to select the required mode from a context menu. The icon does not change, but when you hover the mouse pointer over this field, a tooltip indicates which mode is active.

Mode	Effect
Standard selection	Click in the text where you want to position the cursor; click in a cell to make it the active cell. Any other selection is deselected.
Extending selection (*F8*)	Clicking in the text extends or crops the current selection.
Adding selection (*Shift+F8)*	A new, separate selection is added to an existing selection. The result is a multiple selection.
Block selection (*Alt+Shift+F8*)	A block of text can be selected.

On Windows systems, you can hold down the *Alt* key while dragging to select a block of text. You do not need to enter the block selection mode.

Document changes status

The icon that is displayed here changes appearance to indicate whether the document has no unsaved changes, or it has been edited and the changes have not been saved. Click on the unsaved changes icon to save the document.

Digital signature

If the document has been digitally signed, an icon is displayed here; otherwise, it is blank. To sign the document, or to view the certificate, click the area or icon.

Section or object information

When the cursor is on a section, heading, or list item, or when an object (such as a picture or table) is selected, information about that item appears in this field. Clicking in this area opens a relevant dialog. For details, consult the Help or the *Writer Guide*.

View layout

Click an icon to change between single page, multiple pages, and book layout views. The effect varies with the combination of window width and zoom factor in use. You can edit the document in any view. See Figure 58.
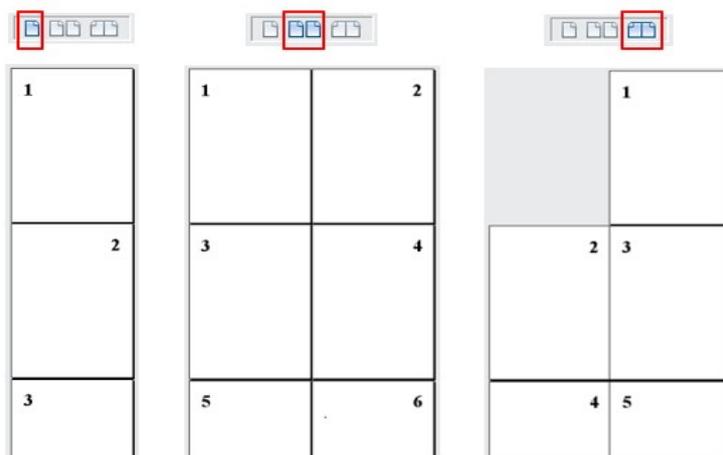
Figure 58: View layouts: single page, multiple pages, book

Zoom

To change the view magnification, drag the Zoom slider, or click on the + and – signs, or click the zoom level percent to pop up the Zoom & View Layout dialog, or right-click on the zoom level percent to pop up a menu of magnification values from which to choose. Zoom interacts with the selected view layout to determine how many pages are visible in the document window.

Sidebar

The Sidebar is normally open by default on the right side of the Writer window. If necessary, select **View > Sidebar** from the Menu bar, or press *Ctrl+F5*, to display it. An example is shown in Chapter 1, Introducing LibreOffice.

The Writer Sidebar contains five decks by default: Properties, Page, Styles, Gallery, and Navigator. Each deck has a corresponding icon on the Tab bar on the right of the sidebar, allowing you to switch between them.

Each deck consists of a title bar and one or more content panels. Some panels contain a small **More Options** button, which opens a dialog to give greater choice of editing controls. When a dialog is open, the document is locked for editing until the dialog is closed.

The decks are described below.

Properties deck

Contains tools for direct formatting of content.

For text editing, the default view shows tools organized into three panels:
– Style: Apply a paragraph style at the cursor position. Create or update a style.
– Character: Modify text by the font type, size, color, weight, style, and spacing.
– Paragraph: Style the paragraph by alignment, lists or bullets, background color, indent, and spacing.

Additional panels appear when specific types of items are selected.

If an image is selected, then the following panels open:
– Area: Modify the image background fill and transparency. Further colors, gradients, hatching, patterns, and bitmap selection and importing are available in **More Options**.
– Image: Modify the image brightness, contrast, color mode, and transparency.
– Wrap: Modify wrap and spacing where these are available.
– Position and Size: Modify width, height, rotation, and flip attributes.

If a drawing object is selected, then the following panels are available:
– Area: Modify fill and transparency.
– Line: Modify style, width, color, and transparency.
– Position and Size: Modify width, height, rotation, and flip attributes.

If a table is selected, then the Table panel opens: insert, select, delete rows and columns; split/merge cells; set row height and column width; others.

If a frame is selected, then the Wrap panel opens but may be grayed-out if frame wrap is not available.

If a video or audio clip is inserted by selecting **Insert > Media > Audio or Video**, the following panels open when the clip is selected:
– Media Playback: Control for play, pause, stop, seek, loop, and volume.
– Position and Size: Modify width and height.

Page deck

Modifies the page style to change the most commonly used page properties. It has four panels:

– Format modifies the size, width, height, orientation, and page margins.
– Styles modifies the numbering scheme, background, page layout (specifies whether the page style should apply to odd or even pages or to both), and columns.
– Header and Footer modify the respective margins, spacing, and content.

> ⚠️ **Caution**
>
> Be aware that by changing the options on the Page deck, you will change the page style in use, modifying not only the current page but all pages in the document using the same page style.

Styles deck

Manages the styles used in the document. This includes applying existing styles, modifying them, or creating new ones. You can preview the changes by checking **Show Previews** at the bottom.

Gallery deck

Contains images and diagrams included in the Gallery themes. The Gallery has two sections. The first lists the themes by name (*Arrows*, *Bullets*, *Diagrams*, etc.) and the second displays the images in the selected category. Select the **New Theme** button to create new categories. To insert an image into a file, or add a new image to the new category, drag and drop the selected image.

Navigator deck

Makes it easy to navigate to specific types of content and to reorganize contents based on categories, such as headings, tables, frames, images, and so on. See "Using the Navigator" in Chapter 1, Introducing LibreOffice.

Changing document views

Writer has three ways to view a document: Normal, Web, and Full Screen. To change the view, go to the View menu and select the desired view.

Normal view

Normal view is the default view in Writer. It shows how the document will look when you print it or create a PDF. In this view, you can use the View Layout icons and the Zoom slider on the Status Bar to change the magnification. You can set these same options by choosing **View > Zoom > Zoom** from the Menu bar to display the Zoom & View Layout dialog.

In Normal view, you can hide or show the headers and footers and the gap between pages. To hide them, choose **View > Hide Whitespace** on the Menu bar. When activated, a check mark appears next to the option. This also hides headers, footers, and white space in Full Screen view. Note that this only works when single-page view is activated in the Status Bar.

Web view

In Web view, you can use only the Zoom slider; the View Layout buttons on the Status Bar are disabled, and most of the choices on the Zoom & View Layout dialog are not available. In Web layout there is no visual indication of page boundaries.

Full Screen view

In Full Screen view, no toolbars or sidebar are displayed; the document takes up the full area available, using the zoom and layout settings previously selected. To exit Full Screen view and return to the previous view, press the *Esc* key or click the **Full Screen** button on the floating toolbar in the top left-hand corner. You can also use *Ctrl+Shift+J* to toggle between Full Screen and the previous views.

Working with documents

Chapter 1, Introducing LibreOffice, includes instructions on creating new documents, opening existing documents, saving documents, accessing remote servers, and password-protecting documents. Chapter 3, Using Styles and Templates, covers how to create a document from a template.

By default, LibreOffice creates and saves files in the OpenDocument file format (ODF), a standardized file format used by many software applications. Writer documents have the extension .ODT.

> ### Tip
>
> Whenever it is possible to choose the document file format, choose the default ODF format. This reduces the possibility of errors.

Saving as a Microsoft Word file

You may need to open, edit, and save documents in Microsoft Word formats. You can also create and edit .ODT files and then save them as .DOC or .DOCX files. To do this:

1) Important—First save your document in the file format used by LibreOffice Writer (.ODT). If you do not, any changes you made since the last time you saved will appear only in the Microsoft Word version of the document. Also, saving in ODF format enables you to re-save or modify the document if the recipient of your document experiences trouble with the Microsoft format.

2) Then choose **File > Save As**.

3) On the Save As dialog, in the drop-down menu, select the type of Word format you need. You may also choose to change the file name.

4) Click **Save**.

This creates a separate document with a different file extension (such as .DOCX). From this point on, all changes you make to the document will occur only in the new document. If you want to go back to working with the ODT version of your document, you must open it again.

> ### Tip
>
> To have Writer save documents by default in a Microsoft Word file format, go to **Tools > Options > Load/Save > General**. In the section named **Default File Format and ODF Settings**, under *Document type*, select **Text document**, then under *Always save as*, select your preferred file format.

Moving quickly through a document

Using the Navigator

In addition to the navigation features of the Status Bar (described above) and the Navigator deck (described in Chapter 1, Introducing LibreOffice), Writer provides a Navigation toolbar (Figure 59).

To open the Navigation toolbar, click the top left-hand icon on the Navigator deck in the Sidebar. The toolbar shows icons for all the object types shown in the Navigator itself.
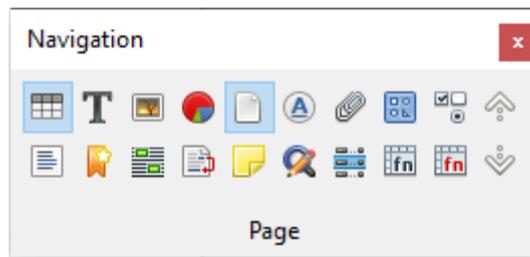
Figure 59: Navigation toolbar

When the icon for a specific object type is selected, clicking the **Previous** and **Next** icons (the up and down arrows on the right of the toolbar) will jump to the previous or next occurrence of the object. This is particularly helpful for finding items like index entries, which can be difficult to see in the text. The names of the icons (shown in the tooltips) change to match the selected category, such as Table, Headings, Bookmark, Footnote.

For more uses of the Navigator in Writer, see the *Writer Guide*.

Using Go to Page

To jump to a specific page in the document, you can use **Edit > Go to Page** on the Menu bar, or the keyboard shortcut *Ctrl+G*, or click on the page number field in the Status Bar, to open the Go to Page dialog (Figure 60). It initially shows the number of the current page and the number of pages in the document. Type the number of the required destination page into the text box and click the **OK** button.
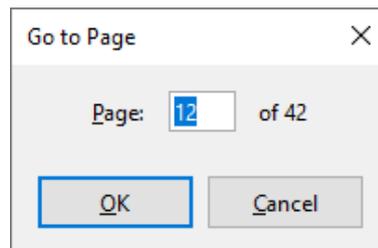
Figure 60: Go to Page dialog

Using Reminders

Reminders let you mark places in your document that you want to return to later on, for example to add or correct information or simply mark where you finished editing. The possible uses of reminders are limited only by your imagination.

To set a reminder at the cursor's current location, click the **Set Reminder** icon in the Navigator. You can set up to five reminders in a document; setting a sixth causes the first to be deleted.

Reminders are not highlighted in any way in the document, nor are they listed in the Navigator, so you cannot see where they are, except that when you jump from one to the next, the location of the cursor shows the location of the reminder.

To jump between reminders, first select the **Reminder** icon on the Navigation toolbar. Then click the **Previous** and **Next** icons. Reminders are not saved with the document.

Working with text

Selecting, copying, pasting, or moving text in Writer is similar to working with text in other programs. LibreOffice also has some convenient ways to select items that are not next to each other, select a vertical block of text, and paste unformatted text.

Selecting items that are not consecutive

To select nonconsecutive items (as shown in Figure 61) using the mouse:

1) Select the first piece of text.

2) Hold down the *Ctrl* key and use the mouse to select the next piece of text.

3) Repeat as often as needed.

To select nonconsecutive items using the keyboard:

1) Select the first piece of text.

2) Press *Shift+F8*. This puts Writer in "Adding selection" mode.

3) Use the arrow keys to move to the start of the next piece of text to be selected. Hold down the *Shift* key and select the next piece of text.

4) Repeat as often as required.

Now you can work with the selected text (copy it, delete it, change the style, and so on).

Press *Esc* to exit from this mode.
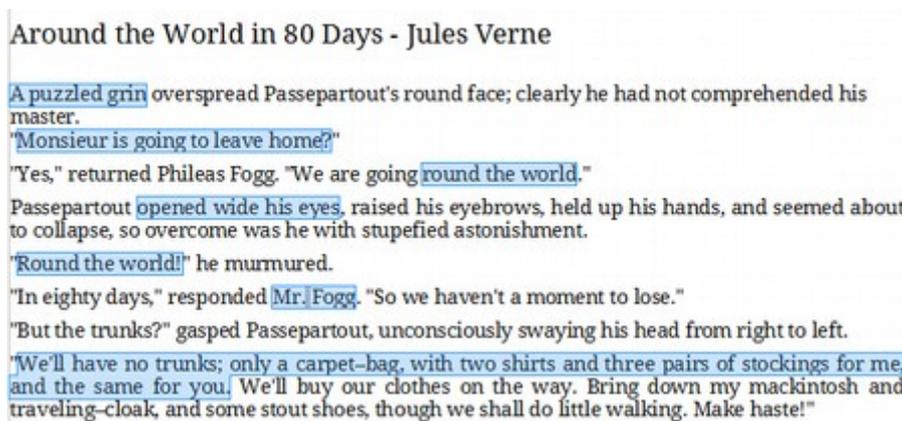
Figure 61: Selecting items that are not next to each other

For more information about keyboard selection of text, see the topic "Navigating and selecting with the keyboard" in LibreOffice Help (*F1*).

Selecting a vertical block of text

You can select a vertical block or "column" of text that is separated by spaces or tabs (as you might see in text pasted from e-mails, program listings, or other sources), using Block selection mode. To change to block selection mode, use **Edit > Selection Mode > Block Area**, or press *Alt+Shift+F8*, or right-click on the **Selection** icon in the Status Bar and select **Block selection** from the menu.
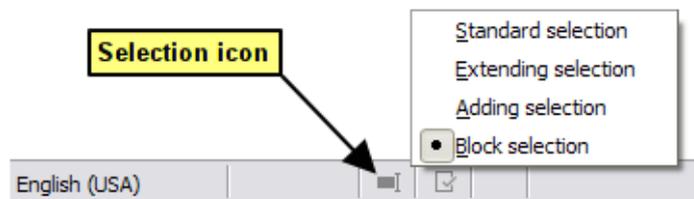
Figure 62: Selection icon

Now highlight the selection, using mouse or keyboard, as shown below.

Figure 63: Selecting a vertical block of text

Cutting, copying, and moving text

Cutting and copying text in Writer is similar to cutting and copying text in other applications. You can use the mouse or the keyboard for these operations. You can copy or move text within a document, or between documents, by dragging or by using menu selections, toolbar buttons, or keyboard shortcuts. You can also copy text from other sources such as Web pages and paste it into a Writer document.

To move (drag and drop) selected text using the mouse, drag it to the new location and release it. To copy selected text, hold down the *Ctrl* key while dragging. The text retains the formatting it had before dragging.

To move (cut and paste) selected text, use *Ctrl+X* to cut the text, insert the cursor at the paste-in point and use *Ctrl+V* to paste. Alternatively, use the buttons on the Standard toolbar.

Pasting text

When you paste text, the result depends on the source of the text and how you paste it. If you click on the Paste button on the Standard toolbar or use *Ctrl+V*, any formatting the text has (such as bold or italics) is retained. Text pasted from Web sites and other sources may also be placed into frames or tables. If you do not like the results, click the **Undo** button or press *Ctrl+Z*.

To make the pasted text inherit the paragraph style at the insertion point:

- Choose **Edit > Paste Special**, or
- Click the arrow button of the combination **Paste** button on the Standard toolbar, or
- Double click the **Paste** button in the Standard toolbar without releasing the left mouse button.

Then select **Paste Unformatted Text** or **Unformatted text** as applicable from the resulting menu. Unformatted text can also be pasted with *Shift+Ctrl+Alt+V*.

Finding and replacing text and formatting

Writer has two ways to find text and formatting within a document: the Find toolbar for fast searching and the Find & Replace dialog. In the dialog, you can:

- Find and replace words and phrases
- Use wildcards and regular expressions to fine-tune a search
- Find and replace specific attributes or formatting
- Find and replace paragraph styles

Using the Find toolbar

By default, the Find toolbar is docked at the bottom of the LibreOffice window (just above the Status Bar) as shown in Figure 64, but you can float it or dock it in another location. If the Find toolbar is not visible, you can display it by choosing **View > Toolbars > Find** from the Menu bar, selecting **Edit > Find** from the Menu bar, or by pressing *Ctrl+F*. For more information on floating and docking toolbars, see Chapter 1, Introducing LibreOffice.
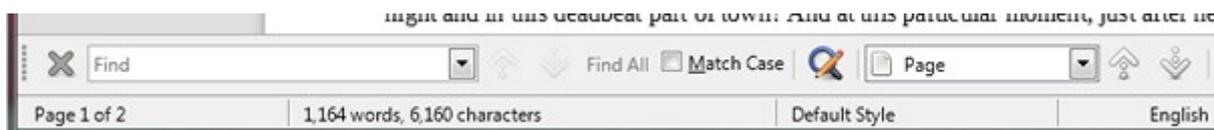
Figure 64: Docked position of Find toolbar

To use the Find toolbar, click in the box and type your search text, then press *Enter* to find the next occurrence of that term. Click the **Find Next** or **Find Previous** (arrow) buttons as needed.

Click the **Find All** button to select all instances of the search term within the document. Select **Match Case** to find only the instances that also match the case (capitalization). To open the Find & Replace dialog, select the icon to the right of **Match Case**.

To search in only specific types of content, click the **Navigate By** field in the Find toolbar and choose from the pop-up menu. For example, to search for something inside the document headings, select the *Headings* entry in the menu.
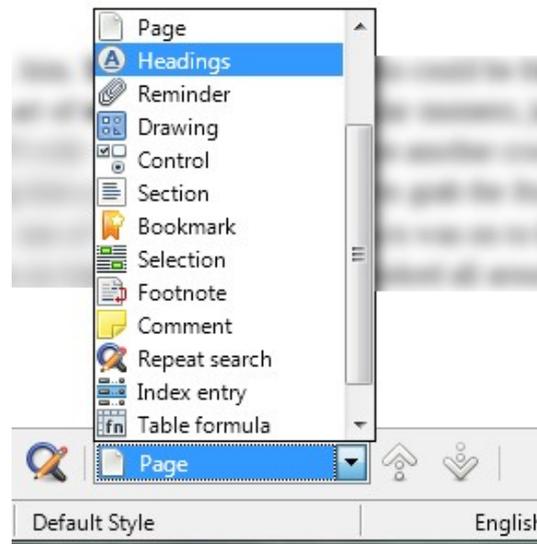
Figure 65: Selective search List

To close the Find toolbar, click the X button on the left, or press *Esc* on the keyboard when the cursor is in the search box.

> 💡 **Tip**
>
> Regular expressions offer powerful ways to search and replace text. For example, they can find all instances where any number is followed by specific letters. However, they can be challenging to understand. Refer to the Help files for guidance.

Using the Find & Replace dialog

To display the Find & Replace dialog (Figure 66), use the keyboard shortcut *Ctrl+H*, or choose **Edit > Find & Replace** from the Menu bar, or click the **Find & Replace** icon on the Find toolbar. When the Find & Replace dialog is open, optionally click **Other options** to expand it.

To use the Find & Replace dialog:

1) Type the text you want to find in the *Find* box.

2) To replace the text with different text, type the new text in the *Replace* box.

3) You can select various options such as matching the case, matching whole words only, or doing a search for similar words.

    The other options include searching only in selected text, searching from the current cursor position backwards toward the beginning of the file, searching for similar words, and searching in comments. The exact options may vary with your language settings (**Tools > Options > Language Settings > Languages**).

4) When you have set up the search, click **Find Next**. To replace the found text, click **Replace**. If you click **Find All**, LibreOffice selects all instances of the search text in the document. Similarly, if you click **Replace All**, LibreOffice replaces all matches, without stopping for you to accept each instance.
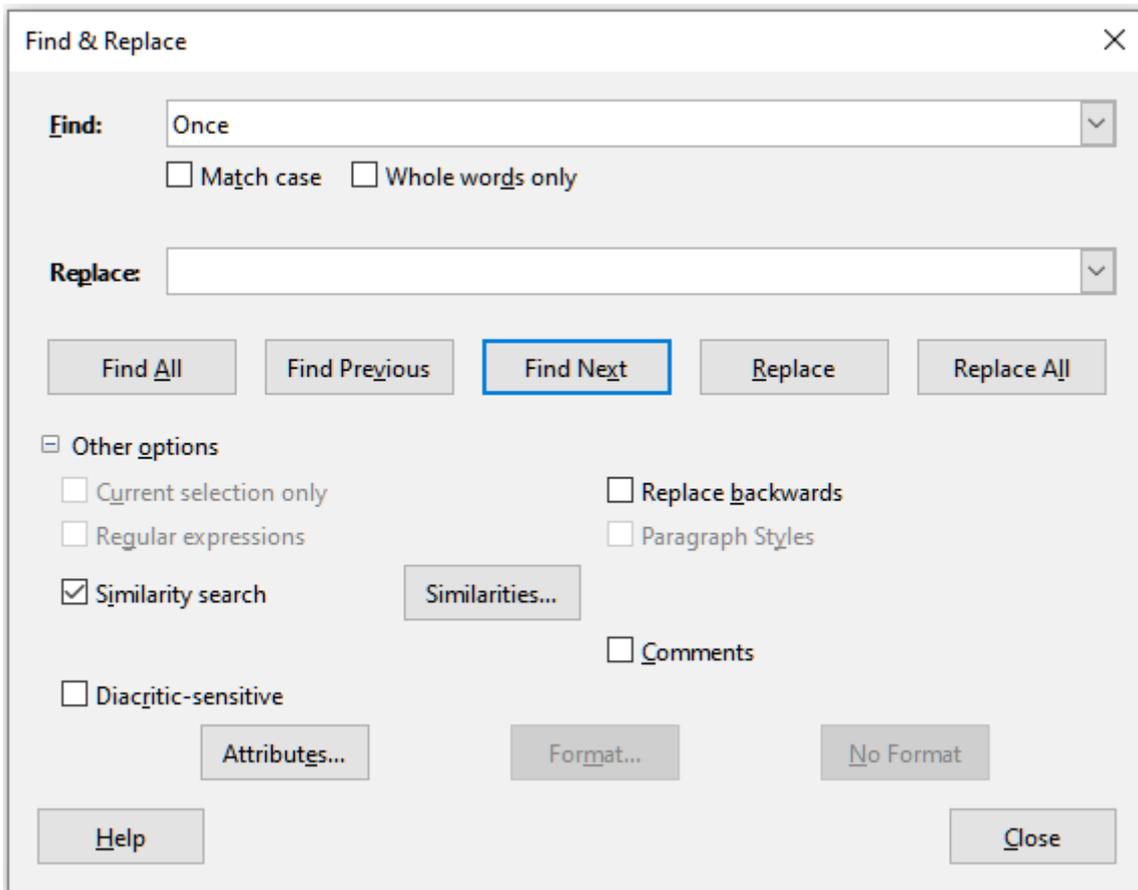
Figure 66: Expanded Find & Replace dialog

For more information on using Find & Replace, see the *Writer Guide*.

⚠️ **Caution**

Use **Replace All** with caution; otherwise, you may end up with some highly embarrassing (and often hilarious) mistakes. A mistake with **Replace All** might require a manual, word-by-word, search to fix.

Inserting special characters

A special character is one not found on a standard user's keyboard. For example, © ¾ æ ç ñ ö ø ¢ are all special characters not available on an English keyboard. To insert a special character:

1) Place the cursor where you want the character to appear.

2) Choose **Insert > Special Character,** or click on the **Insert Special Character** icon in the Standard toolbar**wwxy**, to open the Special Characters dialog.

3) Double-click the characters (from any font or mixture of fonts) you wish to insert, in order, then click **Insert**. Characters previously selected for insertion are shown in the lower left of the dialog. As you select a character, it is shown on the right, along with its numerical code.

The Special Characters dialog (Figure 67) includes areas to select *Recent Characters* and *Favorite Characters*. To add a new character to the *Favorite Characters* list, click on a character and click the **Add to Favorites** button.
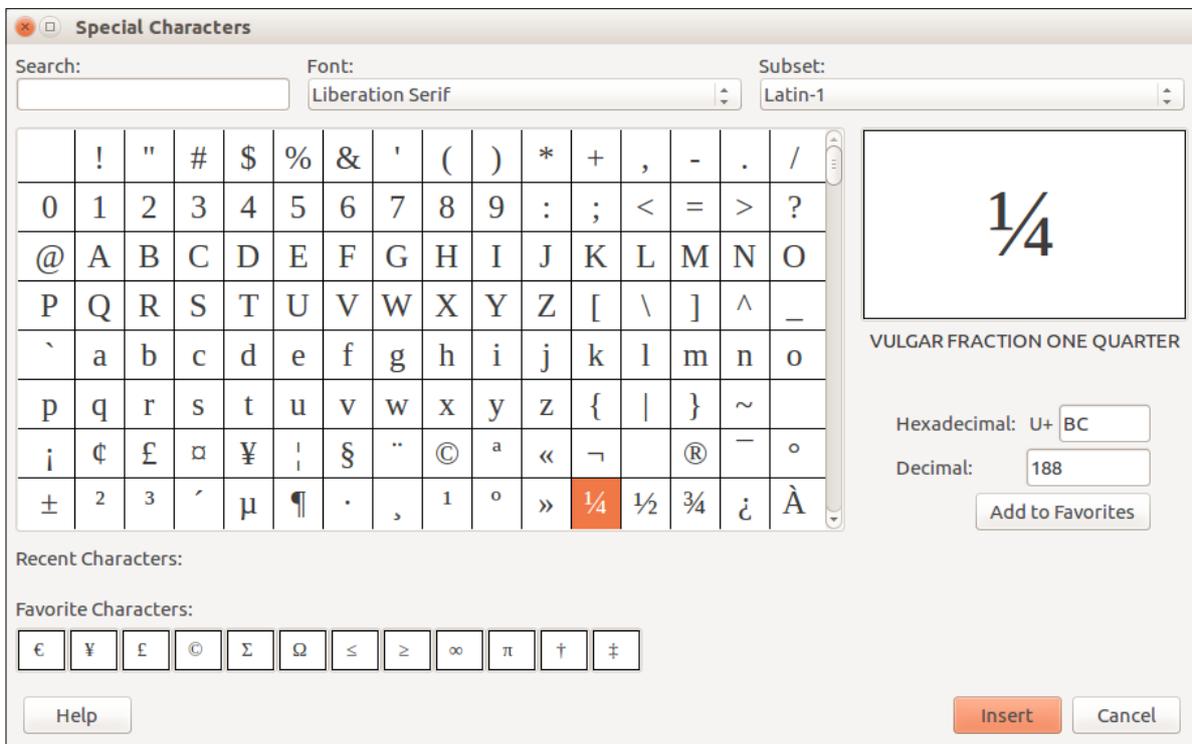
Figure 67: The Special Characters dialog

Inserting dashes and non-breaking spaces and hyphens

Inserting non-breaking spaces

To prevent two words from being separated at the end of a line, press *Ctrl+Shift* when you type the space between the two words. This inserts a non-breaking space. You can also use **Insert > Formatting Mark > Insert non-breaking space** on the Menu bar.

Inserting non-breaking hyphens

In cases where you do not want the hyphen to appear at the end of a line, for example in a number such as 123-4567, you can press *Shift+Ctrl+minus sign* or use **Insert > Formatting Mark > Insert non-breaking hyphen**.

Inserting en and em dashes

To enter en and em dashes, you can use the **Replace dashes** option on the *Options* tab under **Tools > AutoCorrect > AutoCorrect Options**. This option replaces two hyphens, under certain conditions, with the corresponding dash.

– is an en-dash; that is, a dash the width of the letter "n" in the font you are using. Type at least one character, a space, one or two hyphens, another space, and at least one more letter. The one or two hyphens will be replaced by an en-dash.

— is an em-dash; that is, a dash the width of the letter "m" in the font you are using. Type at least one character, two hyphens, and at least one more character. The two hyphens will be replaced by an em-dash. Exception: if the characters are numbers, as in a date or time range, the two hyphens are replaced by an en-dash.

See the Help for more details. For other methods of inserting dashes, see the *Writer Guide*.

Checking spelling and grammar

By default, four dictionaries are installed for each language: a spelling checker, a grammar checker, a hyphenation dictionary, and a thesaurus (assuming it is available for that language). The spelling checker determines if each word in the document is in the installed dictionary. The grammar checker works in combination with the spelling checker.

Checking spelling automatically

When **Automatic Spell Checking** is selected on the Tools menu, each word is checked as it is typed and a wavy red line is displayed under any unrecognized words. Right-click on an unrecognized word to open a context menu. You can click on one of the suggested words to replace the underlined word with the one selected. If the list does not contain the word you want, click **Spelling** to open a dialog. When the word is corrected, the line disappears.

Using the Spelling dialog

To perform a combined spelling and grammar check on the document (or a text selection), click the **Check Spelling** button on the Standard toolbar, or choose **Tools > Spelling**, or press *F7* on the keyboard. This checks the document or selection and opens the Spelling dialog if any unrecognized words are found. To also identify potential grammar problems, select the **Check grammar** box.

Here are some more features of the spelling checker:

Change dictionary language
Change the dictionary language (for example, Spanish, French or German) in the Spelling dialog by selecting the appropriate language in the *Text language* drop-down list.

Add a word to the dictionary
Add a word to the dictionary by clicking **Add to Dictionary** in the Spelling dialog or in the context menu. The word will be added to the Standard dictionary, unless you have created another dictionary in the same language. If you have created a new dictionary, you will be given a choice of dictionaries to add the word to.

Choose text for spell checking
Choose whether to check uppercase words or words that contain numbers, by clicking the **Options** button on the Spelling dialog to open a dialog similar to the one in **Tools > Options > Language Settings > Writing Aids**, described in Chapter 2.

Manage custom dictionaries
Create, edit, or delete dictionaries and edit words in the dictionary in the same Options dialog.

Specify language for specific paragraphs
Set paragraphs to be checked in a language (different from the rest of the document) using several methods—for example, by clicking on the Text Language field on the Status Bar or by creating paragraph styles for specific languages. See "Using built-in language tools" on Page 110 or refer to the *Writer Guide* for more information.

Set additional grammar checking rules
Select additional grammar checking rules through **Tools > Options > Language Settings > English sentence checking**, or through **Tools > Extension Manager > English spelling dictionaries > Options**.

"Grammar by" spell checking

LibreOffice provides "Grammar By" spelling checking. It enables the dictionary to recognize different forms of the same word. It is particularly helpful for new words or specialized words that are unlikely to have all variations in the dictionary. As an example, variations of the word "motorcycle"—motorcycles, motorcycled, motorcycling, motorcyclist, etc.—would all be accepted, without having to enter each of them individually.

To use the Grammar By feature, click the **Options** button in the Spelling dialog. Select or create a dictionary and click **Edit**. Then type the base word in the *Word* field and type a word in the *Grammar By* field that that has the same variations as the base word. In the motorcycle example, the word could be bike.

See the *Writer Guide* for more information about the spelling and grammar checking options.

Using synonyms and the thesaurus

To access a short list of synonyms, right-click on a word and point to **Synonyms** on the context menu. A submenu of alternative words and phrases is displayed. Click on a word or phrase in the submenu to have it replace the highlighted word or phrase in the document.

The thesaurus gives a more extensive list of alternative words and phrases. To use the thesaurus, click on **Thesaurus** from the **Synonyms** submenu. If the current language does not have a thesaurus installed, this feature is disabled.

Using AutoCorrect

Writer's AutoCorrect function has a long list of common misspellings and typing errors, which it corrects automatically. For example, "hte" will be changed to "the". It also includes codes for inserting special characters, emoji, and other symbols.

AutoCorrect is turned on by default. You may wish to disable some of its features, modify others, or turn it off completely.

You can add your own corrections or special characters or change those supplied with LibreOffice. Choose **Tools > AutoCorrect > AutoCorrect Options** to open the AutoCorrect dialog. On the *Replace* tab (Figure 68), you can define which strings of text are corrected and how. In most cases, the defaults are fine.

To stop Writer replacing a specific spelling, go to the *Replace* tab, highlight the word pair, and click **Delete**. To add a new spelling to the list, type it into the *Replace* and *With* boxes on the *Replace* tab, and click **New**.

See the different tabs of the dialog for the wide variety of other options available to fine-tune AutoCorrect.

To turn AutoCorrect off, uncheck **Tools > AutoCorrect > While Typing**.

💡 **Tip**

LibreOffice has an extensive list of special characters accessible with AutoCorrect. For example, type :smiling: and AutoCorrect will replace it with ☺. Or, (c) will be changed to ©. You can add your own special characters.
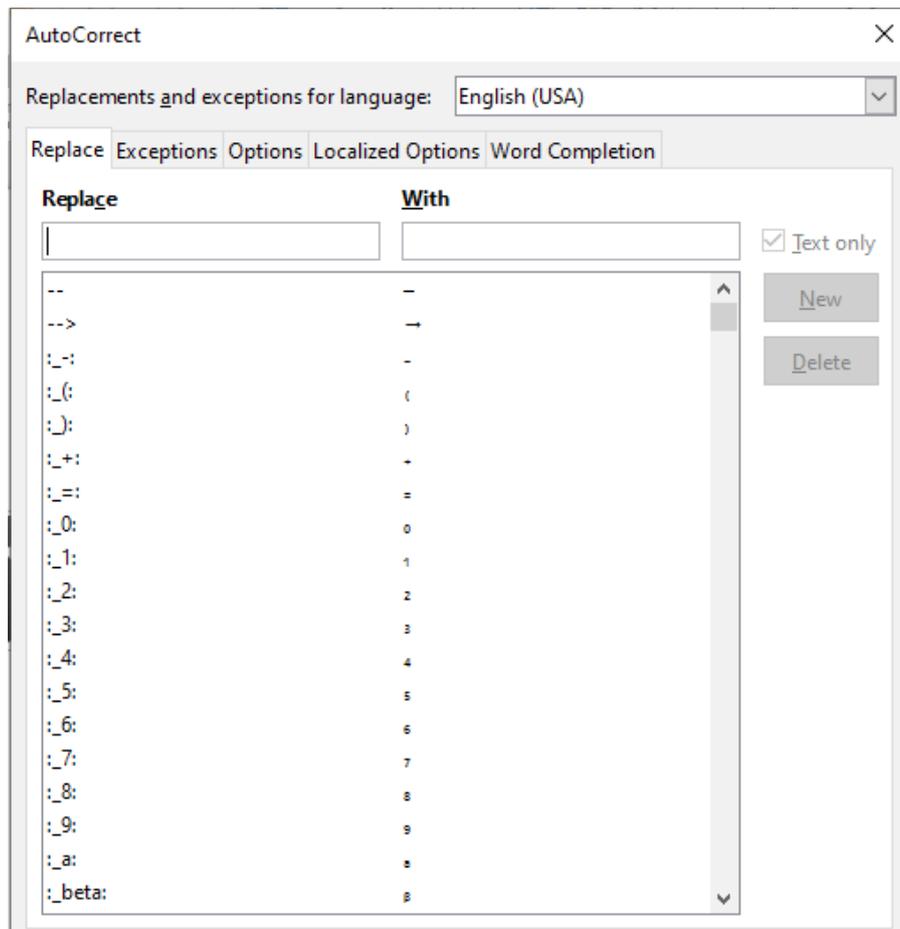
Figure 68: Replace tab of AutoCorrect dialog

Using Word Completion

If Word Completion is enabled, Writer tries to guess which word you are typing and offers to complete the word for you. To accept the suggestion, press *Enter*. Otherwise, continue typing.

To turn off Word Completion, select **Tools > AutoCorrect > AutoCorrect Options > Word Completion** and deselect **Enable word completion**.

Options for customizing word completion from the AutoCorrect dialog (Figure 69) include:

- Add (append) a space automatically after an accepted word.
- Show the suggested word as a tip (hovering over the word) rather than completing the text as you type.
- As you add words when working on documents, you can either save them for later use in other documents or select the option to remove them from the list when closing documents.
- Change the maximum number of words remembered for word completion and the length of the smallest words to be remembered.
- Delete specific entries from the word completion list.
- Change the key that accepts a suggested entry—the options are right arrow, End key, Return (Enter), Space bar, and Tab.

Note

Automatic word completion only occurs after you type a word for the second time in a document.
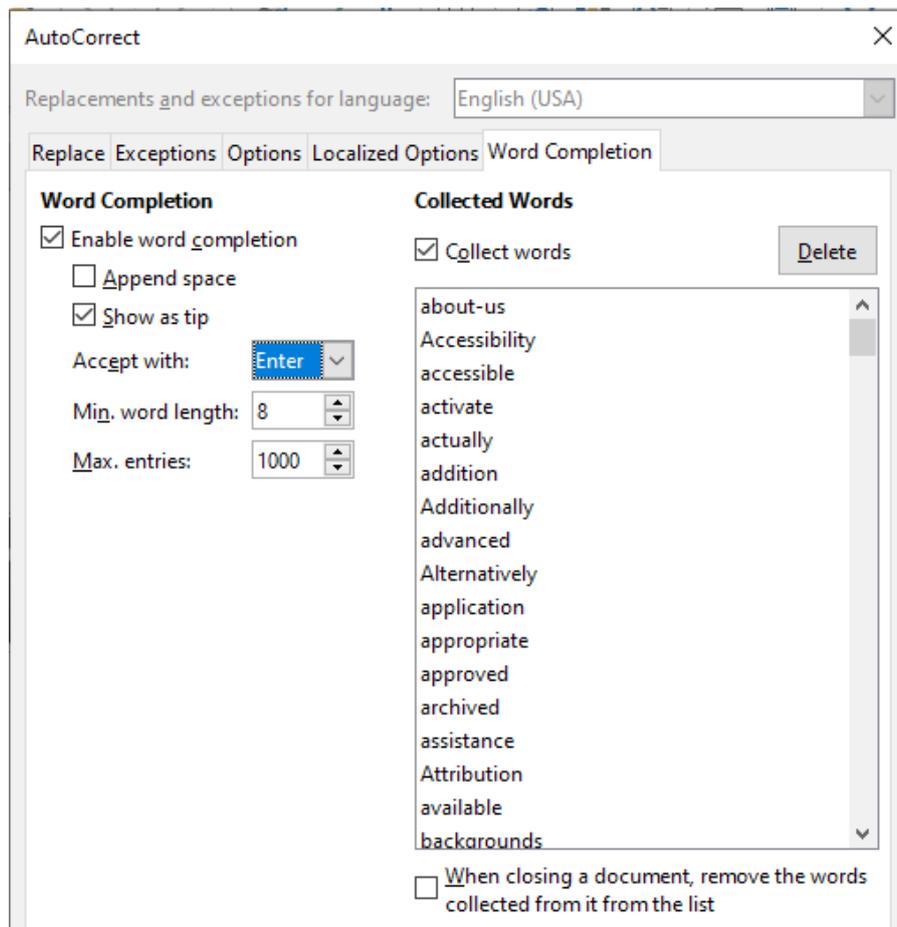
Figure 69: Word Completion tab in AutoCorrect dialog

Using AutoText

Use AutoText to store text, tables, fields, and other items for reuse and assign them to a key combination for easy retrieval. For example, rather than typing "Senior Management" every time you use that phrase, you can set up an AutoText entry to insert those words when you type "sm" and press *F3*.

To store some text as AutoText:

1) Type the text into your document, then select the text.

2) Choose **Tools > AutoText** (or press *Ctrl+F3*).

3) In the AutoText dialog, type a name for the AutoText in the *Name* box. Writer will suggest a one-letter shortcut, which you can change.

4) Choose the category for the AutoText entry, for example *My AutoText*.

5) Click the **AutoText** button at the bottom of the dialog and select from the menu either **New**, to have the AutoText retain specific formatting, no matter where it is inserted, or **New (text only)**, to have the AutoText take on the existing formatting around the insertion point.

6) Click **Close** to return to your document.

7) To insert AutoText, type the shortcut and press *F3*.

> **Tip**
>
> If the only option under the AutoText button is **Import**, either you have not entered a name for your AutoText or there is no text selected in the document.
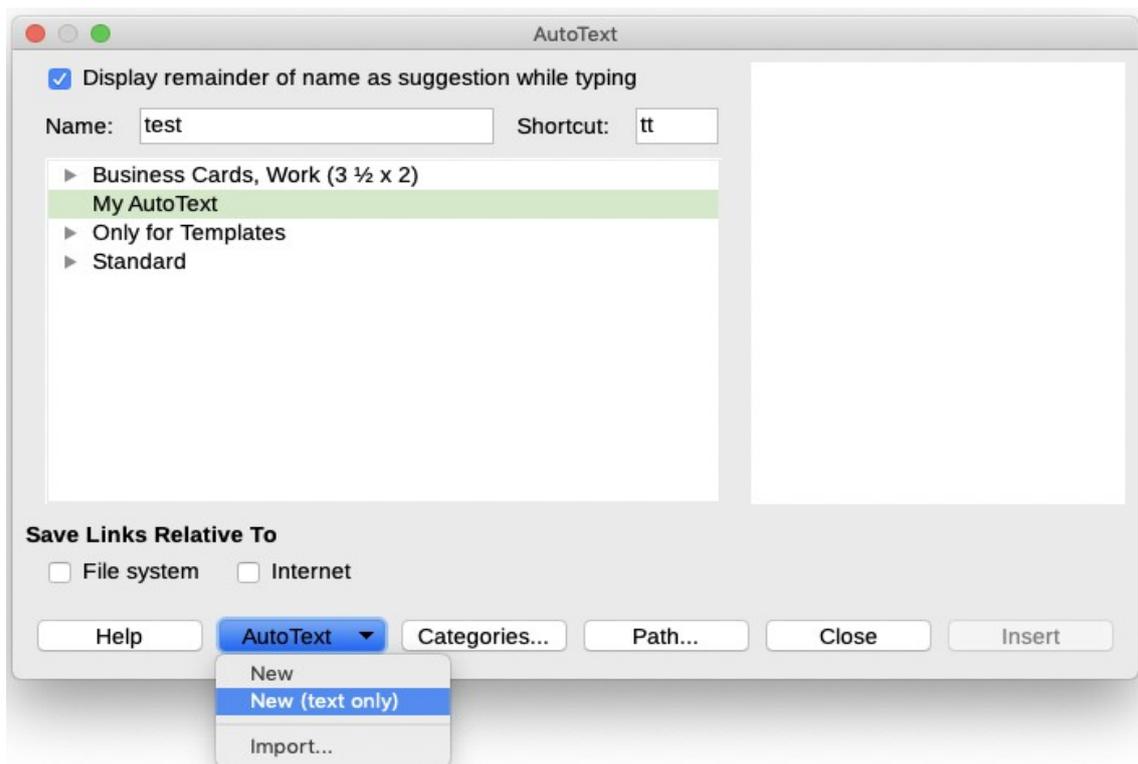
Figure 70: Creating an AutoText entry

AutoText is especially powerful when assigned to fields. See Chapter 17, Fields, in the *Writer Guide* for more information.

Formatting text

There are two basic ways to format text. Understanding these two alternatives is essential for unlocking the power of LibreOffice:

Direct (or Manual) formatting
Applies formatting directly to specific paragraphs, characters, pages, frames, lists, or tables. For example, you can select a word, then click on a button on the Formatting toolbar to format the text as bold or italics.

Styles
Bundles formatting options under one name. For example, a paragraph style defines numerous settings for options such as font type and size, whether paragraphs should be indented, the space between lines, how paragraphs should be aligned on the page, and many others.

Using styles is highly recommended

Writer is designed to be a style-based program. Because styles apply whole groups of formats at the same time, they enable you to easily format a document consistently and to change the formatting of an entire document with minimal effort. In addition, styles are used by LibreOffice for many processes, even if you are not aware of them. For example, Writer relies on heading styles (or other styles you specify) when it compiles a table of contents.

Writer defines six types of styles: paragraph, character, frame, page, list, and table. See Chapter 3, Using Styles and Templates, in this book and also refer to the *Writer Guide*.

Formatting paragraphs using styles

Styles can be applied to paragraphs using the Styles drop-down selection list at the left end of the Formatting toolbar, by using the Styles deck of the Sidebar, and by using the **Styles** menu on the Menu Bar (limited to common styles). You can also use keyboard shortcuts *Ctrl+1* to *Ctrl+5* to apply paragraph styles Heading 1 to Heading 5.

You can open a Formatting (Styles) toolbar using **View > Toolbars > Formatting (Styles)**; see Figure 71.

Figure 71: Formatting (Styles) toolbar

> ### 💡 Tip
>
> For important information about using paragraph styles to format documents, see Chapter 3 of this book and Chapters 8 and 9 in the *Writer Guide*.

Formatting paragraphs directly

You can manually apply many direct formats to paragraphs using the buttons on the Formatting toolbar and by using the Paragraph panel of the Sidebar's Properties deck. Not all buttons are visible in a standard installation, but you can customize the toolbar to include those you use regularly. These buttons and formats include:

- Set Paragraph Style
- Bullets On/Off (with a palette of bullet styles)
- Numbering On/Off (with a palette of numbering styles)
- Align Left, Center Horizontally, Align Right, Justified
- Align Top, Center Vertically, Align Bottom
- Line Spacing (choose from 1, 1.15, 1.5, 2, or custom spacing)
- Increase Paragraph Spacing, Decrease Paragraph Spacing
- Increase Indent, Decrease Indent
- Paragraph (to open the Paragraph dialog)

> ### 📝 Note
>
> Direct formatting (also called manual formatting) overrides styles. This means that when a new style is applied, direct formatting is not removed and still determines the displayed format.

Removing direct formatting

To remove direct formatting, select the text and choose **Format > Clear Direct Formatting** from the Menu bar, or right-click and choose **Clear Direct Formatting** from the context menu, or press *Ctrl+M* on the keyboard, or select the **Clear Direct Formatting** icon in the Formatting toolbar.

> ### 📝 Note
>
> When clearing direct formatting, the text formatting will return to the applied paragraph and character style and not the default paragraph style or default character style (unless these styles are actually applied to the text).

Formatting characters using styles

To apply a character style, highlight the characters or words and apply the selected character style from the Styles menu on the Menu bar, from the Character Styles tab of the Sidebar's Styles deck, or from the right-click context menu.

Formatting characters directly

It is recommended that you use styles to format characters as much as possible rather than formatting characters directly, as described in this section.

You can directly apply many formats to characters using the buttons on the Formatting toolbar and by using the Character panel of the Sidebar's Properties deck. Not all buttons are visible in a standard installation, but you can customize the toolbar to include those you use regularly. These buttons and formats include:

- Font Name, Font Size
- Bold, Italic, Underline, Overline, Double Underline, Strikethrough, Outline
- Superscript, Subscript
- Uppercase, Lowercase
- Increase Font Size, Decrease Font Size
- Font Color (with a palette of colors)
- Background Color (with a palette of colors)
- Highlighting (with a palette of colors)

Note

Just as direct paragraph formatting overrides the current paragraph style, applying direct character formatting to characters overrides the current character style formatting.

Formatting tables

Tables in a Writer document share the same sets of formatting elements as the spreadsheets in LibreOffice Calc.

To apply table styles, click in the table to be formatted and double-click on a style listed in the Table Styles tab of the Sidebar's Styles deck. Alternatively, click in the table to be formatted, choose **Table > AutoFormat Styles** on the Menu bar and select a style from the dialog that opens. For more information, refer to Chapter 13, Tables of Data, in the *Writer Guide*.

AutoCorrection

You can set Writer to format or correct parts of a document automatically as you type, according to the choices made on the *Options* tab of the AutoCorrect dialog (**Tools > AutoCorrect > AutoCorrect Options**).

Some common unwanted or unexpected formatting changes include:

- Horizontal lines. If you type three or more hyphens (---), underscores (___) or equal signs (===) on a line and then press Enter, the paragraph is replaced by a horizontal line as wide as the column in the page. Note that the line is actually the lower border of the preceding paragraph.
- Bulleted and numbered lists. A bulleted list is created when you type a hyphen (-), star (*), or plus sign (+), followed by a space or tab at the beginning of a paragraph. A numbered list is created when you type a number followed by a period (.), followed by a space or tab at

the beginning of a paragraph. Automatic numbering is only applied to paragraphs formatted with the Default Style, Text Body, or Text Body Indent paragraph styles.

To turn AutoCorrect on or off, choose **Tools > AutoCorrect** and select or deselect the items on the list. The Help describes each of these choices.

Creating lists with styles

For more about creating lists using styles, see Chapter 12, Lists: Tips and Tricks, in the *Writer Guide*.

Creating bulleted and numbered lists

Whenever possible, use paragraph styles for creating bulleted and numbered lists. Writer comes with two sets of paragraph styles for this purpose. However, these styles do not include options for settings such as the type of bullet or position of numbers. Those settings come from list styles, which are a different type of style than paragraph styles. It is recommended to use them together in these ways:

- Use paragraph styles List 1, List 2, List 3, and so on for creating bulleted lists. These styles use Bullet list styles.
- Use paragraph styles Numbering 1, Numbering 2, Numbering 3, etc, for creating numbered lists. These styles use the list styles called Numbering 1, Numbering 2, etc.

To assign a list style to one of these paragraph styles, go to the Styles deck in the Sidebar, right-click on the paragraph style you want to use, then choose **Modify**. On the *Outline & Numbering* tab on the Paragraph Style dialog, in the *Numbering style* drop-down list, choose the appropriate list style.
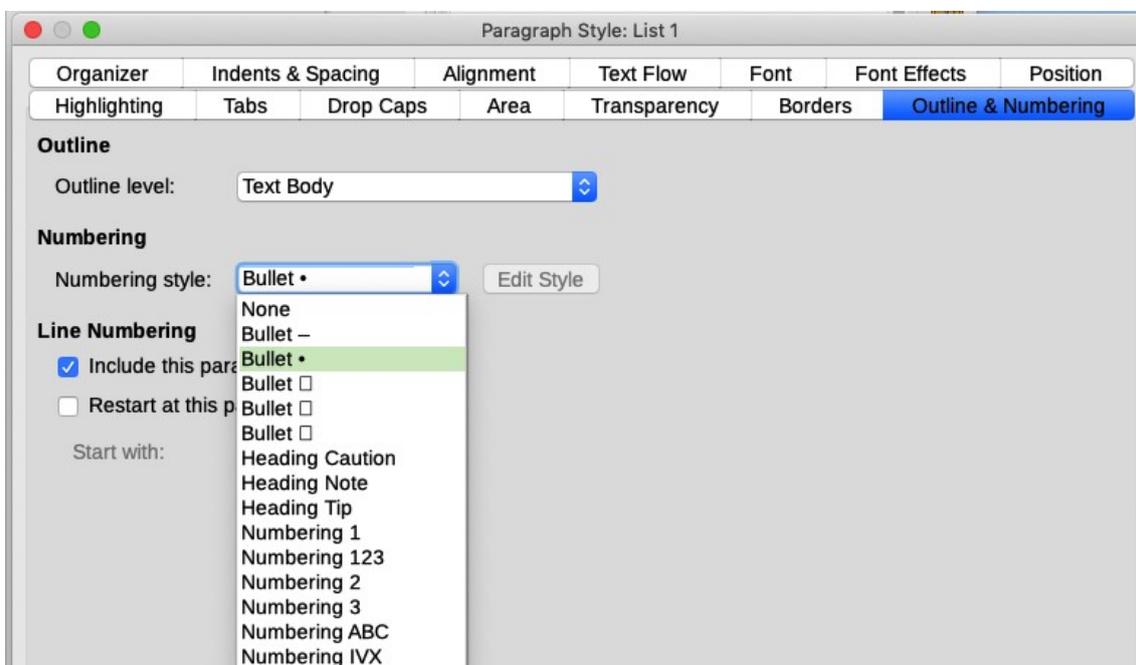
Figure 72: Assigning a list style to a paragraph style

Paragraph styles such as List 1 Start and List 1 End enable you to adjust specific properties (such as the space between paragraphs) for items at the beginning or end of the list.

> **Note**
>
> List styles are not meant to be used on their own. Rather, they are designed to be attached to paragraph styles.

Creating nested lists

With paragraph styles, you can easily create nested lists, in which list items have subpoints under them, as in an outline. This requires specifying the settings for the additional levels. To do this, right click on the list style (not the paragraph style), select **Modify**, and specify how each layer will be labeled, using the *Numbering Style* tab. Also specify the position and spacing for each level on the *Position* tab. Refer to the *Writer Guide* for details.

Once you have set up nested lists, you can readily change the hierarchy of an item. To demote an item one level, position the cursor at the beginning of the line (after the bullet or number) and press the *Tab* key. To promote an item one level, press *Shift+Tab*.

Creating lists with direct formatting

Creating bulleted and numbered lists

Bullets and numbers can be manually applied in three basic ways:

- Use AutoCorrect to autoformat text, as described above
- Use the **Toggle Bulleted List** and **Toggle Numbered List** buttons on the Formatting toolbar
- Use the Paragraph panel of the Sidebar's Properties deck

Bullets and numbering can be applied to already selected text or they can be applied as you type.

> **Tip**
>
> Bullets and numbering applied in these ways cannot be removed with **Format > Clear Direct Formatting** in the Menu bar, or with the **Clear Direct Formatting** icon on the Formatting toolbar, or by using *Ctrl+M*. Rather, they are turned off or removed from selected text by toggling the relevant buttons on the **Formatting** toolbar, or on the Sidebar's Properties deck.

Creating nested lists

Use the buttons on the Bullets and Numbering toolbar to move items up or down the list, create sub-points, change the style of bullets, and access the Bullets and Numbering dialog, which contains more detailed controls. Use **View > Toolbars > Bullets and Numbering** to see the toolbar.

> **Note**
>
> If numbering or bullets are being applied automatically in a way that you find inappropriate, you can switch them off temporarily by unchecking **Tools > AutoCorrect > While Typing**.

The **Toggle Bulleted List** and **Toggle Numbered List** buttons on the Sidebar's Properties deck can also be used to create nested lists. Click the down arrow next to the relevant button, then **More Bullets/Numbering** to access the Bullets and Numbering dialog. However, the Sidebar does not include tools for promoting and demoting items in the list, as found on the Bullets and Numbering toolbar.

Setting tab stops and indents

The horizontal ruler shows the tab stops. Any tab stops that you have defined will overwrite the default tab stops. Tab settings affect indentation of full paragraphs (using the **Increase Indent** and **Decrease Indent** buttons on the Formatting toolbar) as well as indentation of parts of a paragraph (by pressing the *Tab* key on the keyboard).

Using the default tab spacing can cause formatting problems if you share documents with other people. If you use the default tab spacing and then send the document to someone else who has chosen a different default tab spacing, tabbed material will change to use the other person's settings. Instead of using the defaults, define your own tab settings, as described in this section.

To define indents and tab settings for one or more selected paragraphs, right-click and choose **Paragraph > Paragraph**. On the Paragraph dialog go to the *Tabs* tab.

A better strategy is to define tabs for the paragraph style. This is done on the *Tab* tab of the Paragraph Style dialog.

> **Tip**
>
> Using tabs to space out material on a page is not recommended. Depending on what you are trying to accomplish, a table or frame might be a better choice.

Changing the default tab stop interval

> **Caution**
>
> Any changes to the default tab setting will affect the existing default tab stops in any document you open afterward, as well as tab stops you insert after making the change.

To set the spacing of default tab stop intervals, go to **Tools > Options > LibreOffice Writer > General**.

Figure 73: Selecting a default tab stop interval

Changing measurement units for tab stops and rulers

Change the measurement unit for rulers in the current document by right-clicking on the ruler to open a list of units. Click on one of them to change the ruler to that unit. The selected setting applies only to that ruler.
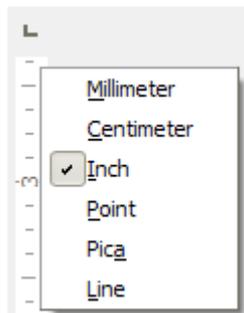
Figure 74: Changing the measurement unit for a ruler

Hyphenating words

Hyphenate words at the end of a line in two ways: let Writer do it automatically (using its hyphenation dictionaries), or insert conditional hyphens manually for specific words.

Automatic hyphenation using styles

To turn automatic hyphenation of words on or off:

1) On the Styles deck in the Sidebar, go to Paragraph Styles, right-click on Default Style (or another style you want to use) and select **Modify**.

2) On the Paragraph Style dialog (Figure 75), go to the *Text Flow* tab.

3) Under *Hyphenation*, select or deselect the **Automatically** option. When automatic hyphenation is on, you can also set the criteria for when it should occur. Click **OK** to save.

> **Note**
>
> Turning on hyphenation for the Default Style paragraph style affects all other paragraph styles that are based on Default Style. You can individually change other styles so that hyphenation is not active; for example, you might not want headings to be hyphenated.
>
> Any styles not based on Default Style are not affected. See Chapter 3, Using Styles and Templates, for more about styles based on styles other than Default Style.
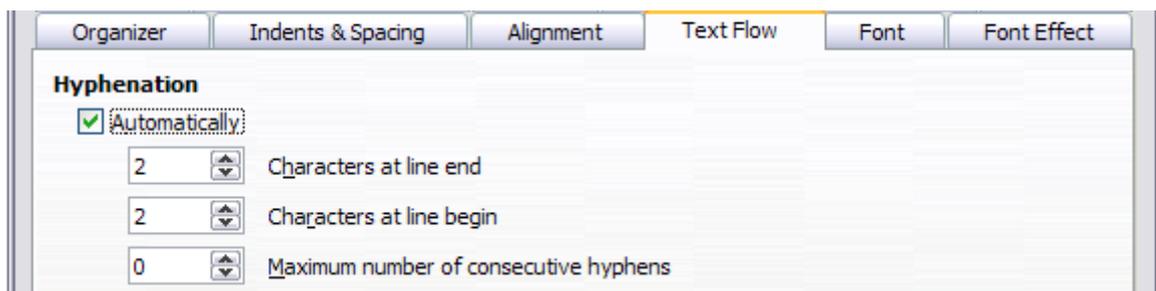
Figure 75: Turning on automatic hyphenation in a paragraph style

Setting hyphenation with Writing Aids

You can also set hyphenation choices through **Tools > Options > Language Settings > Writing Aids**. In *Options*, near the bottom of the dialog, scroll down to find the hyphenation settings.
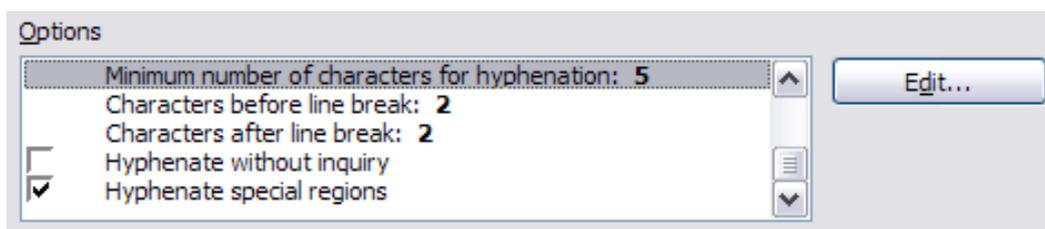
Figure 76: Setting hyphenation options

To change the minimum number of characters for hyphenation, or the minimum number of characters before or after a line break, select the item, and then click the **Edit** button in the *Options* section.

> **Note**
>
> Hyphenation options set on the Writing Aids dialog are effective only if hyphenation is turned on through paragraph styles.

Manual hyphenation

Manually hyphenate words when you want only a specific word hyphenated at the end of a line. Do not use a normal hyphen, which will remain visible even if the word is no longer at the end of a line (when you add or delete text, or change margins or font size). Instead, use a conditional hyphen, which is visible only when required.

To insert a conditional hyphen inside a word, click where you want the hyphen to appear (when needed) and press *Ctrl+hyphen* or use **Insert > Formatting Mark > Insert soft Hyphen**. When the word is at the end of the line it will be hyphenated at this position, even if automatic hyphenation for this paragraph is switched off.

Formatting pages

Every page in Writer is based on a page style. Page styles define basic layout, including page size, margins, headers and footers, borders, backgrounds, and so on. Changes to these settings automatically change the page style. This means that, in contrast to paragraph styles, these settings cannot be used to directly format individual pages.

As with other styles, Writer comes with a number of page styles. You can modify these styles or create new ones. The Default Style page style is used when no other page style has been specified.

In addition to page styles, several features enable you to further control page layouts, including columns, frames, tables, and sections. For more information, see Chapters 5 (Formatting Pages: Basics) and 6 (Formatting Pages: Advanced) in the *Writer Guide*.

> **Tip**
>
> Page layout is usually easier if you show text, object, table, and section boundaries in **Tools > Options > LibreOffice > Application Colors**, and paragraph ends, tabs, breaks, and other items in **Tools > Options > LibreOffice Writer > Formatting Aids**.

Creating headers and footers

A header is an area that appears at the top of a page above the margin. A footer appears at the bottom of the page below the margin. Information such as a page number is placed in the header or footer of a page style. That information is then displayed on every page with the same page style (unless the page style specifies separate settings for the first page or for left and right pages).

Inserting a header or footer

You can insert a header in several ways. Here is the easiest:

- Click above the top margin (or below the bottom margin) to make the Header or Footer marker appear (Figure 77), and then click on the +.
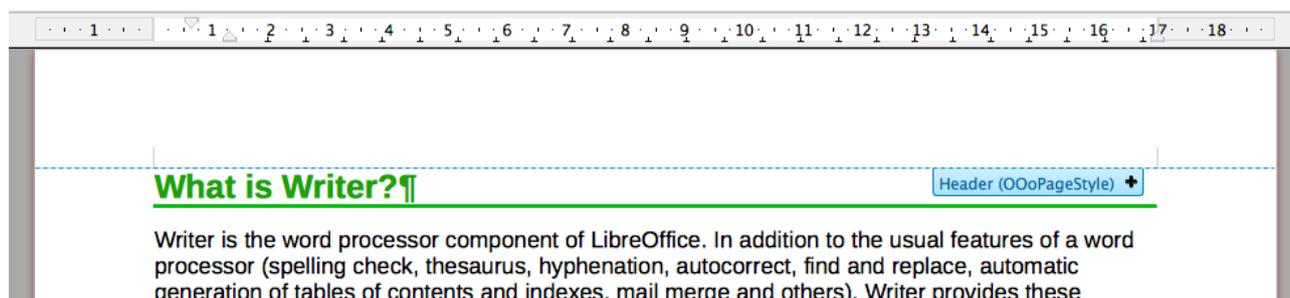
Figure 77: Header marker at top of text area

After a header/footer has been created, a down-arrow appears on the marker. Click on this arrow to drop down a menu of choices for working with the header (Figure 78).
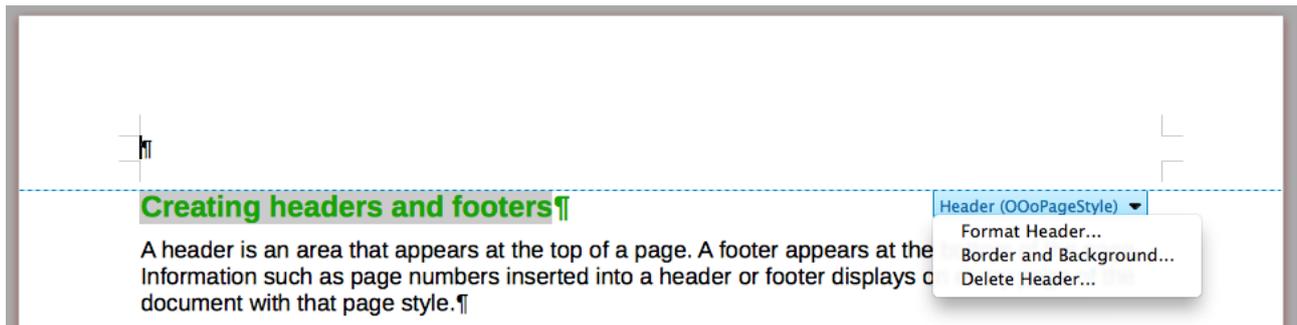
Figure 78: Header menu

Alternatively, you can choose **Insert > Header and Footer > Header > Default Style** (or some other page style, if not Default Style).

Displaying different headers on right and left pages

Page styles can be set up to have the facing left and right pages mirrored or only right (first pages of chapters are often defined to be right-page only) or only left. When you insert a header on a page style set up for mirrored pages or right-and-left pages, you can have the contents of the header be the same on all pages or be different on the right and left pages. For example, you can put the page number on the left-hand edge of the left pages and on the right-hand edge of the right pages, put the document title on the right-hand page only, or make other changes.

Determining header and footer appearance

To format a header (use similar settings for a footer), you can either click on **Format Header** in the menu shown in Figure 78 or go to **Format > Page Style > Header**. Both methods take you to the same tab on the Page Style dialog.

Here you can specify if headings on the left and right pages should be the same or different. You can also specify whether the first page will have no header or a different header than other pages.

In this dialog, you can also turn the header on or off, set the margins, and set the spacing between the header and document text.
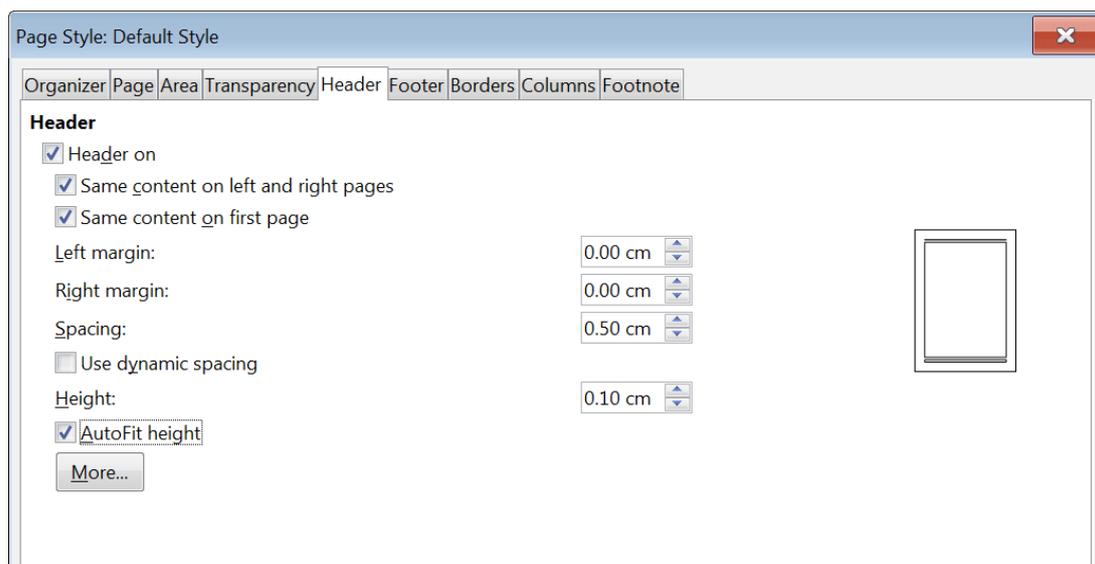
Figure 79: Page Style dialog, Header tab

Inserting document title in headers and footers

Information such as a document title is often put into the header or footer. These items are best added as fields. That way, if something (such as the name) changes, the headers and footers are updated automatically. Here is one common way to use fields to insert the document title into the header:

1) Choose **File > Properties > Description**, type a title for your document, and click the **OK** button.

2) Place the cursor in the header area at the top of the page.

3) Choose **Insert > Field > Title**. The title may appear on a gray background. The background does not show when printed and can be turned off in **Tools > Options > LibreOffice > Application Colors**.

For more about headers, footers, and fields, see the *Writer Guide*.

Numbering pages

Displaying the page number

To display page numbers automatically:

1) Insert a header or footer, as described in "Creating headers and footers" above.

2) Place the cursor in the header or footer where you want the page number to appear and choose **Insert > Page Number**.

3) Change the alignment of the number if you wish (left, right, or center).

Including the total number of pages

To include the total number of pages (as in "page 1 of 12"):

1) Type the word "page" and a space, then insert the page number as above.

2) Press the space bar once, type the word "of" and a space, then choose **Insert > Field > Page Count**.

> **Note**
>
> The Page Count field inserts the total number of pages in the document, as shown on the *Statistics* tab of the document's Properties dialog (**File > Properties**). If you restart page numbering anywhere in the document, then the total page count may not be what you want. See the *Writer Guide* for more information.

Restarting page numbering

Often you will want to restart the page numbering at 1, for example on the page following a title page or a table of contents. In addition, many documents have the "front matter" (such as the table of contents) numbered with Roman numerals and the main body of the document numbered in Arabic numerals, starting with 1. To restart page numbering:

Place the cursor in the first paragraph of the new page.

1) Choose **Format > Paragraph**.

2) On the *Text Flow* tab of the Paragraph dialog (Figure 75 on page 104), select **Insert** in the *Breaks* area, and then select **With page style** and specify the page style to use.

3) Specify the page number to start from, and then click **OK**.

Changing page margins

You can change page margins in three ways:

• Using the page rulers—quick and easy, but does not allow fine control
• Using the Page Style dialog—can specify margins to two decimal places
• Using the Page deck of the Sidebar

To change margins using the rulers:

1) The gray sections of the rulers are the margins. Put the mouse cursor over the line between the gray and white sections. The pointer turns into a double-headed arrow and displays the current setting in a tool-tip.
2) Hold down the left mouse button and drag the mouse to move the margin.

Figure 80: Moving the margins

To change margins using the Page Style dialog:

1) Right-click anywhere in the text area on the page and select **Page Style** from the context menu.
2) On the *Page* tab of the dialog, type the required distances in the four boxes in the *Margins* area.

To change margins using the Page deck of the Sidebar:

1) On the Sidebar, open the Page deck.

2) In the *Format* panel, use the *Margins* drop-down list to select the desired margins. Click the **More Options** button to open the Page Style dialog where you can enter exact margin distances.

Adding a custom watermark to the page background

To add a watermark to a page background:

1) Choose **Format > Watermark**.

2) In the Watermark dialog, type the text and select the font, angle, transparency and color of the watermark. Then click the **OK** button.

Figure 81: The Watermark dialog

> **Note**
>
> The watermark will automatically become part of the page style where it is inserted and all other pages of the same style will have the watermark. Pages with different or no watermarks need different Page Styles for those pages.

Adding comments to a document

Authors and reviewers often use comments to exchange ideas, ask for suggestions, or mark items needing attention.

You can connect a comment to multiple paragraphs or a single point. To insert a comment, select the text, or place the cursor in the place the comment refers to, and choose **Insert > Comment** from the menu bar, click the **Insert Comment** icon in the Standard toolbar, or press *Ctrl+Alt+C*. The anchor point of the comment is connected by a dotted line to a box on the right-hand side of the page where you can type the text of the comment. A **Comments** button is also added to the right of the horizontal ruler at the top of the page; you can click this button to toggle the display of the comments.

Formatting comments

At the bottom of the comment, Writer automatically adds the author's name and a time stamp indicating when the comment was created. If more than one person edits the document, each author is automatically allocated a different background color. Figure 82 shows an example of text with comments from two different authors.

Figure 82: Example of comments

Choose **Tools > Options > LibreOffice > User Data** to provide the name you want to appear in the Author field of comments.

Right-click on a comment to open a context menu where you can delete the current comment, all the comments from the same author, or all the comments in the document. From this menu, you can also reply to a comment, open a dialog to apply some basic formatting to the text, and mark comments as Resolved. These options are also available on a drop-down menu accessed by clicking the down arrow icon at the bottom right of the comment.

Navigating through comments

To navigate from one comment to another, open the sidebar Navigator, expand the Comments section, and click on the comment text to move the cursor to the anchor point of the comment in the document. Click the comment directly to edit it and right-click on the comment to delete it.

You can also navigate through the comments using the keyboard. Use *Ctrl+Alt+Page Down* to move to the next comment and *Ctrl+Alt+Page Up* to move to the previous comment.

Printing comments

When a document contains comments, the print dialog has an option for comments to be printed next to the text in the right margin, as they appear on the screen. In that case, the text on each page is scaled down to make space for the comments. The Print dialog also has options for placing comments at the end of the page or at the end of the document, or for printing only the comments.

Using built-in language tools

Writer provides some tools that make work easier if you use more than one language in the same document or if you write documents in various languages. Changing the language for specific text enables you to use the correct dictionaries and rules to check spelling, grammar, and hyphenation. It also applies the localized versions of AutoCorrect replacement options and uses the appropriate thesaurus.

Options for applying languages

Tip

The language used at the location of the cursor is shown in the Status Bar, next to the page style in use.

Using styles

Languages can be set on the *Font* tab of the Paragraph Style dialog or the Character Style dialog. See the *Writer Guide* for information on how to manage the language settings of a style.

> ⚠️ **Caution**
>
> Be careful when changing a language in character or paragraph styles, as this will change the language for all characters or paragraphs using that style. It may be useful to include the language in the name of the style.
>
> Also, note that languages set with direct formatting will override languages set using styles.

Using direct formatting

The language of a whole document can be set by using **Tools > Options > Language Settings > Languages**. In the *Default Languages for Documents* section, you can choose the language for all the text that is not explicitly marked as a different language.

Set the language for the whole document, for individual paragraphs, or even for individual words and characters, from **Tools > Language** on the Menu bar.

Alternatively, you can set the language for individual paragraphs and characters by selecting text or putting the cursor in a paragraph and changing the language on the Status Bar.

> 📝 **Note**
>
> Although these methods are a type of direct formatting, they cannot be cleared by using **Format > Clear Direct Formatting** on the Menu bar, clicking the **Clear Direct Formatting** icon on the Formatting toolbar, selecting **Clear Direct Formatting** from the context menu, or using *Ctrl+M*.

Preventing text from being checked for spelling

You can set the language for a paragraph or a group of characters as **None (Do not check spelling)** using any of the methods described above. This option is especially useful for text such as web addresses or programming language snippets that you do not want to check for spelling.

Obtaining resources for additional languages

The spelling checker works only for those languages in the Spelling dialog list that have a dictionary installed. You can install additional dictionaries using **Tools > Language > Writing Aids > More Dictionaries Online**.

Creating a table of contents

Writer can generate a table of contents from the headings in your document. Before you start, make sure that the headings are styled consistently. For example, you can use the Heading 1 style for chapter titles and the Heading 2 and Heading 3 styles for chapter subheadings. You can also define your own heading styles and set them up in **Tools > Chapter Numbering**.

Although tables of contents can be customized extensively in Writer, often the default settings are all you need. Creating a quick table of contents is simple:

1) When you create your document, use the following paragraph styles for hierarchical heading levels (such as chapter and section headings): Heading 1, Heading 2, Heading 3, and so on. These headings are what will appear in your table of contents.

2) Place the cursor where you want the table of contents to appear.

3) Choose **Insert > Table of Contents and Index > Table of Contents, Index or Bibliography**.

4) Change nothing in the Table of Contents, Index, or Bibliography dialog (unless you want to change the number of levels shown). Click **OK**.

If you add or delete text (so that headings move to different pages) or you add, delete, or change headings, you need to update the table of contents. To do this, right-click anywhere within the table of contents and choose **Update index** from the context menu.

You can customize an existing table of contents at any time. Right-click anywhere in it and choose **Edit Index** from the context menu. Chapter 15, Tables of Contents, Indexes, Bibliographies, in the *Writer Guide* describes in detail all the customizations you can choose.

Creating indexes and bibliographies

Indexes and bibliographies work in a similar way to tables of contents. In addition to alphabetical indexes, other types of indexes supplied with Writer include those for illustrations, tables, and objects, and you can even create a user-defined index.

For example, you might want an index containing only the scientific names of species mentioned in the text, and a separate index containing only the common names of species. Before creating some types of indexes, you first need to create index entries in your Writer document. Chapter 15, Tables of Contents, Indexes, Bibliographies, in the *Writer Guide* describes the process in detail.

Using footnotes and endnotes

Footnotes appear at the bottom of the page on which they are referenced. Endnotes are collected at the end of a document.

To work effectively with footnotes and endnotes, you need to:

- Insert footnotes and define their format.

  To insert a footnote or an endnote, put the cursor where you want the footnote or endnote marker to appear. Then select **Insert > Footnote and Endnote** from the Menu bar and choose **Footnote** or **Endnote**, or click the **Insert Footnote** or **Insert Endnote** button on the Standard toolbar.

  A footnote or endnote marker is inserted in the text and, depending on your choice, the cursor is relocated either to the footnote area at the bottom of the page or to the endnote area at the end of the document. Type the footnote or endnote content in this area.

  To format the footnotes themselves, click **Tools > Footnotes and Endnotes**. On the Footnotes/Endnotes Settings dialog, choose settings as required.

  See Chapter 3, Working with Text: Advanced, in the *Writer Guide* for more details.

- Define the location of footnotes on the page, and the color and line styles for separator lines, if the defaults do not meet your needs. These are found on the *Footnote* tab of the Page Style dialog; see Chapter 5, Formatting Pages: Basics, in the *Writer Guide*.

Working with images (graphics)

Images in Writer are of these basic types:

- Image files, including photos, drawings, and scanned images
- Diagrams created using LibreOffice's drawing tools
- Artwork created using clip art or Fontwork
- Charts created using LibreOffice's Chart facility

See Chapter 11, Graphics, Gallery, and Fontwork, in this book and Chapter 11, Images and Graphics, in the *Writer Guide*.

Working with tables of data

Tables are a useful way to organize and present large amounts of information. A well-designed table can often help readers understand better what you are saying. In addition to using tables for text or numbers, you could put other objects, such as pictures, in cells. Writer's tables can often be used as an alternative to spreadsheets, and they provide limited spreadsheet functions.

To directly insert a table with the default properties, click the **Insert Table** icon on the Standard toolbar. On the drop-down graphic, choose the size of the table.

To insert a new table using the Insert Table dialog, where you can specify the properties for the table, position the cursor where you want the table to appear, then use any of the following methods to open the dialog:

- Choose **Table > Insert Table** from the Menu bar.
- Press *Ctrl+F12*.
- On the Standard toolbar, click the **Insert Table** icon and select **More Options** at the bottom of the drop-down graphic.

Writer provides many methods to format tables and the contents of cells. Refer to Chapter 13, Tables of Data, in the *Writer Guide*.

Printing and exporting to PDF or EPUB

See Chapter 10, Printing, Exporting, E-mailing, and Signing Documents, in this book and Chapter 7 in the *Writer Guide* for details on previewing pages before printing, selecting print options, printing in black and white on a color printer, printing brochures, and other printing features.

Chapter 10 also covers exporting a Writer document to PDF (Portable Document Format) or EPUB (a popular e-book format).

Using mail merge

Writer provides very useful features to create and print:

- Multiple copies of a document to send to a list of different recipients (form letters)
- Mailing labels
- Envelopes

All these features use data from a Writer table or another registered data source (a spreadsheet or database containing name and address records or other information). Chapter 14 in the *Writer Guide* describes the merge processes.

Tracking changes to a document

You can use several methods to keep track of changes made to a document.

- Make your changes to a copy of the document (stored in a different folder, or under a different name, or both), then use Writer to combine the two files and show the differences. Choose **Edit > Track Changes > Compare Document**.
- Save versions that are stored as part of the original file. However, this method can cause problems with documents of non-trivial size or complexity, especially if you save a lot of versions. Avoid this method if you can.

- (Recommended) Use Writer's change marks (often called "redlines" or "revision marks") to show where you have added or deleted material, or changed formatting. Choose **Edit > Track Changes > Record** before starting to edit. Later, you or another person can review and accept or reject each change. Choose **Edit > Track Changes > Show**. Right-click on an individual change and choose **Accept Change** or **Reject Change** from the context menu, or choose **Edit > Track Changes > Manage** to view the list of changes and accept or reject them. Details are in Chapter 3, Working with Text: Advanced, in the *Writer Guide*.

> **Tip**
>
> Not all changes are recorded. For example, changing a tab stop from align left to align right, and changes in formulas (equations) or linked graphics are not recorded.

> **Caution**
>
> A document with track changes activated but with the changes not shown carries an invisible history of document editing that the current user may not be aware of. Contents deleted or modified can be recovered. While this is a feature, it is also a potential privacy risk.

Using fields

Fields are extremely useful features of Writer. You can use them for data that changes (such as the current date or the total number of pages) and for inserting document properties such as name, author, and date of last update. Fields are the basis of cross-referencing (see below); automatic numbering of figures, tables, headings, and other elements; and a wide range of other functions—too many to describe here. See Chapter 17, Fields, in the *Writer Guide* for details.

Linking and cross-referencing within a document

If you manually type in cross-references to other parts of a document, those references can easily get out of date if you reorganize the order of topics, add or remove material, or reword a heading. Writer provides two ways to ensure that your references are up to date: hyperlinks and cross-references.

Both methods insert links to other parts of the same document or to an external source, taking you directly to the cross-referenced item. However, they have major differences:

- The text in a hyperlink does not automatically update if you change the text of the linked item (although you can change it manually), but changed text does automatically update in a cross-reference.
- When using a hyperlink, you do not have a choice about the type of content linked to (such as text or page number), but when using a cross-reference, you have several choices, including bookmarks.
- To hyperlink to an object such as a graphic, and have the hyperlink show useful text such as *Figure 6*, you need to give such an object a useful name (instead of a default name like Graphics6), or use the Hyperlink dialog to modify the visible text. In contrast, cross-references to figures with captions can automatically show useful text, and you have a choice of several variations of the name.
- If you save a Writer document to HTML, hyperlinks remain active but cross-references do not. Both remain active when the document is exported to PDF.

Using hyperlinks

See Chapter 12, Creating HTML Files, for details on creating hyperlinks within a document and to other documents and websites.

Creating and using cross-references

The *Cross-references* tab of the Fields dialog lists some items, such as headings, bookmarks, figures, tables, or numbered items such as steps in a procedure. You can also create your own reference items; see "Setting References" in Chapter 17, Fields, in the *Writer Guide*.

To insert a cross-reference:

1) In the document, place the cursor where you want the cross-reference to appear.

2) If the Fields dialog is not open, click **Insert > Cross-reference**. On the *Cross-references* tab (Figure 83), in the *Type* list, select the type of item to be referenced (for example, *Headings* or *Figure*).

3) Click on the required item in the *Selection* list, which shows all the items of the selected type. You can type some characters in the top box under *Selection* to filter the list in the selection box.

4) In the *Insert reference to* list, select the option needed. The options determine the text inserted for the hyperlink and how it is formatted. The list varies according to the *Type* chosen. The most commonly used options are *Reference* (to insert the full text of a heading or caption), *Category and Number* (to insert a figure number preceded by the word Figure or Table, but without the caption text), *Numbering* (to insert only the figure or table number, without the word Figure or Table), or *Page* (to insert the number of the page the referenced text is on). Click **Insert**.

You can leave this dialog open while you insert many cross-references.
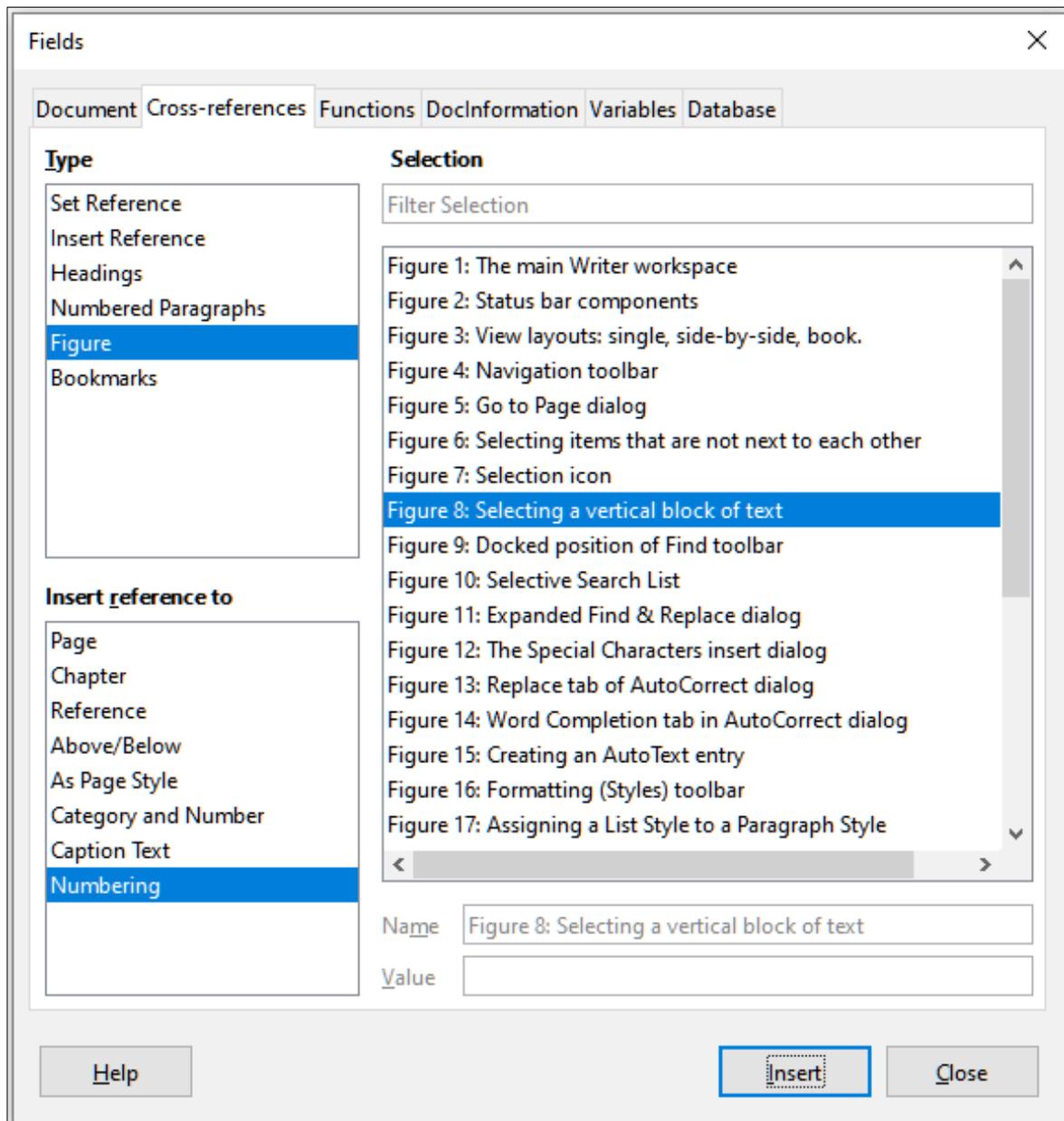
Figure 83: The Cross-references tab of the Fields dialog

Using bookmarks

Use bookmarks to rapidly navigate or link to specific locations in a document. They are listed in the Navigator and can be accessed directly from there with a single mouse click. You can cross-reference to bookmarks and create hyperlinks to bookmarks, as described above. To create a bookmark:

1) Select the text you want to bookmark. Click **Insert > Bookmark**.

2) On the Insert Bookmark dialog, the larger box lists any previously defined bookmarks. Type a name for this new bookmark in the top box, and then click **Insert**.

Using master documents

A master document joins separate text documents into one larger document, and unifies the formatting, table of contents, bibliography, index, and other tables or lists. Master documents are typically used for producing long documents such as a book, thesis, or long report. They are especially handy when different people are writing different sections of a document, eliminating the need to continually share the full document. For details on using master documents, see Chapter 16 in the *Writer Guide*.

You can add master document templates to LibreOffice in the same way as ordinary document templates. Creating a new document based on a master document template creates a master document with the same initial content as the template it is based upon. See Chapter 3, Styles and Templates, for more about creating and using templates.

Classifying document contents

Document classification and security are important for businesses and governments. Where sensitive information is exchanged between users and organizations, the parties agree how such information will be identified and handled. LibreOffice provides standardized means for sensitive information to be identified and protected, using a set of standard fields that can be used to hold sensitive information.

LibreOffice implemented the open standards produced by TSCP (Transglobal Secure Collaboration Participation, Inc.). It contains three BAF (Business Authentication Framework) categories: Intellectual Property, National Security and Export Control. Each category has four BAILS (Business Authorization Identification and Labeling Scheme) levels: Non-Business, General Business, Confidential, and Internal Only.

To enable document classification, open the TSCP bar (**View > Toolbars > TSCP Classification**). This toolbar contains list boxes to help in selecting the security of the document. LibreOffice then adds custom fields in the document properties (**File > Properties,** *Custom Properties* tab) to store the classification policy as document metadata.

To prevent a breach in security policy, contents with a higher classification level cannot be pasted into documents with a lower classification level.

Creating fill-in forms

In a standard text document, such as a report, any text can be edited. By contrast, a form has sections that are not to be edited, and other sections that are designed for the reader to fill in information. For example, a questionnaire has an introduction and questions (which do not change) and spaces for the reader to enter answers.

Forms are used in three ways:

- To create a simple document for the recipient to complete, such as a questionnaire sent out to a group of people who fill it in and return it.
- To enter information directly into a database or data source. Someone taking orders might enter the information for each order into a database using a form.
- To view information held in a database or data source. A librarian might call up information about books.

Writer offers several ways to organize information fields in a form, including check boxes, option buttons, text boxes, pull-down lists, and spinners. Two toolbars control form creation: Form Controls and Form Design. See Chapter 18, Forms, in the *Writer Guide* for more information.

Getting Started Guide

Chapter 5
Getting Started with Calc

Using spreadsheets in LibreOffice

What is Calc?

Calc is the spreadsheet component of LibreOffice. You can enter data (usually numerical) in a spreadsheet and then manipulate this data to produce certain results.

Alternatively, you can enter data and then use Calc in a "What if..." manner by changing some of the data and observing the results without having to retype the entire spreadsheet or sheet.

Other features provided by Calc include:

- Functions, which can be used to create formulas to perform complex calculations on data.
- Database functions, to arrange, store, and filter data.
- Dynamic charts; a wide range of 2D and 3D charts.
- Macros, for recording and executing repetitive tasks; scripting languages supported include LibreOffice Basic, Python, BeanShell, and JavaScript.
- Ability to open, edit, and save Microsoft Excel spreadsheets.
- Import and export of spreadsheets in multiple formats, including HTML, CSV, PDF, and PostScript.

Compatibility with other spreadsheet applications

Wildcards

Simple wildcards such as the asterisk (*), question mark (?), and tilde (~) from other spreadsheet applications are recognized by LibreOffice in formula expressions.

Formula syntax

By default, LibreOffice Calc uses its own formula syntax, referred to as Calc A1, rather than the Excel A1 syntax that is used by Microsoft Excel. LibreOffice will translate seamlessly between the two. However, if you are familiar with Excel you may wish to change the default syntax in Calc by going to **Tools > Options > LibreOffice Calc > Formula** and choosing **Excel A1** or **Excel R1C1** from the *Formula syntax* drop-down menu.

For more information on formula syntax, see Chapter 7, Using Formulas and Functions, in the *Calc Guide*.

Macros

Microsoft Office uses Visual Basic for Applications (VBA) code, and LibreOffice uses Basic code based on the LibreOffice API. Although the programming languages are the same, the objects and methods are different and therefore not entirely compatible.

LibreOffice can run some Excel Visual Basic scripts if you enable this feature at **Tools > Options > Load/Save > VBA Properties**.

If you want to use macros written in Microsoft Excel using the VBA macro code in LibreOffice, you must first edit the code in the LibreOffice Basic IDE editor.

For more information, refer to Chapter 12, Calc Macros, in the *Calc Guide*.

Spreadsheets, sheets, and cells

Calc works with documents called spreadsheets. Spreadsheets consist of a number of individual sheets, each sheet containing cells arranged in rows and columns. A particular cell is identified by its row number and column letter.

Cells hold the individual elements – text, numbers, formulas, and so on – that make up the data to display and manipulate.

Each spreadsheet can have up to 10,000 sheets, and each sheet can have a maximum of 1,048,576 rows and a maximum of 1024 columns. The maximum number of characters in one cell is 32,767.

Calc main window

When Calc is started, the main window opens (Figure 84). The parts of this window are described below. You can show or hide many of the parts as desired, using the View menu on the Menu bar.
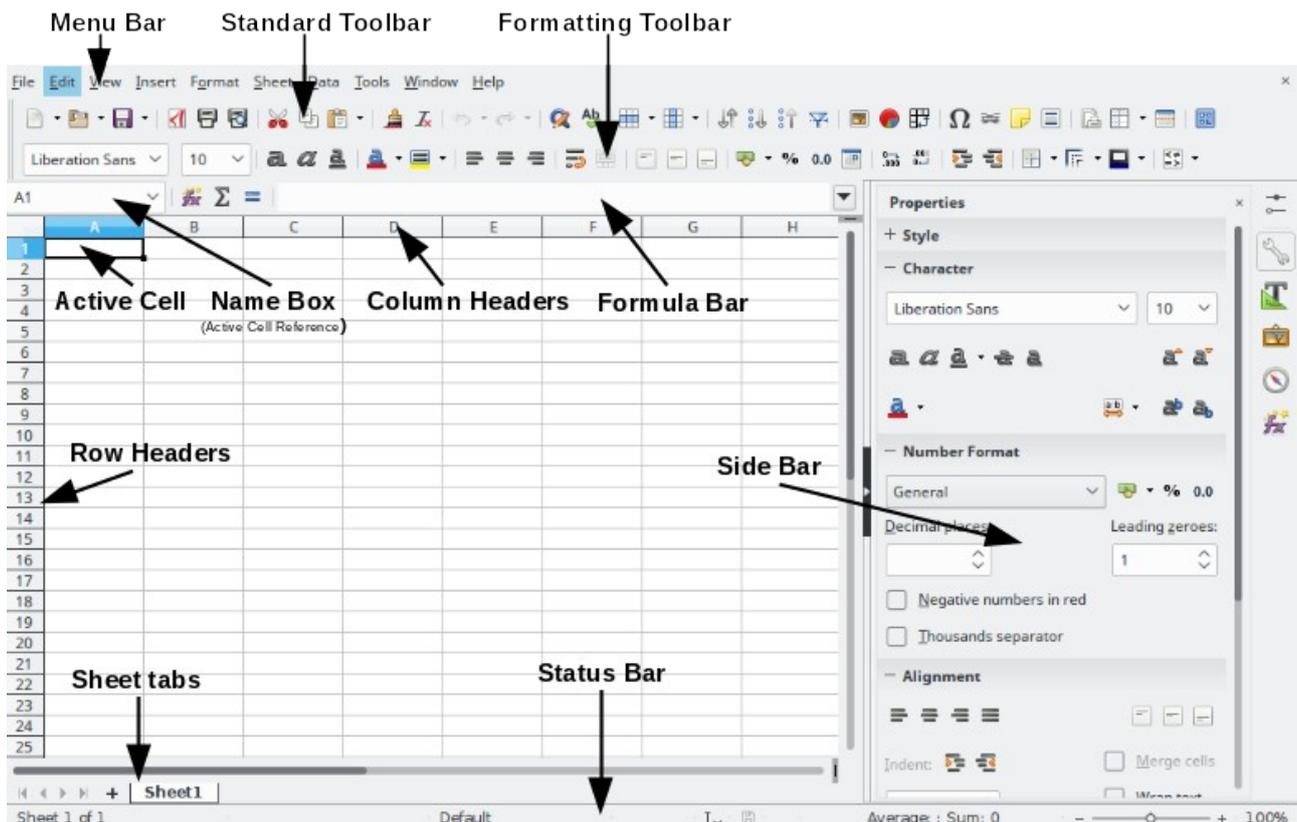
Figure 84: Calc main window

Title bar

The Title bar, located at the top, shows the name of the current spreadsheet. When a spreadsheet is newly created from a template or a blank document, its name is *Untitled X*, where X is a number. When you save a spreadsheet for the first time, you are prompted to enter a name of your choice.

Menu bar

Under the Title bar is the Menu bar. When you select one of the menu items, a sub-menu drops down to show commands. You can also customize the Menu bar; see Chapter 14, Customizing LibreOffice, for more information.

Most of the menus are similar to those in other components of LibreOffice, although the specific commands and tools may vary. The menus specific to Calc are Sheet and Data; in addition, several important data analysis tools are found in the Tools menu.

Sheet

The most often used commands for handling sheets, such as insert and delete cells, columns, rows and sheets; select cell reference type; and link to external data.

Data

> Commands for manipulating data in the spreadsheet; for example, define range, sort, filters, statistics, pivot tables, consolidate, forms, groups and outlines.

Tools

> Functions to help you check and customize the spreadsheet; for example, spelling, macros, goal seek, solver, scenarios, detective, protect sheet, XML filter settings, and extension manager.

Toolbars

In a default LibreOffice installation, the top docked toolbar, just under the Menu bar, is called the Standard toolbar. It is consistent across the LibreOffice applications. The position and use of it and other toolbars are described in Chapter 1, Introducing LibreOffice.

Formula bar

The Formula Bar (Figure 85) is located at the top of the sheet in the Calc workspace. It is permanently docked in this position and cannot be used as a floating toolbar. However, it can be hidden or made visible by going to **View > Formula Bar** on the Menu bar.

Figure 85: Formula Bar

From left to right, the Formula Bar includes the following:

> **Name Box** – gives the current active cell reference using a combination of a letter and number, for example A1. The letter indicates the column and the number indicates the row of the selected cell. If you have selected a range of cells that is also a named range, the name of the range is shown in this box. You can also type a cell reference in the *Name Box* to jump to the referenced cell. If you type the name of a named range and press the *Enter* key, the named range is selected and displayed.

> **Function Wizard** – opens a dialog from which you can search through lists of available functions and formulas. This can be very useful because it also shows how the functions are formatted.

> **Select Function** – this drop-down list provides five choices: **Sum**, **Average**, **Min**, **Max**, and **Count** (Figure 86).
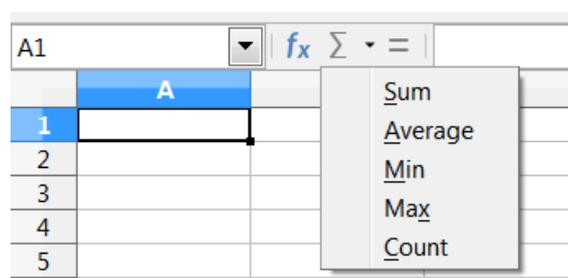
Figure 86: Select Function drop-down

> **Formula** – inserts an equals (=) sign into the selected cell and the *Input line*, allowing a formula to be entered. The *Name Box* now displays a drop-down list of the most frequently used functions, for a quick access to the function name and syntax.

> **Input line** – displays the contents of the selected cell (data, formula, or function) and allows you to edit the cell contents. To turn the *Input line* into a multi-line input area for very long formulas, click the down arrow on the far right-hand end of the Input line.

You can also directly edit the contents of a cell by double-clicking on the cell. When you enter new data into a cell, the **Select Function** and **Formula** icons change to **Cancel** and **Accept** icons.

> **Note**
>
> In a spreadsheet, the term "function" covers much more than just mathematical functions. See Chapter 7, Using Formulas and Functions, in the *Calc Guide* for more information.

Status Bar

The Calc Status Bar (Figure 87) provides information about the spreadsheet as well as quick and convenient ways to change some of its features. Most of the fields are similar to those in other components of LibreOffice; see Chapter 1, Introducing LibreOffice, for more information.
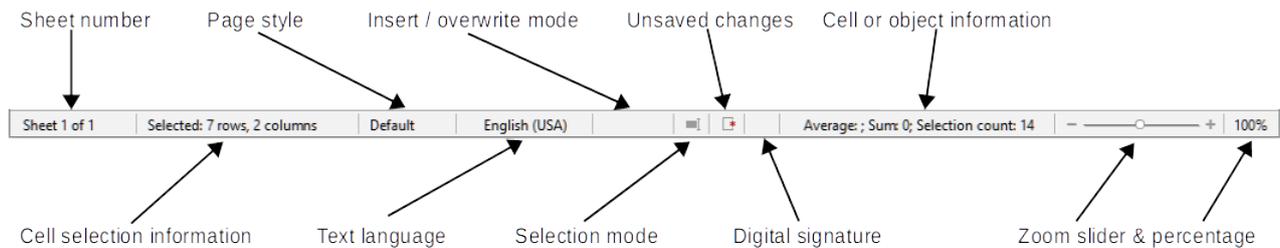
Figure 87: Calc Status Bar

The Status Bar has a quick way to do some math operations on selected cells in the spreadsheet. You can calculate average and sum, count elements, and more on the selection by right-clicking over the cell information area of the Status Bar and selecting the operations you want to display in the Status Bar.

Sidebar

The Calc Sidebar (**View > Sidebar** or *Ctrl+F5*) is located on the right side of the window. It is a mixture of toolbar and dialog. It is similar to the Sidebar in Writer (shown in Chapter 1 and Chapter 4 of this book) and consists of five decks: **Properties**, **Styles**, **Gallery**, **Navigator**, and **Functions**. Each deck has a corresponding icon on the Tab panel to the right of the sidebar, allowing you to switch between them. The decks are described below.

Properties
This deck includes five content panels. These panels, with the exception of the Style panel, have a **More Options** button that opens a dialog with additional options. These dialogs lock the document for editing until they are closed.

Style: Access to the available cell styles, update cell styles, and new cell styles.

Character: Controls for formatting the text, such as font family, size, and color. Some controls, such as superscript, become active only when the text cursor is active in the *Input line* of the Formula bar or the cell.

Number Format: Quickly change the format of numbers including decimals, currency, dates, percentage, or numeric text; and leading zeroes.

Alignment: Controls to align the text in various ways, including horizontal and vertical alignment, wrapping, indenting, merging, text orientation, and vertical stacking.

Cell Appearance: Controls to set the appearance of cells, including cell background color, cell border formats including line color and style, and grid lines.

Styles, Gallery, Navigator
These decks are similar to those in Writer. Their use is described in more detail in the *Calc Guide*.

Functions

This deck contains a list of functions organized by category. It is a simpler version of the Function Wizard, which is opened by selecting **Insert > Function** from the Menu bar, pressing the **Function Wizard** icon on the Formula Bar, or by pressing *Ctrl+F2*.

Spreadsheet layout

Individual cells

The main section of the workspace in Calc displays the cells in the form of a grid. Each cell is formed by the intersection of one column and one row in the spreadsheet.

At the top of the columns and the left of the rows are a series of header boxes containing letters and numbers. The column headers use an alpha character starting at A and go on to the right. The row headers use a numerical character starting at 1 and go down.

These column and row headers form the cell references that appear in the *Name Box* on the Formula Bar (Figure 85). If the headers are not visible on the spreadsheet, choose **View > Headers** on the Menu bar.

Sheet tabs

Each Calc spreadsheet can contain multiple sheets. At the bottom of the grid of cells are sheet tabs indicating how many sheets are in the spreadsheet. Click on a tab to display that sheet. An active sheet is indicated with a white tab (default Calc setup). You can also select multiple sheets by holding down the *Ctrl* key while clicking on the sheet tabs.

To change the default name for a sheet (Sheet1, Sheet2, and so on), right-click on a sheet tab and select **Rename Sheet** from the context menu, or double-click on the sheet tab, to open a dialog where you can type a new name for the sheet.

To change the color of a sheet tab, right-click on the tab and select **Tab Color** from the context menu to open the Tab Color dialog. Select a color and click **OK**. To add new colors to this color palette, see Chapter 14, Customizing LibreOffice.

Opening a CSV file

Comma-separated values (CSV) files are spreadsheet files in a text format where cell contents are separated by a character, for example a comma or semicolon. Each line in a CSV text file represents a row in a spreadsheet. Text is entered between quotation marks; numbers are entered without quotation marks.

> **Note**
>
> Most CSV files come from database tables, queries, or reports, where further calculations and charting are required. On Microsoft Windows, CSV files often have the XLS file name extension to look like an Excel file, but they are still CSV files internally.

To open a CSV file in Calc:

1) Choose **File > Open** on the Menu bar and locate the CSV file. Most CSV files have the extension .csv. However, some CSV files may have a .txt extension.

2) Select the file and click **Open**.

3) On the Text Import dialog (Figure 88), select the required options for importing the CSV file into the Calc spreadsheet. For details about these options, see Chapter 1, Introducing Calc, in the *Calc Guide*.

4) Click **OK** to import the file.
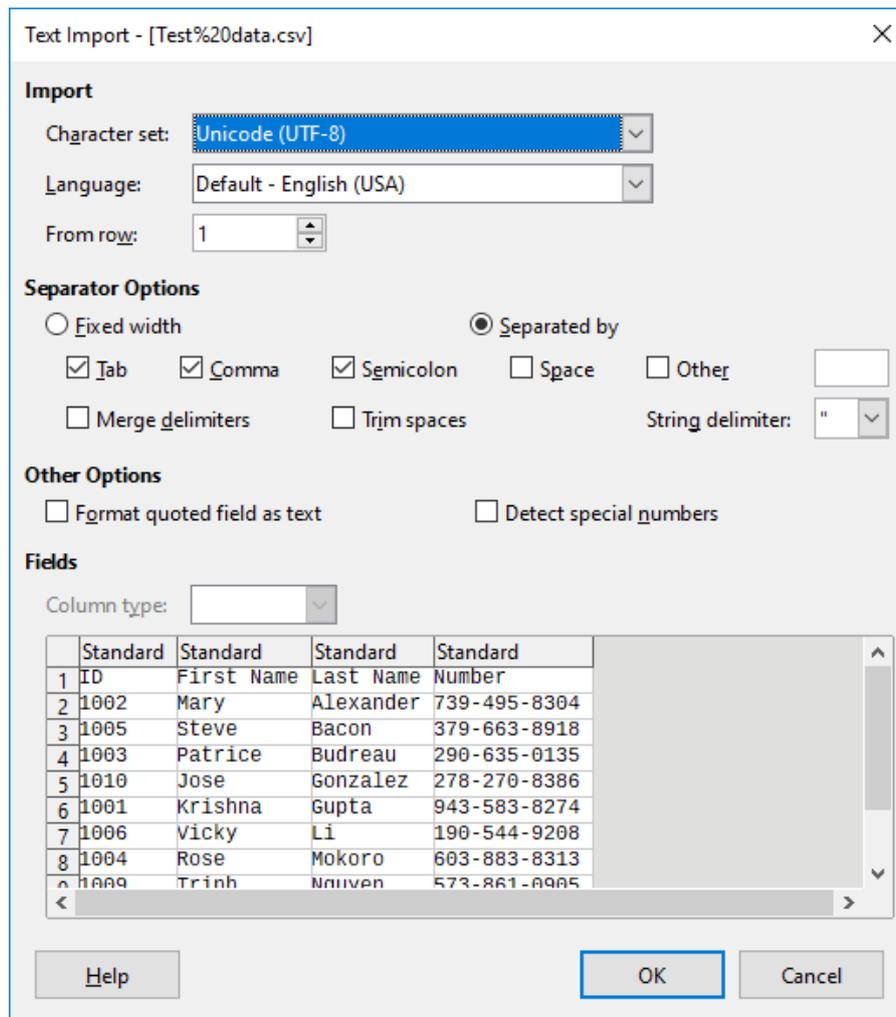
Figure 88: Text Import dialog

Saving spreadsheets

For information on how to save files manually or automatically, see Chapter 1, Introducing LibreOffice. Calc can save spreadsheets in a range of formats and also export spreadsheets to PDF, HTML, XHTML file formats and JPEG and PNG images formats; see Chapter 6, Printing, Exporting, E-mailing, and Signing, in the *Calc Guide* for more information.

Saving in other spreadsheet formats

You can save a spreadsheet in another format:

1) Save the spreadsheet in Calc spreadsheet file format (*.ods).

2) Select **File > Save As** on the Menu bar to open the Save As dialog.

3) In the File name field, you can enter a new file name for the spreadsheet.

4) In the File type drop-down list, select the type of spreadsheet format you want to use.

5) If **Automatic file name extension** is present and selected, the correct file extension for the spreadsheet format you have selected will be added to the file name.

6) Click **Save**.

When a spreadsheet file is saved in a format other than .ods, the Confirm File Format dialog opens (Figure 89). Click **Use [xxx] Format** to continue saving in your selected spreadsheet format or click **Use ODF Format** to save the spreadsheet in Calc ODS format.
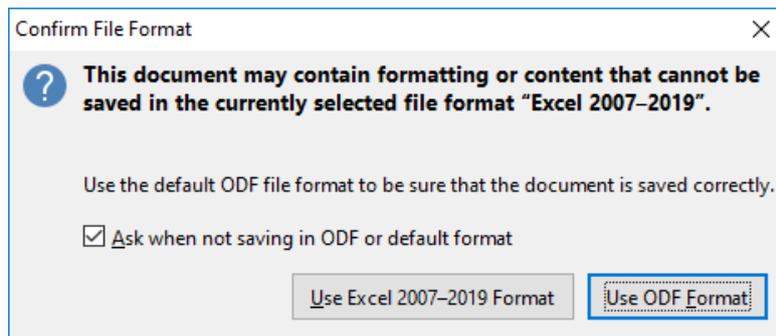
Figure 89: Confirm File Format dialog

If you select **Text CSV format (*.csv)** for your spreadsheet, the Export Text File dialog (Figure 90) may open. Here you can select the character set, field delimiter, text delimiter, and so on to be used for the CSV file.
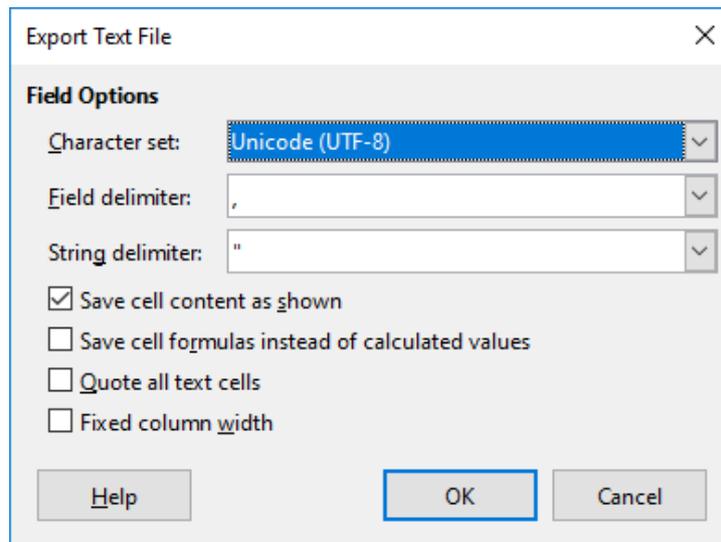
Figure 90: Export Text File dialog for CSV files

📝 **Note**

Once you have saved a spreadsheet in another format, all changes you make to the spreadsheet will now occur only in the format you are using. If you want to go back to working with a *.ods version, you must save the file as a *.ods file.

💡 **Tip**

To have Calc save spreadsheets by default in a file format other than the default ODS format, go to **Tools > Options > Load/Save > General**. In the *Default File Format and ODF Settings* area, select **Spreadsheet** in *Document type,* then in *Always save as*, select your preferred file format.

Exporting contents as an image

To send a fragment of a spreadsheet to someone or publish it on the Internet, you can export a range selection or a selected group of shapes (images) to a PNG or JPG graphics format:

1) Select the cell range or the group of shapes, then select **File > Export**.

2) In the Export dialog, type a name for the image, select the graphics file format, and mark the **Selection** checkbox.

3) Click **Export** or **Save**, as appropriate.

Calc may open a further dialog for you to configure the settings associated with the selected graphics format.

Navigating within spreadsheets

Calc provides many ways to navigate within a spreadsheet from cell to cell and sheet to sheet. You can generally use the method you prefer.

Cell navigation

When a cell is selected or in focus, the cell borders are emphasized. When a group of cells is selected, the cell area is colored. The color of the cell border emphasis and the color of a group of selected cells depends on the operating system being used and how you have set up LibreOffice.

- **Mouse:** place the mouse pointer over the cell and click the left mouse button.
- **Cell reference:** delete the existing cell reference in the *Name Box* on the Formula Bar (Figure 85 on page 121). Type the new cell reference and press *Enter*. Cell references are case-insensitive.
- **Navigator:** press *F5* to open the Navigator (Figure 91) or click the **Navigator** button in the Sidebar. Type the cell reference into the *Column* and *Row* fields and press *Enter*, or use the adjacent increment / decrement buttons.
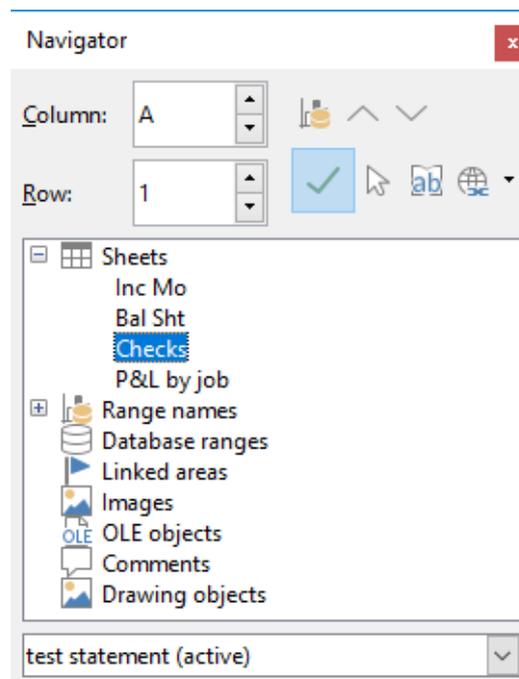
Figure 91: Navigator

- **Enter key:** moves the cell focus down in a column to the next row. *Shift+Enter* moves the focus up in a column to the previous row. You can change the action of the *Enter* key; see "Customizing the Enter key" on page 128.
- **Tab key:** moves the cell focus right in a row to the next column. *Shift+Tab* moves the focus to the left in a row to the previous column.
- **Arrow keys:** the arrow keys on the keyboard move the cell focus in the direction of the arrow pressed.
- **Home, End, Page Up, and Page Down keys**:
  - *Home* moves the cell focus to the start of a row.

– *End* moves the cell focus to the last cell on the right in the row in the right-most column that contains data.

– *Page Down* moves the cell focus down one complete screen display.

– *Page Up* moves the cell focus up one complete screen display.

Sheet navigation

Each sheet in a spreadsheet is independent of the other sheets, though references can be linked from one sheet to another. To navigate between sheets in a spreadsheet:

Navigator – double-click on any of the listed sheets to select the sheet.

Keyboard – *Ctrl+Page Down* moves one sheet to the right and *Ctrl+Page Up* moves one sheet to the left.

Mouse – click on a sheet tab at the bottom of the spreadsheet to select that sheet.

If your spreadsheet contains a lot of sheets, then some of the sheet tabs may be hidden. If this is the case:

• Using the four buttons to the left of the sheet tabs can move the tabs into view (Figure 92).

• Right-clicking on any of the arrows, or the +, opens a context menu where you can select a sheet (Figure 93).

> **Note**
>
> When you insert a new sheet into a spreadsheet, Calc automatically uses the next number in the numeric sequence as a name. Depending on which sheet is open when you insert a new sheet, the new sheet may not be in its correct numerical position. It is recommended to rename sheets in a spreadsheet to make them more recognizable.
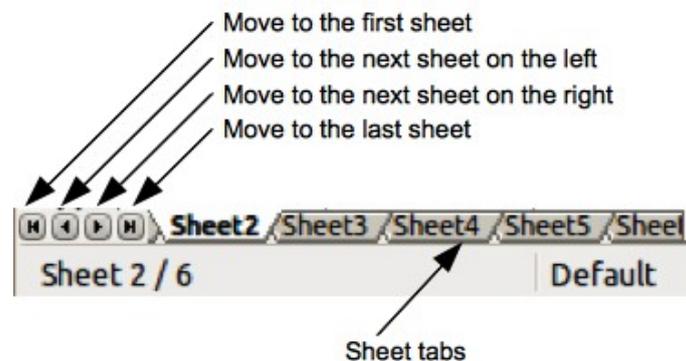
Figure 92: Navigating sheet tabs
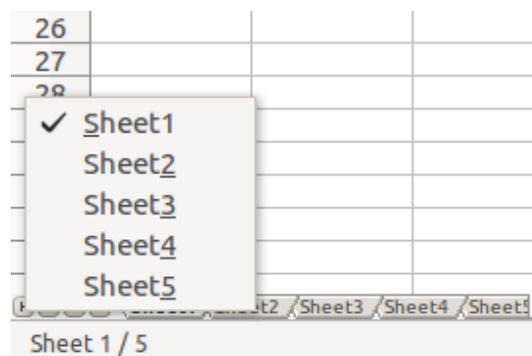
Figure 93: Right-click any arrow button

Keyboard navigation

You can navigate a spreadsheet using the keyboard, by pressing a key or a combination of keys. See Appendix A, Keyboard Shortcuts, in the *Calc Guide* for the keys and key combinations you can use for spreadsheet navigation in Calc.

Customizing the Enter key

You can choose the direction in which the *Enter* key moves the cell focus by going to **Tools > Options > LibreOffice Calc > General**. Use the first two options under *Input Settings* (Figure 94) to change the *Enter* key settings. Select the direction cell focus moves from the drop-down list. The *Enter* key can also be used to switch into and out of editing mode.
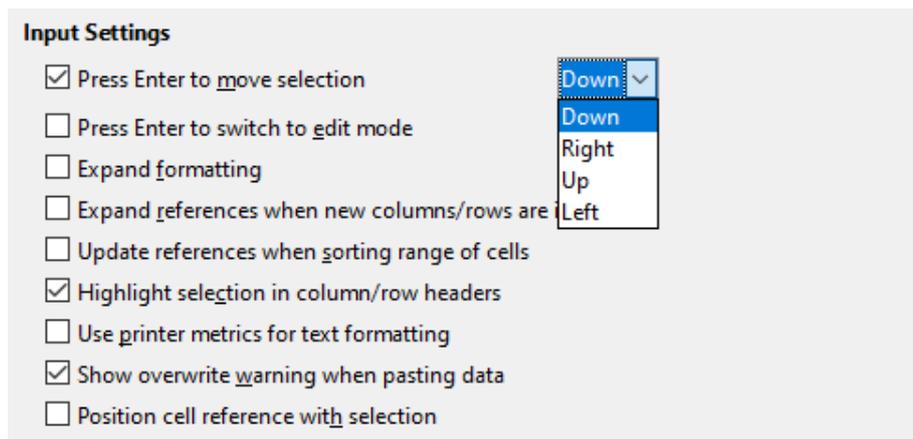
Figure 94: Customizing the Enter key

Selecting items in a spreadsheet

Selecting cells

Single cell:
Left-click in the cell. You can verify your selection by looking in the *Name Box* on the Formula Bar (Figure 85 on page 121).

Range of contiguous cells:
A range of cells can be selected using the keyboard or the mouse.

To select a range of cells by dragging the mouse cursor:

1) Click in a cell.

2) Press and hold down the left mouse button.

3) Move the mouse to highlight the desired block of cells, then release the mouse button.

To select a range of cells without dragging the mouse:

1) Click in the cell that is to be one corner of the range of cells.

2) Hold down the *Shift* key and click in the opposite corner cell of the block of cells.

> 💡 **Tip**
>
> You can also select a contiguous range of cells by first clicking in the Selection mode field on the Status Bar (Figure 87 on page 122) and selecting **Extending selection** before clicking in the opposite corner of the range of cells. Make sure to change back to **Standard selection** or you may extend a cell selection unintentionally.

To select a range of cells without using the mouse:

1) Select the cell that will be one of the corners in the range of cells.

2) While holding down the *Shift* key, use the cursor arrows to select the rest of the range.

> ### 💡 Tip
>
> You can also directly select a range of cells using the *Name Box*. Click in the *Name Box* on the Formula Bar (Figure 85 on page 121). Enter the cell reference for the upper left-hand cell, followed by a colon (:), and then the lower right-hand cell reference. For example, to select the range that would go from A3 to C6, you would enter A3:C6.

Range of non-contiguous cells:

1) Select the cell or range of cells using one of the methods above.

2) Move the mouse pointer to the start of the next range or single cell.

3) Hold down the *Ctrl* key and click or click-and-drag to select another range of cells to add to the first range.

4) Repeat as necessary.

Selecting columns and rows

Single column or row:
To select a single column, click on the column header (Figure 84 on page 120). To select a single row, click on the row header.

Multiple columns or rows:
To select multiple columns or rows that are contiguous:

1) Click on the first column or row in the group.

2) Hold down the *Shift* key.

3) Click the last column or row in the group.

To select multiple columns or rows that are not contiguous:

1) Click on the first column or row in the group.

2) Hold down the *Ctrl* key.

3) Click on all of the subsequent columns or rows while holding down the *Ctrl* key.

Entire sheet:
To select the entire sheet, click on the corner box between the column header A and the row header 1 (Figure 95), or use the key combination *Ctrl+Shift+Space* to select the entire sheet, or use **Edit > Select All** on the Menu bar.
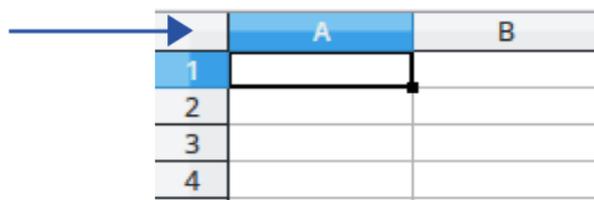
Figure 95: Select All box

Selecting sheets

You can select one or multiple sheets in Calc. It can be advantageous to select multiple sheets, especially when you want to make changes to many sheets at once.

Single sheet:
Click on the sheet tab for the sheet you want to select. The tab for the selected sheet becomes white (default Calc setup).

Multiple contiguous sheets:
To select multiple contiguous sheets:

1) Click on the sheet tab for the first desired sheet.

2) Hold down the *Shift* key and click on the sheet tab for the last desired sheet.

3) All tabs between these two selections will turn white (default Calc setup). Any actions that you perform will now affect all the highlighted sheets.

Multiple non-contiguous sheets:
To select multiple non-contiguous sheets:

1) Click on the sheet tab for the first desired sheet.

2) Hold down the *Ctrl* key and click on the sheet tab for the each additional desired sheet.

3) The selected tabs will turn white (default Calc setup).

All sheets:
Right-click a sheet tab and choose **Select All Sheets** from the context menu, or select **Edit > Select > Select All Sheets** on the Menu bar.

Working with columns and rows

Inserting columns and rows

Single column or row:
Using the Sheet menu:

1) Select a cell, column, or row where you want the new column or row inserted.

2) Go to **Sheet** on the Menu bar and select either **Insert Columns > Columns Before**, or **Insert Columns > Columns After**, or **Insert Rows > Rows Above**, or **Insert Rows > Rows Below**.

Using the mouse:

1) Select a column or row where you want the new column or row inserted.

2) Right-click the column or row header.

3) Select **Insert Columns Before**, **Insert Columns After**, **Insert Rows Above**, or **Insert Rows Below** from the context menu.

Multiple columns or rows:
Multiple columns or rows can be inserted at once rather than inserting them one at a time.

1) Highlight the required number of columns or rows by holding down the left mouse button on the first one and then dragging across the required number of identifiers.

2) Proceed as for inserting a single column or row above.

Hiding and showing columns and rows

To hide columns or rows:

1) Select the row or column you want to hide.

2) Go to **Format** on the Menu bar and select **Rows** or **Columns**.

3) Select **Hide** from the menu. Alternatively, right-click on the row or column header and select **Hide Rows** or **Hide Columns** from the context menu.

To show hidden columns or rows:

1) Select the rows or columns on each side of the hidden row or column.

2) Go to **Format** on the Menu bar and select **Rows** or **Columns**.

3) Select **Show** from the menu. Alternatively, right-click on a row or column header and select **Show Rows** or **Show Columns** from the context menu.

Deleting columns or rows

1) Select the columns or rows you want to delete.

2) Go to **Sheet** on the Menu bar and select **Delete Rows** or **Delete Columns**, or right-click and select **Delete Columns** or **Delete Rows** from the context menu.

Deleting cells

1) Select the cells you want to delete.

2) Go to **Sheet > Delete Cells**, or press *Ctrl+-*. Or, right-click on a cell and select **Delete** from the context menu.

3) Select the option you require from the Delete Cells dialog (Figure 96) and click **OK**.
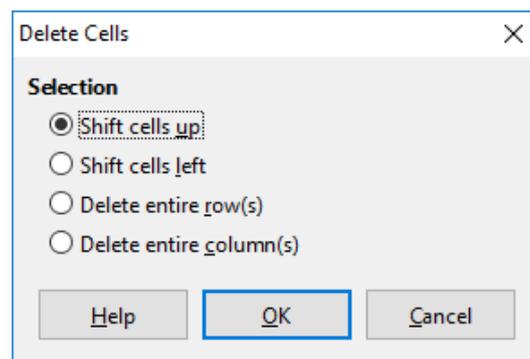
Figure 96: Delete Cells dialog

Working with sheets

Inserting new sheets

Click on the **Add Sheet** (+) icon next to the sheet tabs to insert a new sheet after the last sheet in the spreadsheet without opening the Insert Sheet dialog.

The following methods open the Insert Sheet dialog (Figure 97), where you can position the new sheet, create more than one sheet, name the new sheet, or select a sheet from a file.

• Select the sheet where you want to insert a new sheet, then go to **Sheet > Insert Sheet** on the Menu bar.

• Right-click on the sheet tab where you want to insert a new sheet and select **Insert Sheet** from the context menu.

• Click in the empty space at the end of the sheet tabs.

• Right-click in the empty space at the end of the sheet tabs and select **Insert Sheet** from the context menu.
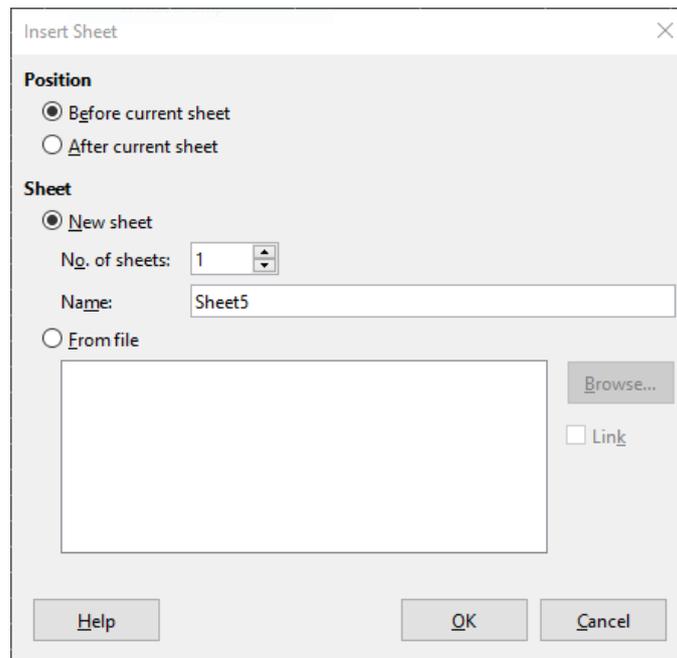
Figure 97: Insert Sheet dialog

Moving and copying sheets

You can move or copy sheets within the same spreadsheet by dragging and dropping, or by using the Move/Copy Sheet dialog. To move or copy a sheet into a different spreadsheet, you have to use the Move/Copy Sheet dialog.

In the Move/Copy Sheet dialog (Figure 98), you can specify exactly whether you want the sheet in the same or a different spreadsheet, its position within the spreadsheet, and the sheet name when you move or copy it.
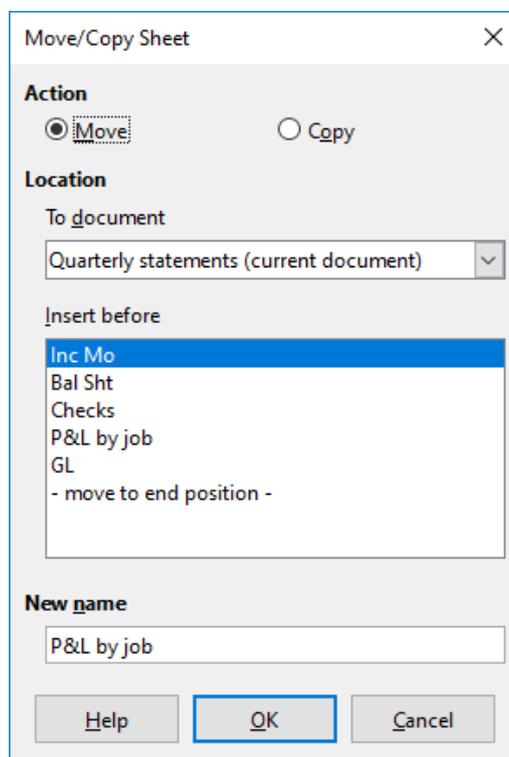
Figure 98: Move/Copy Sheet dialog

1) In the current document, right-click on the sheet tab you wish to move or copy and select **Move or Copy Sheet** from the context menu, or go to **Sheet > Move or Copy Sheet** on the Menu bar.

2) In the *Action* area, select **Move** to move the sheet or **Copy** to copy the sheet.

3) Select the spreadsheet where you want the sheet to be placed from the drop-down list in *To document*. This can be the same spreadsheet, another spreadsheet already open, or a new spreadsheet.

4) Select the position in *Insert before* where you want to place the sheet.

5) Type a name in the *New name* box if you want to rename the sheet when it is moved or copied. If you do not enter a name, Calc creates a default name (Sheet 2, Sheet 3, ...).

6) Click **OK** to confirm the move or copy and close the dialog.

> ⚠️ **Caution**
>
> When you move or copy to another spreadsheet or a new spreadsheet, a conflict may occur with formulas linked to other sheets in the previous location.

Hiding and showing sheets

Sometimes you may want to hide the contents of a sheet to preserve data from accidental editing or because its contents are not important to display.

To hide a sheet or many sheets, select the sheet or sheets as above, right-click to open the context menu, and select **Hide Sheet**.

To show hidden sheets, right-click any sheet tab and select **Show Sheet** on the context menu. A dialog will open with all hidden sheets listed. Select the desired sheets and then click **OK**.

> 💡 **Tip**
>
> LibreOffice Calc does not let you hide the last visible sheet.

Renaming sheets

By default, the name for each new sheet added is SheetX, where X is the number of the next sheet to be added. While this works for a small spreadsheet with only a few sheets, it can become difficult to identify sheets when a spreadsheet contains many sheets.

To rename a sheet, use one of these methods:

- Enter the name in the *Name* text box when you create the sheet using the Insert Sheet dialog (Figure 97 on page 132).
- Right-click on a sheet tab and select **Rename Sheet** from the context menu to replace the existing name with a different one.
- Double-click on a sheet tab to open the Rename Sheet dialog.

> 📝 **Note**
>
> Sheet names must start with either a letter or a number; other characters, including spaces, are not allowed. Apart from the first character of the sheet name, permitted characters are letters, numbers, spaces, and the underscore character. Attempting to rename a sheet with an invalid name will produce an error message.

Deleting sheets

To delete a single sheet, right-click on the sheet tab you want to delete and select **Delete Sheet** from the context menu, or go to **Sheet > Delete Sheet** on the Menu bar. Click **Yes** to confirm the deletion.

To delete multiple sheets, select the sheets (see "Selecting sheets" on page 130), then right-click one of the sheet tabs and select **Delete Sheet** from the context menu, or go to **Sheet > Delete Sheet** on the Menu bar. Click **Yes** to confirm the deletion.

Viewing a spreadsheet

Changing document view

Use the zoom function (**View > Zoom**) to show more or fewer cells in the window when you are working on a spreadsheet. For more about zoom, see Chapter 1, Introducing LibreOffice.

Freezing rows and columns

Freezing is used to lock rows across the top of a spreadsheet or to lock columns on the left of a spreadsheet. Then, when moving around within a sheet, the cells in frozen rows and columns always remain in view.

Figure 99 shows some frozen rows and columns. The heavier horizontal line between rows 3 and 23 and the heavier vertical line between columns F and Q indicate that rows 1 to 3 and columns A to F are frozen. The rows between 3 and 23 and the columns between F and Q have been scrolled off the page.

	A	B	C	D	E	F	Q	R
1		Date	Sales Value	Category	Region	Employee		
2		04/13/08	$498	Sailing	North	Kurt		
3		02/07/08	$1,383	Sailing	South	Kurt		
23		03/27/08	$669	Sailing	South	Hans		
24		01/28/08	$155	Sailing	West	Brigitte		

Figure 99: Frozen rows and columns

Often the first row and column contain headings, which you may wish to be visible when scrolling through a long or wide spreadsheet. To quickly freeze either or both of these, use the commands on the drop-down menu by the **Freeze Rows and Columns** icon on the Standard toolbar: **Freeze First Row** and **Freeze First Column**.

To freeze *either* rows or columns (single or multiple):

1) Click on the row header *below* the rows you want the freeze or click on the column header to the *right* of the columns where you want the freeze.

2) Right-click and choose **Freeze Rows and Columns** from the context menu, or choose **View > Freeze Rows and Columns** on the Menu bar, or click the **Freeze Rows and Columns** icon on the Standard toolbar.

To freeze *both* rows and columns (single or multiple):

1) Click in the cell that is immediately below the rows you want to freeze and immediately to the right of the columns you want frozen.

2) Choose **View > Freeze Rows and Columns** on the Menu bar, or click the **Freeze Rows and Columns** icon on the Standard toolbar.

Unfreezing

To unfreeze rows or columns, either use **View > Freeze Rows and Columns** on the Menu bar, or click on the **Freeze Rows and Columns** icon in the Standard toolbar. The heavier lines indicating freezing will disappear.

Splitting the screen

Another way to change the view is by splitting the screen your spreadsheet is displayed in (also known as splitting the window). The screen can be split horizontally, vertically, or both, giving you up to four portions of the spreadsheet in view at any one time. An example of splitting the screen is shown in Figure 100, where a split is indicated by additional window borders within the sheet.

This could be useful for example, when a large spreadsheet has one cell containing a number that is used by three formulas in other cells. Using the split-screen technique, you can position the cell containing the number in one section of the view and the cells with formulas in other sections. This makes it easy to see how changing the number in one cell affects each of the formulas.

	A	B	C
1		Beta=	3.2
2		A0=	0.1
7	A1=	Beta*A0*(1*A0)	0.6421
8	A2=	Beta*A1*(1*A0)	0.6582
9	A3=	Beta*A0*(1*A0)	0.7219
10	A4=	Beta*A0*(1*A0)	0.6574
11	A5=	Beta*A0*(1*A0)	0.6597
12			

Figure 100: Split screen example

Splitting horizontally or vertically

There are two ways to split a screen horizontally or vertically.

Method 1

To split *either* horizontally or vertically:

1) Click on the row header *below* the rows where you want to split the screen horizontally or click on the column header to the *right* of the columns where you want to split the screen vertically.

2) Right-click and choose **Split Window** from the context menu, or choose **View > Split Window** on the Menu bar. Window borders appear between the rows or columns indicating where the split has been placed, as shown in Figure 100.

To split *both* horizontally and vertically at the same time:

1) Click in the cell that is immediately below the rows where you want to split the screen horizontally and immediately to the right of the columns where you want to split the screen vertically.

2) Choose **View > Split Window** on the Menu bar.

Method 2

For a *horizontal* split, click on the thick black line at the top of the vertical scroll bar (Figure 101) and drag the split line below the row where you want the horizontal split positioned.

Similarly, for a *vertical* split, click on the thick black line at the right of the horizontal scroll bar and drag the split line to the right of the column where you want the vertical split positioned.
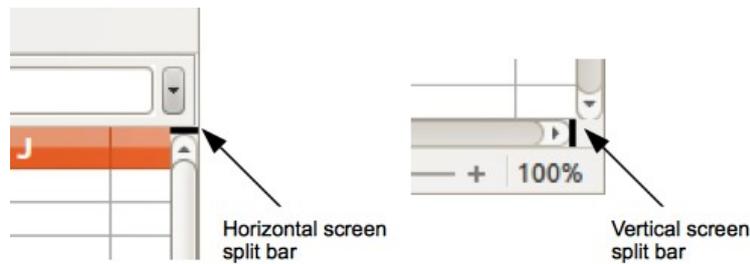
Figure 101. Split screen bars

Removing split views

To remove a split view, do one of the following:

- Double-click on each split line.
- Click on and drag the split lines back to their default positions at the ends of the scroll bars.
- Go to **View** on the Menu bar and deselect **Split Window**.
- Right-click on a column or row heading and deselect **Split Window** in the context menu.

Entering data using the keyboard

Most data entry in Calc can be done using the keyboard.

Numbers

Click in the cell and type in a number using the number keys on either the main keyboard or numeric keypad. By default, numbers are right aligned in a cell.

Negative numbers

To enter a negative number, either type a minus (–) sign in front of the number or enclose the number in parentheses (), for example (1234). The result for both methods of entry will be the same, –1234.

Leading zeroes

If a number is entered with leading zeroes, for example 01481, by default Calc will drop the leading zero. To retain a minimum number of characters in a cell when entering numbers and retain the number format, for example 1234 and 0012, use one of these methods to add leading zeroes.

Method 1

1) With the cell selected, right-click on the cell, select **Format Cells** from the context menu, or go to **Format > Cells** on the Menu bar, or use the keyboard shortcut *Ctrl+1,* to open the Format Cells dialog (Figure 102).

2) Make sure the *Numbers* tab is selected, then select **Number** in the *Category* list.

3) In the *Leading zeroes* field within the *Options* area, enter the minimum number of characters required. For example, for four characters, enter 4. Any number less than four characters will have leading zeroes added, for example 12 becomes 0012.

4) Click **OK**. The number entered retains its number format and any formula used in the spreadsheet will treat the entry as a number in formula functions.
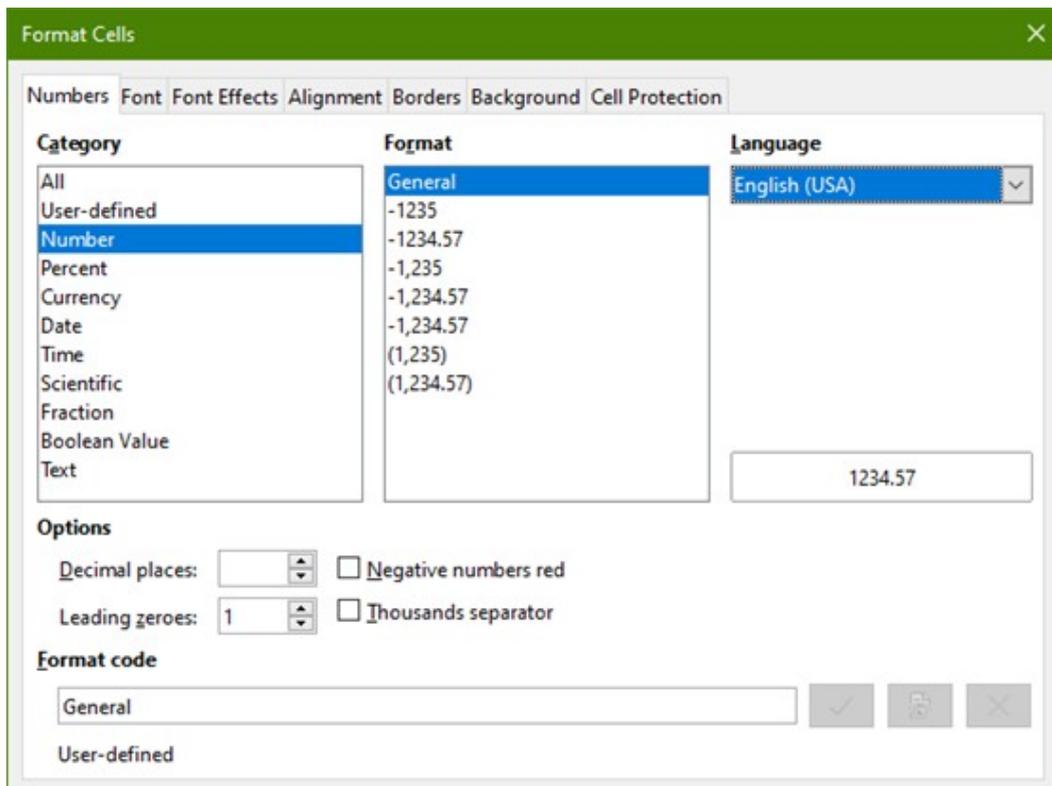
Figure 102: Format Cells dialog – Numbers tab

Method 2

1) Select the cell.

2) In the Sidebar, go to the Properties deck. If necessary, click the open panel icon (+ or arrow) by *Number Format* to open that panel (Figure 103).

3) Select **Number** in the category drop-down list.

4) Set the *Leading zeroes* value box to 4. Formatting is applied immediately.
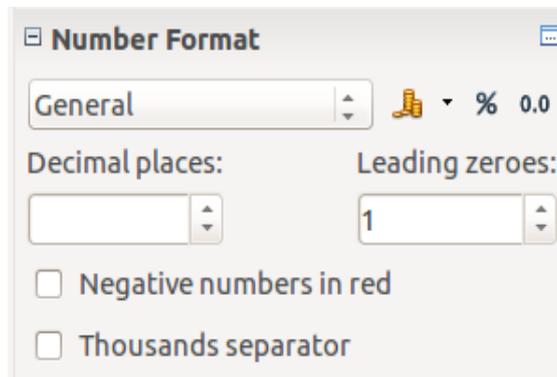
Figure 103: Set leading zeroes in Sidebar

💡 **Tip**

To format numbers with only decimal places, but without a leading zero (for example, 019 instead of 0.019), then in the *Format code* box (Figure 102), type a . (period or full stop) followed by ? (question marks) to represent the number of decimal places required. For example, for 3 decimal places, type .??? and click **OK**. Any number with only decimal places will then have no leading zero.

> **Tip**
>
> If numerical characters do not need to be treated as numbers in calculations (for example when entering zip codes), you can type an apostrophe (') before the number, for example '01481. When you move the cell focus, the apostrophe is removed, the leading zeroes are retained, and the number is converted to left-aligned text.

Numbers as text

Numbers can also be entered as text using one of the following methods.

Method 1

1) With the cell selected, right-click on the cell and select **Format Cells** from the context menu, or go to **Format > Cells** on the Menu bar, or use the keyboard shortcut *Ctrl+1,* to open the Format Cells dialog (Figure 102).

2) Make sure the *Numbers* tab is selected, then select **Text** from the Category list.

3) Click **OK**. The number is converted to text and, by default, left-aligned.

Method 2

1) Select the cell.

2) In the Sidebar, go to the Properties deck. If necessary, click the open panel icon (+ or arrow) by *Number Format* to open that panel (Figure 103).

3) Select **Text** in the category drop-down list. Formatting is applied to the cell immediately.

> **Note**
>
> By default, any numbers that have been formatted as text in a spreadsheet will be treated as a zero by any formulas used in the spreadsheet. Formula functions will ignore text entries. You can change this feature in **Tools > Options > LibreOffice Calc > Formula**. In *Detailed Calculation Settings*, select **Custom (conversion of text to numbers and more)**. Click the **Details** button, and then select the proper treatment in the pop-up dialog (*Conversion from text to number* drop-down list).

Text

Click in the cell and type the text. By default, text is left-aligned in a cell. Cells can contain several lines of text. If you want to use paragraphs, press *Ctrl+Enter* to create another paragraph.

On the Formula bar, you can extend the *Input line* if you are entering several lines of text. Click on the **Expand Formula Bar** icon located on the right-hand end of the Formula bar and the *Input line* becomes multi-line.

Date and time

Select the cell and type the date or time.

You can separate the date elements with a slash (/) or a hyphen (–), or use text, for example 10 Oct 2012. The date format automatically changes to the selected format used by Calc.

When entering a time, separate time elements with colons, for example 10:43:45. The time format automatically changes to the selected format used by Calc.

To change the date or time format used by Calc:

1) With the cell selected, open the Format Cells dialog (Figure 102).

2) Make sure the *Numbers* tab is selected, then select **Date** or **Time** from the *Category* list.

3) Select the date or time format you want to use from the *Format* list. Click **OK**.

Cell fields

You can insert a field linked to the date, sheet name, or document name in a cell.

1) Select a cell and double-click to activate edit mode.

2) Right-click and select **Insert Field > Date**, or **Sheet Name**, or **Document Title** from the context menu.

> **Note**
>
> The **Insert Field > Document Title** command inserts the name of the spreadsheet and not the title defined in the *Description* tab in the Properties dialog for the file.

> **Tip**
>
> The fields are refreshed when the spreadsheet is saved or recalculated when using the *Ctrl+Shift+F9* shortcut.

AutoCorrection

Calc automatically applies many changes during data input using autocorrection, unless you have deactivated any autocorrect changes. You can also undo any autocorrection changes by using the keyboard shortcut *Ctrl+Z* or manually by going back to the change and replacing the autocorrection with what you want to actually see.

To change the autocorrect options, go to **Tools > AutoCorrect Options** on the Menu bar to open the AutoCorrect dialog (Figure 104).

Replace tab
Edit the replacement table for automatically correcting or replacing words or abbreviations.

Exceptions tab
Specify the abbreviations or letter combinations that you do not want corrected automatically.

Options tab
Select the options for automatically correcting errors as you type.

Localized Options tab
Specify the AutoCorrect options for quotation marks and for options that are specific to the language of the text.

Reset button
Reset modified values back to their previous values.

Deactivating automatic changes

Some AutoCorrect settings are applied when you press the space bar after you enter data. To turn off or on Calc AutoCorrect, go to **Tools** on the Menu bar and deselect or select **AutoInput**. See also "AutoInput tool" below.
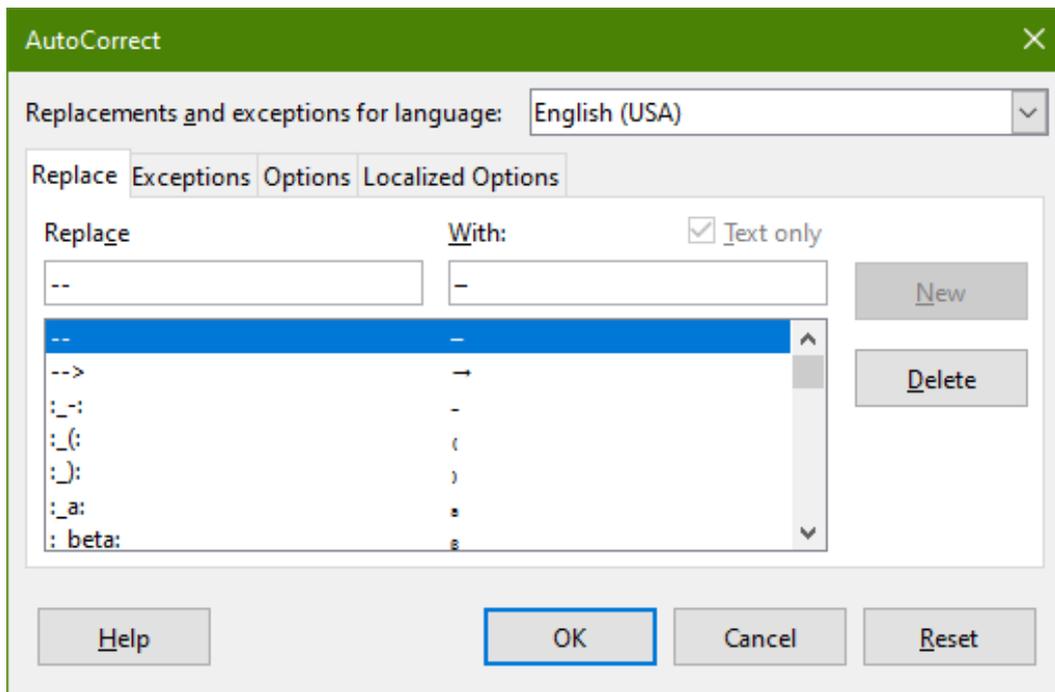
Figure 104: AutoCorrect dialog

Speeding up data entry

Entering data into a spreadsheet can be very labor-intensive, but Calc provides several tools for removing some of the drudgery from input.

The most basic ability is to drag and drop the contents of one cell to another with a mouse. Many people also find AutoInput helpful. Calc also includes several other tools for automating input, especially of repetitive material. They include the Fill tool, Selection lists, and the ability to input information into multiple sheets of the same document.

AutoInput tool

The AutoInput tool in Calc automatically completes entries, based on other entries in the same column. When text is highlighted in a cell, AutoInput can be used as follows:

1) To accept the completion, press *Enter,* or *F2,* or click the mouse button.

2) To view more completions, use the key combinations *Ctrl+Tab* to scroll forward, or *Ctrl+Shift+Tab* to scroll backward.

3) To see a list of all available AutoInput text items for the current column, use the keyboard combination *Alt+Down Arrow*.

When typing formulas using characters that match previous entries, a Help tip will appear listing the last ten functions used in the Function Wizard from all defined range names and from the content of all label ranges. AutoInput ignores the case sensitivity of any data you enter.

By default, AutoInput is activated in Calc. To turn it off, go to **Tools** on the Menu bar and deselect **AutoInput**.

Fill tool

The Fill tool is used to duplicate existing content or create a series in a range of cells (see Figure 105).

1) Select the cell containing the contents you want to copy or start the series from.

2) Drag the mouse in any direction or hold down the *Shift* key and click in the last cell you want to fill.

3) Go to **Sheet > Fill Cells** on the Menu bar and select the direction in which you want to copy or create data (**Fill Up**, **Fill Down**, **Fill Left**, or **Fill Right**), or **Fill Series**, or **Fill Random Number** from the submenu.

Alternatively, you can use a shortcut to fill cells.

1) Select the cell containing the contents you want to copy or start the series from.

2) Move the cursor over the small square in the bottom right corner of the selected cell. The cursor will change shape.

3) Click and drag in the direction you want the cells to be filled. If the original cell contained text, then the text will automatically be copied. If the original cell contained a number, a series will be created.
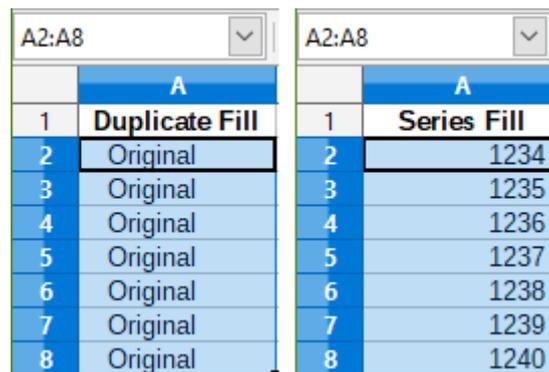
Figure 105: Using the Fill tool

Using a fill series

When you select a series fill from **Sheet > Fill Cells > Fill Series**, the Fill Series dialog (Figure 106) opens. Here you can select the type of series you want.
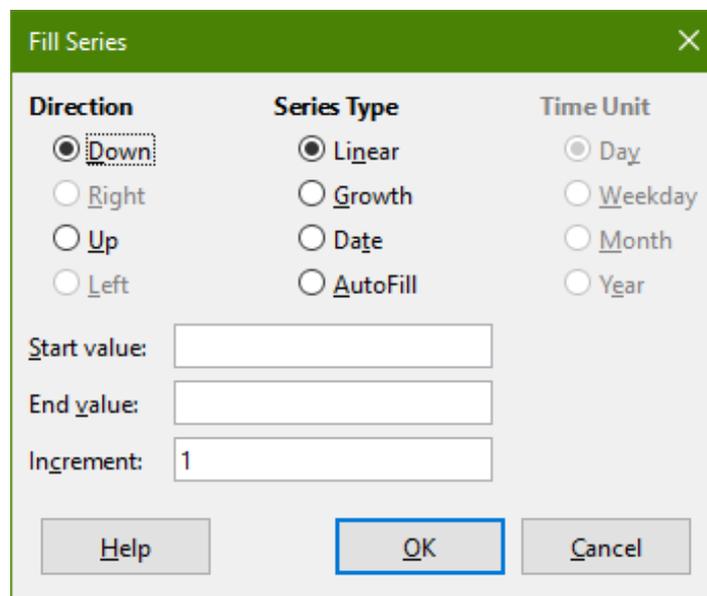
Figure 106: Fill Series dialog

Defining a fill series

If you select the **AutoFill** option on the Fill Series dialog, type some text in the *Start value* field, and press **OK**, Calc will check if one of your predefined sort lists contains that text. If there is a sort list containing that text, Calc uses the entries in that sort list to fill cells. Go to **Tools > Options > LibreOffice Calc > Sort Lists** to view your currently defined sort lists.

To define your own sort list which can later be used as a fill series:

1) Go to **Tools > Options > LibreOffice Calc > Sort Lists** to open the Sort Lists dialog (Figure 107). This dialog shows the previously-defined series in the *Lists* box and the contents of the highlighted list in the *Entries* box.
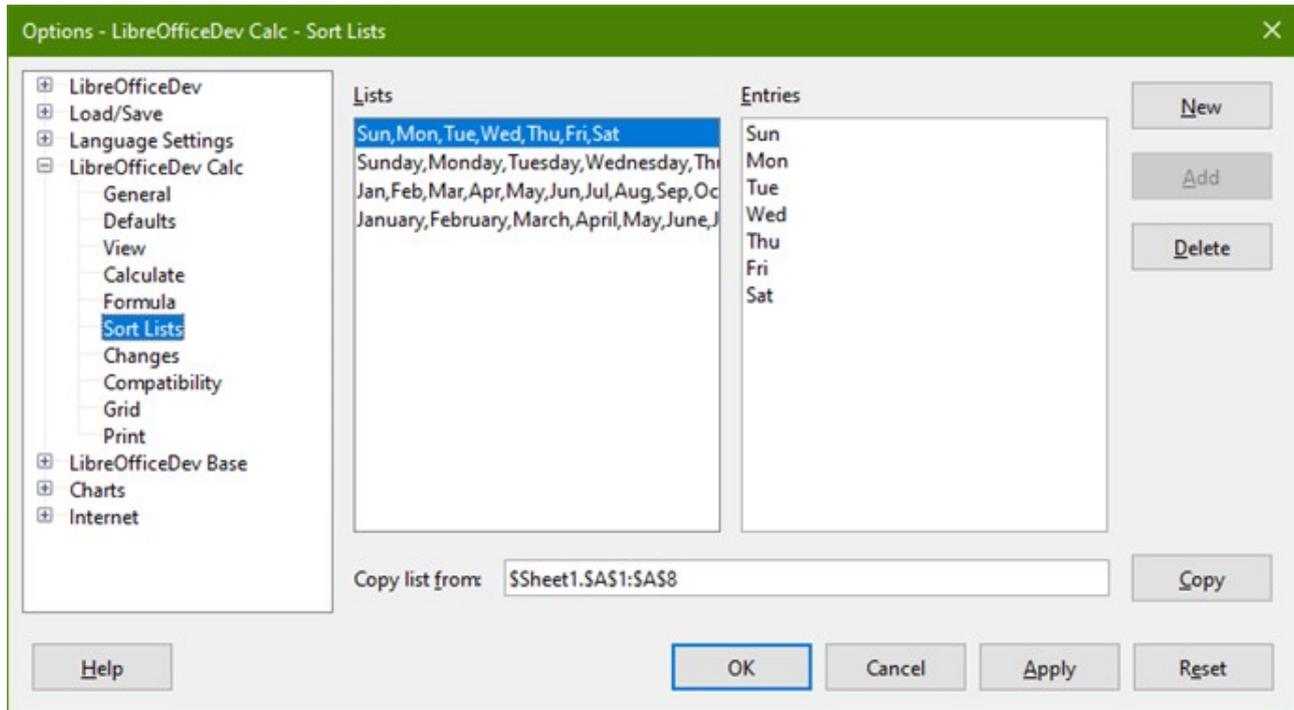
Figure 107: Sort Lists dialog

2) Click **New** and the *Entries* box is cleared.

3) Type the series for the new list in the *Entries* box (one entry per line).

4) Click **Add** and the new list will now appear in the *Lists* box.

5) Click **OK** to save the new list.

Selection lists

Selection lists are available only for text and are limited to using only text that has already been entered in the same column.

1) Select a blank cell in a column that contains cells with text entries.

2) Right-click and select **Selection Lists** from the context menu, or press *Alt+Down Arrow*. A drop-down list appears listing any cell in the same column that either has at least one text character or whose format is defined as text.

3) Click on the text entry you require and it is entered into the selected cell.

Sharing content between sheets

You might want to enter the same information in the same cell on multiple sheets, for example to set up standard listings for a group of individuals or organizations. Instead of entering the list on each sheet individually, you can enter the information in several sheets at the same time.

1) Go to **Edit > Select > Select Sheets** on the Menu bar to open the Select Sheets dialog.

2) Select the individual sheets where you want the information to be repeated.

3) Click **OK** to select the sheets and the sheet tabs will change color.

4) Enter the information in the cells on the first sheet where you want it to appear and it will be repeated in all the selected sheets.

⚠️ **Caution**

This technique automatically overwrites, without any warning, any information that is already in the cells on the selected sheets. Make sure you deselect the additional sheets when you are finished entering information that is going to be repeated before continuing to enter data into the spreadsheet.

Validating cell contents

When creating spreadsheets for other people to use, you may wish to ensure that they enter data that is valid and appropriate for the cell. You can also use validation in your own work as a guide to entering data that is either complex or rarely used.

Fill series and selection lists can handle some types of data, but are limited to predefined information. To validate new data entered by a user, select a cell and go to **Data > Validity** on the Menu bar to define the type of contents that can be entered in that cell. For example, a cell may require a date or a whole number with no alphabetic characters or decimal points, or a cell may not be left empty.

Depending on how validation is set up, it can also define the range of contents that can be entered, provide help messages explaining the content rules set up for the cell and what users should do when they enter invalid content. You can also set the cell to refuse invalid content, accept it with a warning, or start a macro when an error is entered. See Chapter 2, Entering, Editing, and Formatting Data, in the *Calc Guide* for more information.

Editing data

Deleting data

Deleting data only

To delete only the data in a cell or range of cells, without deleting any of the cell formatting, select the cells and then press the *Delete* key.

To completely delete cells, rows, or columns, see the instructions on page 131.

Deleting data and formatting

Data and cell formatting can be deleted from a cell at the same time.

1) Select a cell or a range of cells.

2) Press the *Backspace* key, or right-click in the cell selection and choose **Clear Contents** from the context menu, or select **Sheet > Clear Cells** from the Menu bar.

3) In the Delete Contents dialog (Figure 108), choose any of the options or choose **Delete all**.

4) Click **OK**.
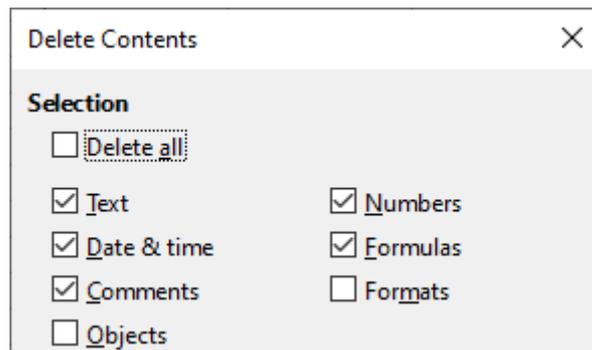
Figure 108: Delete Contents dialog

Replacing data

To completely replace data in a cell and insert new data, select the cell and type in the new data. The new data will replace the old data but will retain the cell formatting.

Alternatively, select the cell and click in the *Input line* on the Formula bar (Figure 85 on page 121), then double-click on the data to highlight it completely and type the new data.

Changing data

Sometimes it is necessary to edit the contents of cell without removing all of the data from the cell. For example, changing the phrase "Sales in Qtr. 2" to "Sales rose in Qtr" can be done as follows.

Using the keyboard

1) If you intend to use the keyboard to change data in cells with minimum use of the mouse, then you may want to enable **Tools > Options > LibreOffice Calc > General > Press enter to switch to edit mode**. This means that when you click in the cell to select it, the cell switches to its edit mode. Alternatively you can press *F2* to switch the cell to edit mode.

2) Use the keyboard arrow keys to position the cursor where you want to start entering the new data in the cell, then press the *Delete* key or *Backspace* key to delete any unwanted data before typing the new data.

3) When you have finished editing, press the *Enter* key to save the changes.

Using the mouse

1) Double-click on the cell to select it and place the cursor in the cell for editing. You can also use **Edit > Cell Edit Mode** on the Menu bar to put the cell in edit mode.

2) Either:

   • Reposition the cursor to where you want to start entering the new data in the cell.

   • Single-click to select the cell, then move the cursor to the *Input line* on the Formula bar and click at the position where you want to start editing data in the cell.

3) When you have finished, click away from the cell to deselect it and save the changes.

Paste Special function

To copy text, numbers, or formulas to the target cell or cell range:

1) Select the source cell or cell range and copy the data.

2) Select the target cell or cell range.

3) Right-click on the target cell or cell range and select **Paste Special** from the context menu, then select **Unformatted Text**, **Text**, **Number**, or **Formula**.

   Or, use the submenu items reached from **Edit > Paste Special** on the Menu bar.

You can also use the Paste Special function to paste into another cell selected parts of the data in the original cell or cell range, for example its format or the result of its formula. To do this:

1) Select a cell or a cell range.

2) Go to **Edit > Copy** on the Menu bar, or press *Ctrl+C*, or right-click and select **Copy** from the context menu.

3) Select the target cell or cell range.

4) Go to **Edit > Paste Special > Paste Special** on the Menu bar, or use the keyboard shortcut *Ctrl+Shift+V*, or right-click and select **Paste Special > Paste Special** from the context menu to open the Paste Special dialog (Figure 109).

5) Select the options for *Selection, Operations, Options,* and *Shift Cells*.

6) Click **OK** to paste the data into the target cell or range of cells and close the dialog.
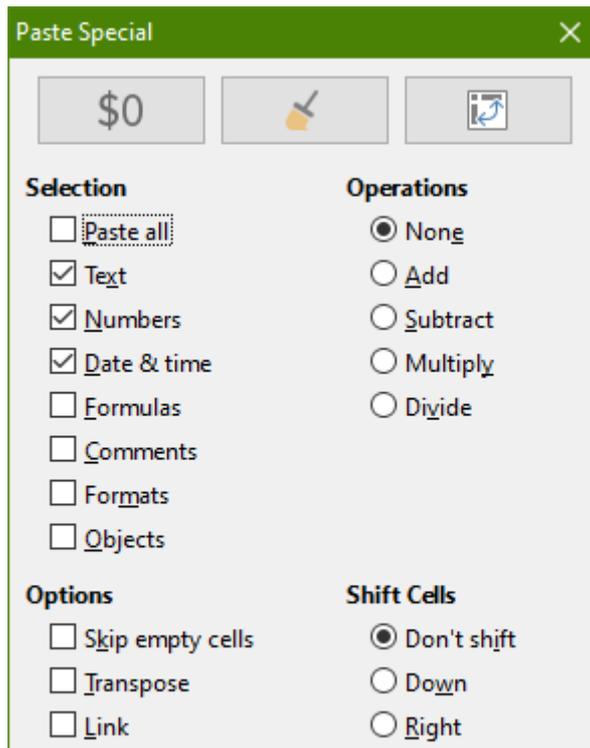
Figure 109: Paste Special dialog

Formatting data

Note

All the settings discussed in this section can also be set as a part of the cell style. See Chapter 4, Using Styles and Templates, in the *Calc Guide* for more information.

Multiple lines of text

Multiple lines of text can be entered into a single cell using automatic wrapping or manual line breaks. Each method is useful for different situations.

Automatic wrapping

To automatically wrap multiple lines of text in a cell, use one of the following methods.

Method 1

1) Right-click on the cell and select **Format Cells** from the context menu to open the Format Cells dialog.

2) On the *Alignment* tab (Figure 110), under *Properties*, select **Wrap text automatically** and click **OK**.
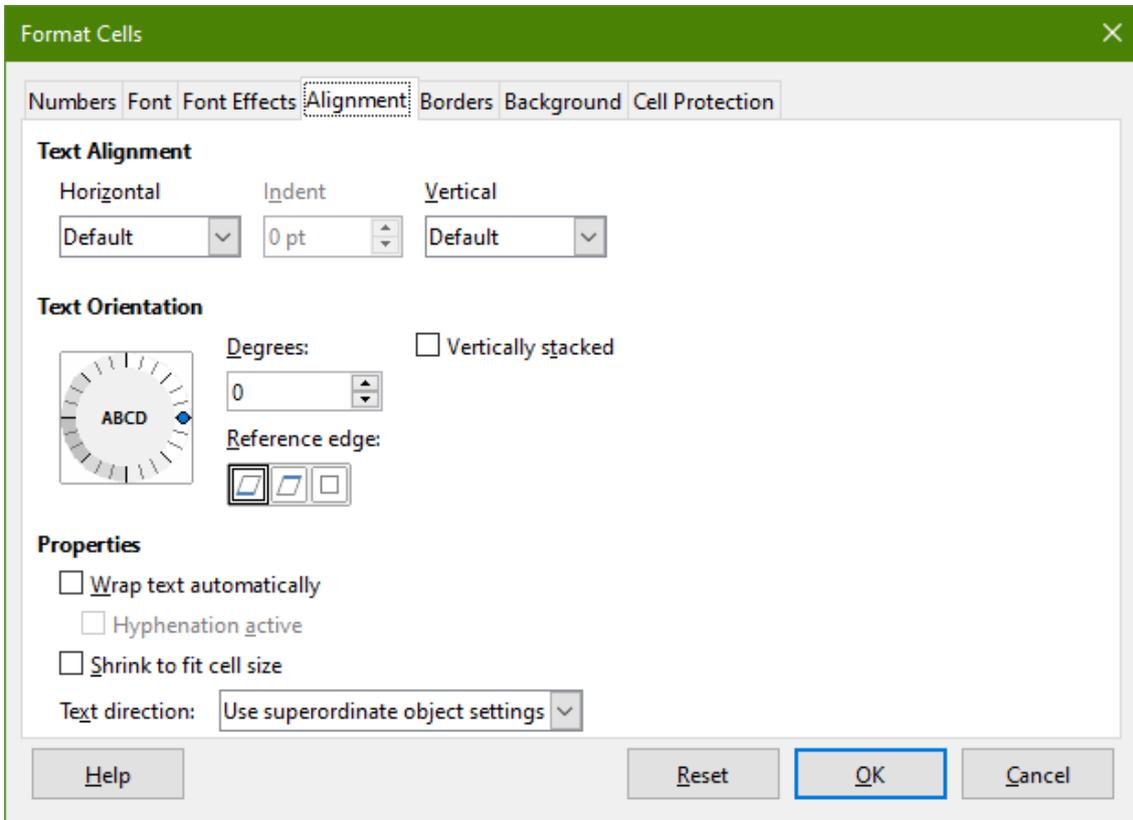
Figure 110: Format Cells dialog – Alignment tab

Method 2

1) Select the cell.

2) On the Properties deck of the Sidebar, open the Alignment panel (Figure 111).

3) Select the **Wrap text** option to apply the formatting immediately.
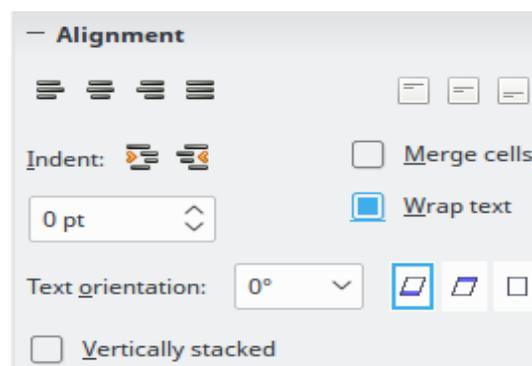
Figure 111: Wrap text formatting

Manual line breaks

To insert a manual line break while typing in a cell, press *Ctrl+Enter*. When editing text, double-click the cell, then reposition the cursor to where you want the line break. In the *Input line* of the Formula bar, you can also press *Shift+Enter*.

When a manual line break is entered in a cell, the cell row height changes but the cell width does not change and the text may still overlap the end of the cell. You have to change the cell width manually or reposition the line break.

Shrinking text to fit the cell

The font size of the data in a cell can automatically adjust to fit inside cell borders. To do this, select the **Shrink to fit cell size** option under *Properties* on the *Alignment* tab of the Format Cells dialog (Figure 110).

Merging cells

You can select contiguous cells and merge them into one as follows:

1) Select the range of contiguous cells you want to merge.

2) Right-click on the selected cells and select **Merge Cells** from the context menu, or go to **Format > Merge Cells > Merge Cells** or **Merge and Center Cells** on the Menu bar, or click on the **Merge and Center Cells** icon on the Formatting toolbar. Using **Merge and Center Cells** will center align any contents in the cells.

3) If the cells contain any data, a small dialog (Figure 112) opens, showing choices for moving or hiding data in the hidden cells. Make your selection and click **OK**.
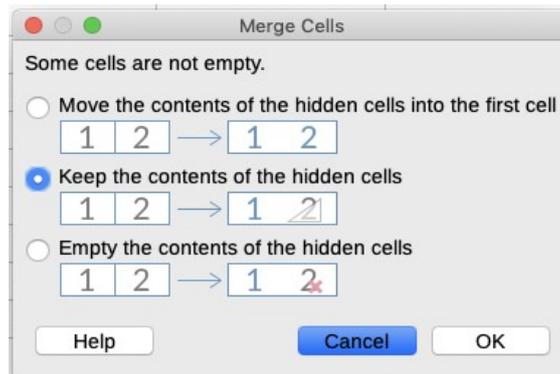
Figure 112: Merge choices for non-empty cells

> ⚠️ **Caution**
>
> Merging cells can lead to calculation errors in formulas used in the spreadsheet.

Splitting cells

You can reverse or split only a cell that was created from several cells by merging.

1) Select a merged cell.

2) Go to **Format > Merge Cells > Split Cells** on the Menu bar, or right-click and select **Split Cells** from the context menu, or click on the **Merge and Center Cells** icon on the Formatting toolbar.

3) Any data in the cell will remain in the first cell. If the hidden cells did have any contents before the cells were merged, then you have to manually move the contents in to the correct cell.

Formatting numbers

Several number formats can be applied to cells by using icons on the Formatting toolbar. Select the cell, then click the relevant icon to change the number format.

For more control or to select other number formats, use the *Numbers* tab of the Format Cells dialog (Figure 102 on page 137):

- Apply any of the data types in the *Category* list to the data.
- Control the number of decimal places and leading zeroes in the *Options* area.
- Enter a custom format code.
- The *Language* setting controls the local settings for the different formats such as the date format and currency symbol.

Some number formats are available from the sidebar's Number Format panel in the Properties deck. Click the **More Options** button to open the Format Cells dialog.

Formatting fonts and text in cells

> **Tip**
>
> For consistency in a spreadsheet, use cell styles whenever possible.

To manually select a font and format text for use in a cell:

1) Select a cell or cell range.

2) Click the small triangle on the right of the *Font Name* box on the Formatting toolbar and select a font from the drop-down list, or use the *Font Name* box in the Character panel of the Properties deck in the Sidebar.

3) Click on the small triangle on the right of the *Font Size* box on the Formatting toolbar and select a font size from the drop-down list, or use the *Font Size* box in the Character panel of the Properties deck in the Sidebar.

4) To change the character format, click on the **Bold**, **Italic**, or **Underline** icons on the Formatting toolbar or the Characters panel of the Properties deck in the Sidebar.

5) To change the horizontal paragraph alignment, click on one of the four alignment icons (**Align Left**, **Align Center**, **Align Right**, **Justified**) in the Formatting toolbar or on the Alignment panel of the Properties deck in the Sidebar. For more options, go to **Format > Cells > Alignment** and select one of the options in the *Horizontal* drop-down list.

6) To change the vertical alignment of the text in the cell, go to **Format > Cells > Alignment** and select one of the options in the *Vertical* drop-down list.

7) To change the font color, click the arrow next to the **Font Color** icon on the Formatting toolbar, or on the Character panel on the Properties deck in the Sidebar, to display the color palette, then select the desired color.

8) To specify the language used in the cell, use the *Font* tab on the Format Cells dialog.

9) Use the *Font Effects* tab on the Format Cells dialog to set other font characteristics.

Formatting cell borders

To format the borders of a cell or a group of selected cells, click the **Borders** icon on the Formatting toolbar and select a border from the palette.

To format the border line style, click the **Border Style** icon in the Formatting toolbar and select the line style from the palette. For the color of the border lines, click the arrow at the right of the **Border Color** icon in the Formatting toolbar and choose from the color palette.

The Cell Appearance panel of the Properties deck in the Sidebar also contains cell border, line style and line color controls.

For more control, including the spacing between cell borders and any data in the cell, use the *Borders* tab of the Format Cells dialog, where you can also define a shadow style. Clicking the **More Options** button on the Cell Appearance panel, or clicking **More Options** in the panel's line style drop-down list, opens the Format Cells dialog at the *Borders* tab.

See Chapter 4, Using Styles and Templates, in the *Calc Guide* for more information.

> **Note**
>
> Cell border properties apply only to the selected cells and can be changed only when you are editing those cells. For example, if cell C3 has a top border, that border can only be removed by selecting C3. It cannot be removed in C2 despite also appearing to be the bottom border for cell C2.

Formatting cell background

To format the background color for a cell or a group of cells, click the small arrow next to the **Background Color** icon on the Formatting toolbar. A color palette, similar to the Font Color palette, is displayed. You can also use the *Background* tab of the Format Cells dialog. The Cell Appearance panel of the Properties deck in the Sidebar contains a cell background control with a color palette. See Chapter 4, Using Styles and Templates, in the *Calc Guide* for more information.

Formatting default cell styles

To add default styles for a cell or a group of cells, click **Styles** in the Menu bar and a menu displays the default styles. The default styles can be applied, or modified through the Styles deck in the Sidebar. You can create custom cell styles by clicking **Styles > New Style from Selection** in the Menu bar, or by pressing the **New Style from Selection** icon on the Styles deck of the Sidebar. Type a new name for the style or click an existing style name to update that style. Apply, delete, or modify the custom style in the Styles deck.

AutoFormatting of cells

Using AutoFormat

You can use Calc's AutoFormat feature to format a table (range of cells) quickly and easily. It also lets you format different tables of the sheet with the same look and feel very easily. All formatting applied is direct formatting.

1) Select the cells in at least three columns and rows, including column and row headers, that you want to format.
2) Go to **Format > AutoFormat Styles** on the Menu bar to open the AutoFormat dialog (Figure 113).
3) Select the type of format and format color from the list.
4) Select the formatting properties to be included in the AutoFormat style.
5) Click **OK**.
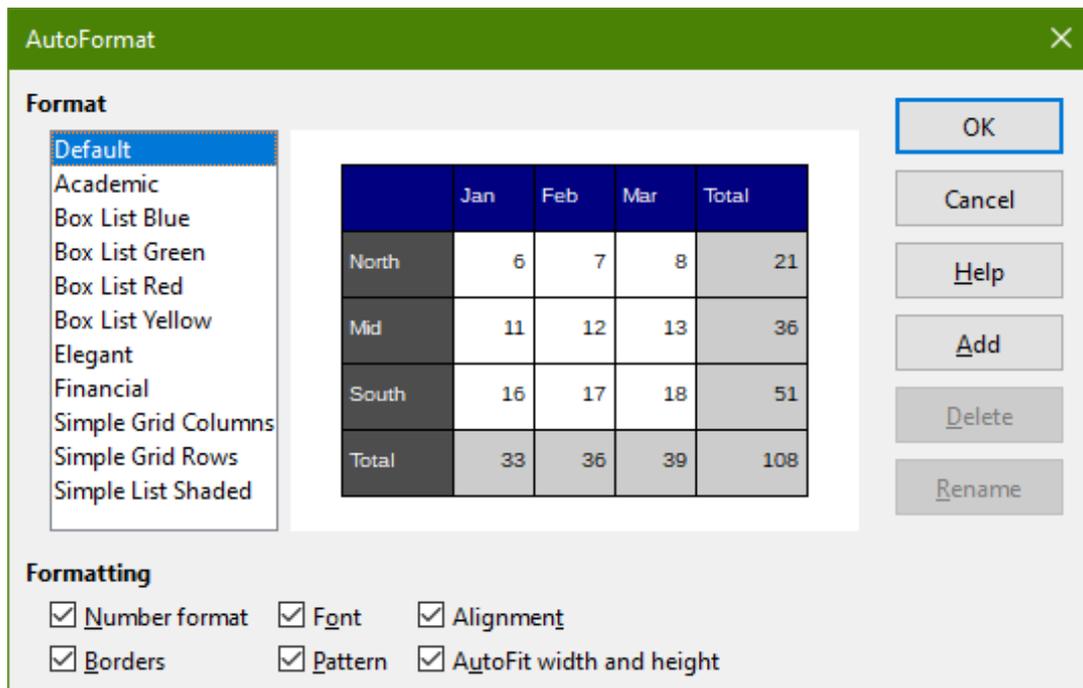
Figure 113: AutoFormat dialog

Defining a new AutoFormat

You can define a new AutoFormat so that it becomes available for use in all spreadsheets.

1) Format the data type, font, font size, cell borders, cell background, and so on for a range of cells.

2) Select the range, of at least 4 x 4 cells.

3) Go to **Format > AutoFormat Styles** to open the AutoFormat dialog. Click **Add**.

4) In the *Name* box of the Add AutoFormat dialog that opens, type a meaningful name for the new format.

5) Click **OK** to save. The new AutoFormat is now available in the *Format* list in the AutoFormat dialog.

> **Note**
>
> The new AutoFormat is stored in your computer user profile and is not available to other users. However, other users can import the new AutoFormat by selecting the table range in the spreadsheet document and defining it as a new AutoFormat.

Using themes

Calc comes with a predefined set of formatting themes (set of styles) that you can apply to spreadsheets. It is not possible to add new themes to Calc, but you can modify the theme styles after the theme is applied to the spreadsheet. The modified styles are available for use only in that spreadsheet.

To apply a theme to a spreadsheet:

1) Go to **Format > Spreadsheet Theme** on the Menu bar or click the **Spreadsheet Theme** icon in the Tools toolbar to open the Theme Selection dialog (Figure 114).

2) Select the theme that you want to apply. The theme styles are immediately visible on the underlying spreadsheet.

3) Click **OK**.

4) If you wish, you can now open the Styles deck in the Sidebar to modify specific styles. These changes do not modify the theme; they only change the appearance of the style in the specific spreadsheet you are using. For more about modifying styles, see Chapter 3, Using Styles and Templates.

⚠️ **Caution**

Applying a new theme over an existing one will override all existing theme styles customization with the new theme styles.
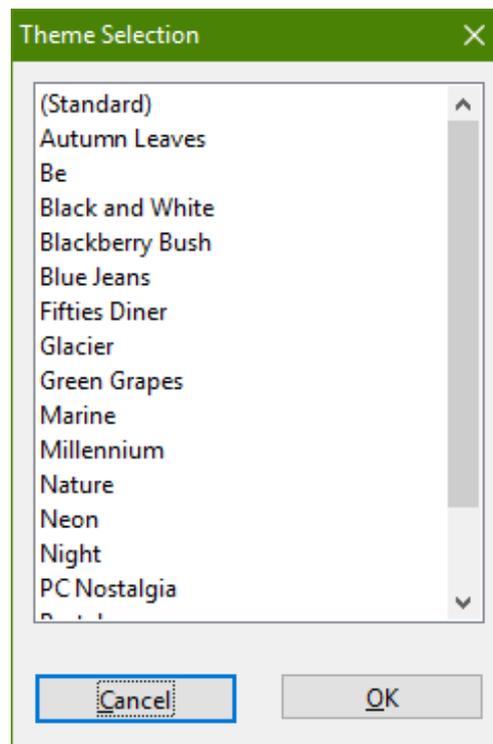
Figure 114: Theme Selection dialog

Using conditional formatting

You can set up cell formats to change depending on conditions that you specify. For example, in a table of numbers, you can show all the values above the average in green and all those below the average in red. Multiple formatting options can be entered and arranged using assigned priority rules to order the importance of the conditions, allowing certain formatting options to take place before others.

Conditional formatting depends upon the use of styles, and the AutoCalculate feature (**Data > Calculate > AutoCalculate**) must be enabled. See Chapter 2, Entering, Editing, and Formatting Data, in the *Calc Guide* for details.

Hiding and showing data

In Calc you can hide elements so that they are neither visible on a computer display nor printed when a spreadsheet is printed. However, hidden elements can still be selected for copying if you select the elements around them. For example, if column B is hidden, it is copied when you select columns A and C. When you require a hidden element again, you can reverse the process and show the element.

For more information on how to hide and show data, including how to use outline groups and filtering, see Chapter 2, Entering, Editing, and Formatting Data, in the *Calc Guide*.

Filtering data

A filter is a list of conditions that each entry has to meet to be displayed. Calc provides three types of filter:

Standard – Specifies the logical conditions to filter the data.

AutoFilter – Filters data according to a specific value or string. Automatically filters the selected cell range and creates one-row list boxes where you can choose the items that you want to display.

Advanced – Uses filter criteria from specified cells.

Setting up and using filters are explained in Chapter 2, Entering, Editing, and Formatting Data, of the *Calc Guide*.

Cell protection

All or some of the cells in a spreadsheet can be password protected to prevent changes being made by unauthorized users. This can be handy when multiple people have access to the spreadsheet itself, but only a few are allowed to modify the data it contains. Protected cells can optionally be hidden.

Use the *Cell Protection* tab of the Format Cells dialog (Figure 115) to set up cell protection and toggle the hidden status of protected cells.
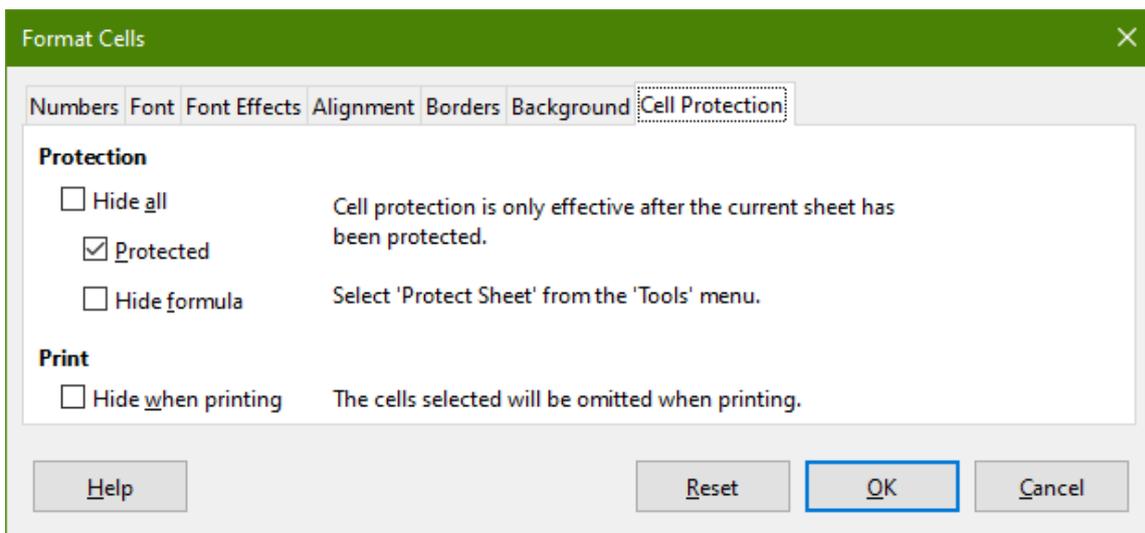
Figure 115: Cell Protection tab in Format Cells dialog

When all desired cells have been flagged with either a protected or unprotected status:

1) Go to **Tools > Protect Sheet**, or right-click on the sheet's tab in the Sheet tabs area and select **Protect Sheet** from the context menu. The Protect Sheet dialog will open (Figure 116).

2) Select **Protect this sheet and the contents of protected cells**.

3) Type a password and then confirm the password.

4) Select or deselect the user selection options for cells.

5) Click **OK**.

Any cells that had been toggled as protected will no longer be editable by anyone that does not have the password.
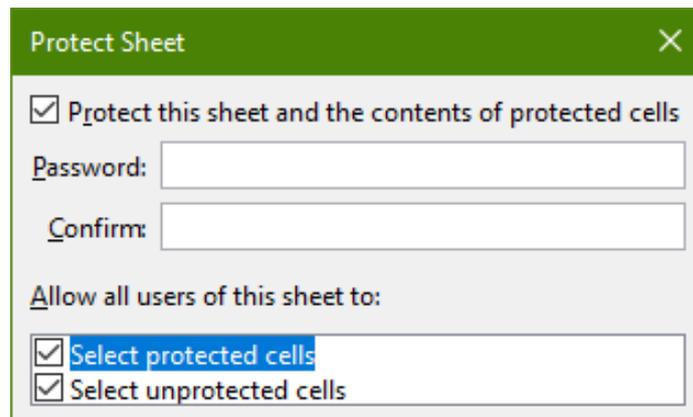
Figure 116: Protect Sheet dialog

The protected sheet has a lock icon in its tab, as shown in Figure 117.
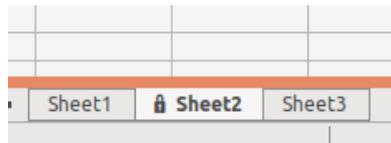
*Figure 117: The lock icon in a
protected sheet*

Alternatively, you can choose to protect the structure of the entire spreadsheet rather than individual cells on individual sheets by selecting **Tools > Protect Spreadsheet Structure** from the Menu bar. This option enables you to protect your spreadsheet against adding, deleting, moving, or renaming sheets. You can optionally enter a password through the Protect Spreadsheet Structure dialog.

Sorting records

Sorting within Calc arranges the cells in a sheet using the sort criteria that you specify. Several criteria can be used and a sort applies each criteria consecutively. Sorts are useful when you are searching for a particular item and become even more useful after you have filtered data.

Also, sorting is useful when you add new information to your spreadsheet. When a spreadsheet is long, it is usually easier to add new information at the bottom of the sheet, rather than adding rows in their correct place. After you have added information, you then carry out a sort to update the spreadsheet.

For more information on how to sort records and the sorting options available, see Chapter 2, Entering, Editing, and Formatting Data, in the *Calc Guide*.

To sort cells in a spreadsheet using the Sort dialog:

1) Select the cells to be sorted.

2) Go to **Data > Sort** on the Menu bar, or press the **Sort** icon on the Standard toolbar, to open the Sort dialog (Figure 118).

3) On the *Sort Criteria* tab, select the sort criteria from the drop down lists. The selected lists are populated from the selected cells.

4) Select either ascending order (A-Z, 0-9) or descending order (Z-A, 9-0).

5) Adjust the settings as required on the *Options* tab.

6) Click **OK** and the sort is carried out on your spreadsheet.
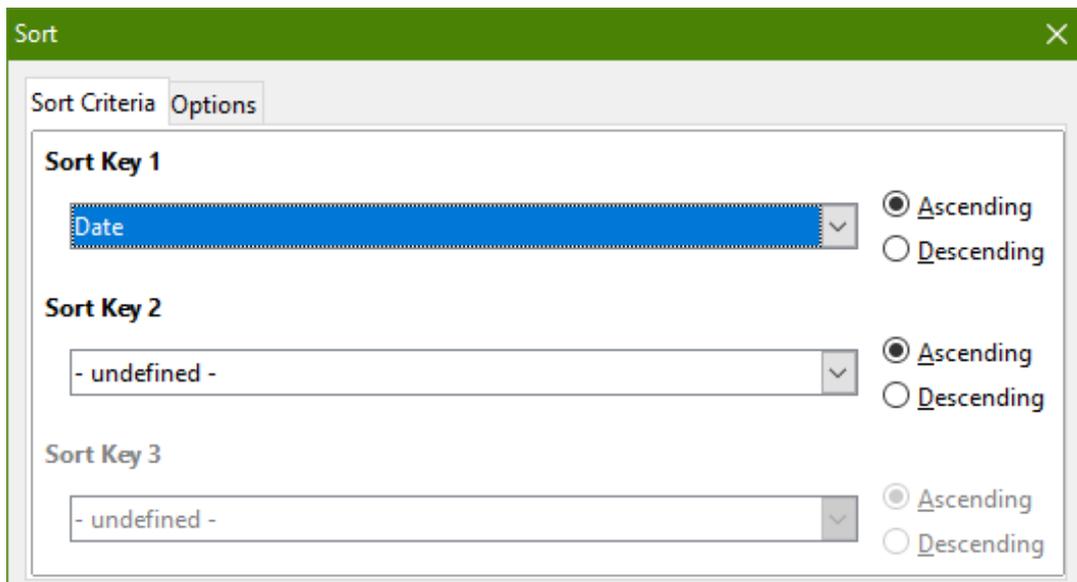
Figure 118: Sort dialog, Sort Criteria tab

Cell comments

Comments are small notes and text that can serve as a reminder or an aside to the user. A comment is not considered a part of the spreadsheet for calculation or printing purposes, and will only appear when hovering the mouse over the particular cell that has been commented.

The easiest way to insert a comment is by right-clicking on the desired cell and selecting **Insert Comment** from the context menu. Alternatively, you can select **Insert > Comment** from the Menu bar, or use *Ctrl+Alt+C*, or click the **Insert Comment** icon in the Standard toolbar.

By default, comments will remain hidden and only appear when hovering the mouse. Cells that contain comments are marked with a red square in the upper right corner. To toggle the visibility of comments, select **View > Comments** on the Menu bar.

For more information, see Chapter 11, Sharing and Reviewing Spreadsheets, in the *Calc Guide*.

Using formulas and functions

You may need more than numbers and text in a spreadsheet. Often the contents of one cell depend on the contents of other cells. Formulas are equations that use numbers and variables to produce a result. Variables are placed in cells to hold data required by equations.

A function is a predefined calculation entered in a cell to help you analyze or manipulate data. All you have to do is enter the arguments and the calculation is made automatically. Functions help you create the formulas required to get the results that you are looking for.

Creating formulas

Functions and formulas can be entered directly into the Formula bar or by accessing the Function Wizard. To launch the Function Wizard, click the **Function Wizard** icon to the right of the *Name Box*, or select **Insert > Function** on the Menu bar, or press *Ctrl+F2*.

Inside the Function Wizard, you can search, list, and narrow down the many Calc functions available. You can also choose to complete functions from within the wizard rather than having to type full formulas into the Formula bar.

Each function, when selected, will display a brief explanation of its use and acceptable syntax. It will also display dialog boxes where you can enter the information required by that function and a result window showing the expected calculation from the data entered.

> ## Note
>
> A fast alternative to the Function Wizard is the Functions deck in the Sidebar, where you can quickly list and narrow down functions. It provides brief explanations on their use and syntax, but does not provide the search or data entry capabilities of the full wizard.

For a more in-depth introduction to formulas and the Function Wizard, see Chapter 7, Using Formulas and Functions, in the *Calc Guide*.
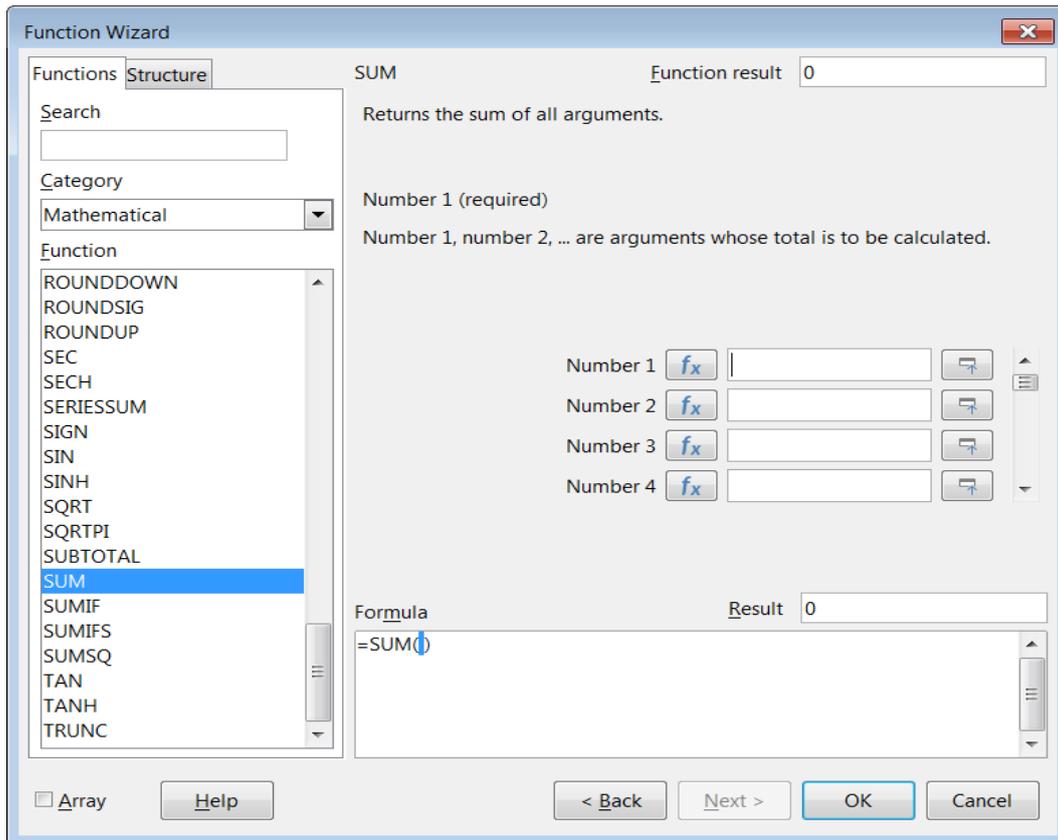
Figure 119: Function Wizard

Analyzing data

Calc includes several tools to help you analyze the information in your spreadsheets, ranging from features for copying and reusing data, to creating subtotals automatically, to varying information to help you find the answers you need. These tools are divided between the Tools and Data menus.

Calc also includes many tools for statistical analysis of data, where you can obtain important numerical information on data obtained from physical measurements, polls, or even business transactions such as sales, stock quotations, and so on. These statistical data analyses are available in the menu **Data > Statistics**.

See Chapter 9, Data Analysis, in the *Calc Guide* for more information on the tools available in Calc to analyze data.

Pivot tables and pivot charts

One of the most useful tools for analyzing data is the pivot table, a way to organize, manipulate, and summarize large amounts of data to make it much easier to read and understand while also allowing you to answer different questions about a spreadsheet by rearranging – or pivoting – the data in it. Using a pivot table, you can view different summaries of the source data, display the details of areas of interest, and create reports. You can also create a pivot chart to view a graphical representation of the data in a pivot table.

For example, let's say that you have a spreadsheet containing a list of donations to various charities by a group of recruiters in various months, but you are only interested in how much money each recruiter has collected in total. You could manually calculate that amount by using the sorting and formatting options provided by Calc. Alternatively, you could arrange a pivot table to make that data easier to organize and read.

To access the pivot table creation dialog, choose **Data > Pivot Table > Insert or Edit** from the Menu bar, or click the **Insert or Edit Pivot Table** icon on the Standard toolbar. The Pivot Table Layout dialog will intelligently guess the column headings from the provided raw data and insert them into the *Available Fields* selection box. From there, you can drag and drop your desired information into column, row, data, or filter fields to organize accordingly and click **OK** to view the results.

To choose new information to display, or to alter the layout of the existing information, right-click anywhere in the existing pivot table to bring up the context menu and choose **Properties**. You can also access the same dialog by selecting **Data > Pivot Table > Insert or Edit** on the Menu bar, or clicking the **Insert or Edit Pivot Table** icon on the Standard toolbar

For an in-depth explanation of pivot tables and the preconditions necessary to use them, see Chapter 8, Using Pivot Tables, in the *Calc Guide*.

Pivot charts

To get a quick visual representation of the data contained in a pivot table, you can generate a pivot chart. Functionally, pivot charts are nearly identical to regular charts except in two key areas. First, as the data in the pivot table is altered, the pivot chart will adjust itself automatically. Second, it includes field buttons, graphical elements that allow you to filter the content of the pivot table from within the pivot chart itself.

For more information on pivot charts and charts in general, see Chapter 3, Creating Charts and Graphs, and Chapter 8, Using Pivot Tables, in the *Calc Guide*.

Printing

Printing from Calc is much the same as printing from other LibreOffice components (see Chapter 10, Printing, Exporting, E-mailing, and Signing Documents). However, some details of printing in Calc are different, especially regarding preparation for printing.

After print ranges have been defined, they are formatted with automatic page breaks. To view the page breaks, go to **View > Page Break** on the Menu bar.

Print ranges

Print ranges have several uses, including printing only a specific part of the data or printing selected rows or columns on every page. For more information about using print ranges, see Chapter 6, Printing, Exporting, E-mailing, and Signing in the *Calc Guide*.

Defining a print range

To define a new print range or modify an existing print range:

1) Select the range of cells to be included in the print range.

2) Go to **Format > Print Ranges > Define** on the Menu bar. Automatic page break lines are displayed on screen.

3) To check the print range, go to **File > Print Preview** on the Menu bar, press *Ctrl+Shift+O*, or click the **Toggle Print Preview** icon on the Standard toolbar. Calc will display only the cells in the print range.

Adding to a print range

After defining a print range, you can add more cells to it by creating another print range. This allows multiple, separate areas of the same sheet to be printed while not printing the whole sheet.

1) After defining a print range, select an extra range of cells for adding to the print range.

2) Go to **Format > Print Ranges > Add** on the Menu bar to add the extra cells to the print range. The page break lines are no longer displayed on the screen.

3) To check the print ranges, go to **File > Print Preview** on the Menu bar, press *Ctrl+Shift+O*, or click the **Toggle Print Preview** icon on the Standard toolbar. LibreOffice will display the print ranges as separate pages.

> **Note**
>
> The additional print range will print as a separate page, even if both ranges are on the same sheet.

Removing a print range

It may become necessary to remove a defined print range, for example, if the whole sheet needs to be printed later.

To remove all the defined print ranges, go to **Format > Print Ranges > Clear** on the Menu bar. After the print ranges have been removed, the default page break lines will appear on the screen.

Editing a print range

At any time, you can directly edit the print range, for example to remove or resize part of the print range. Go to **Format > Print Ranges > Edit** on the Menu bar to open the Edit Print Ranges dialog where you can define the print range.

Printing options

To select the printing options for page order, details, and scale to be used when printing a spreadsheet:

1) Go to **Format > Page** on the Menu bar to open the Page Style dialog (Figure 120).

2) Select the *Sheet* tab and make your selections from the available options. Click **OK**.
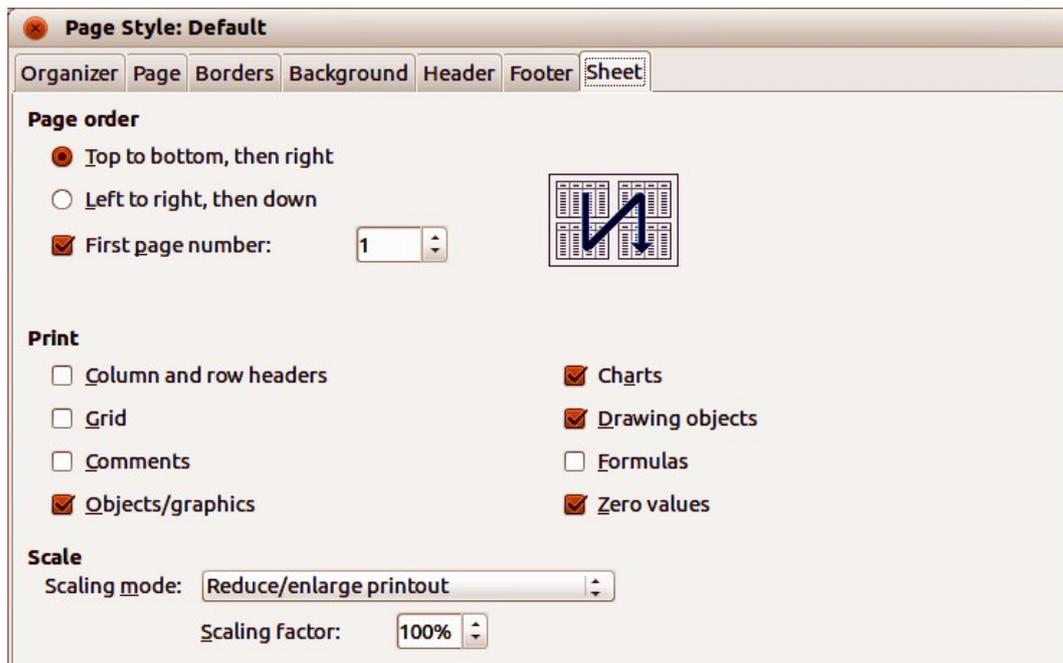
Figure 120: Page Style dialog – Sheet tab

Repeat printing of rows or columns

If a sheet is printed on multiple pages, you can set up certain rows or columns to repeat on each printed page. For example, if the top two rows of the sheet as well as column A need to be printed on all pages, do the following:

1) Go to **Format > Print Ranges > Edit** on the Menu bar to open the Edit Print Ranges dialog (Figure 121).

2) Type the row identifiers in the *Rows to Repeat* box. For example, to repeat rows 1 and 2, type $1:$2. This automatically changes *Rows to Repeat* from **- none -** to **- user defined -**.

3) Type the column identifiers in the *Columns to Repeat* box. For example, to repeat column A, type $A. In the *Columns to Repeat* list, **- none -** changes to **- user defined -**.

4) Click **OK**.

For more information on editing print ranges, see Chapter 6, Printing, Exporting, E-mailing, and Signing, in the *Calc Guide*.
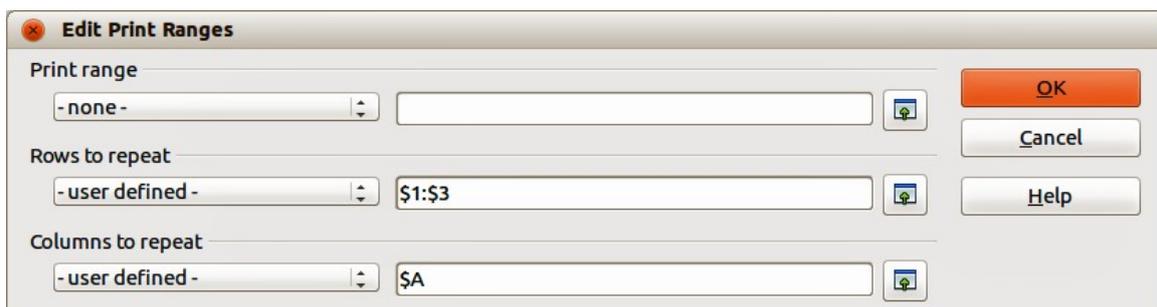
Figure 121: Edit Print Ranges dialog

Page breaks

While defining a print range can be a powerful tool, it may sometimes be necessary to manually adjust the Calc printout manually using a manual or page break. A page break helps to ensure that the data prints properly according to the page size and page orientation. You can insert a horizontal page break above or a vertical page break to the left of the active cell.

For more information on manual breaks, see Chapter 6, Printing, Exporting, E-mailing, and Signing, in the *Calc Guide*.

Inserting a break

To insert a page break:

1) Navigate to the cell where the page break will begin.

2) Go to **Sheet > Insert Page Break** on the Menu bar.

3) Select **Row Break** to create a page break above the selected cell. Select **Column Break** to create a page break to the left of the selected cell.

Deleting a break

To remove a page break:

1) Navigate to a cell that is next to the break you want to remove.

2) Go to **Sheet > Delete Page Break** on the Menu bar.

3) Select **Row Break** or **Column Break** as needed.

> **Note**
>
> Multiple manual row and column breaks can exist on the same page. When you want to remove them, you have to remove each break individually.

Headers and footers

Headers and footers are predefined pieces of text that are printed at the top or bottom of a page when a spreadsheet is printed. Headers and footers are set and defined using the same method. For more information on setting and defining headers and footers, see Chapter 6, Printing, Exporting, E-mailing, and Signing, in the *Calc Guide*.

Headers and footers are also assigned to a page style. You can define more than one page style for a spreadsheet and assign different page styles to different sheets within a spreadsheet. For more information on page styles in Calc, see Chapter 4, Using Styles and Templates, in the *Calc Guide*.

Setting a header or footer

To set a header or footer:

1) Select to the sheet that you want to set the header or footer for.

2) Go to **Format > Page** on the Menu bar to open the Page Style dialog (Figure 122) and select the *Header* or *Footer* tab (Figure 122).

3) Select the **Header on** or **Footer on** option.

4) Select **Same content on left and right pages** if you want the same header or footer to appear on all the printed pages.

5) Set the margins, spacing, and height for the header or footer. You can also select **AutoFit height** to automatically adjust the height of the header or footer.

6) To change the appearance of the header or footer, click on **More** to open the Border / Background dialog.

7) To set the contents, for example page number, date and so on, that appear in the header or footer, click **Edit** to open the Header (or Footer) dialog.
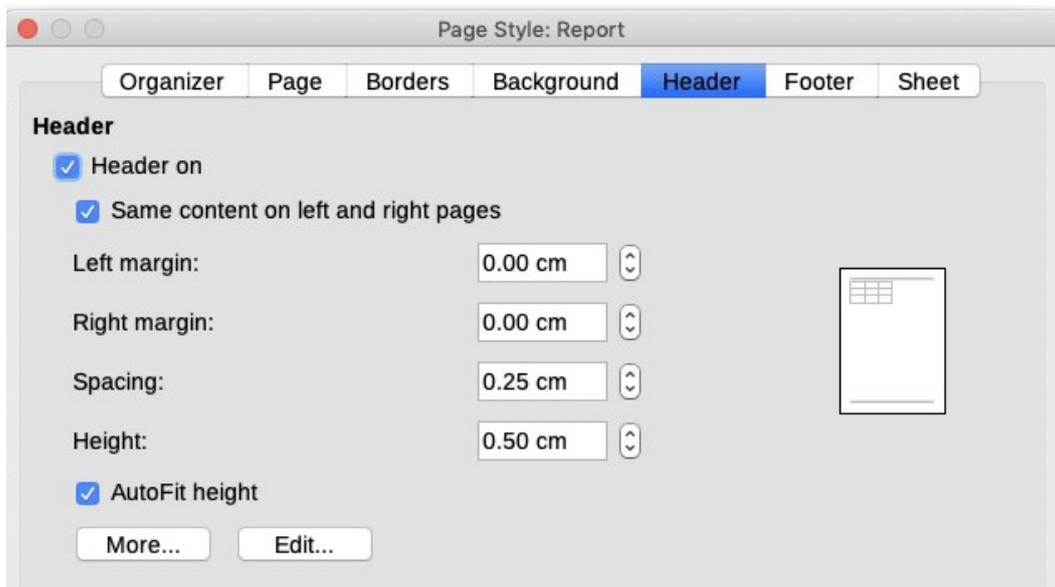
Figure 122: Header tab of Page Style dialog

Getting Started Guide

Chapter 6
Getting Started with Impress

Presentations in LibreOffice

What is Impress?

Impress is the presentation (slide show) program included in LibreOffice. You can create slides that contain many different elements, including text, bulleted and numbered lists, tables, charts, and a wide range of graphic objects such as clipart, drawings, and photographs. Impress also includes a spelling checker, a thesaurus, and styles for drawings, text, and backgrounds.

This chapter includes instructions to guide you through the Impress environment while designing your presentations. Although more difficult designs are mentioned in this chapter, explanations for creating them are in the *Impress Guide*. If you have a working knowledge of how to create slide shows, we recommend you use the *Impress Guide* for your source of information.

To use Impress for more than very simple slide shows requires some knowledge of the elements which the slides contain. Slides that contain text use styles to determine the appearance of that text. Creating drawings in Impress is similar to the Draw component of LibreOffice. For this reason, we recommend that you also see Chapter 3, Using Styles and Templates, and Chapter 7, Getting Started with Draw, in this guide. You may also wish to consult the *Draw Guide* for more details on how to use the drawing tools.

Starting Impress

When you start Impress, it opens with the Select a Template dialog (Figure 123) displayed over the workspace, unless you have turned off this feature. Templates are included to fit two standard sizes of presentation slides: 4:3 and 16:9 ratios. Other slides sizes are available in the Sidebar.
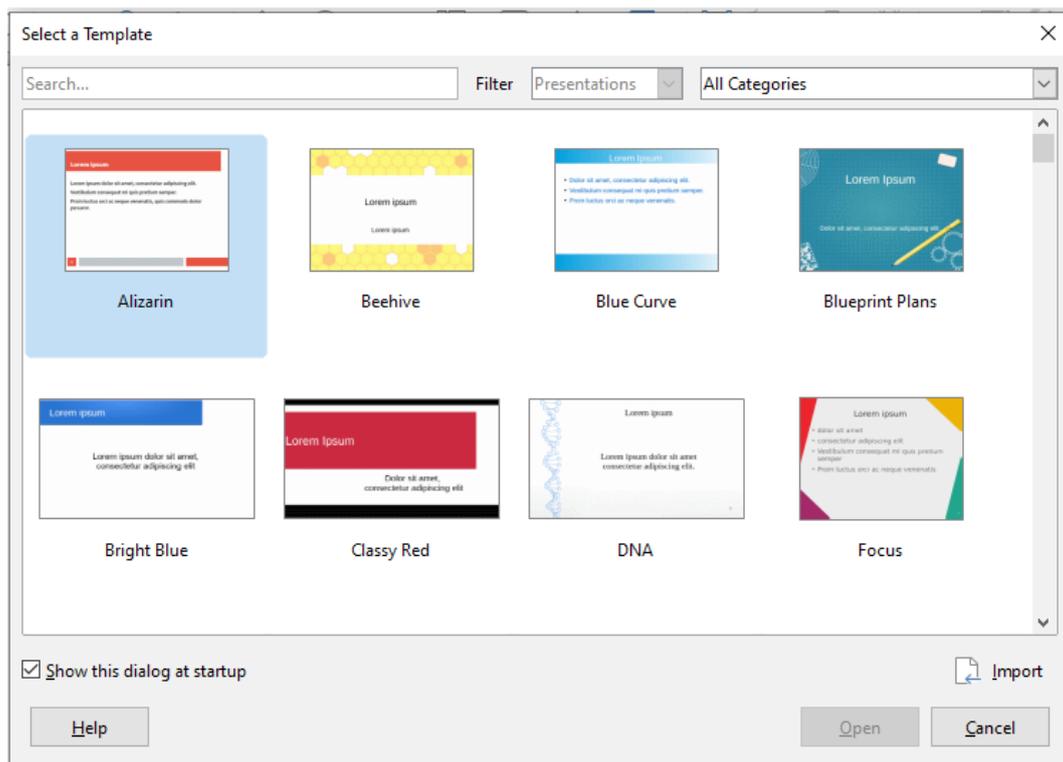
Figure 123: Select a Template dialog

> 💡 **Tip**
>
> To start Impress without the Select a Template dialog, deselect **Show this dialog at startup** in the lower left of the dialog, or go to **Tools > Options > LibreOffice Impress > General** and deselect **Start with Template Selection** under New Document.

Main Impress window

The main Impress window (Figure 124) has three parts: the Slides pane, Workspace, and Sidebar. At the top is a Menu bar and usually some toolbars. These and other toolbars can be displayed or hidden during the creation of a presentation.

> ### 💡 Tip
>
> You can close the Slides pane or the Sidebar by clicking the X in the upper right corner of each pane or go to **View > Slide Pane** or **View > Sidebar** on the Menu bar to deselect the pane. To reopen a pane, select **View > Slide Pane** or **Sidebar** again.
>
> You can also maximize the Workspace area by clicking on the **Hide/Show** marker in the middle of the vertical separator line (highlighted in Figure 124). Using the Hide/Show marker hides, but does not close, the Slide pane or Sidebar. To restore a pane, click again on its Hide/Show marker.

Workspace

The Workspace (normally in the center of the main window) opens in the Normal view. It has five views: Normal, Outline, Notes, Handout, and Slide Sorter. The workspace views are described on page 166.
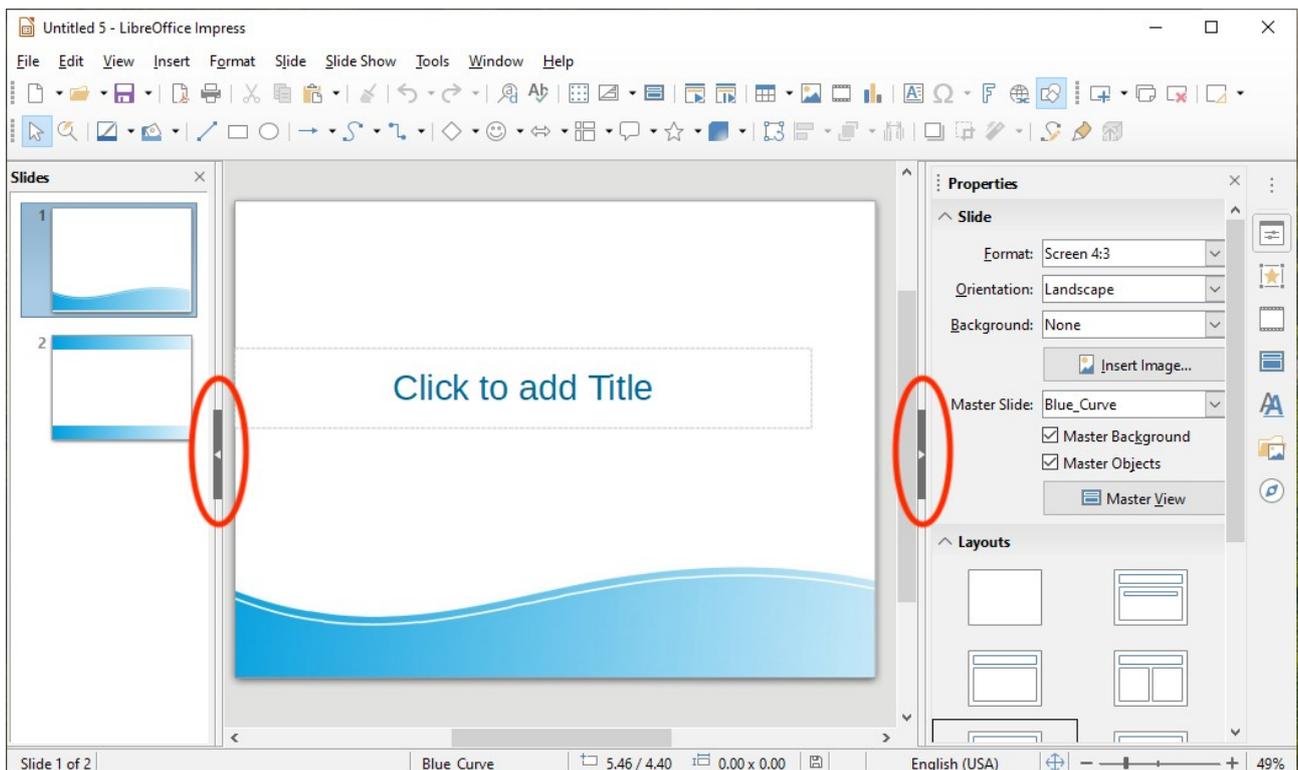
Figure 124: Main window of Impress; ovals indicate the Hide/Show markers

Menu bar

The Impress Menu bar provides several menus common to all LibreOffice components, although the commands on them may differ (File, Edit, View, Insert, Format, Tools, Window, Help), plus Slide and Slide Show. When you select one of the menus, a sub-menu drops down to show commands. You can customize the Menu bar; see Chapter 14, Customizing LibreOffice, for more information.

Slides pane

The Slides pane contains thumbnail pictures of the slides in the presentation in the order in which they will be shown, unless you change the slide show order. Clicking a slide in this pane selects it and places it in the Workspace. When a slide is in the Workspace, you can make changes to it.

Several additional operations can be performed on one or more slides in the Slides pane:

- Add new slides to the presentation.
- Mark a slide as hidden so that it will not be shown as part of the presentation.
- Delete a slide from the presentation if it is no longer needed.
- Rename a slide.
- Duplicate a slide (copy and paste).
- Move a slide to another place in the slide stack by dragging and dropping it to the desired position. If the position is not visible in the slide pane, the slide stack will scroll up or down.

You can also perform the following operations, although there are more efficient methods than using the Slides pane:

- Change the slide transition following the selected slide or after each slide in a group.
- Change the sequence of slides in the presentation.
- Change the slide design.
- Change slide layout for a group of slides simultaneously.

Sidebar

The Impress Sidebar is usually located on the right side of the window. It is similar to the Sidebar in Writer (shown in Chapter 1 and Chapter 4 of this guide) and consists of seven decks. Each deck has a corresponding icon on the Tab panel to the right of the Sidebar. To display a deck, click on its icon or click on the Sidebar Settings icon at the top of the Tab panel and select a deck from the drop-down list.

Properties
> This deck has two panels. The Slide panel shows the characteristics of the selected slide, which you can modify in the panel, and the available slide layouts. You can choose a layout and use it as it is, or modify it to meet your requirements. However, it is not possible to save customized layouts. See "Selecting slide layout" on page 170.

Slide Transition
> Provides quick selection of slide transition options and transition speed (slow, medium, fast), automatic or manual transition, and how long the selected slide should be shown (automatic transition only). For more information, see "Slide transitions" on page 191.

Animation
> A variety of animations can be used to emphasize or enhance different elements of each slide. This panel provides an easy way to add, change, or remove animations. See page 192.

Master Slides
> Here you choose the slide style for your presentation. Impress includes several designs for Master Slide. One of them (Default) is blank; the others have a background and styled text. For more information, see "Working with master slides and styles" on page 180.

Styles
> Here you can quickly apply drawing (graphic and text) styles and presentation styles, create new drawing styles, and open style dialogs to modify both types of styles. When you save changes to a style, the changes are applied to all of the elements formatted with that style in the presentation. See "Styles" on page 180.

Gallery

Opens the Impress gallery where you can insert an object into your presentation either as a copy or as a link. A copy of an object is independent of the original object. Changes to the original object have no effect on the copy. A link remains dependent on the original object. Changes to the original object are also reflected in the link. See the *Impress Guide* for details.

Navigator

Opens the Impress navigator, in which you can quickly move to another slide or select an object on a slide. It is recommended to give slides and objects in your presentation meaningful names so that you can easily identify them when using the navigator. See the *Impress Guide* for details.

Toolbars

Many toolbars can be used during slide creation. They can be displayed or hidden by going to **View > Toolbars** on the Menu bar and selecting from the submenu. For more information, see Chapter 1, Introducing LibreOffice.

Many of the toolbars in Impress are similar to the toolbars in Draw. Refer to the *Draw Guide* for details on the functions available and how to use them.

Status bar

The Status bar (Figure 125), located at the bottom of the Impress window, contains information that you may find useful when working on a presentation. For details on the contents and use of these fields, see Chapter 1, Introducing LibreOffice, in this guide and Chapter 1, Introducing Impress, in the *Impress Guide*.

You can hide the Status Bar by going to **View** on the Menu bar and deselecting **Status Bar**.
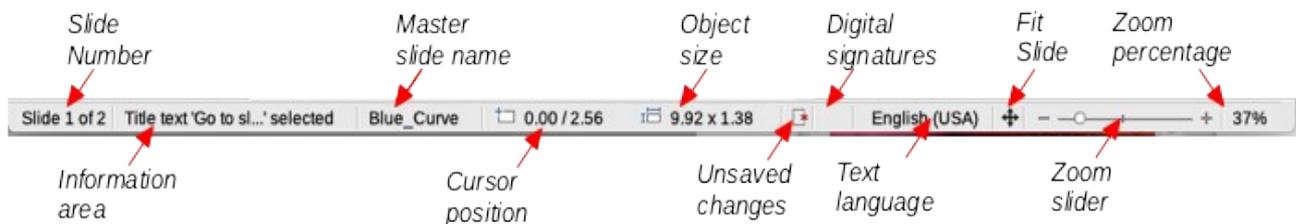
Figure 125: Status bar

From left to right, you will find:

Slide number

The slide number currently displayed in the Workspace and the total number of slides in the presentation.

Information area

This changes depending on the object selected on the slide. Examples are shown in the following table.

Example selection	Examples of information shown
Text area	Text Edit: Paragraph x, Row y, Column z
Charts, spreadsheets	Embedded object (OLE) "ObjectName" selected
Graphics	Bitmap with transparency selected

Master slide name
> The style associated with the slide, handout, or notes page currently in the Workspace. Right-click to pop up a list of available master slides; pick one to apply it to the selected slide. Double-click to open the Available Master Slides dialog (see page 183).

Cursor position
> The position of the cursor or of the top left corner of the selection measured from the top left corner of the slide, followed by the width and height of the selection or text box where the cursor is located. The sizes are given in the current measurement unit as defined in **Tools > Options > LibreOffice Impress > General**.

Object size
> Indicates the size of a selected object on the slide.

Unsaved changes
> This icon indicates if there are any unsaved changes in your presentation.

Digital signatures
> Indicates if your presentation has a digital signature.

Text language
> Indicates the language used for any text on your presentation.

Fit slide
> When this icon is clicked on, the slide in the workspace zooms to fit in the Workspace.

Zoom slider
> When moved, the slide changes its viewing zoom in the Workspace.

Zoom percentage
> Indicates the zoom level of the slide displayed in the Workspace.

Workspace views

The Impress workspace has four views: **Normal**, **Outline**, **Notes**, and **Slide Sorter**. You can display a row of View buttons above the workspace by choosing **View > Views Tab Bar** from the Menu bar, or you can switch between them using entries on the View menu.

Each of the workspace views is designed to ease the completion of certain tasks. It is therefore useful to familiarize yourself with them in order to accomplish those tasks quickly.

> **Note**
>
> Each workspace view displays a different set of toolbars when selected. These toolbar sets can be customized by going to **View > Toolbars** on the Menu bar, then check or uncheck the toolbars you want to add or remove.

Normal view

View > Normal is the main view for working with individual slides. Use this view to format and design and to add text, graphics, and animation effects.

To place a slide in the slide design area (Normal view) (Figure 124 on page 163), click the slide thumbnail in the Slides pane or double-click it in the Navigator.

Outline view

View > Outline (Figure 126) contains all the slides of the presentation in their numbered sequence. It shows topic titles, bulleted lists, and numbered lists for each slide in outline format.
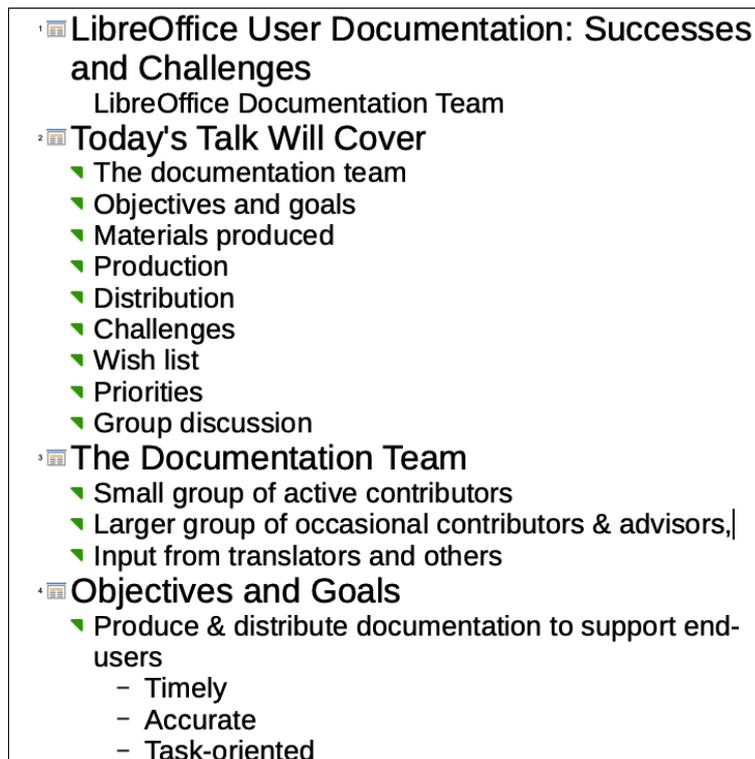
Figure 126: Outline view

Use Outline view to do the following tasks:

- Quickly insert text for fast content creation or editing.

- Make changes in the text of a slide:

  – Add and delete the text in a slide as in the Normal view.

  – Move the paragraphs of text in the selected slide up or down by using the up and down arrow buttons (**Move Up** or **Move Down**) on the Outline toolbar.

  – Change the outline level for any of the paragraphs in a slide using the left and right arrow buttons (**Promote** or **Demote**) on the Outline toolbar.
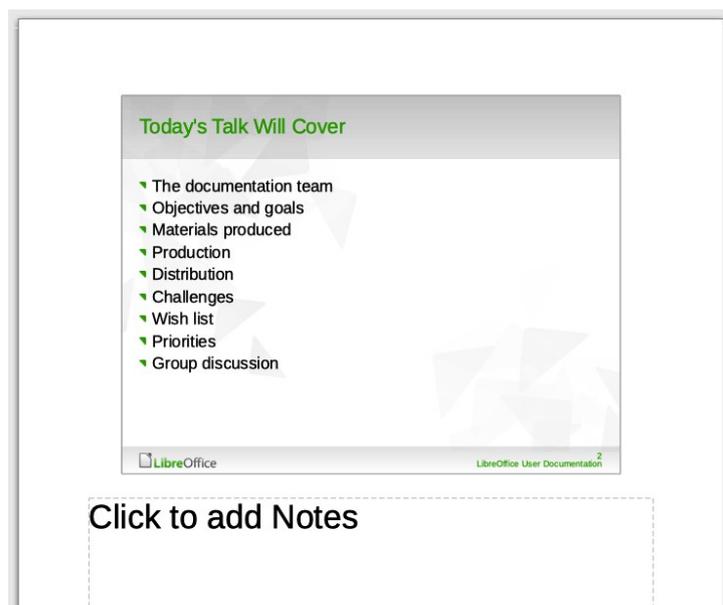
Figure 127: Notes view

Notes view

Use **View > Notes** (Figure 127) to add notes to a slide. These notes are for your information and are not seen by the audience when the presentation is shown. Click on the words **Click to add notes** and begin typing.

You can resize the Notes text box using the colored resizing handles that appear when you click on the box and move the box by clicking and dragging. To make changes in the text style, click on the **Styles** tab on the Sidebar and select **Notes**.

Slide Sorter view

View > Slide Sorter (Figure 128) contains all of the slide thumbnails. Use this view to work with a group of slides or with only one slide.
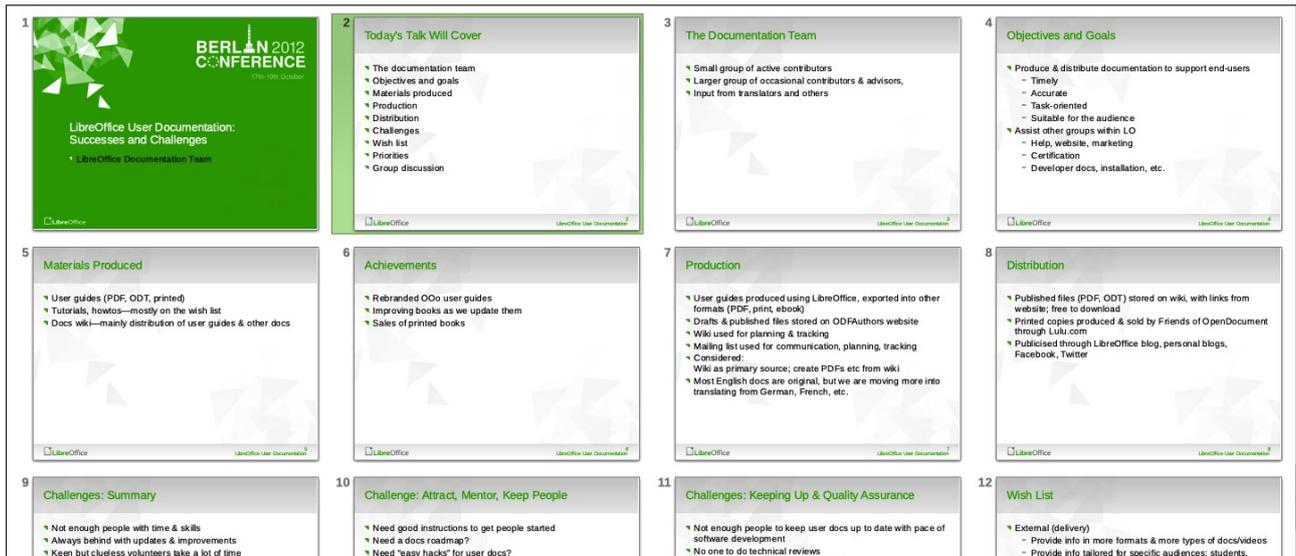
Figure 128: Slide Sorter view

Customizing Slide Sorter view

To change the number of slides per row:

1) Go to **View > Toolbars** and select Slide Sorter and Slide View to show or hide the Slide Sorter and Slide View toolbars (Figure 129).

2) Adjust the number of slides (up to a maximum of 15).

Figure 129: Slide Sorter and Slide View toolbars

Moving a slide using Slide Sorter

To move a slide in a presentation in the Slide Sorter:

1) Click the slide and the slide is highlighted.

2) Drag and drop the slide to the location you want.

Selecting and moving groups of slides

To select a group of slides, use one of these methods:

- Using the *Ctrl* key – click on the first slide and, while pressing the *Ctrl* key, select the other desired slides.

- Using the *Shift* key – click on the first slide, and while pressing the *Shift* key, select the final slide in the group. All of the other slides between the first and the last slide are selected.

- Using the mouse – click slightly to one side (left or right) of the first slide to be selected. Hold down the left mouse button and drag the cursor until all of the slides you want selected are highlighted.

To move a group of slides, select them and then drag and drop the group to their new location.

Working in Slide Sorter view

You can work with slides in the Slide Sorter view just as you can in the Slide pane. To make changes, right-click a slide and choose any of the following from the context menu:

- New Slide – adds a new slide after the selected slide (see "New slide" on page 169).

- Duplicate Slide – creates a duplicate of the selected slide and places the new slide immediately after the selected slide (see "Duplicate slide" on page 169).

- Rename Slide – rename the selected slide.

- Hide Slide – any slides that are hidden are not shown in the slide show.

- Delete Slide – deletes the selected slide.

- Layout – select a different layout for the selected slide.

- Move – move the selected slide up or down or to the first or last position.

- Cut – removes the selected slide and saves it to the clipboard.

- Copy – copies the selected slide to the clipboard without removing it.

- Paste – inserts a slide from the clipboard after the selected slide.

Formatting a presentation

Inserting slides

New slide

A new slide can be inserted into a presentation after the selected slide in any of these ways:

- Use **Slide > New Slide** on the Menu bar.

- Right-click on a slide in the Slides Pane or Slide Sorter view and select **New Slide** from the context menu.

- Click the **New Slide** icon in the Presentation toolbar. You can also select the layout of the new slide by clicking on the small downward arrow of the icon. If the Presentation toolbar is not visible, go to **View > Toolbars** on the Menu bar and select **Presentation** from the list.

- Press *Ctrl+M*.

Duplicate slide

Sometimes, rather than starting from a new slide you may want to duplicate a slide already in the presentation. To duplicate a slide:

1) Select the slide you want to duplicate from the Slides Pane.

2) Then do one of the following:

    – Use **Slide > Duplicate Slide** on the Menu bar.

- Right-click on the slide in the Slides Pane or Slide Sorter view and select **Duplicate Slide** from the context menu.

- Click on the triangle to the right of the Slide icon in the Presentation toolbar and select **Duplicate Slide** from the submenu.

3) A duplicate slide is inserted after the selected slide in the presentation.

Selecting slide layout

The first slide of a presentation is usually a title slide. You can use either a blank layout or one of the title layouts as your title slide.

- Go to the Properties deck on the Sidebar and open the Layouts panel to show the available layouts (Figure 130).

- Or, click on the Slide Layout icon on the Presentation Toolbar to display the available layouts (Figure 131).

To create a title, if one of the title layouts has been selected, click on **Click to add title** and then type the title text. To add text content, depending on the slide layout selected, click on **Click to add text**. To adjust the formatting of the title, subtitle or content modify the presentation style; see Chapter 2, Using Master Slides, Styles, and Templates, in the *Impress Guide*.
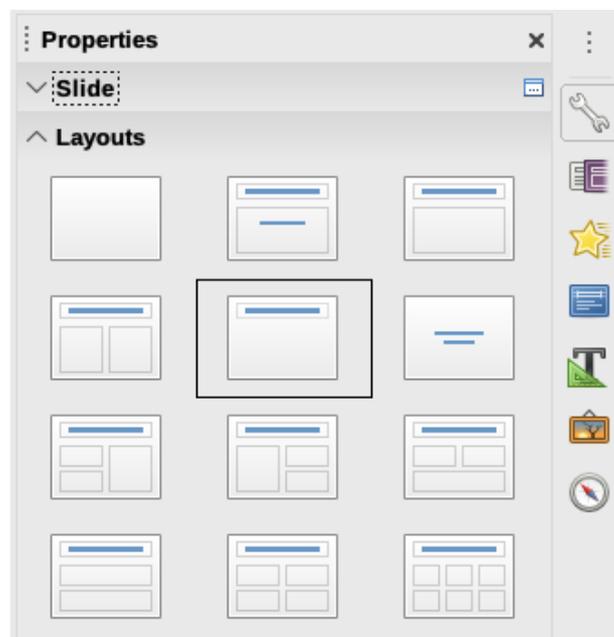
Figure 130: Slide layouts in Sidebar
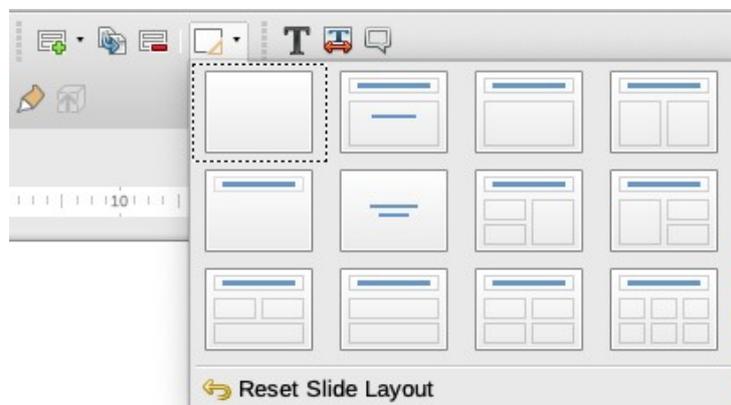
Figure 131: Slide layouts in Presentation toolbar

To select or change the layout of a slide, select the slide in the Slides Pane so that it appears in the Workspace, then select the desired layout from the Layouts section in the Sidebar. Several layouts contain one or more content boxes. Each of these content boxes can be configured to contain text, movies, images, charts, or tables.

You can choose the type of content by clicking on the corresponding icon that is displayed in the middle of the content box as shown in Figure 132. If you intend to use the content box for text, click on **Click to add text**.
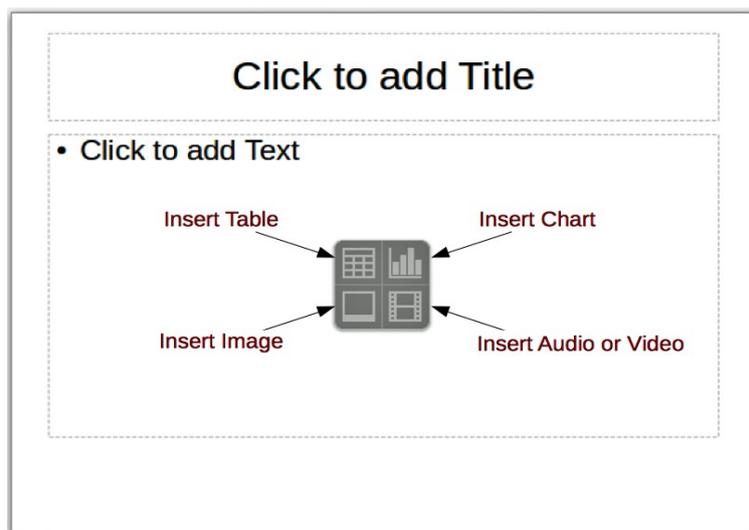
Figure 132: Selecting content type

Modifying slide elements

A slide contains elements that were included in the master slide, as well as those elements included in the selected slide layout. However, it is unlikely that the predefined layouts will suit all your needs for the presentation. You may want to remove elements that are not required or insert objects such as text and graphics.

Although Impress does not allow you to create new layouts, you can resize and move the layout elements. It is also possible to add elements without being limited to the size and position of the layout boxes.

To resize a contents box, click on the outer frame so that the resizing handles are displayed. To move it, place the mouse cursor on the frame so that the cursor changes shape. You can now click and drag the contents box to a new position on the slide.

To remove any unwanted element:

1) Click the element to highlight it. The resizing handles show that it is selected.

2) Press the *Delete* key to remove it.

> **Note**
>
> Changes to any of the layouts included in Impress can only be made using **View > Normal**. Attempting any changes by modifying a master slide, although possible, may result in unpredictable results and requires extra care as well as a certain amount of trial and error.

Adding text

To add text to a slide that contains a text frame, click on **Click to add text** in the text frame and then type your text. The Outline styles are automatically applied to the text as you insert it. You can change the outline level of each paragraph as well as its position within the text by using the arrow buttons on the Outline toolbar (see Figure 133 and "Outline view" on page 166) or using the *Tab* key while positioning the cursor at the beginning of the paragraph. For more information on text, see "Adding and formatting text" on page 173.

Figure 133: Outline toolbar

Adding objects

To add any objects to a slide, for example a picture, clipart, drawing, photograph, or spreadsheet, click on Insert then select from the drop down menu what type of object you want to insert. For more information, see "Adding pictures, tables, charts, and media" on page 178.

Modifying the appearance of all slides

To change the background and other characteristics of all slides in the presentation, you need to modify the master page or choose a different master slide as explained in "Working with master slides and styles" on page 180.

A Master Slide has a specified set of characteristics that acts as a template and is used as the starting point for creating other slides. These characteristics include slide background, objects in the background, formatting of any text used, and any background graphics.

Impress has a range of master slides, which are found in the Master Slides deck of the Sidebar. You can also create and save additional master slides or add more from other sources. See Chapter 2, Using Master Slides, Styles, and Templates in the *Impress Guide* for more information.

If all you need to do is to change the background, you can use a shortcut:

1) Select **Slide > Properties** on the Menu bar and go to the Background tab on the Slide Setup dialog.

2) Select the desired background (a color, gradient, bitmap, pattern, or hatching) and click **OK**.

3) A dialog opens asking if the background should be applied to all the slides. Click **Yes** if you want all the slides modified and Impress will modify the master page.

> **Note**
>
> Inserting and correctly formatting a background is beyond the scope of this chapter, but you can find all the information you need in Chapter 4, Changing Object Attributes, of the *Draw Guide* or in Chapter 6, Formatting Graphic Objects, of the *Impress Guide*.

Adding and formatting text

Most of your slides are likely to contain some text. This section gives some guidelines on how to add text and change its appearance. Text used in slides is contained in text boxes. For more information on adding and formatting text, see *Chapter 3, Adding and Formatting Text* in the *Impress Guide*.

You can use two types of text boxes on a slide:

  • Choose a predefined layout from the Layouts section of the Sidebar and do not select any special content type. These text boxes are called AutoLayout text boxes.

  • Use the Text toolbar to create text boxes or callouts on a blank slide or a slide with pre-existing text boxes, images, and so on.

You can move, resize, and delete text boxes of both types.

Using AutoLayout text boxes

1) Make sure Normal view is selected.

2) Click in the text box that reads **Click to add Text**. and type or paste your text.

Figure 134: Standard toolbar

Figure 135: Text toolbar

Using text boxes

1) Make sure Normal view is selected.

2) Click on the **Text** icon on the Standard (Figure 134) or Text (Figure 135) toolbar or use the keyboard shortcut *F2*. If the Standard or Text toolbars are not visible, go to **View > Toolbars** on the Menu bar and select **Standard** or **Text** as needed.

3) Click and drag to draw a box for the text on the slide. Do not worry about the vertical size and position as the text box will expand if needed as you type.

4) Release the mouse button when finished. The cursor appears in the text box, which is now in edit mode (a colored border shown in Figure 136).

5) Type or paste your text in the text box, then click outside the text box to deselect it.
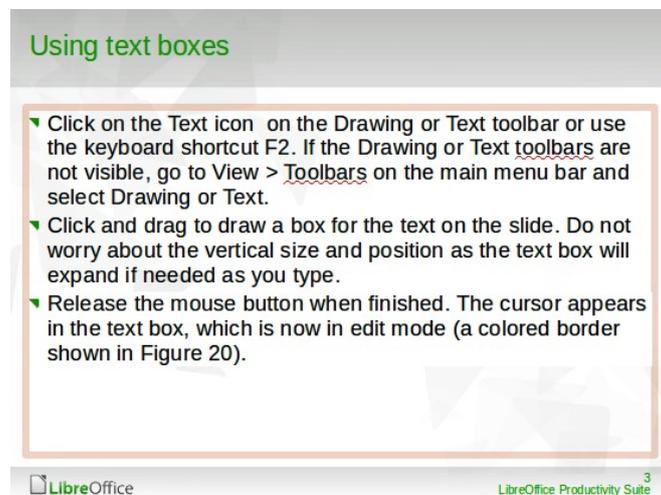
Figure 136: Creating and editing text boxes

Vertical text

In addition to normal text boxes where text is horizontally aligned, it is possible to insert text boxes where the text is aligned vertically. Vertical text is available only when Asian languages are enabled in **Tools > Options > Language Settings > Languages**. Click the **Vertical Text** icon in the Vertical Text toolbar (Figure 137) to create a vertical text box.

Figure 137: Vertical text toolbar

Quick font resizing

Impress has an **Increase Font Size** icon and a **Decrease Font Size** icon on the Text Formatting toolbar (highlighted in Figure 138) to quickly change the font size of selected text. The amount by which the font size changes depends on the standard sizes available for the font in use.

Figure 138: Quick font resizing

> **Note**
>
> AutoLayout text boxes can automatically resize fonts to let the box contain all the text you insert. If you insert a long piece of text, the font size may shrink to fit into the box. Otherwise, the font keeps its default size.

Pasting text

Text may be inserted into the text box by copying it from another document and pasting it into Impress. However, pasted text will probably not match the formatting of the surrounding text on the slide or that of the other slides in the presentation. This may be what you want on some occasions; however, in most cases you want to make sure that the presentation is consistent and does not become a patchwork of different styles, font types, bullet points, and so on.

Pasting unformatted text

It is normally good practice to paste text without formatting and apply the formatting later. To paste text without formatting:

- Use the keyboard shortcut *Ctrl+Shift+V* and select **Unformatted text** from the Paste Special dialog that opens.
- Or click on the small triangle next to the **Paste** icon in the Standard toolbar and select **Unformatted text** from the submenu.

The unformatted text will be formatted with the outline or paragraph style at the cursor position in an AutoLayout text box or with the default style in a normal text box.

Formatting pasted text

When formatting pasted text, you can use the tools available on the Text Formatting toolbar, or the tools available in the Character and Paragraph sections of the Properties deck in the Sidebar (Figure 139).

If you are pasting the text into an AutoLayout text box, you need to apply the appropriate outline style to the text to give it the same look and feel as the rest of the presentation.

Figure 139: Sidebar Character pane

1) Select the text you have just pasted.

2) Select **Format > Clear Direct Formatting** on the Menu bar.

3) Use the four arrow buttons on the Outline toolbar to move the text to the appropriate position and give it the appropriate outline level.

   – Left arrow promotes a list entry by one level (for example from Outline 3 to Outline 2). You can get the same result by placing the cursor at the beginning of the paragraph and pressing the *Shift+Tab* keys.

   – Right arrow button demotes a list entry by one level. Press the *Tab* key to get the same result after placing the cursor at the beginning of the paragraph.

   – Up arrow moves a list entry up in the list order.

   – Down arrow moves a list entry down in the list order.

4) Apply any necessary manual formatting to the text to change font attributes, tabs, and so on.

If you are pasting text in a text box, you can still use styles to format the text quickly. Only one style can be applied to the pasted text, as follows:

1) Paste the text in the desired position.

2) Select the text you have just pasted.

3) Select the desired drawing style to format the text from the default drawing styles available in Impress.

4) Apply any necessary manual formatting to the text to change font attributes, tabs, and so on.

> **Note**
>
> You can also create your own drawing styles in Impress. These drawing styles are only available for the Impress presentation that you have created and saved. You can also create templates in Impress that include any drawing styles that you have created. For more information, see the *Impress Guide*.

Creating bulleted and numbered lists

The procedure to create a bulleted or numbered list is slightly different depending on the type of text box used, although the tools to manage the list and customize the appearance are the same. In AutoLayout text boxes, the outline styles available are, by default, bulleted lists. For normal text boxes, an additional step is required to create a bulleted list. In both cases, you can create numbered lists or change bulleted lists to numbered. Methods for changing the appearance of a list are explained in "Changing list appearance" on page 177.

AutoLayout text boxes

AutoLayout text boxes included in the available layouts are already formatted as a bulleted list. Create a slide with a bulleted list as follows:

1) From the Layout pane, choose a slide design that contains a text box.

2) In the text box, click on **Click to add text**. A bullet appears near the left edge of the box.

3) Type your text and press the *Enter* key to start a new bulleted point.

To change the list to a numbered list, select the list and click the **Toggle Numbered List** icon on the Text Formatting toolbar.

> ### Tip
>
> Press *Shift+Enter* to start a new line without creating a new bullet point. The new line will have the same indentation as the previous line. To switch off bullets altogether, click the **Toggle Bulleted List** icon on the Text Formatting toolbar. If the Text Formatting toolbar is not visible, go to **View > Toolbar > Text Formatting** to turn it on.

Text boxes

Create a bulleted or numbered list in a text box as follows:

1) Click the **Text** icon on the Standard toolbar and draw a text box on the slide.

2) Click the **Toggle Bulleted List** icon or the **Toggle Numbered List** icon on the Text Formatting toolbar.

3) Type the text and press *Enter* to start a new bulleted line.

Creating a new outline level

In AutoLayout text boxes, create a new outline level as follows:

1) If necessary, press *Enter* to begin a new list entry.

2) To demote a list entry (move it to the right), press the *Tab* key or click the **Demote** (right arrow) icon on the Text Formatting toolbar or use the keyboard shortcut *Alt+Shift+Right*. The list entry moves to the right and is indented to the next outline level.

3) To promote a list entry (move it to the left), press *Shift+Tab* or click the **Promote** (left arrow) icon on the Text Formatting toolbar or use the keyboard shortcut *Alt+Shift+Left*. The list entry moves to the left and is indented at the next higher level.

4) To create a new list entry at the same level as the previous one, press *Enter* again.

In AutoLayout text boxes, promoting or demoting an item in the list corresponds to applying a different outline style. The second outline level corresponds to Outline 2 style, the third outline level to Outline 3 style, and so on. A change in level and style produces other changes, for example, to font size, bullet type, and so on.

In text boxes, a new outline level can only be created by using the *Tab* key to demote the list entry and the *Shift+Tab* key combination to promote the list entry.

> **Note**
>
> Do not try to change the outline level by selecting the text and then clicking the desired outline style as you would in Writer. Due to the way that styles work in Impress, it is not possible to change the level in this way.

Changing list appearance

You can fully customize list appearance by changing the bullet type or numbering for the entire list or for only a single entry. All of the changes can be made using the Bullets and Numbering dialog (Figure 140), which is accessed by going to **Format > Bullets and Numbering** on the Menu bar or by right-clicking on selected text and choosing **Bullets and Numbering** from the context menu..

For the entire list:

1) Select the entire list or click on the border of the text box so that the resizing handles are displayed.
2) Select **Format > Bullets and Numbering** on the Menu bar.
3) On the Bullets and Numbering dialog (Figure 140), select the type of list in **Type**. Choices on the dialog will change depending on the type of list selected. Then,
   – For a bullet list, select the bullet character from the **Character** drop-down list.
   – For a graphics bullet style, click **Select Image** to choose one.
   – For a numbered list, select one of the numbering styles under **Type** and then other options such as position, alignment, spacing, and indentation.
4) For a single list entry, click anywhere in the text and then follow steps 2 and 3 above.

For details on all the choices and options available, see the Help or the Impress Guide.

If the list was created in an AutoLayout text box, then an alternative way to change the entire list is to modify the Outline styles. Changes made to the outline style will apply to all the slides using them.
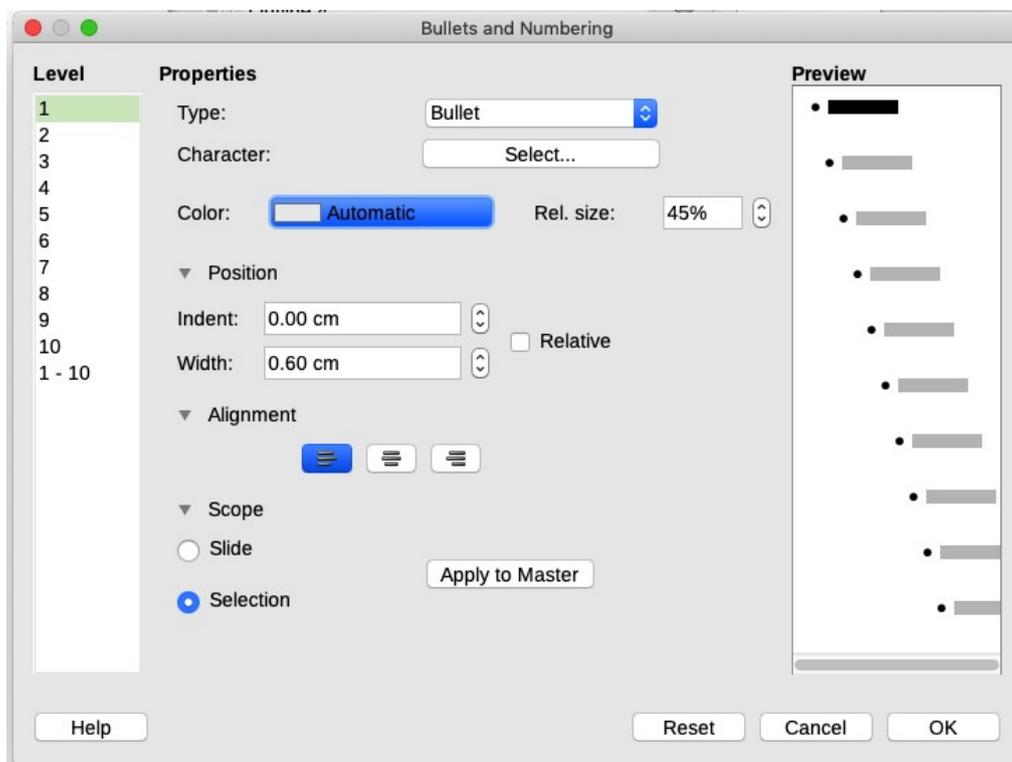
Figure 140: Bullets and Numbering dialog

Adding pictures, tables, charts, and media

A contents box can contain pictures, tables, charts, or media as well as text. This section provides a quick overview of how to work with these objects. For more information on adding pictures, tables, charts, or media, please refer to the *Impress Guide*.

Adding pictures

To add a picture to a contents box:

1) Go to **Insert > Image** on the Menu bar, or click the **Insert Image** icon (Figure 132 on page 171) on the new slide and select the file from the Insert Image dialog that opens. To see a preview of the picture, select **Preview** at the bottom of the Insert Image dialog.

2) Move the picture to the desired location.

3) The picture will automatically resize to fill the area of the content box. Follow the directions in the note below when manually resizing a graphic.

> **Note**
>
> When resizing a graphic, right-click the picture. Select **Position and Size** from the context menu and make sure that **Keep ratio** is selected. Then adjust the height or width to the size you need. As you adjust one dimension, both dimensions will change to keep the width and height ratio the same, ensuring that the picture will not become distorted. Remember also that resizing a bitmap image will reduce its quality; it is better to create an image of the desired size outside of Impress.

Adding tables

To add basic tables to a slide:

1) Go to **Insert > Table** on the Menu bar, or click the **Table** icon on the new slide, or click the **Table** icon on the Standard toolbar.
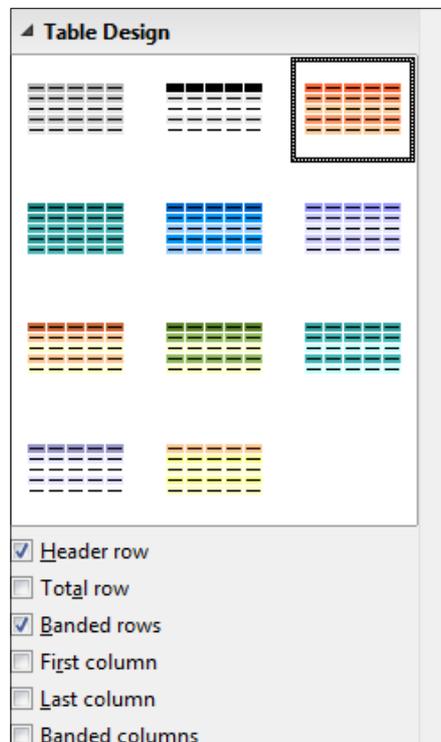
Figure 141: Sidebar Table Design pane

2) If there is a table already on the slide and it is selected, click the **Table** icon on the Table toolbar. The Table toolbar is only visible after selecting **View > Toolbars > Table** on the Menu bar and when a table is selected.

3) Select the number of rows and columns required.

4) Select a design style from the available options for your table in the Table Design pane in the Properties deck of the Sidebar (Figure 141). If the Table Design pane does not automatically open after inserting or selecting a table, click on the **Properties** icon at the side of the Sidebar.

> **Note**
>
> Selecting from any of the styles in the Table Design section in the Sidebar creates a table based on that style. If you create a table by another method, you can still apply a style of your choice later.

The Table toolbar in Impress offers the same functions as the Table toolbar in Writer, with the exception of the calculation functions Sort and Sum. To use Sum and Sort in your presentation, you have to insert a Calc spreadsheet.

After the table is created, you can modify it by adding and deleting rows and columns, adjusting width and spacing, adding borders, background colors and so on. For more information on working with tables see Chapter 3, Adding and Formatting Text, in the *Impress Guide* and Chapter 13, Tables of Data, in the *Writer Guide*.

Entering data into table cells is similar to working with text box objects. Click in the cell you wish to add data to and begin typing. To move around cells quickly, use the following keyboard options:

- Press the arrow keys to move the cursor to another cell if the cell is empty, or to the next character if the cell already contains text.
- Press the *Tab* key to move to the next cell on the right and press *Shift+Tab* to move to the next cell on the left.

Adding charts

To insert a chart in a slide:
1) Go to **Insert > Chart** on the Menu bar or click on the Chart icon in the Standard toolbar, or click on the **Insert Chart** icon on the new slide (Figure 132 on page 171).

2) Impress will insert a default chart and open the Chart dialog. To modify the chart type, insert your own data, and change the formatting, refer to *Chapter 7, Spreadsheets, Charts, and Other Objects* in the *Impress Guide*, or, for more details and examples, *Chapter 3, Creating Charts and Graphs* in the *Calc Guide*.

Adding media files

To insert media files, such as music and movie clips, in a slide:

1) Go to **Insert > Audio or Video** on the Menu bar, or click on the **Insert Audio or Video** icon on the new slide (Figure 132 on page 171).

2) In the file browser that opens, find and select the required file and click **Open**.

3) A media player will open at the bottom of the screen and you can preview the media.

4) When an audio file is inserted, the contents box will show a loudspeaker image.

Adding graphics, spreadsheets, and other objects

Graphics, such as shapes, callouts, and arrows, are often useful to complement the text on a slide. These objects are handled much the same way as graphics in Draw. For more information, see Chapter 7, Getting Started with Draw, or the *Impress Guide* Chapters 4, 5, and 6, or the *Draw Guide*.

Spreadsheets embedded in Impress include most of the functionality of Calc spreadsheets and are capable of performing complex calculations and data analysis. If you need to analyze your data or apply formulas, these operations are best performed in a Calc spreadsheet and the results displayed in an embedded Calc spreadsheet or in an Impress table.

Alternatively, go to **Insert > Object > OLE Object** on the Menu bar. You can select from options that include a LibreOffice Spreadsheet. This opens a spreadsheet in the middle of the slide and the menus and toolbars change to those used in Calc. You can start adding data, though you may have to resize the visible area on the slide. You can also insert an existing spreadsheet and use the viewport to select the data that you want to display on your slide.

You can also insert into a slide various other objects such as Writer documents, Math formulas, Draw drawings, or another presentation. For details on using these objects, refer to Chapter 7, Including Spreadsheets, Charts, and Other Objects, in the *Impress Guide*.

Working with master slides and styles

A master slide is a slide that is used as the starting point for other slides. It is similar to a page style in Writer and it controls the basic formatting of all slides based on it. A slide show can have more than one master slide.

A master slide has a defined set of characteristics, including background colors, graphics, gradients; and other objects (such as logos, decorative lines and so on), headers and footers, placement and size of text frames, and text format.

Styles

All of the characteristics of master slides are controlled by styles. New slides that you create using a master slide have styles that are inherited from the master slide which was used. Changing a style in a master slide results in changes to all slides based on that master slide, but you can modify individual slides without affecting the master slide.

> **Note**
>
> Although it is highly recommended to use master slides whenever possible, there are occasions where manual changes are needed for a particular slide, for example to enlarge the chart area when the text and chart layout is used.

Master slides have two types of styles associated with them: presentation styles and drawing styles. The included presentation styles can be modified, but new presentation styles cannot be created. For drawing styles, you can modify the included styles and also create new styles.

Presentation styles affect three elements of a master slide: background, background objects (such as icons, decorative lines, and text frames), and text placed on the slide. Text styles are further divided into Notes, Outline 1 through Outline 9, Subtitle, and Title. The outline styles are used for the different levels of the outline to which they belong. For example, Outline 2 is used for the sub-points of Outline 1, and Outline 3 is used for the sub-points of Outline 2, and so on.

Drawing styles are not restricted and can affect many of the elements of a slide.

Master slides

Impress comes with a collection of master slides. These master slides are shown in the Master Slides deck of the Sidebar (Figure 142), which has three panels: **Used in This Presentation**, **Recently Used**, and **Available for Use**. Click the expansion sign (+ or arrow) next to the name of a panel to expand it to show thumbnails of the slides or collapse it to hide the thumbnails.
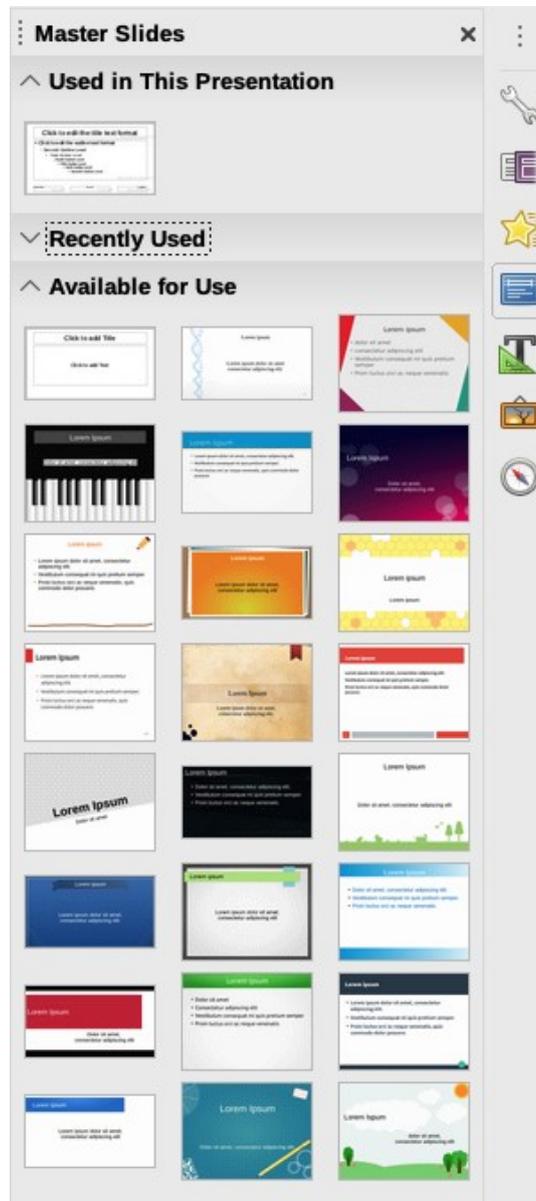
Figure 142: Sidebar Master Slides deck

Each of the master slides shown in the Available for Use list is from a template of the same name. If you have created your own templates, or added templates from other sources, master slides from those templates will also appear in this list.

Creating a master slide

Creating a new master slide is similar to modifying the default master slide.

1) Enable editing of master slides by selecting **View > Master Slide** on the Menu bar and the Master View toolbar opens (Figure 143). If the Master View toolbar does not appear, go to **View > Toolbars** and select **Master View**.

2) On the Master View toolbar, click the **New Master** icon, or right-click on any slide in the Slides Pane and choose **New Master** from the context menu.

3) A new master slide appears in the Slides pane. Modify this master slide to suit your requirements. (See "Modifying a master slide" on page 184.)

Figure 143: Master view toolbar

4) It is also recommended that you rename this new master slide. Right-click on the slide in the Slides pane and select **Rename master** from the context menu, or click the **Rename master** icon on the Master View toolbar.

5) When finished creating a master slide, click the **Close Master View** icon on the Master View toolbar and return to normal slide editing mode.

Applying a master slide

To apply a master slide to all the slides in your presentation:

1) Open the Master Pages deck in the Sidebar (Figure 142).

2) Right-click on one of the master slides select **Apply to All Slides** on the context menu.

To apply a master slide to one or more selected slides:

1) In the Slides Pane, select the slide or slides where you want to use a new master slide.

2) In the Master Pages deck on the Sidebar, right-click on the master slide you want to apply to the selected slides, and select **Apply to Selected Slides** on the context menu.

Loading additional master slides

Sometimes, in the same set of slides, you may need to use master slides that belong to different templates. For example, you may need a completely different layout for the first slide of the presentation, or you may want to add to your presentation a slide from a different presentation.

1) Select the slide, then go to **Slide > Change master slide** on the Menu bar. The Available Master Slides dialog (Figure 144) opens.

2) To add more master slides, click the **Load** button to open the Load Master Slide dialog (Figure 145). Click **Preview** to expand the dialog to show a preview of the slide designs.

3) Select the template from which to load the master slide and click **OK**.

4) Click **OK** again to close the Available Master Slides dialog.
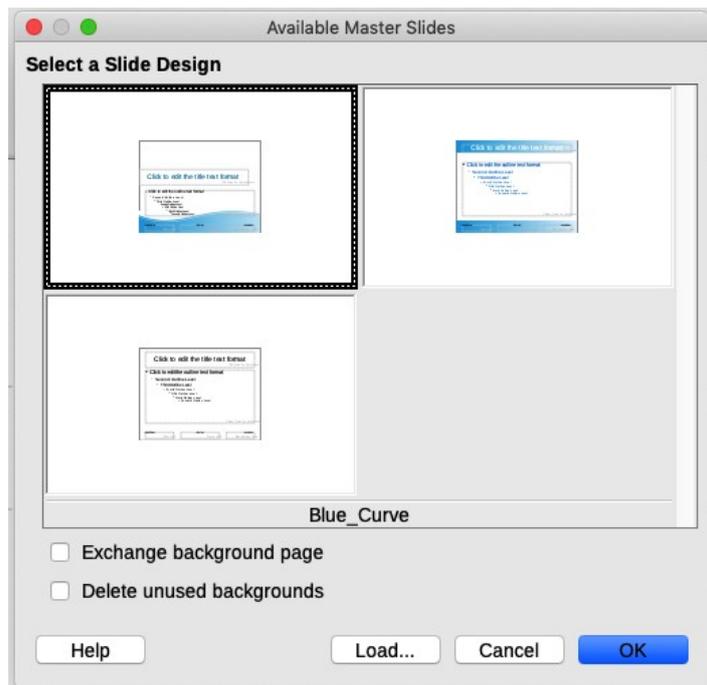
Figure 144: Available Master Slides dialog
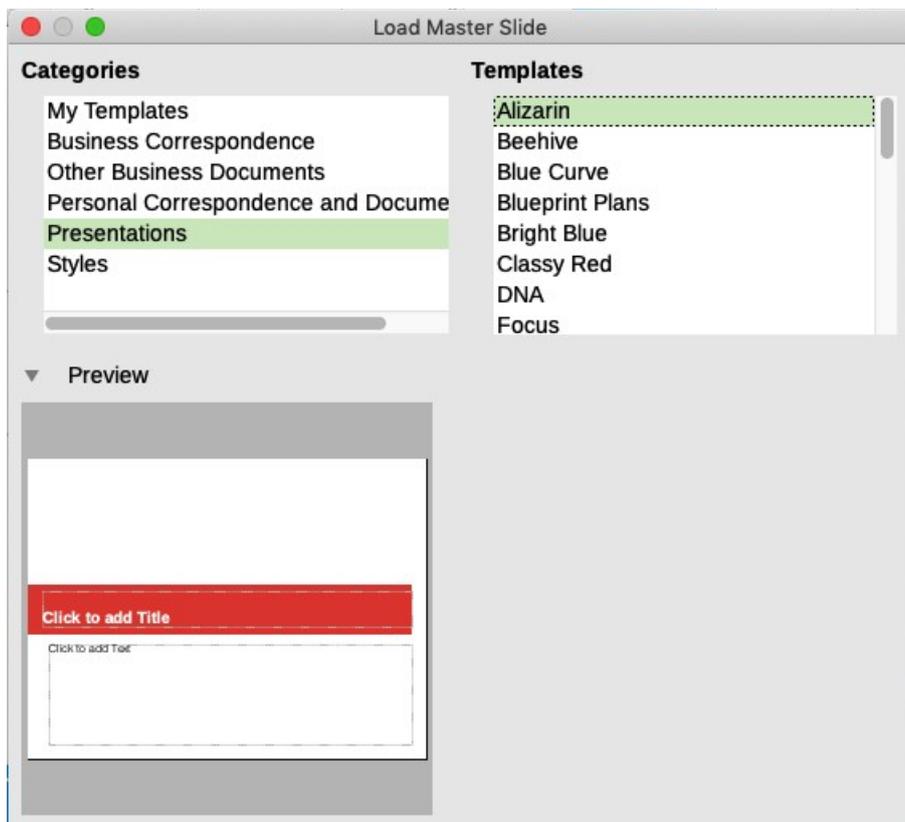
Figure 145: Load Master Slide dialog, expanded to show preview

The master slides in the template you selected are now shown in the **Available for use** pane of the Master Slides deck in the Sidebar.

Modifying a master slide

You can change the following items on a master slide:

- Background (color, gradient, hatching, pattern, or bitmap)
- Background objects (for example, a logo or decorative graphics)
- Size, placement, and contents of header and footer elements to appear on every slide
- Size and placement of default frames for slide titles and content

For more information on modifying master slides, see Chapter 2, Using Master Slides, Styles, and Templates, in the *Impress Guide*.

1) Select **View > Master Slide** from the Menu bar. This unlocks the properties of a master slide so you can edit it.

2) Select a master slide in the Slides pane on the left of the Workspace.

3) Select an object on the master slide in the Workspace. The Properties deck in the Sidebar will then display the properties that can be changed for the selected object. Figure 146 shows an image selected with the Image pane open on the Sidebar.

4) Make all necessary changes to the master slide, then click the **Close Master View** icon on the Master View toolbar or go to **View > Normal** on the Menu bar to exit from editing master slides. Save the presentation file before continuing.
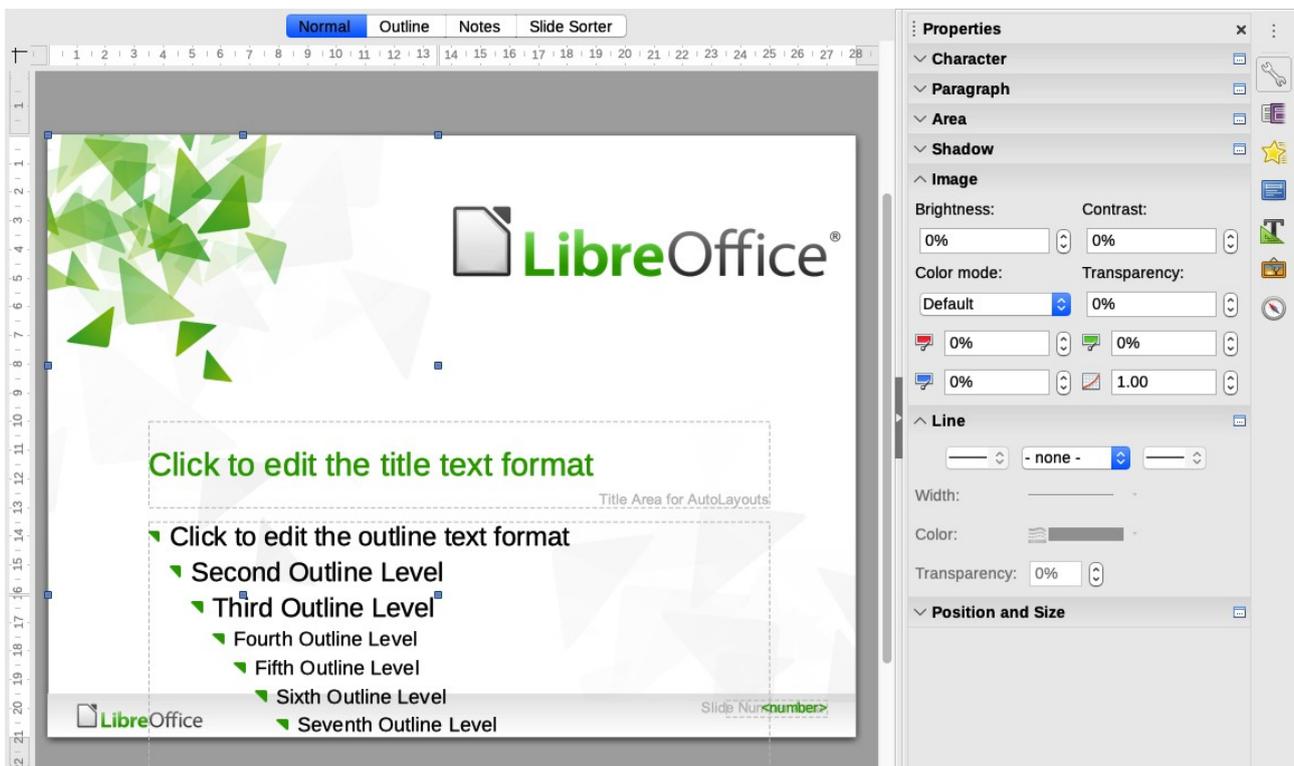
Figure 146: Editing a master slide

> ⚠️ **Caution**
>
> Any changes made to one slide when in Master View mode will appear on all slides using this master slide. Always make sure you close Master View and return to Normal view before working on any of the presentation slides.

	Note

The changes made to one of the slides in Normal view (for example, changes to the bullet point style, the color of the title area, and so on) will not be overridden by subsequent changes to the master slide. There are cases, however, where it is desirable to revert a manually modified element of the slide to the style defined in the master slide. To revert back to default formatting, select the element and select **Format > Clear Direct Formatting** from the Menu bar.

Adding text, footers, and fields to all slides

You can add text, footers, or fields to a master slide so those elements appear on every slide in your presentation. Headers are not normally added to slides.

Text

1) Go to **View > Master Slide** on the Menu bar to open Master View (Figure 147).

2) On the Drawing toolbar, select the Text icon or press the *F2* key.

3) Click and drag in the master slide to draw a text object and then type or paste your text into the text object.

4) Go to **View > Normal** on the Menu bar or click the **Close Master View** icon on the Master View toolbar when you have finished.
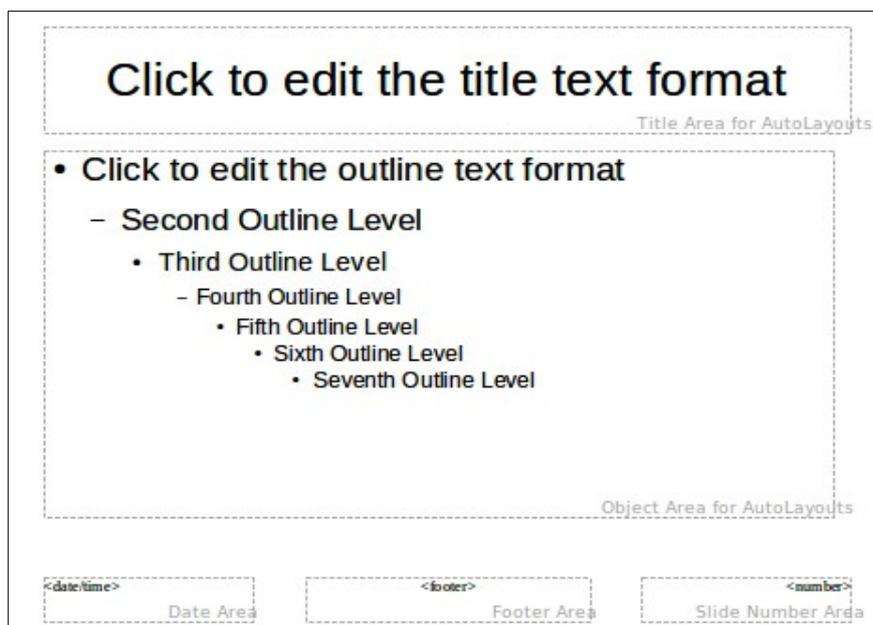
Figure 147: Example master view
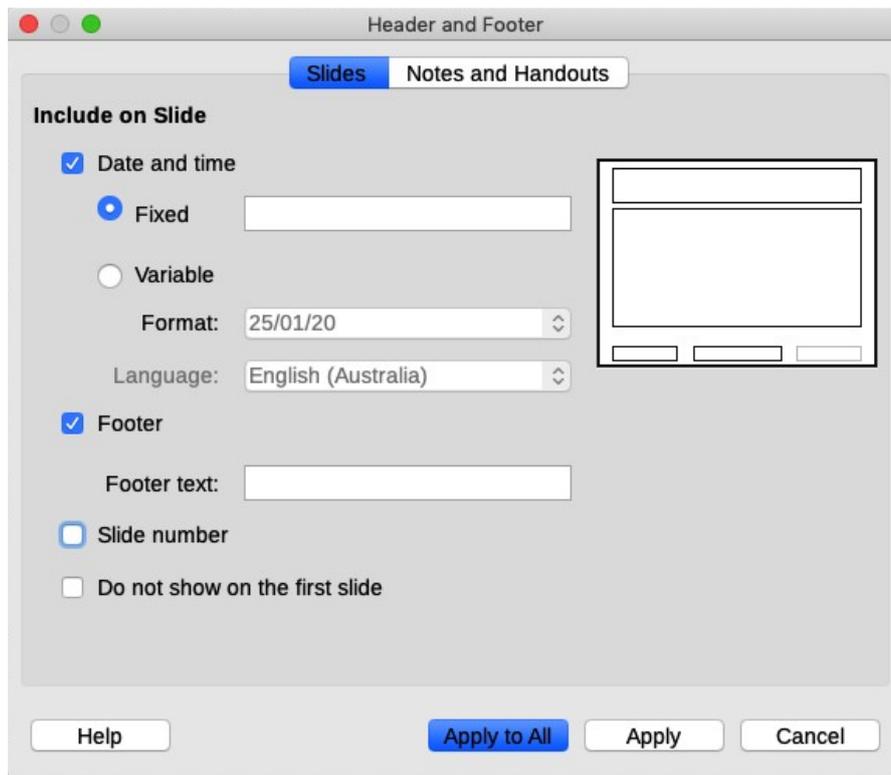
Figure 148: Header and Footer dialog in Impress

Footers

To add a footer to your slides:

1) In Master View (Figure 147), go to **Insert > Header and Footer** on the Menu bar.

2) On the Header and Footer dialog (Figure 148), go to the Slides tab and choose items to display and type in the footer text.

3) Click **Apply to All** to apply your changes to all the master slides in the presentation, or click **Apply** to apply your changes only to the selected master slide.

Fields

To add a field into an object or as a separate object on a slide, select **Insert > Fields** on the Menu bar and select the required field from the submenu. If you want to edit this field in your slide, see Chapter 3, Adding and Formatting Text, in the *Impress Guide* for more information.

The fields you can use in Impress are:

- Date (fixed)
- Date (variable): updates automatically when you reload a file
- Time (fixed)
- Time (variable): updates automatically when you reload a file
- Author: first and last names listed in the LibreOffice user data (see Tip below)
- Slide Number: the sequence number of the slide, without the word "Slide"
- Slide Title: defaults to Slide 1, Slide 2, ... if you have not renamed the slides
- Slide Count: the number of slides in the presentation
- File Name
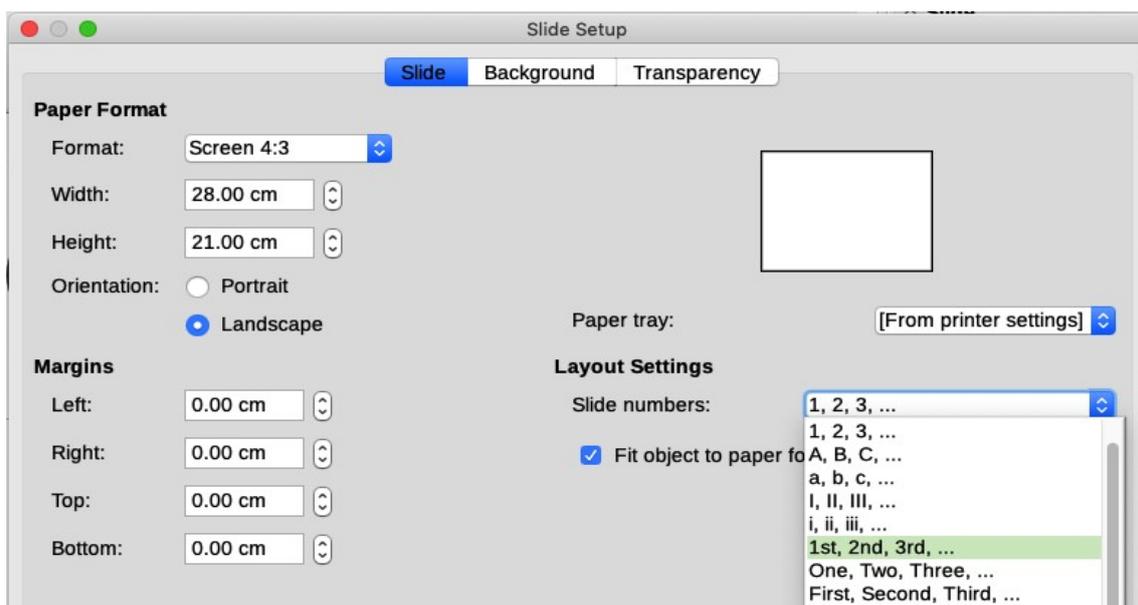
Figure 149: Choosing slide number format

Adding comments to a presentation

Impress supports comments similar to those in Writer and Calc.

In Normal View, go to **Insert > Comment** on the Menu bar to open a blank comment (Figure 150). A small box containing your initials appears in the upper left-hand corner of the slide, with a larger text box beside it. Impress automatically adds your name and the current date at the bottom of the text box. Type or paste your comment into the text box.

You can move the small comment markers to anywhere you wish on the slide. Typically you might place it on or near an object you refer to in the comment.

To show or hide the comment markers, choose **View > Comments**.

Select **Tools > Options > User Data** to configure the name you want to appear in the comment.

If more than one person edits the document, each person is automatically allocated a different background color.
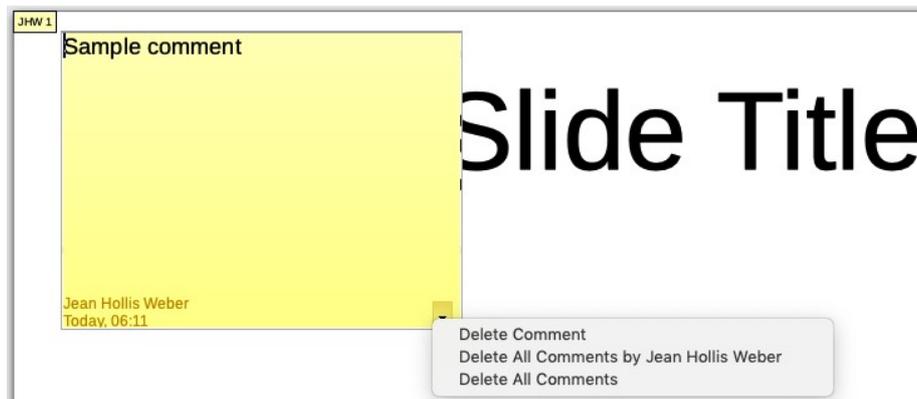
Figure 150: Inserting comments

Creating handouts

Choose **View > Master Handout** to set up the layout of slides for printed (or PDF) handouts. Click the Handout tab in the workspace to open the Properties deck on the Sidebar. Expand the Layouts pane (Figure 151). Here you can choose to print 1, 2, 3, 4, 6, or 9 slides per page.
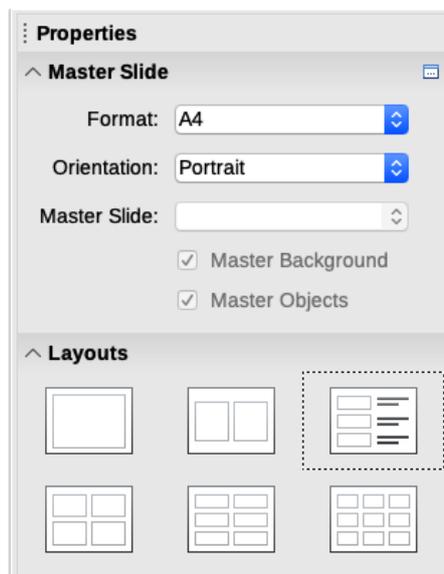
Figure 151: Handout layouts

Use this view also to customize the information printed on the handout. Refer to Chapter 10, Printing, Emailing, Exporting, and Saving Slide Shows in the *Impress Guide* for instructions on printing slides, handouts, and notes.

Go to **Insert > Header and Footer** on the Menu bar to open the Header and Footer dialog. On the Notes and Handouts tab (Figure 152), select the elements you want to appear on each handout page and their contents. More details on how to use this dialog are provided in the *Impress Guide*.
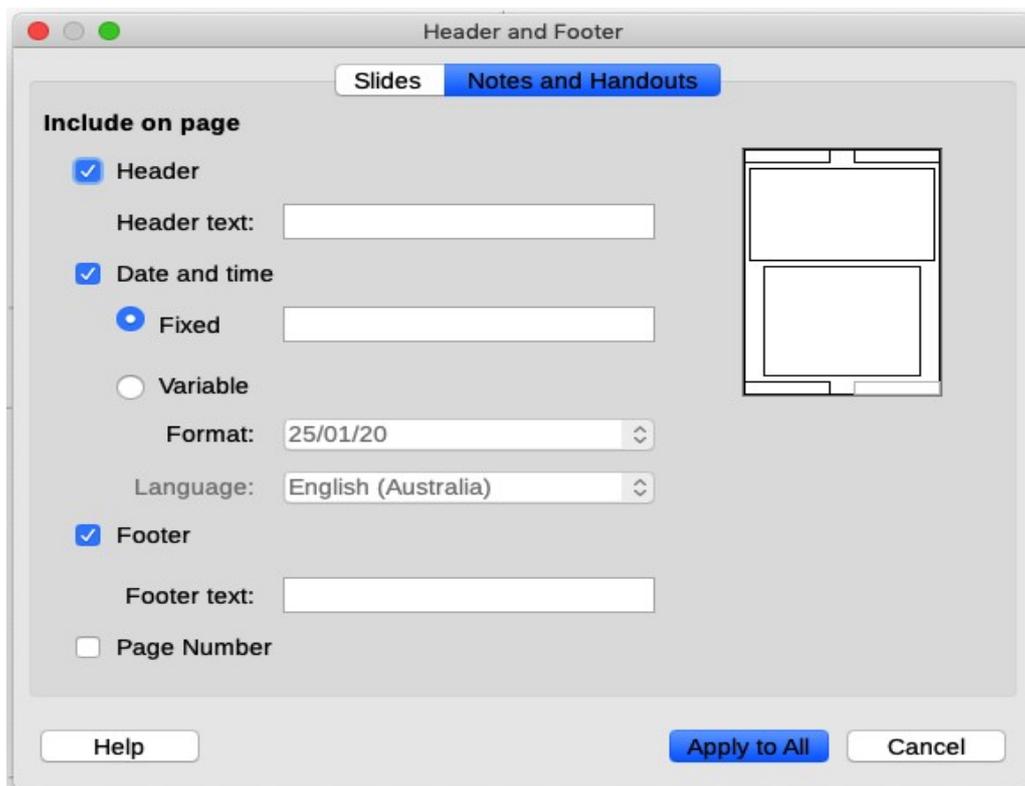
Figure 152: Header and Footer dialog – Notes and Handouts page

Creating a photo album

Impress can create a photo album from a set of images, usually with one photo per slide. This photo album can be a multimedia show with graphics and images or even collect your latest vacation pictures into a presentation file.

To insert a photo album into your presentation:

1) Open an existing or blank presentation.

2) Go to the slide that precedes the photo album.

3) Choose **Insert > Media > Photo Album**.

4) In the Create Photo Album dialog (Figure 153), click **Add**. A standard file browser opens.

5) Locate and select the photos you want to include.

> ### 🔆 Tip
>
> If several images are in the same folder, you can select a group of photos using the *Shift* or *Ctrl* keys while clicking on their filenames.

6) Click **Open** to add the files to the photo album.

7) Select the number of images per slide in the **Slide layout** drop-down list.

8) Optionally select the **Add caption to each slide o**ption to insert a text box for the caption.

9) Create the required sequence by removing images or moving them up or down in the list of images. When the sequence of images is ready, click **Insert Slides**. (You can change the sequence and remove or insert images later, as you can with any slides.)
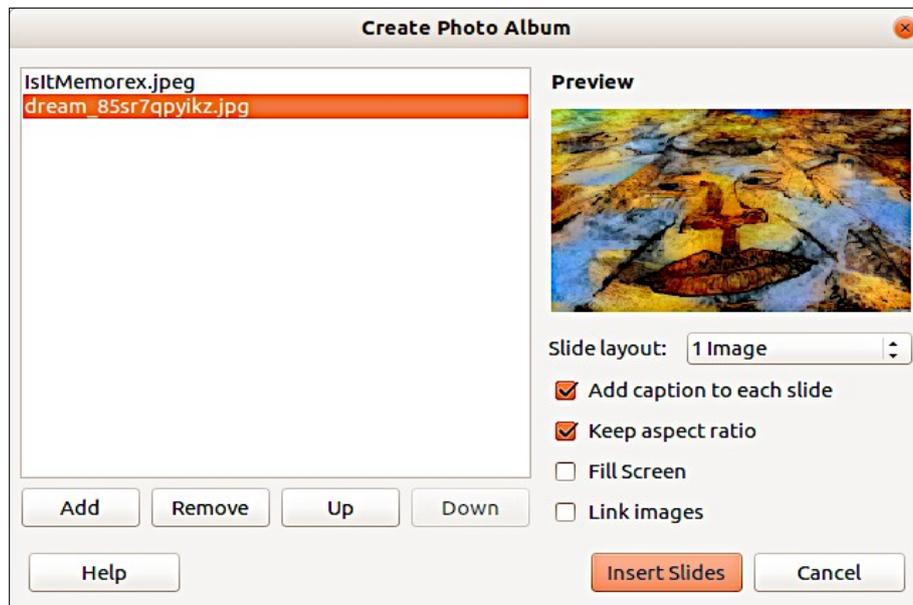
Figure 153: Create Photo Album dialog with photo preview

> 💡 **Tip**
>
> Click on a file name to display it in the Preview area.

Impress will create a presentation with as many pages as needed. If you selected Add caption to each slide, there will be a placeholder for the image caption (title) on each slide.

> 💡 **Tip**
>
> Use the Slide Sorter (see page 168) to reorder your photo album. Use slide transitions (page 191) to go smoothly from one photo to the following photo. Use audio resources (page 179) to insert a musical background.

Setting up a slide show

Impress allocates reasonable default settings for slide shows, while at the same time allowing for customizing many aspects of the slide show experience. This section covers only some aspects; more advanced techniques are explained in Chapter 9, Slide Shows, in the *Impress Guide*.

Most of the tasks are best done in Slide Sorter view where you can see most of the slides simultaneously. Go to **View > Slide Sorter** on the Menu bar or click the Slide Sorter tab (if visible) at the top of the Workspace.

One slide set – multiple presentations

In many situations, you may find that you have more slides than the time available to present them or you may want to provide a rapid overview without dwelling on the details. Rather than having to create a new presentation, you can use two tools that Impress offers: hiding slides and custom slide shows.

Hiding slides

1) Select the slide you want to hide in the Slide Pane or Slide Sorter view in the Workspace.
2) Go to **Slide > Hide Slide** on the Menu bar or right-click on the slide thumbnail and select **Hide Slide**. Hidden slides are marked by a diagonal bar across the slide.

Custom slide shows

If you want to create a custom slide show from the same presentation:

1) Select the slides you want to use in your custom slide show.

2) Go to **Slide Show > Custom Slide Show** on the Menu bar.

3) Click on the **New** button to create a new sequence of slides and save it with a different name. You can have as many slide shows as you want from a single presentation.

Slide transitions

A slide transition is the effect that takes place between slides when one slide changes to the next slide in a presentation. To configure the slide transition:

1) Open the Slide Transition deck in the Sidebar to display the transitions available.

2) Select the desired transition, the speed of the animation, and whether the transition should happen when you click the mouse (preferred) or automatically after a certain number of seconds.

3) To apply the transition to all of the slides in your presentation, click **Apply Transition to All Slides**. Otherwise, select one or more slides in the Slides pane to configure different transitions.

> **Tip**
>
> At the bottom of the Slide Transition deck, select the **Automatic preview** option. Select its checkbox and when you make any changes in a slide transition, the new slide is previewed in the Workspace, including its transition effect.

Slide advance

You can set the presentation to advance automatically to the next slide after a set amount of time from the Slide Transition deck in the Sidebar.

1) Go to **Advance Slide** and select the **Automatically after** option.

2) Enter the required amount of time in seconds that each slide will be displayed.

3) Click on the **Apply Transition to All Slides** button.

To apply a different display time to each slide in your presentation:

1) Go to **Slide Show > Rehearse Timings** on the Menu bar. The slide show begins in full-screen mode and a timer appears in the lower left corner of the display.

2) When you are ready to advance to the next slide, click on the display background or press the right arrow or space bar on your keyboard.

3) Impress will memorize the timings for each slide and will advance to the next slide automatically using these timings when you run the slide show.

To restart a slide show automatically after the last slide has been displayed (kiosk mode):

1) Go to **Slide Show > Slide Show Settings** on the Menu bar.

2) In the Presentation Mode section, select **Loop and repeat after** and the timing of the pause between slide shows. Click **OK** when you have finished.

Playing sounds

You can use the Slide Transition pane to select a sound or song that is played throughout your presentation.

1) Select the slide where you want the sound to start.

2) In the Sidebar, go to the Slide Transition deck.

3) In the Modify transition section, select **Other sound** from the Sound drop-down list.

4) In the Open dialog, navigate to the sound file, select it, and click **Open**.

5) On the Slide Transition deck, select **Loop until next sound** if you want the sound to restart when it is finished.

Animation effects

Slide animations are similar to transitions, but they are applied to individual elements (title, chart, shape, or individual bullet point) in a single slide. For example, you may wish each bullet point to appear when you are ready to discuss it, instead of having all of them visible as soon as the slide is opened.

Animation effects are applied from Normal view so that you can select individual objects on a single slide. For details, see Chapter 9, Slide Shows in the *Impress Guide*.

Tip
You can apply animation effects to the elements on a master slide, so that all slides based on that master slide use the same animation.

Applying animation effects

1) In Normal view, display the desired slide and then select the text or object you want to animate. An object such as a graphic or an entire text box will have selection handles around it when selected. If you choose only a portion of the text in a text box, you may not see any selection handles.

2) In the Sidebar, open the **Animation** deck (Figure 154).

3) Select an animation category, then select an effect. More than one type of animation effect can be applied to an object.

   Entrance effects apply when an object is placed on the screen.

   Emphasis effects apply to an object, for example changing font color.

   Exit effects apply when an object leaves the screen.

   Motion Paths effects cause an object to move along a line or curve.

4) Select from the **Start** drop-down list how the animation effect starts.

   On click − the animation does not start until you click the mouse.

   With previous − the animation runs at the same time as the previous animation.

   After previous − the animation runs as soon as the previous animation ends.

5) Select the duration of the animation effect from the **Duration** drop-down list.

6) If required, select **Automatic preview** so you can check the animation effect on the object.

7) Click **Play** to check how the animation effects looks on the slide.
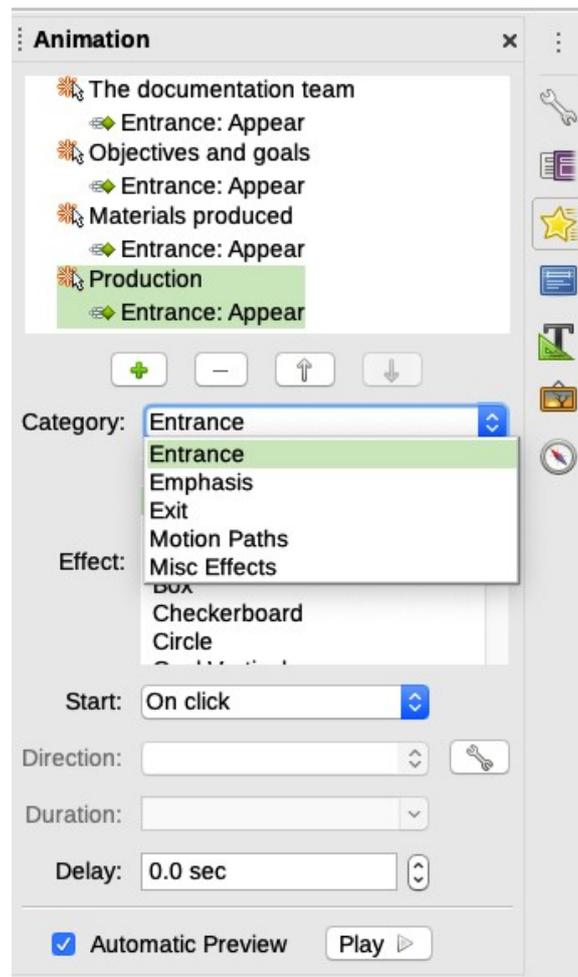
Figure 154: Animation deck in the Sidebar

Running a slide show

To run a slide show, do one of the following:

- Click **Slide Show > Start from First Slide** on the Menu bar.
- Click the **Start from First Slide** icon on the Presentation toolbar.
- Press *F5* on the keyboard.

If the slide advance is set to **Automatically after X sec**, let the slide show run by itself.

If the slide advance is set to **On mouse click**, do one of the following to move from one slide to the next:

- Use the arrow keys on the keyboard to go to the next slide or to go back to the previous one.
- Click the mouse to move to the next slide.
- Press the spacebar on the keyboard to advance to the next slide.

Right-click anywhere on the screen to open a context menu where you can navigate through the slides and set other options.

To exit the slide show at any time including when the slide show has ended, press the *Esc* key.

You can restart a slide show where you left off by selecting **Start from Current Slide**.

Presenter Console

LibreOffice Impress has a Presenter Console function that can be used when an extra display for presentation has been connected to your computer. The Presenter Console (Figure 156) provides extra control over slide shows by using different views on your computer display and on the display that the audience sees. The view you see on your computer display includes the current slide, the upcoming slide, any slide notes, and a presentation timer.

To enable the Presenter Console, go to **Tools > Options > LibreOffice Impress > General** and select **Enable Presenter Console** in the Presentation area (Figure 155). When you run the slide show, the Presenter Console will be activated automatically.

For more information and details about using the Presenter Console, see Chapter 9, Slide Shows, in the *Impress Guide*.
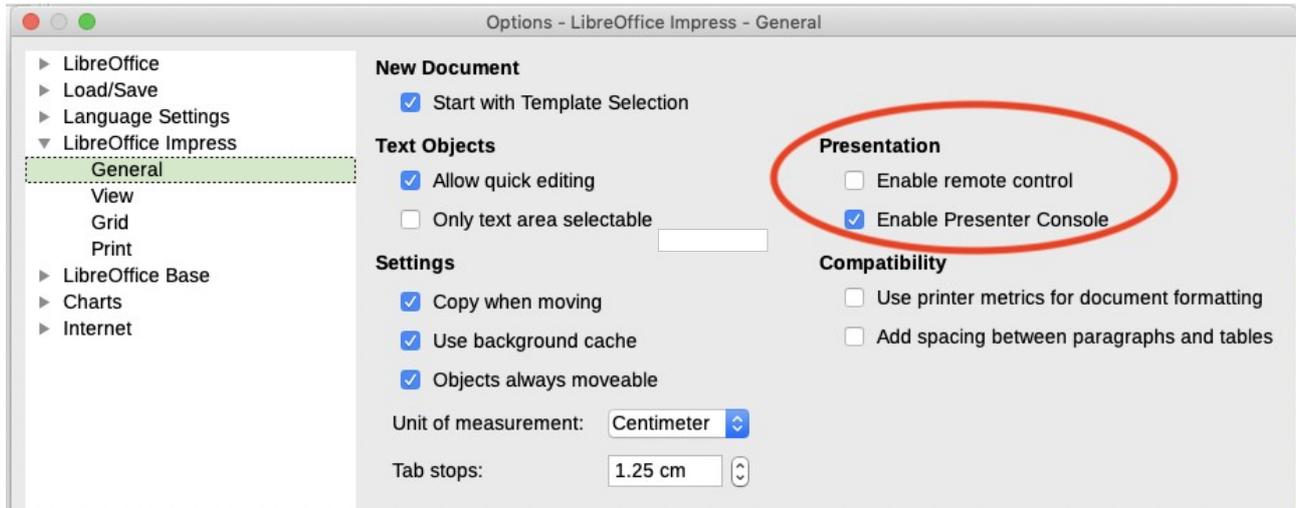
Figure 155: Enabling Impress remote control and Presentation Console
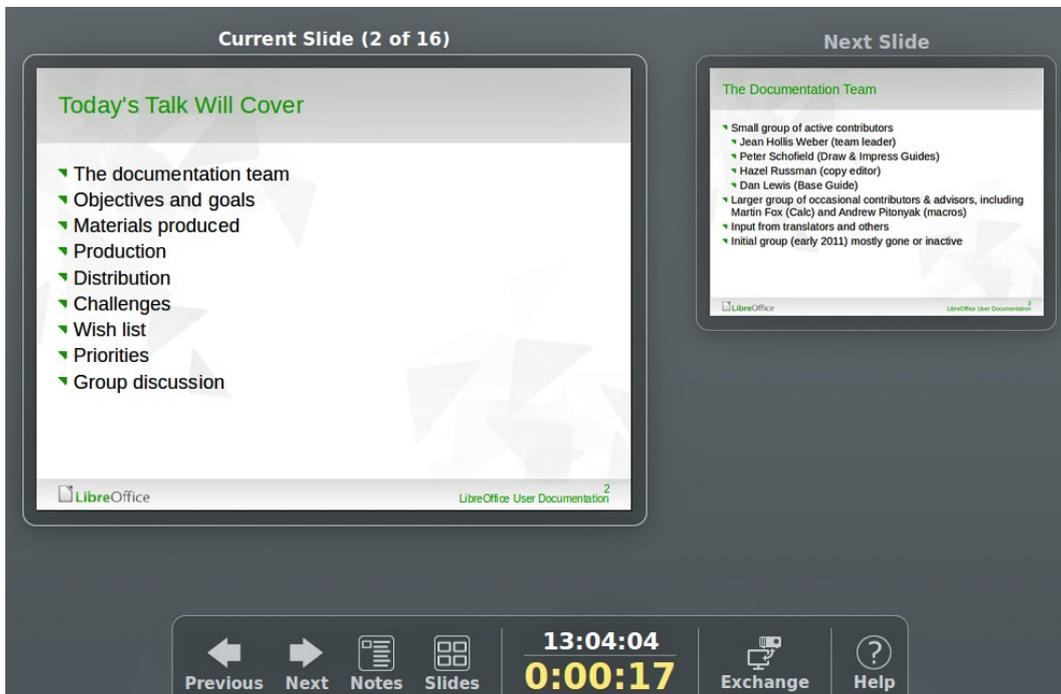
Figure 156: Impress Presenter Console

Using Impress Remote control

Impress Remote is a mobile application developed by the community for Android and iOS systems that allows you to control a live presentation with a mobile device such as a phone or tablet.

The connection between your mobile device and the computer running your presentation is made through a Bluetooth pairing or a local network connection between the two.

Getting Impress Remote

To get the software, access your mobile device application store, either Google Play Store for Android devices or Apple App Store for iOS devices. Search for "LibreOffice Impress Remote" and select the one that is from The Document Foundation and install it in your device.

> **Note**
>
> The iOS version of Impress Remote does not work with iOS version 11 or later.

Connecting the mobile device to the computer

Activate Bluetooth on both devices, then pair the devices. Refer to the manuals for your mobile device and computer operating system for instructions about enabling, setting up a Bluetooth identifier, and pairing.

Once the pairing is established, your mobile device is ready to control your presentation.

Enabling remote control in Impress

An Impress slide show with remote control is not enabled by default. To enable it, go to **Tools > Options > LibreOffice Impress > General** and select **Enable Remote Control** in the Presentation area of the dialog (see Figure 155).

Running a slide show with Impress Remote

To run a slide show using Impress Remote, follow these steps:

1) On both devices, make sure Bluetooth is already enabled and configured.

2) On your computer, open the presentation you would like to present.

3) On your phone:

    a) Open Impress Remote from the Menu bar.

    b) To select your computer, tap its name. The presentation opened on the computer begins automatically.

To advance the presentation
Tap the slide thumbnail or use the phone's physical volume up button.

To go backwards
Double-tap the slide thumbnail or use the phone's physical volume down button.

To skip slide animations and transitions
Swipe left to go to the next slide, or swipe right to go backwards.

To end the presentation, use the Back button of the phone, or open the menu and select **Stop slide show**.

Getting Started Guide

Chapter 7
Getting Started with Draw

Vector Drawing in LibreOffice

What is Draw?

LibreOffice Draw is a vector graphics drawing program, although it can also perform some operations on raster graphics (pixels). Using Draw, you can quickly create a wide variety of graphical images.

Vector graphics store and display an image as an assembly of simple geometric elements such as lines, circles, and polygons, rather than a collection of pixels (points on the screen). Vector graphics allow for easier storage and scaling of the image.

Draw is fully integrated into the LibreOffice suite, and this simplifies exchanging graphics with all components of the suite. For example, if you create an image in Draw, reusing it in a Writer document is as simple as copying and pasting the image. You can also work with drawings directly from within Writer or Impress, using a subset of the functions and tools from Draw.

The functionality of LibreOffice Draw is extensive and, even though it was not designed to rival high-end graphics applications, it possesses more functionality than the drawing tools that are generally integrated with most office productivity suites.

A few examples of the drawing functions are: layer management, magnetic grid-point system, dimensions and measurement display, connectors for making organization charts, 3D functions that enable small three-dimensional drawings to be created (with texture and lighting effects), drawing and page-style integration, and Bézier curves.

This chapter introduces some features of Draw and does not attempt to cover all of the Draw features. See the *Draw Guide* and the Help for more information.

Draw main window

The main components of the Draw main window are shown in Figure 157.

Workspace

The large area in the center of the Draw main window (Workspace) is where you create your drawings. This drawing area can be surrounded with toolbars and information areas. The number and position of the visible tools vary with the task in hand and user preferences, therefore your setup may look different from Figure 157.

The maximum size of a drawing page in LibreOffice Draw is limited by your computer setup and the page size that you can set and use in your printer.

By default, the Workspace consists of three layers (**Layout**, **Controls** and **Dimension Lines**) and the tabs for these default layers appear in the bottom left corner of the Workspace. The default layers cannot be deleted or renamed, but you can add layers as and when necessary.

Pages pane

You can split drawings in Draw over several pages. Multi-page drawings are used mainly for presentations. The Pages pane, on the left side of the Draw main window, gives an overview of the pages that you create in your drawing. If the Pages pane is not visible, go to **View** on the Menu bar and select **Page Pane**. To make changes to the page order, drag and drop one or more pages.

Layers bar

A layer is a workspace where you insert your drawings elements and objects. The Layers bar is located on the bottom of the workplace and contains the guides for layer selection and layer command. For more information on layers, see "Working with layers" on page 201.

Main menu bar   Standard toolbar   Line and Filling toolbar

Pages pane   Workspace

Drawing toolbar   Status bar   Sidebar
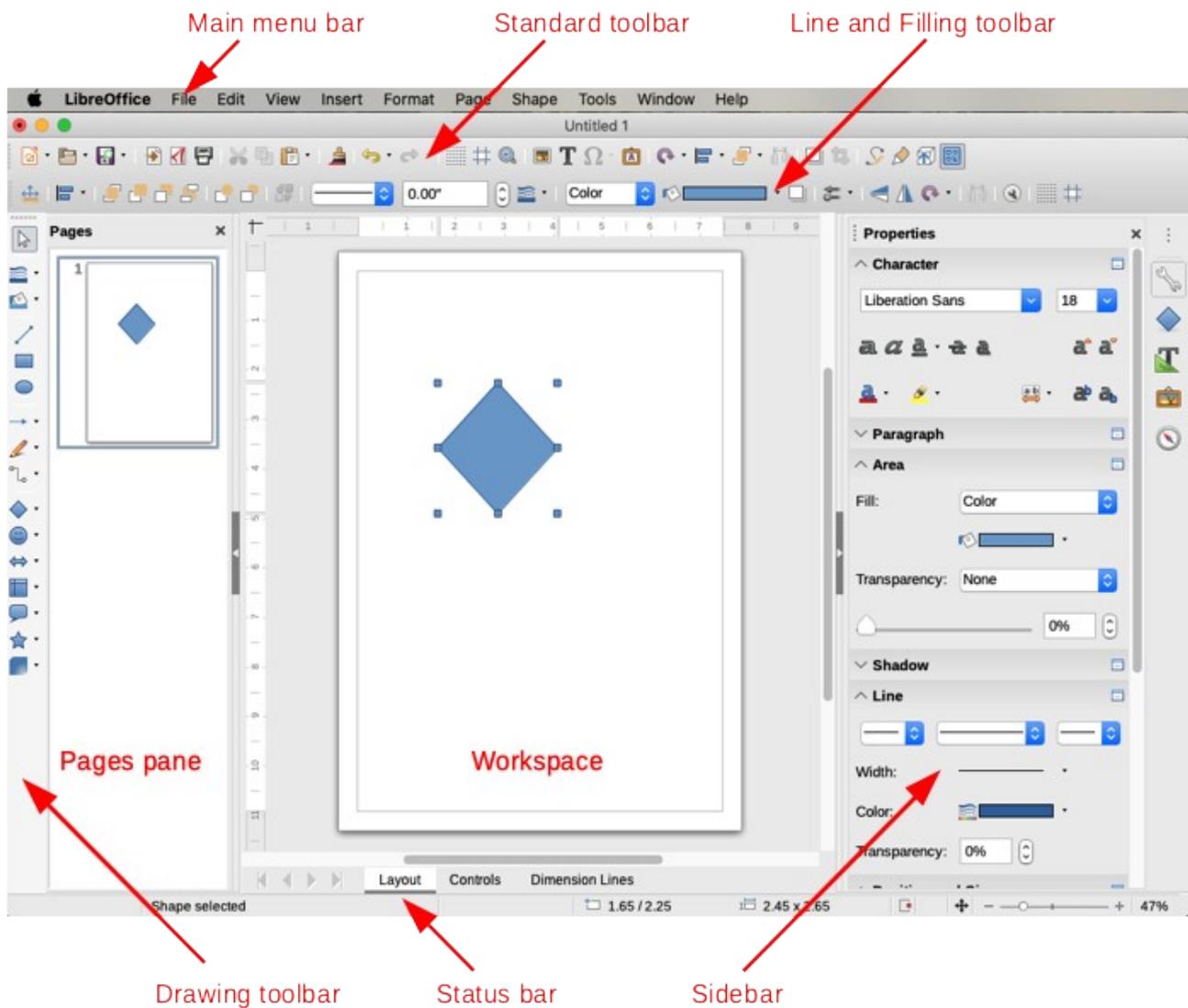
Figure 157: Draw main window

Sidebar

The Sidebar has five main decks in Draw. To expand a deck, click on its icon or click on the small triangle at the top of the icons and select a deck from the drop-down list. If the Sidebar is not visible, go to **View** on the Menu bar and select **Sidebar** from the submenu.

Properties

Contains panes for object properties: **Page**, **Character**, **Paragraph**, **Lists**, **Area**, **Shadow**, **Line**, and **Position and Size**. The visible panes change depending on the object selected.

Shapes

Provides quick selection of most items on the Drawing toolbar: Lines & Arrows, Curves, Connectors, Basic Shapes, Symbols, Block Arrows, Flowchart symbols, Callouts, Stars, and 3D Objects.

Styles

Here you can edit and apply Drawing styles to objects within your drawing. When you edit a style, the changes are automatically applied to all of the elements formatted with this style in your drawing. (In Draw, Presentation styles are not available.)

Gallery

Opens the Drawing gallery where you can insert an object into your drawing either as a copy or as a link. A copy of an object is independent of the original object. Changes to the original object have no effect on the copy. A link remains dependent on the original object. Changes to the original object are also reflected in the link.

Navigator

Opens the Draw Navigator, in which you can quickly move between pages in your drawing or select an object on the drawing. It is recommended to give pages and objects in your drawing meaningful names so that you can easily identify them when using the Navigator.

Rulers

You should see rulers (bars with numbers) on the upper and left-hand sides of the workspace. If they are not visible, you can enable them by selecting **View > Rulers** in the Menu bar. The rulers show the size of a selected object on the page using double lines (highlighted in Figure 158). When no object is selected, they show the location of the mouse pointer, which helps to position drawing objects more accurately.

You can also use the rulers to manage object handles and guide lines when positioning objects.

The page margins in the drawing area are also represented on the rulers. You can change the margins directly on the rulers by dragging them with the mouse. The margin area is indicated by the grayed out area on the rulers as shown in Figure 158.
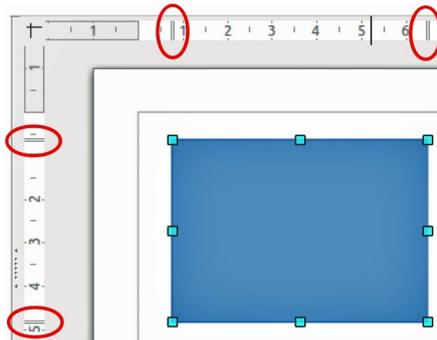
Figure 158: Rulers showing size of a selected object

To change the measurement units of the rulers, which can be defined independently, right-click on a ruler and select the measurement unit from the drop down list, as illustrated for the horizontal ruler in Figure 159.
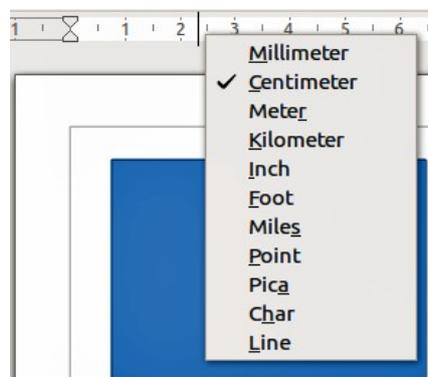
Figure 159: Ruler units

Status bar

The Status bar (Figure 160) is located at the bottom of the workspace in all LibreOffice components. It includes several Draw-specific fields. For details on the contents and use of these fields, see Chapter 1, Introducing LibreOffice, in this guide and Chapter 1, Introducing Draw, in the *Draw Guide*.

You can hide the Status Bar by going to **View** on the Menu bar and deselecting **Status Bar**.
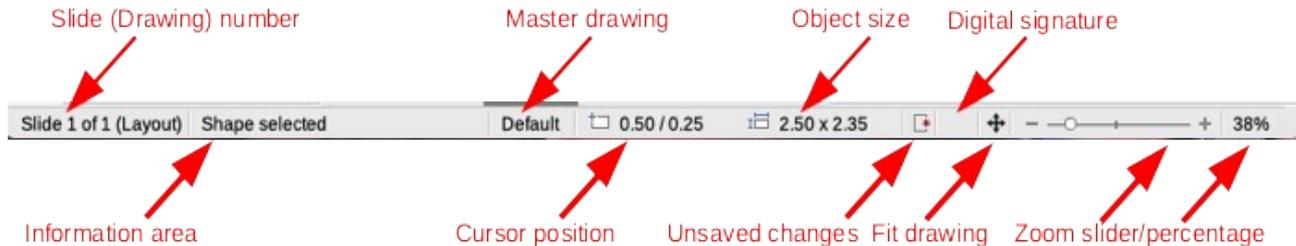
Figure 160: Status bar

> **Note**
>
> The sizes are given in the current measurement unit. They might not be the same as the ruler units. The measurement unit on the Status bar is defined in **Tools > Options > LibreOffice Draw > General**, where you can also change the scale of the page.

Toolbars

To display or hide the various Draw toolbars, go to **View > Toolbars** on the Menu bar and select which toolbars you want to display. By default, the Standard toolbar is shown, but the Line and Filling, Text Formatting, and Options toolbars are not shown.

The tools available in the Draw toolbars are described below. See also "Editing objects" on page 214. The appearance of the toolbar icons may vary depending on your operating system and the selection of icon size and style in **Tools > Options > LibreOffice > View**. For more information about working with toolbars, see Chapter 1, Introducing LibreOffice, in this guide.

Standard toolbar
> The Standard toolbar is the same for all LibreOffice components and is not described in detail in this chapter. By default, it is located just under the Menu bar.

Drawing toolbar
> The Drawing toolbar contains all the necessary functions for drawing various geometric and freehand shapes and for organizing them on the page. By default, it is docked vertically on the left side of the Draw window.

Line and Filling toolbar
> Use the Line and Filling toolbar to modify the main properties of a drawing object. The icons and pull-down lists vary according to the type of object selected. The functions on this toolbar are also provided in the Properties pane of the sidebar when a drawing object is selected.

Text Formatting toolbar
> If the selected object is text, the Sidebar shows relevant formatting choices in the Properties pane. If you have enabled both the Line and Filling toolbar and the Text Formatting toolbar, Draw switches between them depending on what object is selected.

Options toolbar
> Use the Options toolbar to activate or deactivate various drawing aids.

Working with layers

Use layers to create a complex drawing by stacking simpler drawings in each layer. The area of a layer that does not contain an object is transparent. You can add any number of layers in a drawing document. Layers are common to all pages of the drawing.

A Draw document contains three default layers that you cannot delete or rename. Here are the common ways of using them:

- **Layout**: on this layer you place title, text, and object placeholders on your page.
- **Controls**: on this layer is always on the top of any other. Here you put buttons and other controls on your drawing.
- **Dimension Lines**: on this layer you place the dimension lines for your object, if relevant.

A layer can be set to visible or hidden, printable or not, locked or unlocked. To quickly toggle the attributes for a selected layer, you can use keyboard shortcuts:

- *Shift+click* – toggle visible/hidden layer
- *Ctrl+click* – lock/unlock layer
- *Ctrl+Shift+click* – toggle printable/not printable layer

Adding a layer

To add a layer to your drawing, select **Insert > Layer** from the Menu bar or right-click any layer tab in the Layers bar on the bottom of the workspace (Figure 157 on page 198) and choose **Insert Layer**. The Insert Layer dialog opens (Figure 161).

Add a name, title, and description of the layer. Select if you want it printable or not, visible or hidden, or locked to prevent further changes or accidental edits. A hidden layer still shows in the Layers bar, but its name is in blue. You cannot reorder layers in the Layers bar.

> **Note**
>
> Layers do not determine the stacking order of objects on the page, except for the Controls layer which is always in front of other layers. The stacking order of objects is determined by the sequence in which you add the objects. You can rearrange the stacking order by right-clicking on an object and choosing **Arrange**.
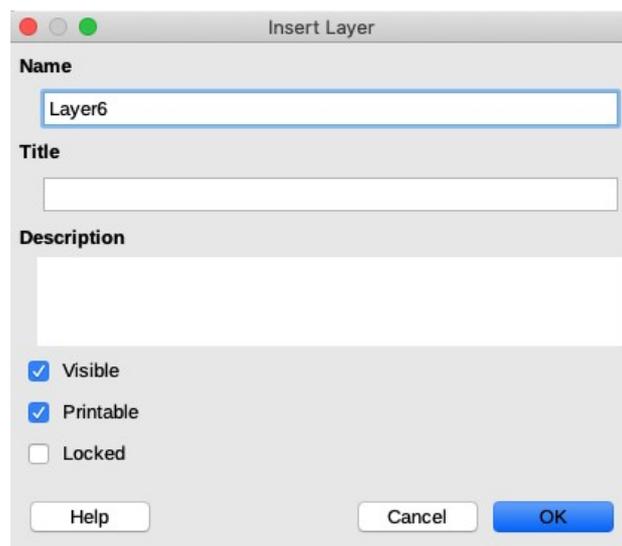
Figure 161: Insert Layer dialog
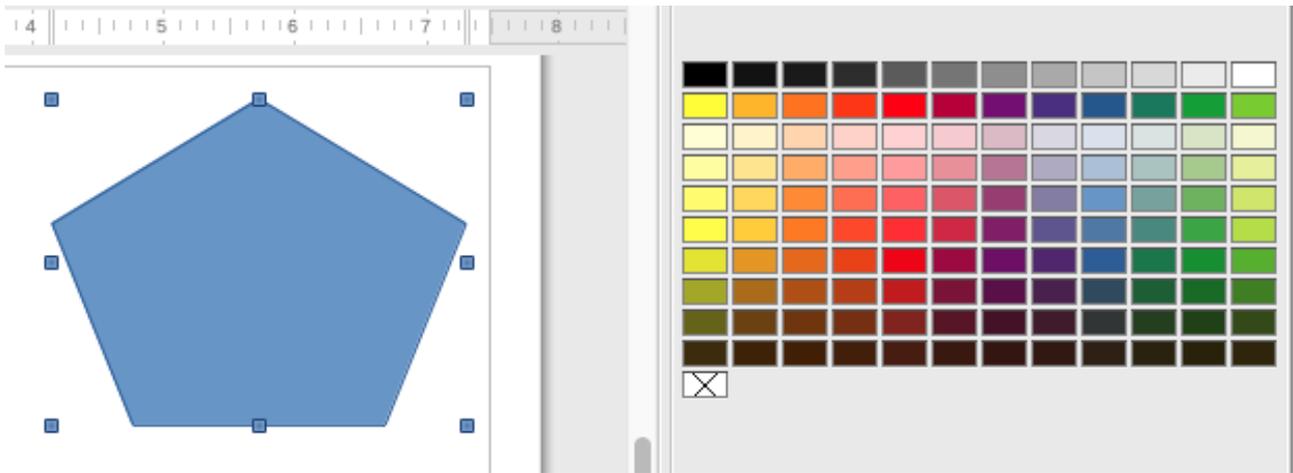
Figure 162: Color Bar
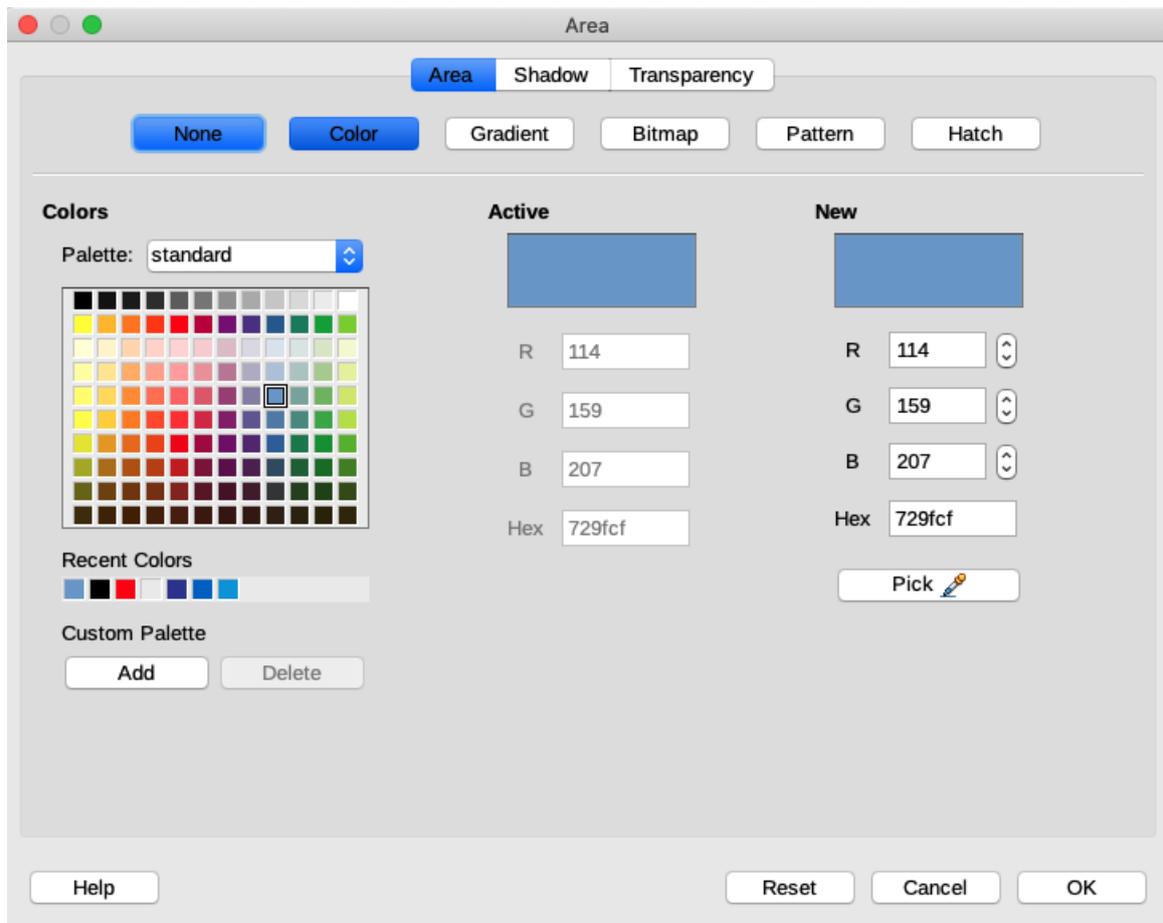
Figure 163: Area dialog - Color

Choosing and defining colors

To display the color palette currently in use (Figure 162), select **View > Color Bar**. By default, the Color Bar is displayed to the right of the Workspace. To close the **Color Bar**, go to **View** on the Menu bar and deselect **Color Bar**. Using the **Color Bar**, you can rapidly choose the color of objects in your drawing (lines, areas, and 3D effects). The box with the X at the bottom left of the **Color Bar** corresponds to none (no color).
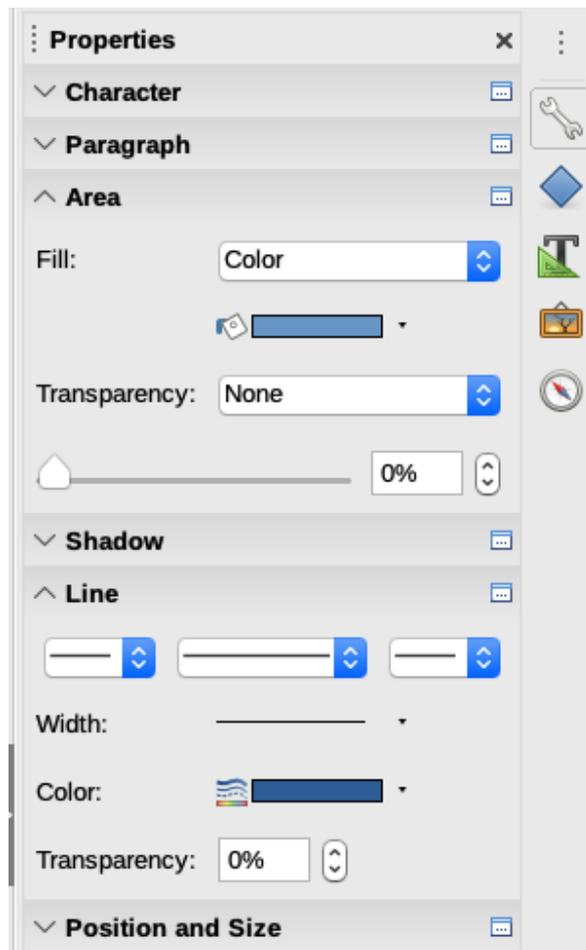
Figure 164: SidebarArea and Line Color
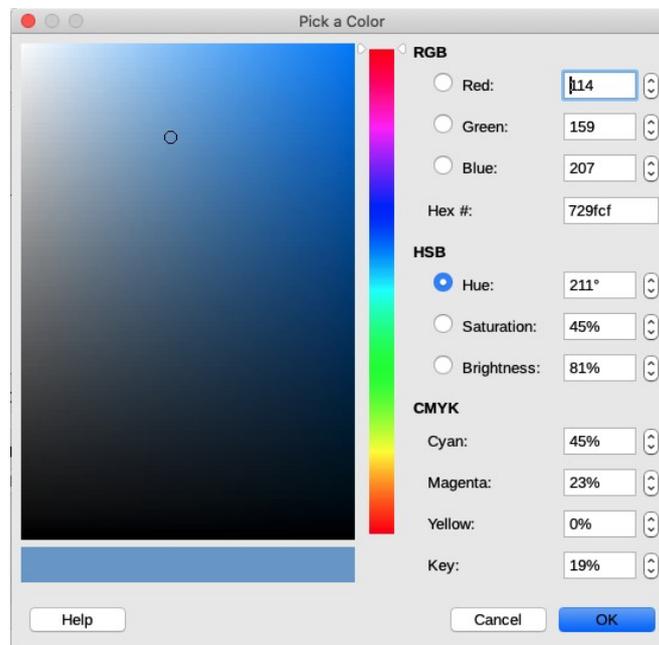
Figure 165: Pick a Color dialog

You can also access several specialized color palettes in Draw, as well as change individual colors to your own taste. To do this, go to **Format > Area** on the Menu bar to open the **Color** section in the **Area** dialog (Figure 163).

To choose another palette, click on the **Palette** drop down list and select one of the palettes available in LibreOffice.

Alternatively, when an object in your drawing is selected, click on **Area** or **Line** in the Sidebar and select a color from the Color drop down list to change the area or line color of your object (Figure 164).

To add a custom color to the custom palette, first select your color by clicking the **Pick** button in the **Area – Color** dialog to open the **Pick a Color** dialog (Figure 165). Here you can change any color by either dragging the round cursor to different locations on the visible color palette, or by modifying the numerical values in the fields provided to the right of the color palette in either CMYK or RGB color schemes.

For a more detailed description of color palettes and their options, as well as more on the difference between the CMYK and RGB color schemes, refer to Chapter 11, Advanced Draw Techniques, in the *Draw Guide*.

Drawing basic shapes

Draw provides a wide range of shapes, located in palettes accessed from the Drawing toolbar or from the Shapes deck in the Sidebar. This section describes only a few of the basic shapes, including text, which are treated as objects in Draw. See the *Draw Guide* for a complete description of the shapes available.

Some of the icons on the Drawing toolbar will change according to the shape that has been selected from the choices available. Icons with tool palettes available are indicated by a small triangle to the right of the icon.

> ### Note
>
> When you draw a basic shape or select one for editing, the Information field in the status bar changes to reflect the present action: for example Line created, Text frame xxyy selected, and so on.

Drawing a straight line

    4) Use one of the following options to start drawing a line:

        c) Click the **insert Line** icon in the **Drawing** toolbar.

        d) Click the small triangle on the right of the **Lines and Arrows** icon in the **Drawing** toolbar and select the **Insert Line** icon from the drop down list.

        e) Click the **Insert Line** icon in the **Lines and Arrows** section of the Shapes deck on the Sidebar.
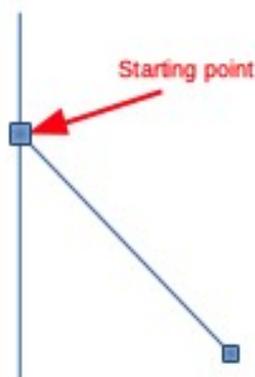
Figure 166: Line starting point

5) Place the cursor at the point where you want to start the line (Figure 166) and drag the mouse while keeping the mouse button pressed.

6) Release the mouse button at the point where you want to end the line. A selection handle appears at each end of the line, showing that this object is the currently selected object. The selection handle at the starting point of the line is slightly larger than the other selection handle.

7) Keep the *Ctrl* key pressed while drawing a line to enable the end of the line to snap to the nearest grid point.

> **Note**
>
> This is the default behavior of the *Ctrl* key. However, if the **Snap to Grid** option on the **View > Grid** menu has been selected, the *Ctrl* key deactivates the snap to grid activity.

8) Keep the *Shift* key pressed while drawing a line to restrict the drawing angle of the line to a multiple of 45 degrees (0, 45, 90, 135, and so on).

> **Note**
>
> This is the default behavior of the *Shift* key. However, if the option **When creating or moving objects** in the *Constrain Objects* section of **Tools > Options > LibreOffice Draw > Grid** has been selected, the action of the *Shift* key is the opposite. Lines will automatically be drawn at a multiple of 45 degrees unless the *Shift* key is pressed.

9) Keep the *Alt* key pressed while drawing a line to cause the line to extend outwards symmetrically in both directions from the start point. This lets you draw lines by starting from the middle of the line.

When a line is drawn, it uses default attributes. To change any of these attributes, select a line by clicking on it, then go to the **Properties** deck on the Sidebar and open the **Line** pane (Figure 164 on page 203). Alternatively, right-click and select **Line** from the context menu or go to **Format > Line** on the Menu bar to open the **Line** dialog (Figure 181 on page 218). Line style, line width, and line color can also be changed using the controls in the Line and Filling toolbar (if visible) at the top of the workspace.

Drawing an arrow

Arrows are drawn like lines. Draw classifies arrows as a subgroup of lines: lines with arrowheads. The information field on the Status bar shows them only as lines.

1) Use one of the following options to start drawing an arrow:

   a) Click the **Lines and Arrows** icon in the **Drawing** toolbar.

   b) Click the small triangle on the right of the **Lines and Arrows** icon in the **Drawing** toolbar and select the type of arrow you require from the drop down list (Figure 167).

   c) Click the icon of the type of arrow you require in the **Lines and Arrows** section of the Shapes deck on the Sidebar.

2) Place the cursor at the point where you want to start the arrow and drag the mouse while keeping the mouse button pressed. The arrowhead is drawn at the end point of the arrow when you release the mouse button.

Figure 167: Lines and Arrows

> ![Note icon] **Note**
>
> Hovering the mouse cursor over each of the type of arrows available will tell you the type of line endings each icon will draw. The line endings available are lines, arrows, circles, squares, dimension lines and 45 degree lines.
>
> The icon for the tool used most recently will already be selected on the Drawing toolbar to make it easier to use the same tool again.
>
> After drawing the line, you can change the arrow style by opening the **Line** dialog (Figure 25 on page 23) and going to the **Arrow Styles** page. Here you will find a larger selection of line endings to use in your drawing.

Drawing a dimension line

Dimension lines display a measurement of an object in the drawing (Figure 168). The dimension line does not belong to the object itself, but it is usually placed close to it. An object can have as many dimension lines as necessary to indicate measures of its sides, edges, and distances.

1) Use one of the following options to start drawing a dimension line:

   a) Click the small triangle on the right of the **Lines and Arrows** icon in the **Drawing** toolbar and select **Dimension Line** from the drop down list (Figure 167).

   b) Click the **Dimension Line** icon in the **Lines and Arrows** section of the Shapes deck on the Sidebar.

2) Place the cursor at the point where you want to start the dimension line and drag the mouse while keeping the mouse button pressed. The dimension line is drawn and automatically calculates and displays the linear dimension.

You can control the display of a dimension line components and appearance by selecting it, right-clicking, and choosing **Dimensions** in the context menu to display the **Dimension line** dialog (Figure 169).
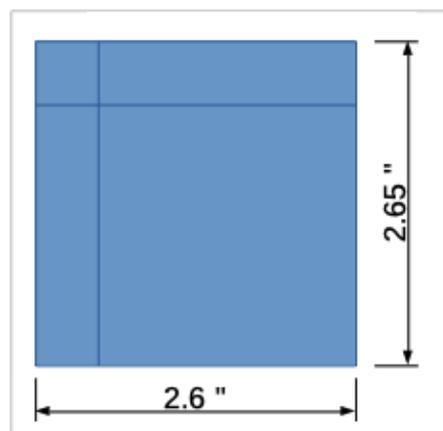
Figure 168: Measuring an object with dimension lines
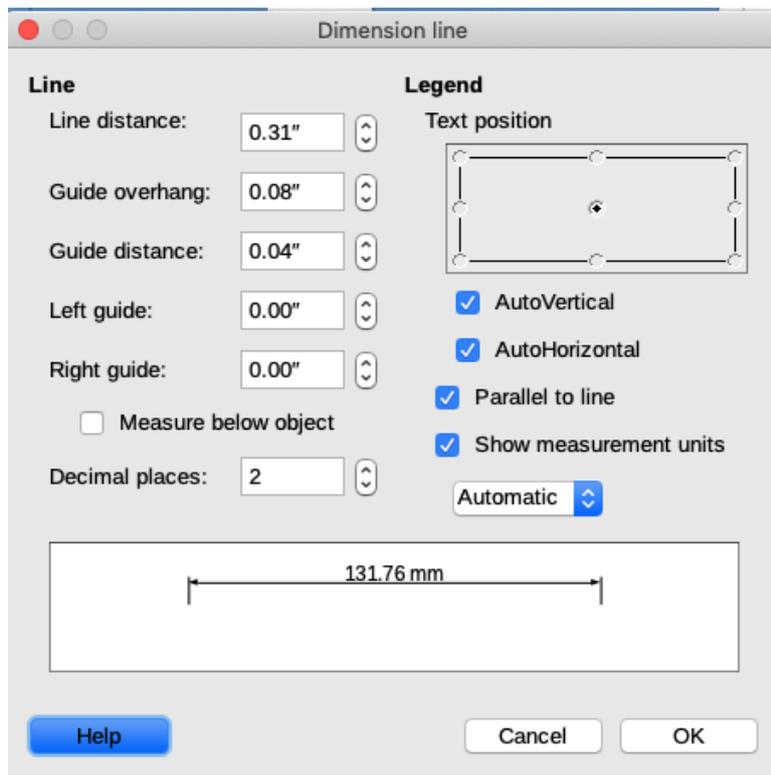
Figure 169: Dimension line settings dialog

Drawing rectangles or squares

Drawing a rectangle is similar to drawing a straight line.

1) Click on the **Rectangle** icon in the **Drawing** toolbar or select **Rectangle** icon in **Basic Shapes** on the **Shapes** deck in the Sidebar. As you draw the rectangle with the mouse cursor, the rectangle appears with its bottom right corner attached to the cursor.

2) Squares are 4 sided shapes with all sides of equal length. To draw a square, click on the **Rectangle** icon and hold down the *Shift* key while you draw a square.

3) To draw a rectangle or square from its center rather than the bottom right corner, position your cursor on the drawing, press the mouse button and then hold down the *Alt* key while dragging with the cursor. The rectangle or square uses the start point (where you first clicked the mouse button) as the center.

Note

If the option **When creating or moving objects** has been selected in the Constrain Object section of **Tools > Options > LibreOffice Draw > Grid**, the action of the *Shift* key is reversed: the Rectangle tool draws a square. To draw a rectangle, press the *Shift* key. This *Shift* key reversal also applies when drawing ellipses and circles.

Drawing circles or ellipses

To draw an ellipse (also called an oval):

1) Click on the **Ellipse** icon in the **Drawing** toolbar or select **Ellipse** icon in **Basic Shapes** on the **Shapes** deck in the Sidebar.

2) A circle is a round shape with both axes the same length. To draw a circle, click on the **Ellipse** icon and hold down the *Shift* key while you draw a circle.

3) To draw an ellipse or circle from its center, position the cursor on the drawing, press the mouse button and then hold down the *Alt* key while dragging with the cursor. The ellipse or circle uses the start point (where you first clicked the mouse button) as the center.

> **Note**
>
> If you first press and hold down the *Ctrl* key and then click on one of the icons for Line, Rectangle, Ellipse, or Text, a standard sized object is drawn automatically in the work area; the size, shape, and color are all standard values. These attributes can be changed later, if desired. See the *Draw Guide* for more information.

Drawing curves or polygons

1) Use one of the following options to start drawing a curve or polygon. Moving the mouse cursor over one of the icons shows a tooltip giving the type of curve or polygon:

   a) Click the small triangle on the right of the **Curve and Polygons** icon in the **Drawing** toolbar and select the type of curve or polygon from the drop down list (Figure 170).

   b) Select and click the type of curve or polygon in the **Curve and Polygons** section of the Shapes deck on the Sidebar.

2) Place the cursor at the point where you want to start the dimension line and drag the mouse while keeping the mouse button pressed. The dimension line is drawn and automatically calculates and displays the linear dimension.

3) Hold down the *Shift* key when drawing curves or polygons to restrict the angles between the lines to 45 or 90 degrees.

Figure 170: Curves and Polygons

> **Note**
>
> The icon for the tool used most recently is shown on the Drawing toolbar to make it easier to use the same tool again

Curves

1) Click and hold the left mouse button to create the starting point of the curve, then drag from the starting point to draw a line. Release the mouse button and continue to drag the cursor to bend the line into a curve.

2) Click to set the end point of the curve and fix the line on the page.

3) To continue with the line, drag the mouse cursor to draw a straight line. Each mouse click sets a corner point and allows you to continue drawing another straight line from the corner point. A double-click ends the drawing of your line.

4) A filled curve automatically joins the last point to the first point to close off the figure and fills it with the selected fill color. A curve without filling will not be closed at the end of the drawing.

Polygons

1) Click and draw the first line from the start point with the left mouse button held down. As soon as you release the mouse button, a line between the first and second points is drawn.

2) Move the cursor to draw the next line. Each mouse click sets a corner point and allows you to draw another line. A double-click ends the drawing.

3) A filled polygon automatically joins the last point to the first point to close off the figure and fills it with the selected fill color. A polygon without filling will not be closed at the end of the drawing.

Polygons 45°

Like ordinary polygons, these are formed from lines, but the angles between lines are restricted to 45 or 90 degrees when the *Shift* key is held down as you draw the line.

Freeform lines

Using the freeform line tools is similar to drawing with a pencil on paper. Press and hold the left mouse button and drag the cursor to the shape you require. It is not necessary to end the drawing with a double-click, just release the mouse button and the drawing is completed.

If **Freeform Line Filled** is selected, the end point is joined automatically to the start point and the object is filled with the selected color.

Adding text

To activate the text tool, click on the **Text** icon. You can display the Text Formatting toolbar (**View > Toolbars**) or use the Character pane in the Properties deck of the Sidebar to select font type, font size, and other text properties before you start typing.

After activating the Text command, click at the location where you want to position the text. A small text frame appears, containing only the cursor. This frame can be moved like any other object. A text frame is also dynamic and grows as you enter text.

The information field in the status bar shows that you are editing text and also provides details about the current cursor location using paragraph, row, and column numbers (Figure 171).
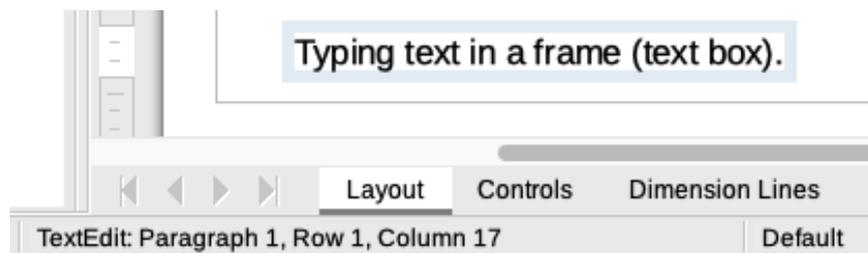
Figure 171: Text information on Status bar

You can insert a line break with *Shift+Enter* or start a new paragraph using *Enter*. The insertion of line breaks or new paragraphs does not terminate text editing or deselect the text frame. When you have finished typing text, click outside the text frame to cancel adding or editing text.

Text properties can also be changed during text input, with any changes taking effect from the cursor position onwards. To change the properties for all of the text in the text frame, you have to highlight all text in the text frame.

You can create Drawing styles that you can reuse for other text frames using the **Styles** deck on the Sidebar. Drawing styles affect all of the text within a text frame. To only format parts of the text, use direct formatting with the **Text Formatting** toolbar or the **Character** and **Paragraph** panes in the **Properties** deck of the Sidebar. See also "Using styles" on page 217.

Text frames can also have fill colors, shadows, and other attributes, just like any other object. You can rotate the frame and write the text at any angle. These options are available by right-clicking on the text frame itself.

If you double-click on a graphic object, or press *F2* or click on the Text icon when an object is selected, you can add text to the graphic object. This text then becomes part of the graphic object.

A graphic object is not dynamic and does not behave like a text frame. To keep text within the borders of the object, you have to use paragraphs, line breaks, or smaller text size, increase the object size, or a combination of all four methods.

For more information about text, see Chapter 2, Drawing Basic Shapes, and Chapter 9, Adding and Formatting Text, in the *Draw Guide*.

Using glue points and connectors

Glue points

All Draw objects have glue points, which are not normally displayed. Glue points become visible when the **Connectors** icon is selected on the Drawing toolbar or when a **Connector** is selected in the **Shapes** deck in the Sidebar.

Most objects have four glue points (Figure 172). You can add more glue points and customize them, using the Glue Points toolbar (Figure 173). Go to **View > Toolbars > Glue Points** to open the toolbar.

Glue points are not the same as the selection handles of an object. Selection handles are for moving or changing the shape of an object. Glue points are used to fix or glue a connector to an object so that when the object moves, the connector stays fixed to the object. For a more detailed description on the use of glue points, see Chapter 3, Working with Objects and Object Points, and Chapter 8, Connections, Flowcharts, and Organization Charts, in the *Draw Guide*.
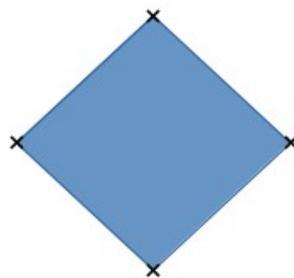
Figure 172: Glue points

Figure 173: Glue points toolbar

Connectors

Connectors are lines or arrows whose ends automatically snap to a glue point of an object. Connectors are especially useful in drawing organization charts, flow diagrams, and mind-maps. When objects are moved or reordered, the connectors remain attached to a glue point. Figure 174 shows an example of two objects and a connector.

Draw offers a range of different connectors and connector functions. On the Drawing toolbar, click on the triangle next to the **Connector** icon to open the Connectors toolbar (Figure 175), or select a connector from **Connectors** section in the **Shapes** deck in the Sidebar. For a more detailed description of the use of connectors, see Chapter 8, Connections, Flowcharts, and Organization Charts, in the *Draw Guide*.
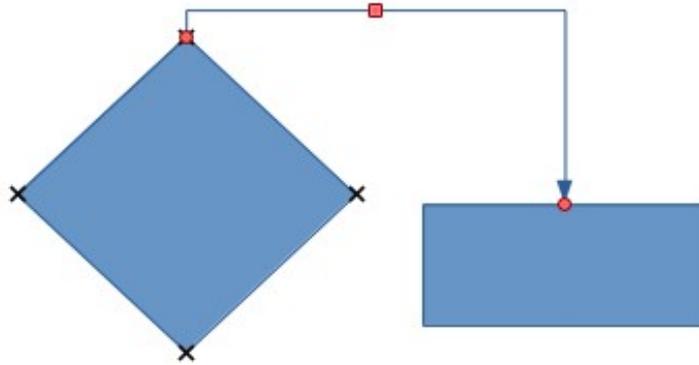
Figure 174: Connector between two objects

Figure 175: Connectors toolbar

Drawing geometric shapes

The icons for drawing geometric shapes are located on the Drawing toolbar. The geometric shapes are explained in the following sections. Clicking on the triangle to the right of the icon on the Drawing toolbar opens a floating toolbar giving access to the tools for that shape. These shapes are also available on the Shapes deck in the Sidebar.

> ## Tip
>
> The use of these tools for geometric shapes is similar to the tool used for drawing rectangles or squares. For more information, see page 207 in this chapter or Chapter 2, Drawing Basic Shapes, in the *Draw Guide*.

> ## Notes
>
> The icons for geometric shapes displayed on the Drawing toolbar will change shape according to the last tool selected and used to draw an object.
>
> You can add text to all of these geometric shapes. For more information, see Chapter 2 and Chapter 11 in the *Draw Guide*.

Basic shapes

Symbol shapes

Block arrows

Flowcharts

> The creation of flowcharts, organization charts, and similar planning tools is further described in Chapter 8, Connections, Flowcharts, and Organization Charts, in the *Draw Guide*.

Callouts

Stars and banners

3D Objects

Selecting objects

Direct selection

The easiest way to select an object is to click directly on it. For objects that are not filled, click on the object outline to select it. One click selects; a second click deselects. To select or deselect more than one object, hold the *Shift* key down while clicking.

Selection by framing

You can also select several objects at once by dragging the mouse cursor to draw a rectangle (also known as a marquee) around the objects. Only objects that lie entirely within the rectangle will be selected.

To select multiple objects by framing, the **Select** icon on the **Drawing** toolbar must be active.

Selecting hidden objects

Even if objects are located behind others and not visible, they can still be selected. Hold down the *Alt* key and click on the object at the front of where the hidden object is located, then click again to select the hidden object. If there are several hidden objects, keep holding down the *Alt* key and clicking until you reach the object you want. To cycle through the objects in reverse order, hold down the *Alt+Shift* keys and click. This is a quick way to reach an object, but it may not be practical if there a large number of objects in a drawing.

When you click on the selected object, its outline will appear briefly through the objects covering it.

> 📝 **Note**
>
> Using the *Alt* key method works on computers using Windows or macOS. On Linux, use the *Tab* key to cycle through the objects, stopping at the object you want to select. To cycle through the objects in reverse order, press *Shift+Tab*.

Arranging objects

In a complex drawing, several objects may be stacked on top of one another. You can rearrange the stacking order by moving an object forward or backward using one of the following methods:

- Select an object, go to **Shape > Arrange** on the Menu bar, or right-click on the object and select **Arrange** from the drop-down menu, then select one of the following options:
    - **Bring to Front**
    - **Bring Forward**
    - **Send Backward**
    - **Send to Back**
    - **In Front of Object**
    - **Behind Object**

- Select an object, then use one of the following keyboard shortcuts:
    - *Ctrl+Shift++* (bring to front)
    - *Ctrl++* (bring forward)
    - *Ctrl+-* (send backward)
    - *Ctrl+Shift+-* (send to back)

- Select an object, then select one of the **Arrange** icons (Figure 176) on left of the **Line and Filling** toolbar on the Menu bar. When you hover the mouse cursor over one of the icons, its function will be indicated.

Figure 176: Arrange icons

Moving objects and adjusting object size

When moving an object or changing its size, check the information area of the Status bar at the bottom of the Draw window (Figure 177). From left to right, it shows what object is selected, its position on the drawing in X/Y coordinates and dimensions of the object. The units of measurement are those selected in **Tools > Options > LibreOffice Draw > General**.

For more information on moving and adjusting object size, see Chapter 3, Working with Objects and Object Points, in the *Draw Guide*.
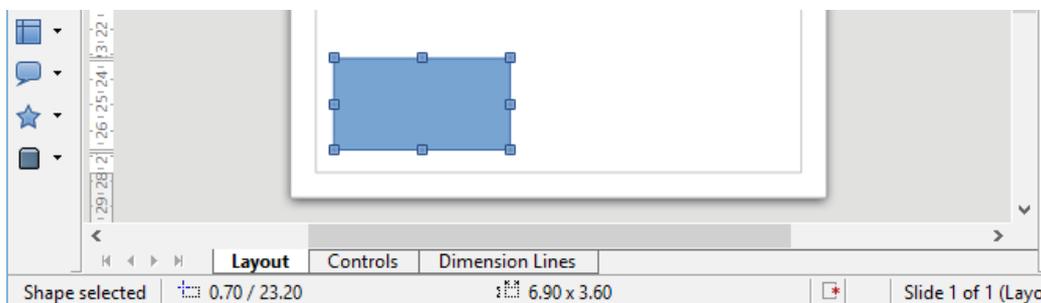
Figure 177: Left end of status bar when moving or adjusting an object

Moving objects

To move an object (or a group of objects), select it and then click within the object borders and hold down the left mouse button while dragging the mouse. During movement, a ghost image of the object appears to help with repositioning (Figure 178). To locate the object at its new location, release the mouse button.
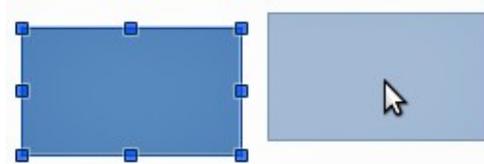
Figure 178: Moving an object

Adjusting object size

To change the size of a selected object (or a group of selected objects), move the mouse cursor to one of the selection handles. The mouse cursor will change shape to indicate the direction of movement for that selection handle. As you change the size of the object, a ghosted outline of the object appears (Figure 179). When you have reached the desired size of the object, release the mouse button.

The results depend on which selection handle you use. To resize an object along one axis, use a side, top, or bottom handle. To resize along both axes, use a corner handle.
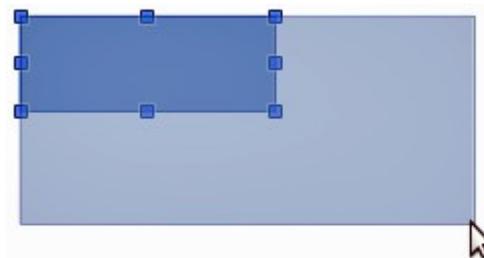
Figure 179: Adjusting object size

> **Note**
>
> If you press the *Shift* key while resizing an object, the change in size will be carried out symmetrically with respect to the two axes so that the aspect ratio of the object remains the same. This *Shift* key behavior works on all selection handles.
>
> This is the default behavior of the *Shift* key. However, if **When creating or moving objects** has been selected in the Constrain Objects section of **Tools > Options > LibreOffice Draw > Grid**, the action of the *Shift* key is reversed and the aspect ratio will be preserved unless the *Shift* key is pressed.

Editing objects

To edit an object or change attributes such as color or border width, you can use the **Properties** deck in the Sidebar or display and use the **Line and Filling** toolbar or the **Text Formatting** toolbar, or right-click on an object to pop up a context menu. The functions are similar to those described for creating objects. For more information on editing objects and changing attributes, see Chapter 4, Changing Object Attributes, in the *Draw Guide*.

Using the Properties deck in the Sidebar

When you select an object in your drawing, the sections in the **Properties** deck of the Sidebar become active. You can change the properties or options of an object without having to open a dialog or use any of the toolbars provided by Draw. To expand a section, click on the arrow (^) sign next to the title of the section.

Formatting lines and borders

In LibreOffice the term *line* applies to a freestanding segment (line), the outer edge of a shape (border), or an arrow. In most cases the properties of the line you can modify are its style (solid, dashed, invisible, and so on), its width, and its color.

Select the line you need to format and then use the controls on the **Line** section in the Sidebar to change the most common options (Figure 180).

If you need to fine tune the appearance of a line, choose **Format > Line** from the Menu bar, or right-click on the line and select **Line** from the context menu, or select the **More Options** icon on the right of the section title in the Sidebar. All of these methods open the **Line** dialog (Figure 181), where you can set line properties. This dialog contains three pages: **Line**, **Line Styles**, and **Arrow Styles**.

Arrows, arrowheads, and other line endings are usually referred to as arrows and can be treated the same as lines when editing and changing attributes.

Several types of arrowheads are available. Each end of a line can have a different arrowhead or no arrowhead. Arrowheads are only applicable to lines and they have no effect on the border of an object.
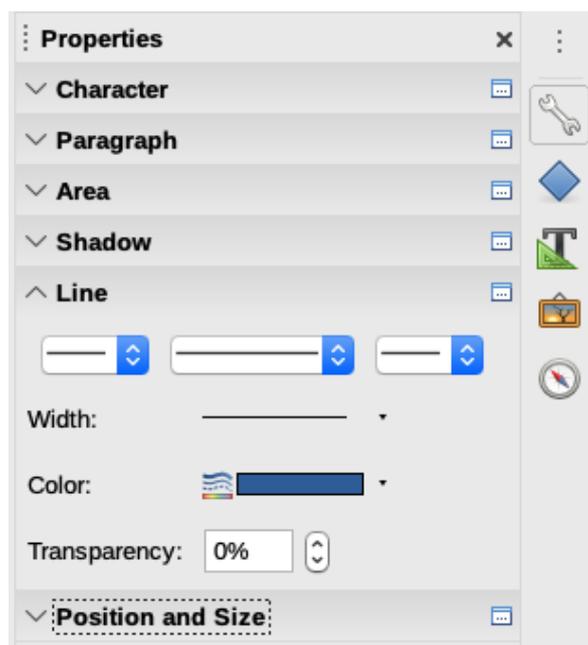
Figure 180: Line section in Sidebar
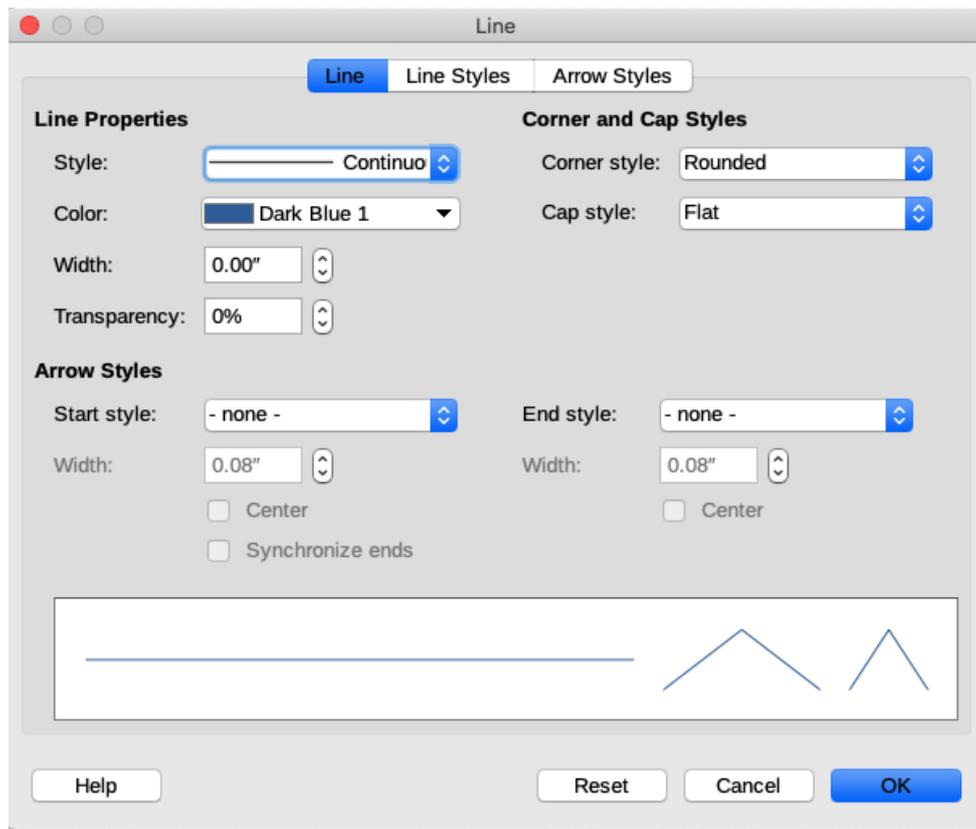
Figure 181: Line dialog

Formatting area fills

The term *area fill* refers to the inside of an object, which can be a uniform color, gradient, hatching, pattern, or bitmap. An area fill can be made partly or wholly transparent. In most cases, you will choose one of the standard area fill options, which are all available in the **Area** section (Figure 182) of the **Properties** deck on the Sidebar or from the **Line and Filling** toolbar. You can also define your own area fills. For more information on area, see Chapter 4, Changing Object Attributes, in the *Draw Guide*.
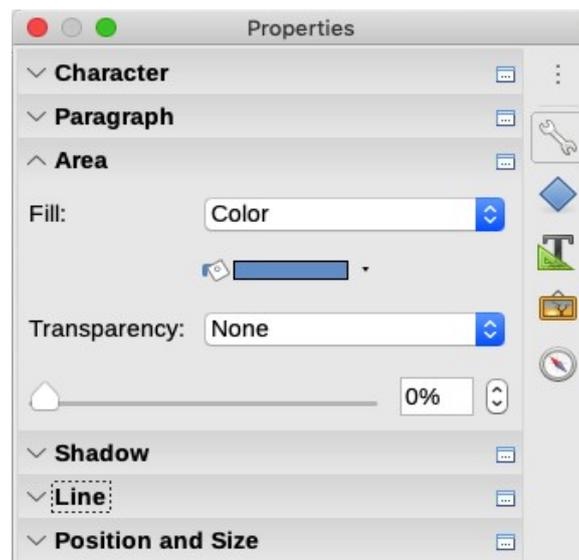
Figure 182: Area section in the Sidebar

Using styles

Suppose that you want to apply the same area fill, line thickness, and border to a set of objects. This repetitive process can be greatly simplified by the use of styles. Styles allow you to define a set of formats (a style) and then apply that set of formats to multiple objects with one click. In Draw, you can define several styles for different types of lines, shapes, and text.
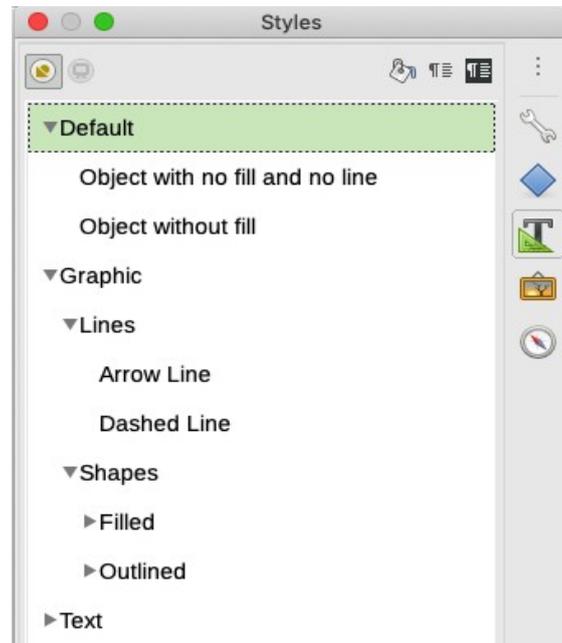
Figure 183: Styles deck in Sidebar

For more information on styles, see Chapter 3, Using Styles and Templates, in this guide; Chapter 8, Introduction to Styles, in the *Writer Guide*; and Chapter 4, Changing Object Attributes, in the *Draw Guide*.

Positioning objects

Snap function

In Draw, objects can be accurately and consistently positioned using the snap function. Grid points, snap points and lines, object frames, individual points on objects, or page edges can all be used with the snap function.

The snap function is easier to work with at the highest zoom values that are practical for your display. Two different snap functions can be used at the same time; for example snapping to a guide line and to the page edge. It is recommended, however, to activate only the functions that you really need.

For more detailed information about the snap function, see Chapter 3, Working with Objects and Object Points, and Chapter 11, Advanced Draw Techniques, in the *Draw Guide*.

Snap to grid

Use **Snap to grid** to position an object to a grid point. Go to **View > Snap Guides > Snap to Grid** on the Menu bar or click on the **Snap to Grid** icon on the **Options** toolbar (Figure 184) to turn on or off the snap to grid function. If the **Options** toolbar is not visible, you can go to **View > Toolbars > Options** on the Menu bar to display it.

Figure 184: Options toolbar

Figure 185: Configuring the grid

Displaying the grid

To display the grid in Draw or to switch off the grid, go to **View > Grid and Helplines > Display Grid** on the Menu bar or click the **Display Grid** icon on the **Options** toolbar.

Configuring the grid

The resolution, snap, and snap position of the grid points can be configured. Go to **Tools > Options > LibreOffice Draw > Grid** on the Menu bar to open the **Options** dialog for the grid (Figure 185).

- Vertical and horizontal spacing of the dots in the grid. You can also change the unit of measurement used in the general Draw options by going to **Tools > Options > LibreOffice Draw > General**.

- The resolution is the size of the squares or rectangles in the grid. For example, if the resolution is 1 cm horizontal and 2 cm vertical, the grid consists of rectangles 2 cm high and 1 cm wide.

- Subdivisions are additional points that appear along the sides of each rectangle or square in the grid. Objects can snap to subdivisions as well as to the corners of the grid.

- The pixel size of the snap area defines how close you need to bring an object to a snap point or line before it will snap to it.

- The default color of the grid is light gray. To change the color of the grid points, go to **Tools > Options > LibreOffice > Application Colors** on the Menu bar.

Help lines

Draw has help lines to help you to position an object using the rulers at the top and left side of the workspace. To turn on or off the help lines, go to **Tools > Options > LibreOffice Draw > View** on the Menu bar and select **Helplines while moving** or go to the **Options** toolbar and click the **Helplines While Moving** icon.

Applying special effects

With Draw, you can apply many special effects to objects and groups of objects. This section is an introduction to some of these effects. For more information on special effects, see Chapter 3, Working with Objects and Object Points, and Chapter 4, Changing Object Attributes, in the *Draw Guide*.

To access the tools used for special effects, go to **View > Toolbars > Transformations** (Figure 186) or go to **Shapes > Transformations** on the Menu bar, or **Transformations** on the Standard toolbar, or right-click on the object and use the context menu.

Figure 186: Transformations toolbar

Rotating or slanting an object

To rotate or slant an object (or a group of objects), select the object, then go to rotation mode:

- Right-click on the object or group and select **Transformations > Rotate**.
- Click on the arrow next to the **Transformations** icon on the Standard toolbar, then select **Rotate**.
- Click on the **Rotation** icon on the **Transformations** toolbar (Figure 186).

The selection handles will change shape and color (Figure 157) and a rotation point will appear in the center of the object. As you move the mouse cursor over the handles, the cursor changes shape. The corner handles rotate an object and the top, bottom, and side handles slant an object.
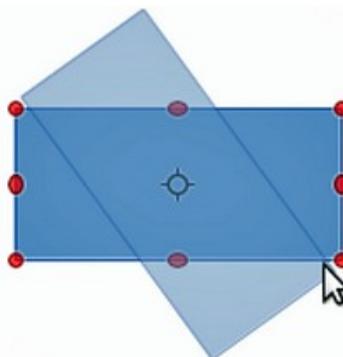
Figure 187: Rotating objects

Move the mouse cursor to one of the corner handles and it normally changes to an arc with an arrow at each end. Click and hold the mouse button, then start to move the cursor to rotate the object. A ghost image of the object being rotated appears and the current angle of rotation is shown in the status bar.

> **Note**
>
> If you press the *Shift* key while rotating or slanting an object, movement will be restricted to 15° of movement.
>
> This is the default behavior of the *Shift* key. However, if **When creating or moving objects** has been selected in the Constrain Objects section of **Tools > Options > LibreOffice Draw > Grid**, the action of the *Shift* key is reversed and rotation or slanting will be restricted to 15° of movement unless the *Shift* key is pressed.

> **Note**
>
> Rotation works differently for 3D objects because rotation occurs around global axes and not around a single axis. For more information, see Chapter 7, Working with 3D Objects, in the *Draw Guide*.

The rotation point is normally located at the center of an object. To change the position of the rotation point, click on the object with the mouse cursor and drag the object until the rotation point is at the desired position. This rotation point can even be outside of the object.

To slant a selected object, use the handles located at the midpoints on the top, bottom and sides of the object. The mouse cursor changes when it hovers over one of these midpoint handles. The axis used for slanting an object is the object edge directly opposite the midpoint handle being used to slant the object. This axis stays fixed in location while the other sides of the object move in relation to it as you drag the mouse cursor.

Click and hold the mouse button, then move the cursor to slant the object. A ghost image of the object being slanted appears (Figure 188) and the current angle of slant is shown in the status bar.
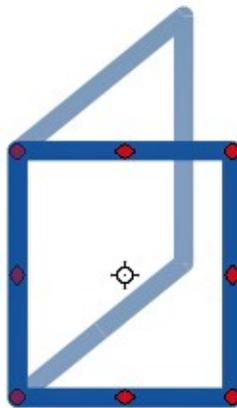
Figure 188: Slanting an object

Flipping an object

The quickest and easiest method to flip an object horizontally or vertically is as follows:

1) Click on a graphic object and the selection handles will show.

2) Right-click and select **Flip > Vertically** or **Horizontally**, or go to **Shape > Flip > Vertically** or **Horizontally** on the Menu bar, or click on the **Vertically** or **Horizontally** icon on the **Line and Filling** toolbar.

However, the **Flip** tool on the **Transformations** toolbar provides greater control over the flipping process. You can use the **Flip** tool to change the position and angle that the object flips over, as described in Chapter 4, Changing Object Attributes, in the *Draw Guide*.

Distorting an object

Three tools on the **Transformations** toolbar let you drag the corners and edges of an object to distort the image.

- **Distort** tool distorts an object in perspective.
- **Set in Circle (perspective)** creates a pseudo three-dimensional effect.
- **Set to Circle (slant)** creates a pseudo three-dimensional effect. Despite the (slant) in the name of this tool, it operates differently to the slanting created by the **Rotate** tool.

In all three cases you are initially asked if you want to transform the object to a curve. This is a necessary first step, so click **Yes**. Then you can move the object handles to produce the desired effect. See Chapter 4, Changing Object Attributes, in the *Draw Guide* for more information on how to distort an object.

Dynamic transparency gradients

You can control transparency gradients in the same manner as color gradients. Both types of gradient can be used together. With a transparency gradient, the direction and degree of object fill color changes from opaque to transparent. In a regular gradient, the fill changes from one color to another, but the degree of transparency remains the same.

The **Interactive Transparency** and **Interactive Gradient** tools on the **Transformations** toolbar dynamically control transparency and color gradients. See Chapter 4, Changing Object Attributes, in the *Draw Guide* for more information on how to create transparencies and gradients in an object.

Duplication

Duplication makes copies of an object while applying a set of changes such as color or rotation to the duplicates that are created.

1) Click on an object or group of objects and go to **Edit > Duplicate** or **Shape > Duplicate** on the Menu bar, or press *Shift+F3*, to open the **Duplicate** dialog (Figure 189).
2) Select the required options chosen from the options available. For example, when the options in the dialog are applied to a rectangle, they produce the result shown in Figure 190.

Cross-fading

Cross-fading transforms one object shape to another object shape and only works when two objects are selected.

1) Select two differently shaped objects.
2) Go to **Shape > Cross-fading** on the Menu bar to open the Cross-fading dialog (Figure 191).
   - Select **Increments** to determine the number of shapes between the two objects.
   - Select **Cross-fading attributes** to apply a gradual change of line and fill properties between the two objects.
   - Select **Same orientation** to apply a smooth transition between the two objects.
3) Click **OK** and the result is a new group of objects with the first object selected as the start object and the second object selected as the end object. For example, when the options in the dialog are applied to a rectangle and a triangle, the cross fade produces the result shown in Figure 192.
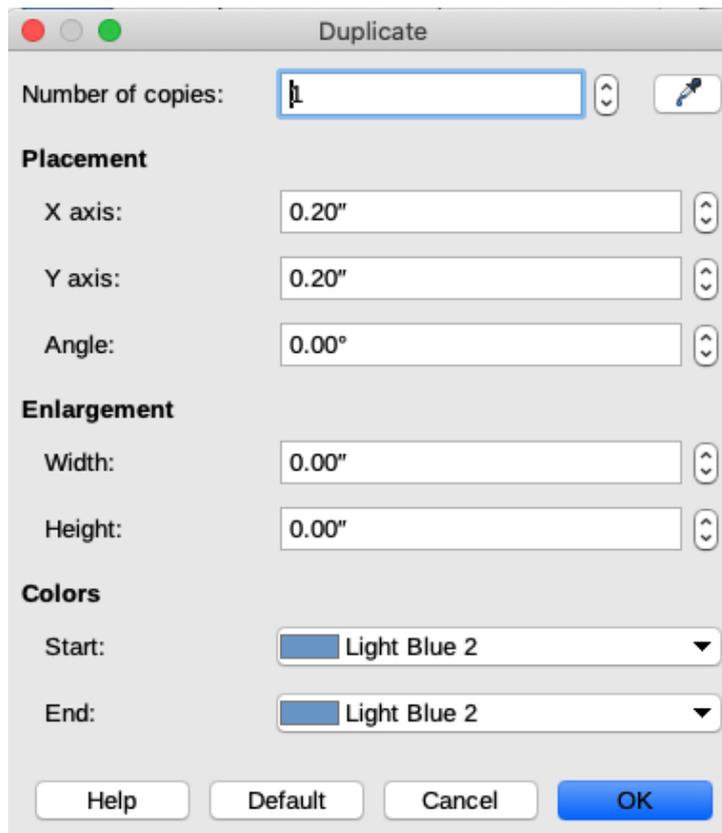
Figure 189: Duplicate dialog
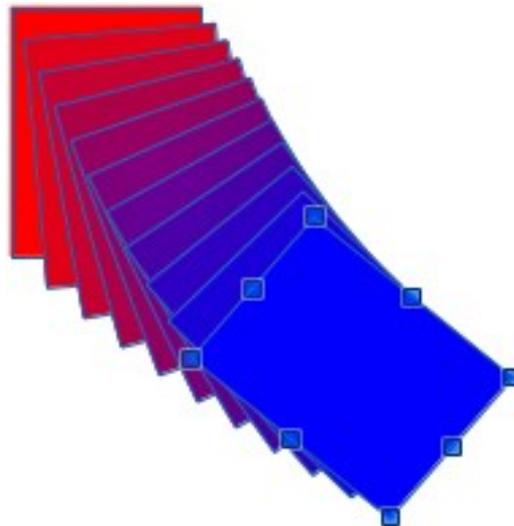
Figure 190: Duplication result

Figure 191: Cross-fading dialog
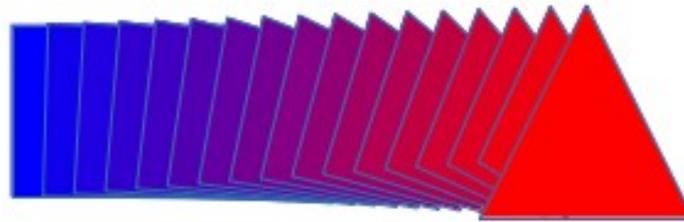
Figure 192: Cross-fading result

Combining multiple objects

Using Draw, you can group or combine objects together allowing you to treat multiple objects as one unit, or to merge objects to form a new shape. For more information, see Chapter 5, Combining Multiple Objects, in the *Draw Guide*.

Grouping of objects is similar to putting objects into a container. You can move the objects as a group and apply global changes to the objects within the group. A group can always be undone (ungroup) and the objects that make up the group can always be manipulated separately. The objects within a group also retain their own individual properties.

Combining objects is a permanent merging of objects that creates a new object. The original objects are no longer available as individual entities and cannot be edited as individual objects. Any editing of a combined object affects all the objects that were used when combination was carried out.

Grouping

Temporary grouping

A temporary grouping is when several objects are selected using the **Select** icon on the Drawing toolbar or using the mouse to drag a rectangle (also known as a marquee) around the objects. Any changes to object parameters you carry out are applied to all of the objects within the temporary group. For example, you can rotate a temporary group of objects in its entirety.

To cancel a temporary grouping of objects simply click outside of the selection handles displayed around the objects.

Permanent grouping

A permanent grouping of objects can be created after you have selected your objects. Go to **Shape > Group > Group** on the Menu bar, or right-click on the selection and select **Group** from the context menu, or use the keyboard shortcut *Ctrl+Shift+G*. When you deselect your selection, the objects remain grouped together.

When objects are permanently grouped, any editing operations carried out on that group are applied to all members of the group. If you click on one member of the group, the whole group is selected.

You can edit an individual member of a group without ungrouping or breaking the group. Select the group and go to **Shape > Group > Enter Group**, or right-click and select **Enter Group** from the context menu, or use the keyboard shortcut *F3*, or double-click on the group.

When you have finished editing an individual member of a group, go to **Shape > Group > Exit Group**, or right-click and select **Exit Group**, or use the keyboard shortcut *Shift+F3*.

Ungrouping

To ungroup or break apart a group of objects, select the group then go to **Shape > Group > Ungroup** on the Menu bar, or right-click and select **Ungroup** from the context menu or use the keyboard shortcut *Ctrl+Alt+Shift+G*.

Combining objects

Combining objects is a permanent merging of objects that creates a new object. The original objects are no longer available as individual entities and cannot be edited as individual objects. Any editing of a combined object affects all the objects that were used when combination was carried out.

Select several objects, then go to **Shape > Combine** on the Menu bar, or right-click on the objects and select **Shapes > Combine** from the context menu, or use the keyboard shortcut *Ctrl+Shift+K*.

After you have selected your objects, the Merge, Subtract, and Intersect functions also become available so that you can create a new object from your selected objects. See Chapter 5, Combining Multiple Objects, in the *Draw Guide* for more information on these functions.

Arranging, aligning, and distributing objects

In Draw you can arrange, align, and distribute selected objects in relation to each other:

- Arrange the position of an object by moving it either forward or backward in relation to the order of objects.
- Align objects with respect to each other using Left, Centered, or Right for horizontal alignment and Top, Center, or Bottom for vertical alignment.
- Distribute objects so that the space between each of the objects is the same.

See Chapter 5, Combining Multiple Objects, in the *Draw Guide* for more information on arranging and aligning objects in relation to each other.

Inserting and editing images

Draw contains a number of functions for editing images (also called pictures, raster graphics, or bitmaps); for example, photos and scanned images. This includes the import and export of images, and conversion from one image format to another.

Draw includes a large range of filters so that it can read and display several image file formats. It also includes several tools for working with images, but does not have the same functionality as specialized programs like GIMP or Adobe Photoshop. See Chapter 6, Editing Images, in the *Draw Guide* for more information.

You can add images from several sources:

- Directly from a scanner (**Insert > Media > Scan**)
- Created by another program, including photographs from a digital camera (**Insert > Image**)
- The Draw Gallery; see Chapter 11, Images and Graphics, in this guide.

Working with 3D objects

Although Draw does not match the functionality of specialized drawing or image editing programs, it is capable of producing and editing very good 3D drawings.

You can create a 3D object by selecting a 3D shape from the **Shapes** deck in the Sidebar, or by converting a 2D object (right-click and choose **Convert > To 3D**). Draw also offers several methods of editing a 3D object, using the 3D Effects dialog.

See Chapter 7, Working with 3D Objects, in the *Draw Guide* for more information.

Exporting images

Draw saves images in the Open Document Format *.odg. To save an image or the entire Draw file in another format, use **File > Export** and select a format from the drop-down list. The image formats that Draw can export and save to are listed in Appendix B, Open Source, Open Standards, OpenDocument, in this guide.

You can also export Draw files to HTML, XHTML, PDF, or Flash. PDF export from LibreOffice is described in Chapter 10, Printing, Exporting, Emailing, and Signing, in this guide.

HTML export uses a conversion wizard that creates as many web pages as there are pages in your Draw document. You can optionally choose to display pages in frames with a navigator and set an index page. For more information, see Chapter 12, Creating HTML Files, in this guide.

Inserting comments in a drawing

You can insert comments into your drawing in a similar process to the one used in Writer and Calc.

Go to **Insert > Comment** on the Menu bar. A small box containing your initials appears in the upper left-hand corner of your drawing with a larger text box beside it (Figure 193). Draw automatically adds your name and the date at the bottom of this text box. Type or paste your comment into the text box.

You can apply basic formatting to parts of the text by selecting it, right-clicking, and choosing from the context menu. From this menu, you can also delete the current comment, all the comments from the same author, or all the comments in the document.

You can move the small comment markers to anywhere you wish on the drawing. Typically you might place it on or near an object you refer to in the comment.

To show or hide the comment markers, go to **View > Comments** on the Menu bar.

Go to **Tools > Options > User Data** to enter the name and initials you want to appear in the comment marker and in the Author field of the comment. If more than one person edits the document, each author is automatically allocated a different background color.

Figure 193: Inserting comments

Getting Started Guide

Chapter 8
Getting Started with Base

Relational databases in LibreOffice

Introduction

A data source, or database, is a collection of pieces of information that can be accessed or managed by LibreOffice. For example, a list of names and addresses is a data source that could be used for producing a mail merge letter. A business stock list could be a data source managed through LibreOffice.

This chapter covers creating a database, showing what is contained in a database, and how the different parts are used by LibreOffice.

> **Note**
>
> LibreOffice uses the terms "Data Source" and "Database" to refer to the same thing, which could be a database such as MySQL or dBase, or a spreadsheet or text document holding data.

A *database* consists of a number of *fields* that contain the individual pieces of data. Each *table* of the database is a group of fields. When creating a table, you also determine the characteristics of each field within it. *Forms* are for data entry into the fields of one or more tables which have been associated with the form. They can also be used for viewing fields from one or more tables associated with the form. A *query* creates a new table from the existing tables based upon how you create the query. A *report* organizes the information from the fields of a query or table into a document according to your requirements.

> **Caution**
>
> Some of Base will work without a Java Runtime Environment (JRE), but the dialogs and wizards that Base uses require JRE. In order to create reports, it is also required.
>
> Please go to **Tools > Options > LibreOffice > Advanced** to select a JRE from those installed on your computer.
>
> If a JRE is not already installed, you will need to download and install one. For Windows, you need to get Java from www.java.com. For Linux, you can download it from the same website or you can use the JRE available from the repository of your Linux version. macOS users can install a JRE from Apple Inc.

Base creates both flat and *relational databases*. This makes it fairly easy to create a database in which the fields of the database have relationships with each other.

For example: Consider a database for a library. It will contain a field for the names of the authors and another field for the names of the books. There is an obvious relationship between the authors and the books they have written. The library may contain more than one book by the same author. This is what is known as a one-to-many relationship: one author and more than one book. Most if not all the relationships in such a database are one-to-many relationships.

Consider an employment database for the same library. One of the fields contains the names of the employees while others contain the social security numbers, and other personal data. The relationship between the names and social security numbers is one-to-one: only one social security number for each name.

If you are acquainted with mathematical sets, a relational database can easily be explained in terms of sets: elements, subsets, unions, and intersections. The fields of a database are the elements. The tables are subsets. Relationships are defined in terms of unions and intersections of the subsets (tables).

Instructions for creating a database for automobile expenses will be used to explain how to do this.

Planning a database

The first step in creating a database is to ask yourself many questions. Write them down, and leave some space between the questions to write the answers later. At least some of the answers should seem obvious after you take some time to think.

You may have to go through this process a few times before everything becomes clear in your mind and on paper. Using a text document on a computer for these questions and answers makes it easier to move the questions around, add additional questions, or change the answers.

Here are some of the questions and answers I developed before I created a database for automobile expenses. I had an idea of what I wanted before I started, but as I began asking questions and listing the answers, I discovered that I needed additional tables and fields.

What are the fields going to be? My expenses divided into three broad areas: fuel purchases, maintenance, and vacation expenses. The annual cost for the car's license plate and driver's license every four years did not fit into any of these. It will be a table of its own: license fees.

What fields fit the fuel purchases area? Date purchased, odometer reading, fuel cost, fuel quantity, and payment method for it. (Fuel economy need not be included, as it can be calculated using a query.)

What fields fit the maintenance area? Date of service, odometer reading, type of service, cost of service, and next scheduled service of this type (for example, for oil changes, list when the next oil change should be). But it would be nice if there was a way to write notes. So a field for notes was added to the list.

What fields fit the vacations area? Date, odometer reading, fuel (including all the fields of the fuel table), food (including meals and snacks), motel, total tolls, and miscellaneous. Since these purchases are made by one of two bank cards or with cash, I want a field to state which payment type was used for each item.

What fields fit into the food category? Breakfast, lunch, supper, and snacks seem to fit. Do I list all the snacks individually or list the total cost for snacks for the day? I chose to divide snacks into two fields: number of snacks and total cost of snacks. I also need a payment type for each of these: breakfast, lunch, supper, and total cost of snacks.

What are the fields that are common to more than one area? Date appears in multiple areas, as does odometer reading and payment type.

How will I use this information about these three fields? While on vacation, I want the expenses for each day to be listed together. The date fields suggest a relationship between the vacation table and the dates in each of these tables: fuel and food, This means that the date fields in these tables will be linked as we create the database.

The type of payment includes two bank cards and cash. So we will create a table with a field for the type of payment and use it in list boxes in the forms.

> **Tip**
>
> While we have listed fields we will create in the tables of the database, there is one more field that may be needed in a table: the field for the *primary key*, an identifier unique to each record. In some tables, a suitable field for the primary key has already been listed. In other tables such as the payment type, an additional field for the primary key must be created.
>
> Without the primary key field in a table, any data added, deleted, or modified has to be done by using the Execute SQL Statement dialog (**Tools> SQL…**). This takes much longer than to insert it using the Table Data View dialog. But thereafter, the data is visible in the table and is available to be used in queries, forms, and reports.

Creating a new database

To create a new database, select **File > New > Database** from the Menu bar, or click the arrow next to the **New** icon on the Standard toolbar and select **Database** from the drop-down menu. You can also click the **Base Database** button in the *Create* area of the LibreOffice Start Center. If you are already working in Base, you can also press *Ctrl+N*. All of these methods open the Database Wizard.

On the first page of the Database Wizard (Figure 194), select **Create a new database**. Make sure that the **HSQLDB Embedded** entry is selected in the *Embedded database* drop-down menu; see the *Base Guide* for information about using alternative embedded database engines. Click **Next**.
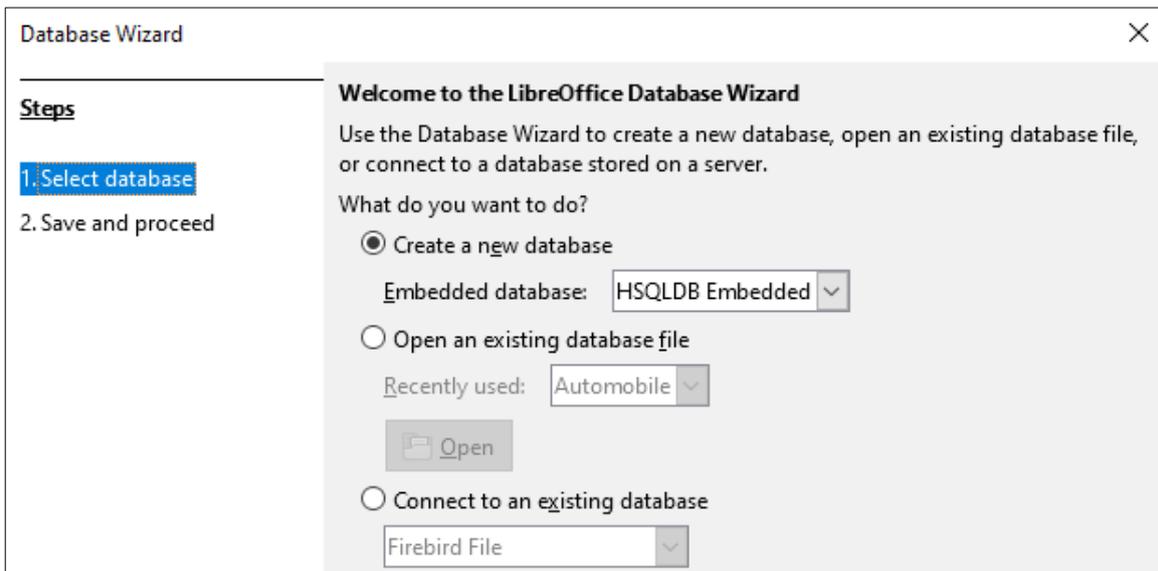
Figure 194: Creating a new database

The second page of the Database Wizard (Figure 195) has two questions. For the first question, it is advised that the database should be registered. Make sure the choice for the second question is **Open the database for editing**. Click **Finish**.
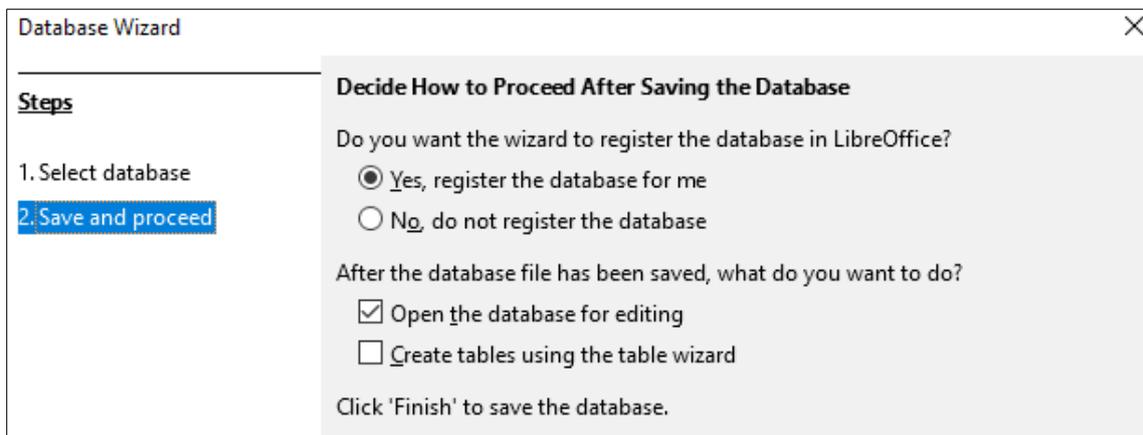
Figure 195: Registering the new database

> 📝 **Note**
>
> In Writer and Calc, selecting **View > Data Sources**, or pressing the *Ctrl+Shift+F4* key combination, opens and closes the Data Sources window containing the list of registered databases. If a database is not registered, this window will not contain it and you cannot access it in Writer or Calc if you need to use data from it in the document you are now working on.

Save the new database with the name Automobile. This opens the Automobile.odb – LibreOffice Base window (Figure 196).
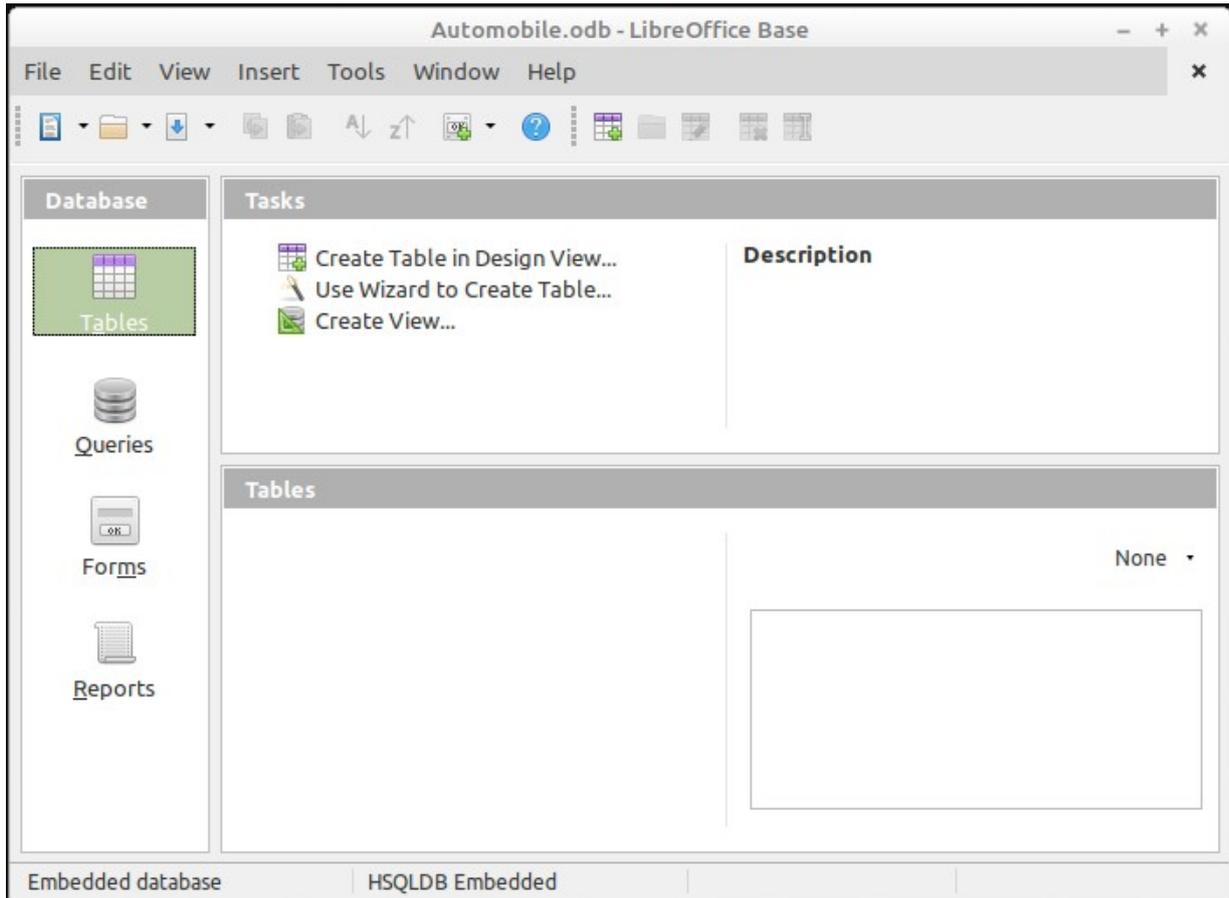
Figure 196: LibreOffice Base window

💡 **Tip**

Every time the Automobile database is opened, the Automobile.odb – LibreOffice Base window opens. Changes can then be made to the database. The title for this window is always <database name> – LibreOffice Base.

⚠️ **Caution**

As you create a database, you should save your work regularly. This means more than saving what you have just created. You must save the whole database as well.

For example, when you create your first table, you must save it before you can close it. This makes it part of the database in memory. But it is only when you save the database file that the table is written to disk.

📝 **Note**

Database files in Open Document Format are stored with the *.odb extension. This file format is actually a container of all elements of the database, including forms, reports, tables, and the data itself. The same format can also store a connection to an external database server instead of the local data, for example, to access a MySQL or PostgreSQL database server in your network.

Creating database tables

In a database, a table stores information in a group of things we call fields. For example, a table might hold an address book, a stock list, a phone book, or a price list. A database must have at least one table and may have several.

Each field of a table contains information of a single type. For example, the Phone field of an address book would only contain phone numbers. Similarly, a price list table could contain two fields: Name and Price. The Name field would contain the names of the items; the Price field would contain the amount of each item.

To work with tables, click the **Tables** icon in the *Database* list, select **View > Tables**, or press *Alt+A*. The tasks that you can perform on a table are in the *Tasks* list (see Figure 196).

Using the Table Wizard to create a table

Wizards are designed to do the basic work. Sometimes this is not sufficient for what we want; in those cases we can use a wizard as a starting point and then build upon what it produces.

The Table Wizard in Base contains two categories of suggested tables: business and personal. Each category contains sample tables from which to choose. Each table has a list of available fields. We can delete some of these fields and add other fields.

A field in a table is one bit of information. For example, a price list table might have one field for item name, one for the description, and a third for the price.

Since none of the fields we need for our Automobile database are contained in any of the sample wizard tables, we will create a simple table using the wizard that has nothing to do with our database. This section is merely an exercise in explaining how the wizard works.

The Table Wizard permits the fields of the table to come from more than one suggested table. We will create a table with fields from three different suggested tables in the wizard.

Click **Use Wizard to Create Table**. This opens the Table Wizard (Figure 197).

Step 1: Select fields

We will use the CD-Collection sample table in the Personal category and Employees in the Business category to select the fields we need.

1) *Category*: Select **Personal**. The *Sample tables* drop-down list changes to a list of personal sample tables.

2) *Sample tables*: Select **CD-Collection**. The *Available fields* area changes to a list of available fields for this table.

3) *Selected fields*: By selecting each field and using the > button, move the following fields from the *Available fields* list to the *Selected fields* list in this order: CollectionID, AlbumTitle, Artist, DatePurchased, Format, Notes, and NumberofTracks.

4) To select fields from another sample table, select **Business** as the Category. Select Employees from the drop-down list of sample tables. Use the > button to move the Photo field from the *Available fields* list to the *Selected fields* list. It will be at the bottom of the list, directly below the NumberofTracks field.

5) If you make a mistake in selecting fields, click on the field name in the *Selected fields* list and use the **<** button to move it from the *Selected fields* list back to the *Available fields* list.

6) If you make a mistake in the order of the selected fields, click the field name that is in the wrong order and use the up and down arrows on the right side of the *Selected fields* list to move it to the correct position.

7) Click **Next**.

You can double-click a field in in the *Available fields* list to transfer it to the *Selected fields* list. Similarly you can double-click a field in the *Selected fields* list to transfer it back to the *Available fields* list.

Figure 197: Selecting fields for the table

Step 2: Set field types and formats

Figure 198: Changing field types

In this step you give the fields their properties. When you click a field, the information on the right changes. (See Figure 198.) You can then make changes to meet your needs. Click each field, one at a time, and make the changes listed below.

If any of these fields requires a mandatory entry, set *Entry required* to **Yes**. A blank field will then not be allowed. In general, only set *Entry required* to **Yes** if something **must** always be put in that field. By default, *Entry required* is set to **No**. (The *Entry required* option is not visible in Figure 198 because *AutoValue* has been set to **Yes**.)

- **CollectionID**: Change *AutoValue* from **No** to **Yes**. (example of a mandatory entry)
- **AlbumTitle**:
  - *Entry required*: Leave *Entry required* as **No**, unless all of your music is in albums.
  - *Length*: Unless you have an album title that exceeds 100 characters counting the spaces, do not change the length.

- **Artist**: Use most of the default settings. Since music always has artists, set *Entry Required* to **Yes**.
- **Date Purchased**: *Field type*: default setting. *Entry required* should be **No**. (You may not know the date.)
- **Format**: Only change the *Entry Required* setting: from **No** to **Yes**.
- **Notes**: No changes are required.
- **NumberofTracks**: Change the *Field type* to **Small Integer [SMALLINT]**, which allows for 32768 tracks.
- **Photo**: Use the default settings.

> ### Note
>
> In Base the maximum length of each field must be specified on creation. It is not easy to change this later, so if in doubt specify a greater length. Base uses VARCHAR as the field format for text fields. This format uses only the actual number of characters in a field up to the limit set, so a field containing 20 characters will occupy only 20 characters even if the limit is set at 100. Two album titles containing 25 and 32 characters respectively will use space for 25 and 32 characters and not 100 characters.
>
> Another text format is CHAR, which has a fixed length. If the limit is set to 100 characters, every entry into this field will have a length of 100 regardless of whether the actual length is 1 or 100.

> ### Note
>
> Each field has a *Field type*, which must be specified. Types include text, integer, date, and decimal. If the field is going to have general information in it (for example, a name or a description), use text. If the field will always contain a number (for example, a price), the type should be decimal or another numerical field. The wizard picks the right field type, so to get an idea of how this works, see what the wizard has chosen for different fields.

> ### Tip
>
> Up and down arrows are available on this page (not shown in Figure 198) and you can use these to reorder the list of fields. Also **+** and **–** buttons are available and you can use these to remove fields from the list or to add new fields.

When you have finished, click **Next**.

Step 3: Set primary key

1) **Create a primary key** should be checked.
2) Select option **Use an existing field as a primary key**.
3) In the *Fieldname* drop-down list, select **CollectionID**.
4) Check **Auto value** if it is not already checked.
5) Click **Next**.

> **Note**
>
> A primary key uniquely identifies an item (or record) in the table. For example, you might know two people called "Randy Herring" or three people living at the same address and the database needs to distinguish between them.
>
> The simplest method is to assign a unique number to each one: number the first person 1, the second 2, and so on. Each entry has one number and every number is different, so it is easy to say "record ID 172". This is the option chosen here: CollectionID is just a number assigned automatically by Base to each record of this table.

Step 4: Create table

1) If desired, rename the table at this point. If you rename it, make the name meaningful to you. For this example, make no changes.

2) Leave the option **Insert data immediately** checked.

3) Click **Finish** to complete the Table Wizard. Close the Table Data View window created by the Table Wizard. You are now back to the main window of the database with the listing of the tables, queries, forms, and reports. Notice that a table named CD-Collection is now listed in the *Tables* portion of the window.

4) Click the **Save** button in the Standard toolbar at the top of the main window.

Creating a table by copying an existing table

If you have a large collection of music, you might want to create a table for each type of music you have. Rather than creating each table from the wizard, you can make copies of the original table, naming each according to the type of music contained in it.

1) Click on the **Tables** icon in the Database area of the LibreOffice Base window to see the existing tables.

2) Right-click on the **CD-Collection** table icon. Choose **Copy** from the context menu.

3) Move the mouse pointer below this table, right-click, and select **Paste**. The Copy table dialog opens.

4) Change the Table *name* to *CD-Jazz* and click **Next**.

5) Click the **>>** button to move all the fields from the left box to the right box and click **Next**.

> **Tip**
>
> Using the four action buttons provided on this page, you can move selected fields, or all fields, in either direction. You can also double-click to move a field from one list to the other.

6) Since all the fields already have the proper field type, no changes should be needed. However, this is the time and place to make any changes if they are needed. (See Caution below for the reason why.) Click **Create**. The new table is created.

7) Click the **Save** button in the Standard toolbar at the top of the LibreOffice Base window.

> ⚠️ **Caution**
>
> Once tables have been created using the wizard, and data has been entered, editing a table should be very limited. You can add or delete fields, but adding a field requires you to enter the data for that one field for every existing record with an entry for that field.
>
> Deleting a field deletes **all the data** once contained in that field. Changing the field type of a field can lead to data being lost either partially or completely. When creating a new table, it pays to create the fields with the correct names, length, and format before you add any data.
>
> Deleting a table removes all of the data contained in every field of the table. **Unless you are sure, do not delete a table**.

Creating tables in Design View

Design View is a more advanced method for creating a new table, in which you directly enter information about each field in a table. We will use this method for the remaining tables of our Automobile database.

> 📝 **Note**
>
> While the field types and formatting are different in Design View, the concepts are the same as in the Table Wizard.

The first table to be created is Fuel. Its fields are FuelID, Date, FuelCost, FuelQuantity, Odometer, and PaymentType.

1) Click **Create Table in Design View** in the *Tasks* area of the LibreOffice Base window. Base opens the LibreOffice Base: Table Design dialog.

2) FuelID field: Type *FuelID* as the first *Field Name* entry. Press the *Tab* key to move to the *Field Type* column. Select **Integer [INTEGER]** as the field type from the drop-down list. (The default setting is Text [VARCHAR].)

Figure 199: Defining the primary key field

> 💡 **Tip**
>
> A shortcut for selecting from the Field Type drop-down list: press the key for the first letter of the choice. You can cycle through the choices for a given letter by repeatedly pressing that key.

a) Change the *Field Properties* in the bottom section of the dialog.
Change *AutoValue* from **No** to **Yes**.

b) Set *FuelID* as the primary key.
Click in the *Field Name* cell directly below *FuelID*. The dialog automatically sets *FuelID* as the primary key and places a key icon in front of *FuelID* (Figure 199).

Tip

Certain of the integer field types (Integer and BigInt for example) have an *AutoValue* field property. When using one of these field types, your selection of **Yes** for *AutoValue* automatically makes the field the primary key.

Primary keys for any other field type must be selected by right-clicking the rectangle before the field and selecting **Primary Key** in the context menu.

Note

The primary key serves only one purpose: to identify each record uniquely. Any name can be used for this field. We have used *FuelID* for convenience, so we know to which table it belongs.

3) All other fields (Date, FuelCost, FuelQuantity, Odometer, and PaymentType):

a) Type the next field name in the *Field Name* column.

b) Select the field type for each field.

   – For *Date* use **Date[DATE]**. (Press the *D* key to select it.)

   – *FuelCost*, *FuelQuantity*, and *Odometer* use **Number [NUMERIC]**. (Press the *N* key once to select it.)

   – *PaymentType* uses **Text [VARCHAR]**, the default setting.

c) *FuelCost*, *FuelQuantity*, and *Odometer* also need changes in the *Field Properties* section (Figure 200).

   – *FuelCost*: Change the *Length* to 5 and *Decimal places* to 2. Click the *Format example* ellipsis button (...) (Figure 200). This opens the Field Format dialog (Figure 201). Use **Currency** as the *Category* and your currency as the *Format*. My currency has two decimal places. Use what is appropriate for yours.

   – *FuelQuantity*: Change *Length* to 6 and *Decimal places* to 3. (Many fuel pumps measure fuel to thousandths of a gallon in the USA.)

   – *Odometer*: Change the *Length* to 10 and the *Decimal places* to 1.

d) Repeat steps a) through c) until you have entered all of the fields.

4) To save and close the table in the Table Design dialog, select **File > Save**, click the **Save** icon in the Standard toolbar, or press *Ctrl+S*. Name the table *Fuel*.

5) Close the Table Design dialog.

6) In the main database window, select **File > Save**, click the **Save** icon in the Standard toolbar, or *Ctrl+S* to save the database.

Figure 200: Changing field properties

Figure 201: Format example options

Follow the same steps to create the *Vacations* table. The fields, field types, and descriptions are listed in Figure 202.

	Field Name	Field Type	Description
🔑	Date	Date [DATE]	
	Odometer	Number [NUMERIC	odometer reading
	Motel	Number [NUMERIC	
	MPayment	Text [VARCHAR]	payment type for motels
	Tolls	Number [NUMERIC	total tolls
	Breakfast	Number [NUMERIC	
	BPayment	Text [VARCHAR]	payment type for breakfast
	Lunch	Number [NUMERIC	
	LPayment	Text [VARCHAR]	payment type for lunch
	Supper	Number [NUMERIC	
	SPayment	Text [VARCHAR]	payment type for supper
	SnackNo	Text [VARCHAR]	
	SnCost	Number [NUMERIC	
	SnPayment	Text [VARCHAR]	payment type for snacks
	Miscellaneous	Number [NUMERIC	
▷	MiscPayment	Text [VARCHAR]	payment type for misc.
	Notes	Memo [LONGVARCH	

Figure 202: Fields in Vacations table

1) Make the following changes in the *Field Properties* area of the window.

   a) *Odometer*: As described in step 3), bullet c) for the corresponding field of the Fuel table.

   b) *Motel*, *Tolls*, *Breakfast*, *Lunch*, *Supper*, *SnCost*, and *Miscellaneous*: As described in step 3), bullet c) for the *FuelCost* field of the Fuel table.

2) Making *Date* the primary key in this table has to be done in a different way because this field is typed as Date, not Integer.

   a) Right-click to the left of the field name *Date*.

   b) Select **Primary Key** in the context menu.

Following similar steps to those above, you should use Design View to create a much simpler table entitled Payment Type. This table contains a single field named Type, with the field type set to Text[VARCHAR]. Set this field as the primary key for the table.

Defining relationships

Now that the tables have been created, what are the relationships between our tables? This is the time to define them based upon the questions we asked and answered in the beginning.

When on vacation, we want to enter all of our expenses at once each day. Most of these expenses are in the Vacations table, but the fuel we buy is not. So we will link these two tables using the Date fields. Since the Fuel table may have more than one entry per date, this relationship between the Vacations and Fuel tables is one to many (it is designated 1:n.)

The Fuel and Maintenance tables do not really have a relationship even though they share similar fields: Date and Odometer readings. (We are not creating the Maintenance table in these examples.)

> **Tip**
>
> As you create your own databases, you will also need to determine if tables are related and if so how.

1) To begin defining relationships, select **Tools > Relationships**. The Automobile – LibreOffice Base: Relation Design window opens and the Add Tables dialog pops up. (You can also open it by clicking the **Add Tables** icon on the Relation Design window if you ever need to do so.)

2) In the Add Tables dialog, use either of these ways to add a table to the Relation Design window:

   – Double-click the name of the table. In our case, do this for both *Vacations* and *Fuel*.

   – Or, for each table, click the name of the table and then click **Add**.

3) Click **Close** to close the Add Tables dialog when you have added the tables you want.

4) Define the relationship between the Vacations and Fuel tables: click the **New Relation** icon in the Standard toolbar, or select **Insert > New Relation.** This opens the Relations dialog (Figure 204). Our two tables are listed in the *Tables Involved* section.

   a) In the *Fields Involved* section, click the drop-down list under the *Fuel* label.

   b) Select **Date** from the list.

   c) Click in the cell to the right of this drop-down list. This opens a drop-down list for the *Vacations* table.

   d) Select **Date** from the list. It should now look like Figure 204.

   e) Modify the *Update Options* and *Delete Options* section of the Relations dialog (Figure 205).

      – Select **Update cascade** in the *Update* options area.

      – Select **Delete cascade** in the *Delete* options area.

   f) Click **OK**.

   g) In the Relation Design dialog, click the **Save** icon or select **File > Save**.

   h) Close the Relation Design dialog.

   i) Click the **Save** button in the Standard toolbar at the top of the main database window.
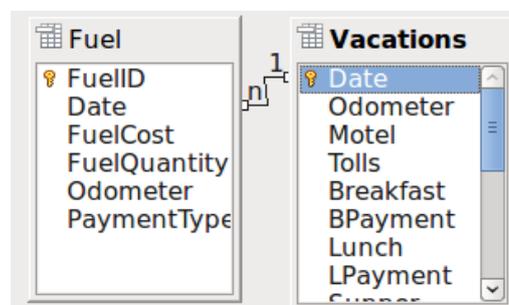
Figure 203: Designation for a 1:n relationship
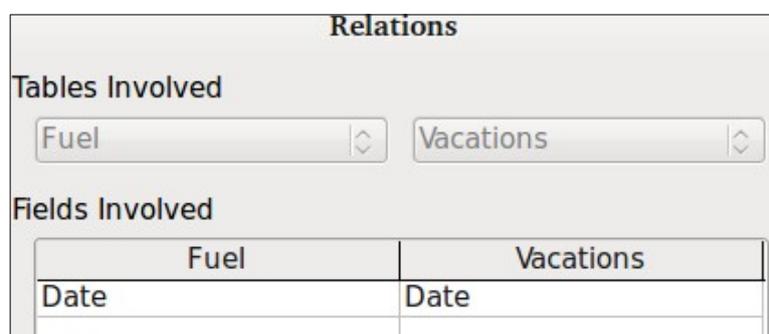
Figure 204: Selected fields in a relationship

> **💡 Tip**
>
> The primary key can contain more than one field. (Its foreign key[1] will contain the same number of fields.) If this were the case in Figure 204, the other fields of the primary field for the *Fuel* table would be listed under *Date*. The corresponding fields of the foreign key would be listed under *Vacations*. Detailed information about this is in the *Base Guide*.
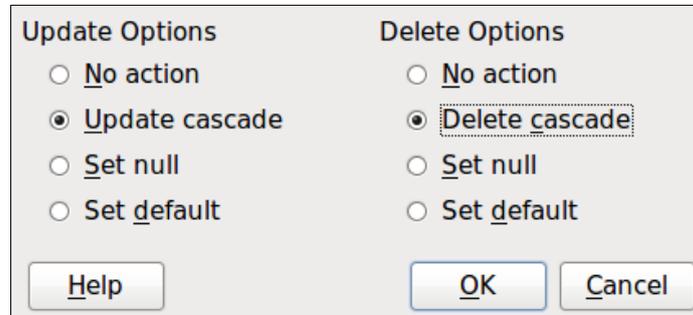
Figure 205: Update Options and Delete Options section

While these options are not strictly necessary, they do help. Having them selected permits you to update a table that has a relationship defined with another table which has been modified. It also permits you to delete a field from the table without causing inconsistencies.

Creating a database form

Databases are used to store data. But, how is the data put into the database? Forms are used to do this. In the language of databases, a form is a front end for data entry and editing.

A simple form consists of the fields from a table (Figure 206). More complex forms can contain much more, including additional text, graphics, selection boxes, and many other elements. Figure 207 is made from the same table with a text label (Fuel Purchases), a list box placed in PaymentType, and a graphic background.

> **💡 Tip**
>
> A list box is useful when a field contains a fixed number of options. It saves you from having to type data by hand and having to double-check that the entered data is correct, and ensures that invalid options are not entered.
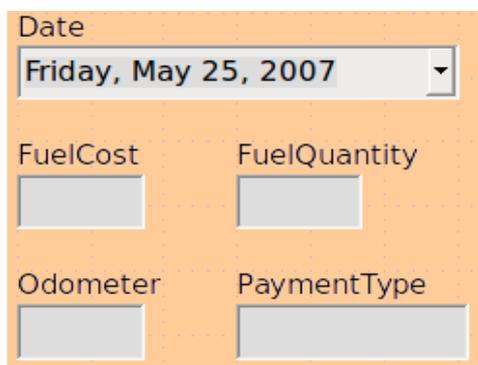
Figure 206: Fields of a simple form
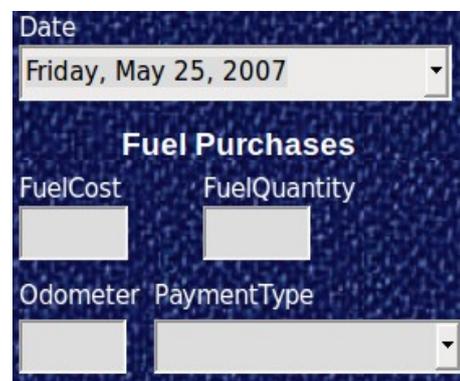
Figure 207: Simple form with additions

---

1   A field in a table that stores values of the primary key of records in another table.

In our database, payments for food or fuel might be made from one of two credit cards (Dan or Kevin) or in cash, so these would be the available options for all boxes that contain payments.

To create a list box, we first need to create a small, separate table containing the name of the options. This is then linked to the corresponding field in the form. The topic is dealt with in detail in the Base Guide and will not be pursued further here.

Using the Form Wizard to create a form

We will use the Form Wizard to create a Vacations form, which will contain a form and a subform.

In the main database window (Figure 196), click the **Forms** icon in the *Database* area, select **View > Forms**, or press *Alt+M*. In the Tasks list, click **Use Wizard to Create Form** to open the Form Wizard (Figure 208). Base displays the Database Form window and the Form Wizard dialog. Simple forms require only some of these steps, while more complex forms may use all of them.

Step 1: Select fields

1) On the Form Wizard dialog, under *Tables or queries* drop-down, select **Table: Vacations**. *Available fields* lists the fields for the Vacations table.

2) Click the right double arrow to move all of these fields to the *Fields in the form* list. Click **Next**.
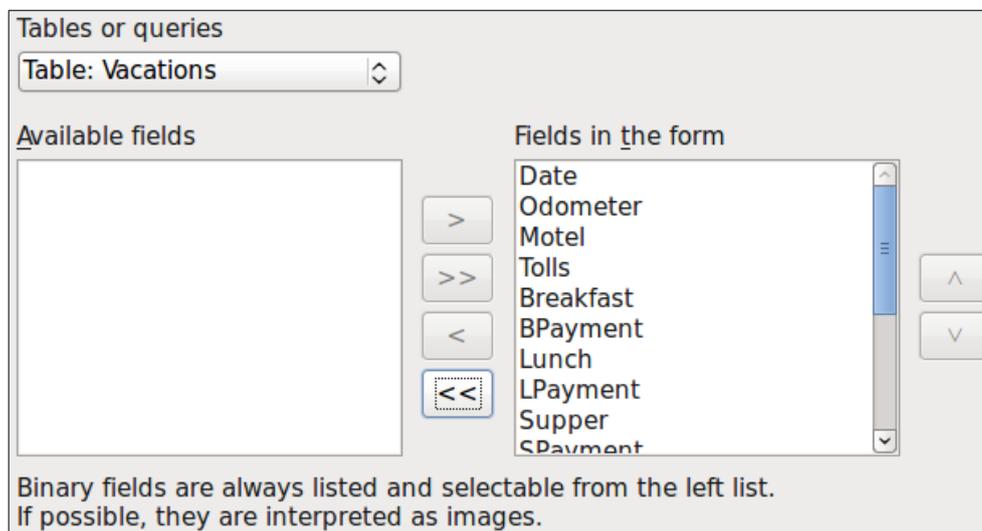
Figure 208: Selecting fields in the Form Wizard

> 💡 **Tip**
>
> Using the four action buttons in the center of this page, you can move selected fields, or all fields, in either direction. You can also double-click to move a field from one list to the other. The up and down arrows on the right can be used to re-order entries in the *Fields in the form* list.

Step 2: Set up a subform

Since we have already created a relationship between the Fuel and Vacations tables, we will use that relationship. If no relationship had been defined, this would need to be done later in the wizard (Step 4: Get joined fields).

1) Click the box labeled **Add Subform**.

2) Click **Subform based upon existing relation**.

3) Fuel is listed as a relation we want to add. So click **Fuel** to highlight it, as in Figure 209. Click **Next**.

Figure 209: Adding a subform

Step 3: Add subform fields

This step is similar to Step 1: Select fields. The only difference is that not all of the fields will be used in the subform.

1) Fuel is preselected under *Tables or queries*.

2) Use the **>>** button to move all the fields to the *Fields in the form* list.

3) Click the **FuelID** field to highlight it.

4) Use the **<** button to move the **FuelID** back to the *Available* fields list (Figure 210).

5) Click **Next**.

Figure 210: Selecting fields of a subform

Step 4: Get joined fields

This step is for tables or queries for which no relationship has been defined. Because this has been defined in the relationship, the wizard skips this step.

> **Note**
>
> It is possible to create a relationship between two tables that is based upon more than one pair of fields. How to do that and why is discussed in the *Base Guide*.

> ⚠️ **Caution**
>
> When selecting a pair of fields from two tables to use as a relationship, they have to have the same field type. That is why we used the Date field from both tables: both their field types are Date[DATE].
>
> Whether a single pair of fields from two tables are chosen as the relationship, or two or more pairs are chosen, certain requirements must be met for the form to work.
>
> – One of the fields from the main form must be the primary key for its table. (Date would have to be used.)
>
> – No field from the subform can be the primary key for its table. (*FuelID* cannot be used.)
>
> – Each pair of joined fields must have the same field type.

Step 5: Arrange controls

A control in a form consists of two parts: label and field. This step in creating the form determines where a control's label and field are placed relative to each other. The four choices from left to right are *Columnar – Labels Left*, *Columnar – Labels on Top*, *As Data Sheet*, and *In Blocks – Labels Above*.

1) *Arrangement of the main form*: Click the second icon (*Columnar – Labels on Top*). The labels will be placed above their field.

2) *Arrangement of the subform*: Click the third icon (*As Data Sheet*). (The labels are column headings and the field entries are in spreadsheet format.) Click **Next**.
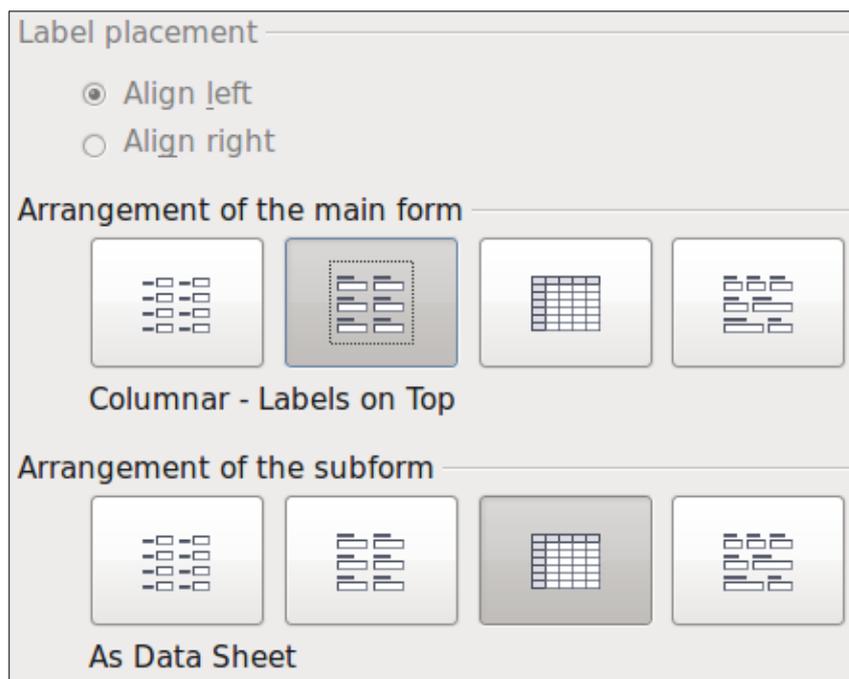
Figure 211: Arrange controls

Step 6: Set data entry

Unless you have a need for any of these entries to be checked, accept the default settings. Click **Next**.

Step 7: Apply styles

1) Select the color you want in the *Apply styles* list. (I chose the **Beige** option.)

2) Select the *Field border* you want. (I prefer the **3D look** option. You might want to experiment with the different possible settings.)

3) Click **Next**.

Step 8: Set name

1) Enter the name for the form. In this case, it is *Vacations*.

2) Click **Modify the form**.

3) Click **Finish**. The form opens in edit mode, Base displaying the Fuel – LibreOffce Base: Database Form window.

Modifying a form

The form does not look organized at all. Every control seems to have a different size. The background is not the best color, nor are all of the labels the way we would want them.

The reason for different sized controls is that they contain different types of field data. There are three different sized controls: text, formatted, and date. Text controls have their width set to display a large number of characters. Formatted controls will usually contain numbers or decimals although they can contain a wide variety of formatting. So, these are likely going to have a limited number of characters, hence a shorter control. Date controls obviously contain dates. Most formats for them are fairly short, which is the reason for their width. However, one of the date formats is day of the week, month day, year (Thursday, October 31, 2020). This needs a larger width than 10/31/2020 or 31/10/2020 for example.

First, all of the payment type controls need to be modified. The fields need to be replaced with a list box, and each needs to be related to an existing field in the table, Payment Type. The rest of the controls require modification based upon the category into which they fall.

> **Note**
>
> The steps that follow assume that the Payment Type table already contains three single-field records. These might be *Cash*, *Dan*, and *Kevin*. If necessary you could use the Form Wizard to create a very simple form to input or edit these values.

We will carry out the following steps:

1) Replace fields with list boxes.

2) Modify text controls (label field first and then the data field).

3) Modify date control.

4) Modify formatted controls.

5) Modify fields in the table.

6) Group the controls (food, fuel subform, and miscellaneous).

7) Modify memo control.

8) Add headings (for each group in the form).

9) Change the background to a picture, then modify some of the labels so that they can be read clearly against this background. Change the font color of the headings.

10) Change tab order of fields.

Figure 212 shows a section of the Form Design toolbar, identifying key icons that will be used during the following steps.

Figure 213 shows the Form Navigator.
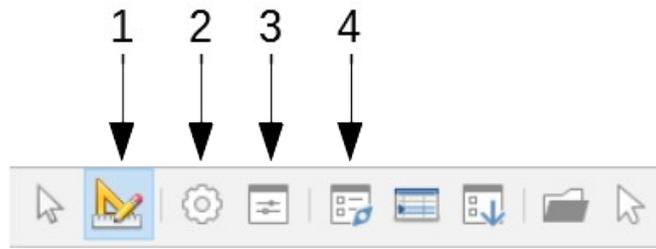
| 1 | Design Mode | 3 | Form Properties |
| 2 | Control Properties | 4 | Form Navigator |

Figure 212: Selection of Form Design toolbar
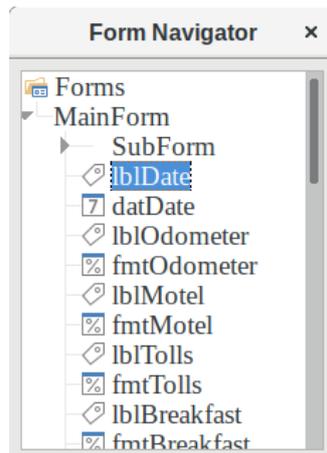
Figure 213: Form Navigator

Step 1: Replace fields with list boxes

1) Press the **Control Properties** and **Form Navigator** icons on the Form Design toolbar to open the corresponding dialogs. (You may need to select a control for the **Control Properties** icon to become available)

2) Going down the list of labels and fields in the Form Navigator, click the first text box whose name contains the word "Payment".

3) If both the label and text box components of the field are highlighted in the Form Navigator, double-click the text box so that only it is highlighted.

> 💡 **Tip**
>
> In some cases when the Form Navigator does not have the input focus, selecting a field highlights both components (for example, label and text) of the field. If this arises, then double-clicking the required component will highlight it, and enable you to subsequently move from one component to another with a single click.

4) Right-click the text box in the Form Navigator and select **Replace with > List Box** from the context menu.

5) In the Properties dialog, the heading becomes *Properties: List Box*.

6) The *General* tab is selected, so scroll down to the *Dropdown* property. Change the **No** to **Yes**.

7) Click the *Data* tab.

8) Go to *Type of list contents*. Change *Valuelist* to *Sql*.

9) The line below this becomes *List content*. Click the ellipsis (…) to the right of this property.

10) Base opens the SQL Command – LibreOffice Base: Query Design window and the Add Table or Query dialog. The Payment Type table has the entries that are required.

    a) Click it, and then click the **Add** button.

    b) Close the Add Table or Query dialog.

11) In the SQL Command – LibreOffice Base: Query Design window, double-click **Type** in the table named *Payment Type*. This places *Type* in the *Field* row of the tabular area.

Field	Type
Alias	
Table	Payment Type
Sort	
Visible	☑

12) Save and close this window. The SQL code appears in the *List content* property. (SELECT "Type" FROM "Payment Type")

13) Change the *Bound* field value from *1* to *0*.

14) Repeat these steps for each field containing the word "Payment", six fields in total. (See Note below before doing this.)

> 💡 **Tip**
>
> There are times, as in this example, when 8) through 12) produces the same SQL code. When this happens, copy the code. Paste the code into the *Type of list contents* property before doing 13). It is a nice shortcut.

Step 2: Modifying text controls

These are limited to controls whose fields begin with *txt*. This is when the labels and fields are modified if necessary to make them more meaningful. In this example, all but one control contains the word "Payment". The content of these are payment types which determines that name given to them. The other one is named *Note*.

Next the size of the controls needs to be modified based upon the contents they will contain. Because it is hard to determine beforehand just how large the *Note* control needs to be, this will be done after all of the other controls are arranged in a more compact order. The rest of the controls with text will have their sizes changed now.

    1) Rename the labels.

        a) Locate the topmost text control in the Form Navigator.

        b) Select the associated the control label (begins with *lbl*). Make sure that the title of the Properties dialog has become *Label Field*.

        c) Click the *General* tab if it is not already selected.

        d) Click the down arrow at the right end of the *Label* property to open the drop-down. Only then rename the label to *Payment Type* and press **Enter**.

e) Click on another property to save this change.

f) Adjust the width of the label field if necessary for the new width of the label name.

g) Repeat a) through f) for each label field in the form that contains the word *Payment*.

> ### 📝 Note
>
> This database form contains multiple controls with the same label: *Payment Type*. When this name has been entered for the first time, it can be copied. In d) for the next label, highlight the current label name, paste the name you want, and click another property.

2) Resize the fields.

a) Make sure that you are in the edit mode, with the Form Navigator and Properties dialogs open.

b) In the Form Navigator dialog, click the field whose size you want to change.
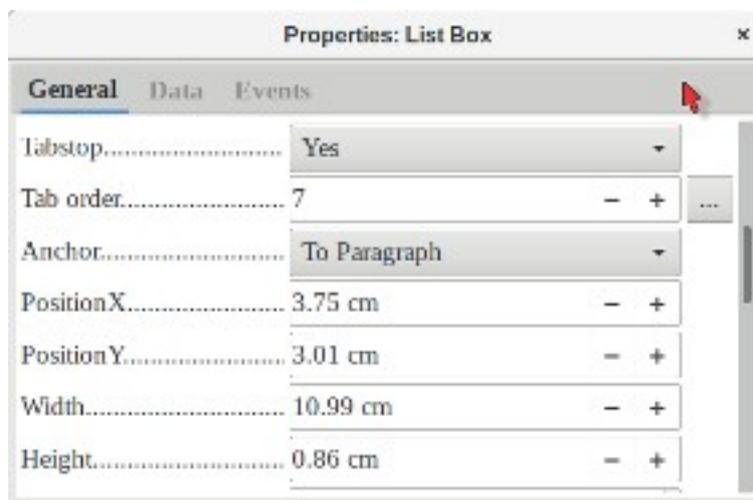
c) Scroll down to the *Width* property in the Properties dialog.

d) Estimate the width required based on the set of possible values for this field and change the *Width* property to that value. In the case of our *Payment Type* fields, the text box should be wide enough for the longest possible payment type value of "Kevin".

e) Click either the *PositionY* or the *Height* property to save the change. (These are adjacent properties, but clicking on any other property will do the same thing.)

f) Use these same steps to change the size for each of the remaining text controls, including *txtSnackNo* and all the payment type fields.

Step 3: Modify date control

1) With the Properties and Form Navigator dialogs open, select the **datDate** field in the Form Navigator dialog. The heading of the Properties dialog changes to Properties: Date Field.

2) In the *General* tab of the Properties dialog, scroll down to the *Date format* property. From the drop-down list, select the date format you desire.

3) Scroll down to the *Dropdown* property and select **Yes**.

4) Is the width of the *Date* field inappropriate for the selected format? If so:

a) The *Date* field has a border around it.

b) Move the cursor over the middle green marker on the right side of the *Date* field. It should become a horizontal double arrow. Drag this to the right to increase the width. Drag it to the left to reduce the width. (It may take several attempts to get this right.)

Step 4: Modify formatted controls

At each step, instructions have been given for which changes need to be made. With the help of the Form Navigator, make a list of the formatted fields and their labels. The fields are those with the prefix, *fmt*. (There are eight of them.)

One of these fields, Odometer, contains the odometer readings as integers. The rest are currency fields. Selecting the correct format follows the same steps.

Working with one control at a time perform the following tasks:

1) Check that the label of the control provides the annotation that you require. In the case of *lblSnCost*, change it to *Snack Cost*.

2) Click the label of the control to be modified in the Form Navigator. If the border for the label is longer or shorter than the text in the label, adjust its width as described for the *Date* field above.

3) Click this formatted field in the Form Navigator list.

   a) Under the *General* tab, scroll down to the F*ormatting* property.

   b) Click the ellipsis (…) on the right to open the Format Number dialog.

   c) For the Odometer field click **Number** in the *Category* list, otherwise click **Currency**.

   d) Under *Format*, select the example to be used.

   e) Select the desired number of decimal places (one for *Odometer*, two otherwise).

   f) Select the desired number of leading zeros.

   g) **Negative numbers red**: check if yes, remove the check if no.

   h) **Thousands separator**: check if yes, remove check if no.

   i) Click **OK**.

   j) If the width of the field is not correct for the selected format, adjust its width as described for the *Date* field above.

4) Repeat these steps for each field name in the Form Navigator that begins with *fmt*.

Step 5: Modify fields in the table

The labels in these controls form the headings of the columns. The values of the field are in the column. The Form Navigator does not show any information about them. So modifications must be done using the Properties dialog.

The controls in a table control require the same types of modification as have already been discussed. To change things, click the header to be able to access that particular control's properties.

1) Click the *Date* label (the column named *Date*).

   a) Scroll to the *Date format* property. From the drop-down list, select the format you desire, if different from the default setting.

   b) Scroll to the *Width* property. Adjust the width if necessary.

   c) Scroll to the *Dropdown* property. If you want to have a small calendar pop-up window, select **Yes**.

2) Click the *FuelCost* label.

   a) Open the drop-down list for the *Label* property. Add a space between *Fuel* and *Cost*. Press *Enter*.

b) Scroll to the *Formatting* property. Click the ellipsis (…) on the right. Select *Currency* from the *Category* column. Uncheck *Negative numbers red* and *Thousands separator*. Press **OK**.

c) Scroll to the *Width* property. Adjust the width if necessary.

d) Change the *Alignment* property if you do not want data to be to the left. Select **Center** to put the data in the middle of the cell.

3) Click the *FuelQuantity* label.

a) Open the drop-down list for the *Label* property. Add a space between *Fuel* and *Quantity*. Press *Enter*.

b) Scroll to the *Formatting* property. Change if needed to show three decimal places.

c) Scroll to the *Width* property. Adjust the width if necessary.

d) Change the *Alignment* property if you do not want data to be to the left. Select **Center** to put the data in the middle of the cell.

4) Click the *Odometer* label.

a) Scroll to the *Formatting* property. Change if needed to show one decimal place.

b) Scroll to the *Width* property. Adjust the width if necessary.

c) Change the *Alignment* property if you do not want data to be to the left. Select **Center** to put the data in the middle of the cell.

5) Click the *PaymentType* label.

a) Right-click this label to open a context menu to add a list box. Select **Replace with > List Box** in the context menu.

b) Open the drop-down list for the *Label* property. Add a space between *Payment* and *Type*. Press *Enter*.

c) On the Data tab, change the *Type of list contents* property to **Sql.**

d) Paste the SQL code `SELECT "Type" FROM "Payment Type"` into the *List content* property. (This is a shortcut method – see the Tip on page 246 and the detailed instructions above it if you want more details).

Step 6: Group the controls

This is a suggested layout which looks reasonably well organized. Use this one or create one that appeals to you. The controls may be wider or narrower than yours because of the content that will be in them. Note that this layout has left space for the additional labels that will be added later.

1) There are three icons that need to be activated on the Form Design toolbar: **Display Grid**, **Snap to Grid**, and **Helplines While Moving**. If this toolbar is on the side of the form, click the double arrow (») to open a sub toolbar showing them. If the toolbar is on the top or bottom of the form, they are on the right end of it. If there is a double arrow at the end, click it to reveal them. Make sure they are highlighted as in this figure.

Figure 214: Help for moving controls

💡 Tip

You can also control the **Display Grid**, **Snap to Grid**, and **Helplines While Moving** options using the **View > Grid and Helplines** menu.

Figure 215: Form suggested layout

2) Some of the controls need to be moved in pairs so the Form Navigator needs to remain open. Close the Properties dialog now.

📝 **Note**

When moving a control, it is tempting to use the *PositionX* and *PositionY* properties to place the control exactly where you want it to be. **Do not do this.** This will place the control's label and field on top of each other. These properties can be used to move a label or field to a specific location, but are not designed to move a control. Use the **Position and Size** icon on the Form Design toolbar to move a control or group of selected controls.

The list in the Form Navigator reveals which controls needed to be grouped based upon their names:

– *lblMotel* / *fmtMotel* with *lblMPayment* / *txtMPayment*;

– *lblBreakfast* / *fmtBreakfast* with *lblBPayment* / *txtBPayment*;

– *lblLunch* / *fmtLunch* with *lblLPayment* / *txtLPayment*;

– *lblSupper* / *fmtSupper* with *lblSPayment* / *txtSPayment*;

– *lblSnackNo* / txt*SnackNo* with *lblSnCost* / *fmtSnCost* and with *lblSnPayment* / txt*SnPayment* (group these three controls together);

– *lblMiscellaneous* / *fmtMiscellaneous* with *lblMiscPayment* / *txtMiscPayment*.

That is six groups of controls; each one will be moved separately.

The layout shows, for each of these groups, an order as to where each control of a group goes. For most of them, the first control holds the cost, and the second contains the payment type in a row. The snacks places the number of snacks followed by the cost and then the payment type. The miscellaneous controls contains the payment below the cost.

3) Before moving an entire group to a new location, move the controls within the group to where you want them to be relative to each other, such as the order mentioned in the last paragraph.

   a) Click on the first control, placing a border around it.

   b) Place the cursor over the label or field where it changes its shape.

   c) Drag it to an open area of the form.

   d) Using the same method, move the second control to the correct position relative to the first control.

   e) As soon as you begin to move it, the helplines will appear. Use them to line up the edges of the controls before releasing the cursor.

   f) If there is a third control, move it to the correct position relative to the second one.

4) Move the controls for the group to where you want them:

   a) Click the first component in the Form Navigator list.

   b) Use the standard *Control+Click* and *Shift+Click* mechanisms until all of the labels and fields in this group are highlighted.

   c) Place the cursor over one of the labels or fields changing the arrow.

   d) Drag the group to where you want its controls to be.

5) Repeat for the other controls using these same steps. If a group is going to be below another group of controls, use the helplines to line up the left end of the two groups (for example: first control under left control).

Step 7: Modify memo control

The size of the *Note* control allows it to be moved into a place on the form that permits the controls of the form to be organized without changing the size of the *Note* control. This might not always be the case. If the size had needed modification, this is done using the same methods as for other text controls.

The other modification is adding scrollbars. The choices are none, vertical, horizontal, or both.

1) To change the size of this control, follow the same steps for changing the size for any text control.

2) If necessary, move the control to the required position using the same steps described above for grouping the controls (Step 6).

3) Click the **Control Properties** icon in the Form Design toolbar if the Properties dialog is not open.

4) Select the *txtNotes* control in the Form Navigator dialog.

5) On the Properties dialog, click the *General* tab if it is not selected.

6) Scroll down to the *Text type* property.

7) Select the **Multi-line** option from its drop-down list.

8) Scroll down to the *Scrollbars* property.

9) From its drop-down list, select the option you need (**None**, **Vertical**, **Horizontal**, or **Both**).

10) Close the Properties dialog.
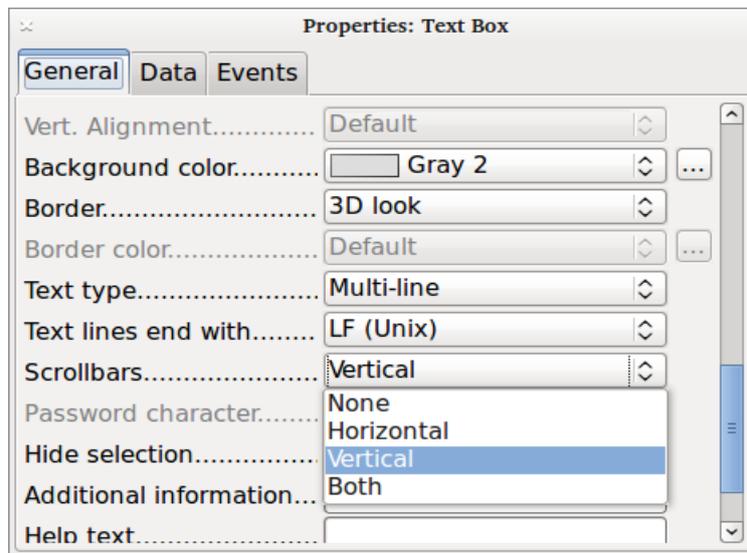
Figure 216: Scroll bar selections in the Properties dialog

Step 8: Add headings

This task is easier to complete if you have end-of-paragraph markers visible. You should turn them on by selecting **View > Formatting Marks**, or by clicking the **Toggle Formatting Marks** icon in the Standard toolbar, or by pressing *Ctrl+F10*.

1) Make sure that the cursor is in the top left hand corner of the Database Form window. If it is not, click in that corner to move the cursor there.

2) Press the *Enter* key repeatedly to move the cursor down until it aligns with the gap between the *Date* field and the *Breakfast* field.

3) Use the *Set Paragraph Style* drop-down list in the Formatting toolbar to select the **Heading 2** style.

4) Use the space bar to move the input cursor along the empty line to the position where you want the first heading to appear. Type the heading *Meals*.

5) Use the space bar to move the input cursor along the same line to the position where you want the second heading to appear. Type the heading *Snacks*.

6) Press the *Enter* key repeatedly to move the cursor down until it aligns with the gap between the *Supper* field and the table.

7) If necessary, use the *Set Paragraph Style* drop-down list in the Formatting toolbar to re-select the **Heading 2** style.

8) Use the space bar to move the input cursor along the line to the position where you want the table's heading to appear. Type the heading *Fuel Data*.

> 💡 **Tip**
>
> If you know how to use styles, you can open the Styles deck by selecting **View > Styles**, or by pressing *F11*. Right-clicking the *Heading 2* style and selecting the **Modify** option in the context menu would allow you to quickly modify the appearance of all three headings. See the *Writer Guide* for details.

Step 9: Change the background

The background for a form can be a color, or a graphic (picture). You can use any of the colors in the color table at **Tools > Options > LibreOffice > Application Colors**. If you know how to create custom colors, you can use them. You can also use a picture (graphic file) as the background.

To add a color to the form background:

1) Right-click the form and select **Page Style** from the context menu.

2) Base displays the Page Style dialog (Figure 217). Make sure the *Area* tab has been selected.

3) Select **Color** in the row of buttons near the top of the tab.
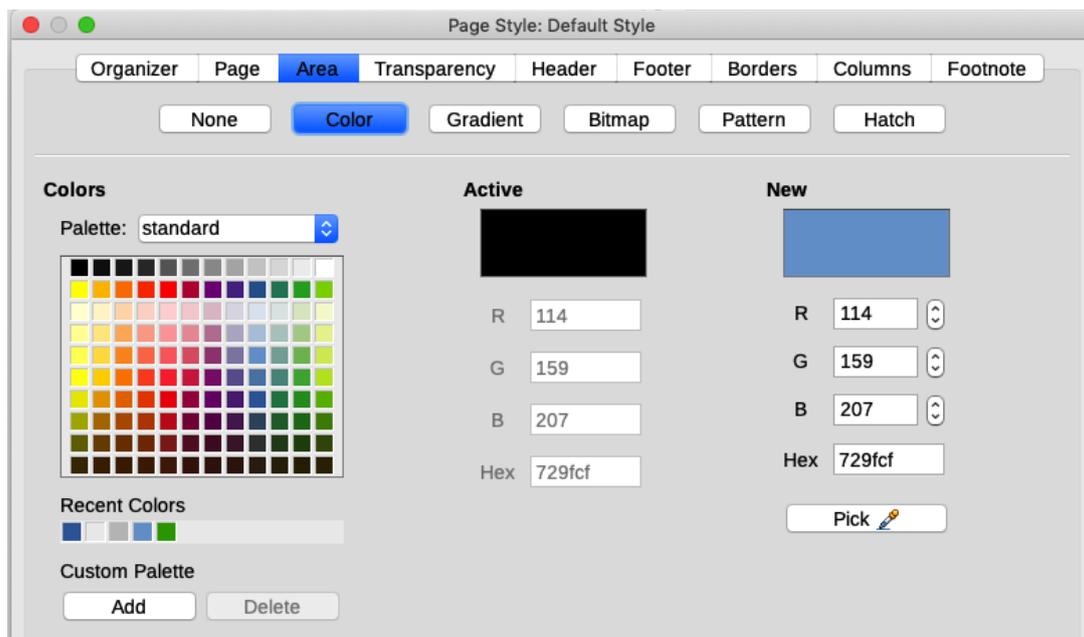
Figure 217: Page Style dialog

4) Select a color from the grid. You can change the color palette to access more choices or use the *RGB* or *Hex* boxes to specify a color, or click **Pick** for even more choices.

5) Click **Apply** to see what your selection will look like in your form.

6) Change if necessary.

7) Click **OK** to accept your color choice and close the dialog.

To add other form backgrounds:

1) Perform steps 1) and 2) as for adding color to the background.

2) Select the type of background from the row of buttons: **None**, **Gradient**, **Bitmap**, **Pattern**, or **Hatch**.

3) In the selected type, choose one of the selections provided or create your own. For details, see Chapter 4, Changing Object Attributes, in the Draw Guide.

4) Click **Apply** to see what your selection will look like in your form.

5) Click **OK** to accept your choice and close the dialog.

If you selected a bitmap from the list, the form might look like Figure 218.

Figure 218: Finished form

Step 10: Change the tab order

The *Tab* key moves the cursor from field to field. This is much easier to do than to click each field to enter data into it. It also permits us to group our expenses into areas before we begin entering data. For example, all of our meal receipts can be grouped together as can our snacks and also our fuel purchases.

Figure 219: Form Design toolbar with Activation Order icon circled

1) If it is not open already, select **View > Toolbar > Form Design** to open the Form Design toolbar.

2) Click the **Activation Order** icon (circled in Figure 219).

3) Rearrange the order of the fields in the Tab Order dialog.

   a) If you click the **Automatic Sort** button, Base will interpret the structure of your form and propose what it considers to be a sensible tab order.

   b) You can use the **Move Up** and **Move Down** buttons to change the position of a selected control in the list.

   c) You can drag a control from one position to another in the *Controls* list.

   d) You may chose to define your own tab order, or you could put the fields in the same order as that shown in Figure 220.

   e) Click **OK**.

4) Save and close the form.

5) Save the database.
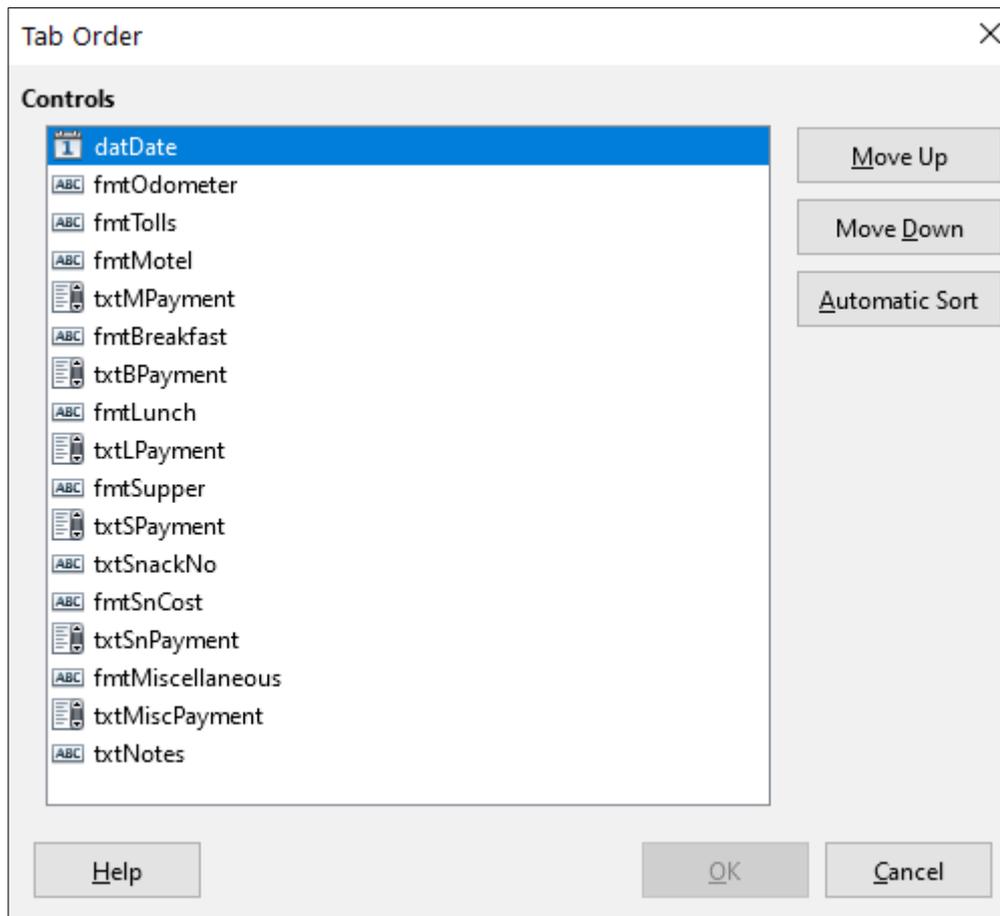
Figure 220: Possible tab order for the Vacations form

Entering data in a form

Records are used to organize the data we enter into a form. They also organize the data we enter into a subform.

Different types of fields allow different methods of data entry. In many cases, more than one method can be used.

The first step to entering data in a form is to open it from the main database window (Figure 196).

1) Click the *Forms* icon in the *Database* list, or select **View > Database**, or press *Alt+M*.

2) Find the form's name in the *Forms* list (Vacations).

3) Double-click the form's name.

> 📝 **Note**
>
> The order in which the following descriptions are presented assume a particular tab order for the form, and this may not match the tab order that you want to define.

The quickest way to enter a date in the *Date* field is to click the arrow that opens the drop-down calendar (Figure 221) and click the day that you want. Then press the *Tab* key to go to the next field.

Figure 221: Calendar drop down

The *Odometer*, *Tolls*, and *Motel* fields are numeric fields. Enter values directly into them, or use the up and down arrows (if you selected to display them during form creation). When the value has been entered, use the *Tab* key to go to the next field.

- Typing the up arrow increases the value, and the down arrow decreases the value by one unit.
- The two arrows only change the numerals to the left of the decimal place.
- Numerals to the right of the decimal place must be changed by deleting them and typing the desired ones.

The Motel's *Payment Type* field is a drop-down list. If, as in my case, all of the elements of the list start with different letters, typing the first letter selects the desired entry.

- If two or more elements of the list have the same first letter, repeated typing of the first letter will cycle through these elements.
- When the selection is correct, use the *Tab* key to go to the next field.

The rest of the fields of the main form are either numeric fields or drop-down lists until we reach the Notes field. It is a text field. Type anything you desire in this field just as you would any simple text editor.

> **Note**
>
> The *Tab* key is used to move between fields. But since text fields do not have tab positions in them, they can not be used to move from one position in the field to another one. All spacing must be done by the space bar. The *Enter* key is a little more complex. It can be used to move between non-text fields. With a text field, its action depends upon whether the text field has a single line property. With it, pressing *Enter* will move the cursor to the next field. But when the field has a multi-line property, pressing *Enter* moved will only move the cursor down one line. With this field, the *Tab* key has to be used to move the cursor to the next field.
>
> If we did not have a subform for fuel data, pressing the *Tab* key in the last field would save all of the fields, clear them, and make the form ready to accept data on the second record.

Since we have a subform, using the *Tab* key places the cursor in the first *Date* field of the subform with the date automatically entered to match the *Date* field of the main form.

The *Fuel Cost*, *Fuel Quantity*, and *Odometer* fields are numeric fields. The *Payment Type* field is a drop-down list. Enter the data just as you did in the main form, and use the *Tab* key to go to the next field.

When you use the *Tab* key to leave the *Payment Type* field, it goes to the *Date* field of the next line and automatically enters the date. Now you can enter your second set of fuel data for this day.

To move to another record when the form has a subform, click any of the fields of the main form. In this case, click the *Date* field of the main form. Then use the directional arrows at the bottom; from left to right: *First Record*, *Previous Record*, *Next Record*, and *Last Record* (all have keyboard shortcuts identified in their extended tips). To the right of these arrows is the *New Record* icon.

To create a new record while in the last record of the main form, click either the *Next Record* icon or the *New Record* icon.

> ### Tip
>
> The number in the Record box is the number of the record whose data is shown in the form.
>
> If you know the number of the record you want, you can enter it into the record box and then type *Enter* to take you to that record.

Figure 222 is a record with data inserted in its fields.

Figure 222: Sample record of the Vacations form and subform

Quickly populate a table with data from a spreadsheet

If you have data in a spreadsheet document that represents the layout of a database table, and you want to copy it into a table of your database, then it is possible to load the sheet contents quickly by dragging and dropping the sheet into a database table:

1) Open the database file in the LibreOffice Base window (Figure 196) and select the Table view.

2) Open the spreadsheet in Calc. Select the sheet you want to insert in the database.

3) Place the two windows side by side on your desktop.

4) Drag the sheet tab in the bottom of the Calc window into the table list of the database file. The mouse pointer shows a square with a + sign. (Sheet tab: This has the name of the sheet on it.)

5) Drop the sheet by releasing the mouse button.

6) The Copy table wizard appears to help you migrate the content to the database table.

7) On the first page of the wizard, select the options of the copy operation and name the database table. Each option is explained in the Help (F1).

8) On the second page of the wizard, select the sheet columns you want to copy into the table.

9) On the third page of the wizard, define the data type of each column of your table.

10) Click **Create** to populate the new table with the spreadsheet data.

> **Note**
>
> The Copy table operation copies only values and strings from the Calc spreadsheet. It **does not** copy formulas.

Creating queries

Queries are used to get specific information from a database. Their results are special tables within the database.

To demonstrate the use of queries, we will use two different methods:

- Using our CD-Collection table, we will create a list of albums by a particular artist. We will do this using the Query Wizard.

- The information we might want from the Fuel table includes what our fuel economy is. We will do this using Design View. (Queries that require calculations are best created with Design View.)

Using the Wizard to create a query

Queries created by the Query Wizard provide a list, or lists, of information based upon what one wants to know. It is possible to obtain a single answer or multiple answers, depending upon the circumstances.

In the main database window (Figure 196), click the **Queries** icon in the Database section, select **View > Queries**, or press *Alt+Q*. In the *Tasks* section, click **Use Wizard to Create Query**. The Query Wizard dialog opens (Figure 223). The information we want is which albums are by a certain musical group or individual (the album's artist). We can include when each album was bought.

> **Note**
>
> When working with a query, more than one table can be used. Since different tables may contain the same field names, the format for naming fields in a query is *table name.field name*, with a period (.) between the table name and the field name. For example, the Lunch field of the Vacations table used in a query has the name *Vacations.Lunch*.
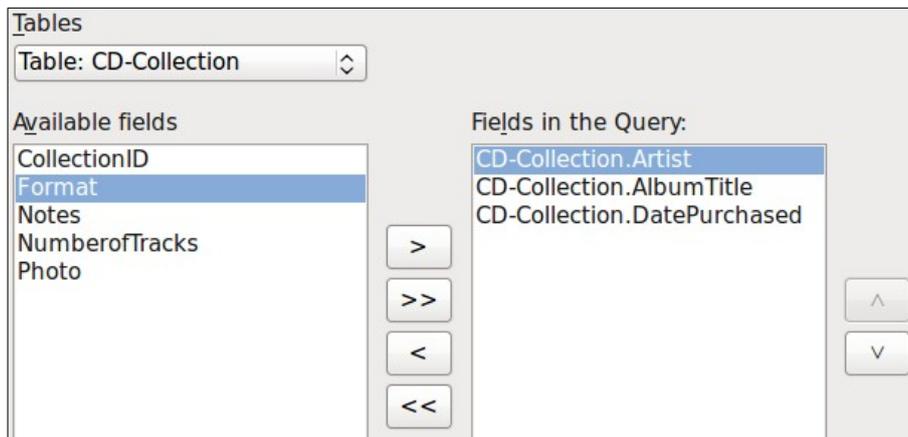
Figure 223: First page of the Query Wizard

Step 1: Select the fields

1) Select the **Table: CD-Collection** option from the *Tables* drop-down list.

2) Select fields from the CD-Collection table in the *Available fields* list.

 a) Click *Artist*, and use the **>** button to move it to the *Fields in the Query* list.

 b) Move the *AlbumTitle* and *DatePurchased* fields in the same manner. You can also move a single field from one list to the other by double-clicking.

 c) If you make a mistake, you can return an unwanted field from the *Fields in the Query* list to the *Available fields* list by selecting it and then typing the **<** button.

 d) In other circumstances, you can use the **>>** and **<<** buttons to move all fields in one list to the other list.

3) Click **Next**.

💡 **Tip**

To change the order of the fields, select the field you want to move and click the up or down arrow to the right of the *Fields in the Query* list.

Step 2: Select the sorting order

Up to four fields can be used to sort the information of our query. A little simple logic helps at this point. Which field is most important?

In our query, the artist is most important, the album title is less important, and the date purchased is of least importance. Of course, if we were interested in what music we bought on a given day, the date purchased would be the most important.

Figure 224: Sorting order page

1) Click the first *Sort by drop-down* list.

 a) Select the **CD-Collection.Artist** option.

 b) To list the artists in alphabetical order (a-z), select **Ascending** on the right.

2) Click the first *Then by* drop-down list.

– Select **CD-Collection.AlbumTitle** and then select **Ascending**.

3) Click the second *Then by* drop-down list.

– Select **CD-Collection.DatePurchased** and then select **Ascending**.

4) Click **Next**.

Step 3: Select the search conditions

The search conditions allow us to compare the name we entered with the names of the artist in our database and decide whether to include a particular artist in our query results or not. The following options are available:

- *is equal to*: the same as
- *is not equal to*: not the same as
- *is smaller than*: comes before
- *is greater than*: comes after
- *is equal or less than*: the same as or comes before
- *is equal or greater than*: the same as or comes after
- *like*: similar to in some way
- *not like*: is not similar to
- *is null*:
- *is not null*:

> 📝 **Note**
>
> These conditions apply to numbers, letters (using alphabetical order), and dates.

1) Since we are only searching for one thing, we will use the default setting of **Match all of the following**.

2) We are looking for a particular artist, so select **CD-Collection.Artist** in the *Fields* drop-down and **is equal to** in the *Condition* drop-down.

3) Type the name of the artist in the *Value* box.

4) Click **Next**.

Step 4: Select the type of query

We want simple information, so the default setting: **Detailed query** is what we want. Click **Next**.

> 📝 **Note**
>
> Since we have a simple query, the *Grouping* and *Grouping conditions* are not needed. Steps 5 and 6 of the wizard are skipped in our query.

Step 7: Assign aliases if desired

The fields, *AlbumTitle* and *DatePurchased*, have names made up of two words without separation. Instead, aliases can be made containing two words each (*Album Title* and *Date Purchased*, respectively).

1) Change the alias for *AlbumTitle* to *Album Title*.

2) Change the alias for *DatePurchased* to *Date Purchased*.

3) Click **Next**.

Step 8: Overview

1) Make sure that the query conditions listed in the *Overview* area are the ones you wanted.

2) If something is wrong, use the **Back** button to move to the step that contains the error.

3) Then use the **Next** button to return to this Overview step.

4) Name the query (suggestion: *Query_Artists*).

5) To the right of this are two choices. Select **Display Query**.

6) Click **Finish**.

Base displays the LibreOffice Base: Table Data View query showing any records that match the query. Close the window when you have finished with it.

Using Design View to create a query

Creating a query using Design View is not as difficult as it may first seem. It may take multiple steps, but each step is fairly simple.

What fuel economy is our vehicle getting (miles per gallon in the USA)? This question requires us to create two queries, with the first query used as part of the second query.

Step 1: Open the first query in Design View

- Click **Create Query in Design View** in the *Tasks* area of the main window. Base displays the Add Table or query dialog (Figure 225) and the LibreOffice Base: Query Design window.

Step 2: Add tables to window

1) In the Add Table or query dialog, click **Fuel** to highlight it.

2) Click **Add**.

3) Click **Close**.

4) Base closes the Add Table or Query dialog and includes the Fuel table in the upper area of the Query Design window.
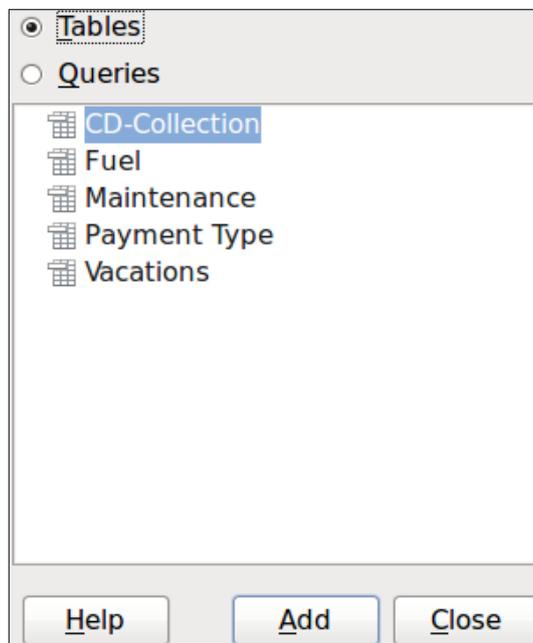
Figure 225: Add Table or Query dialog
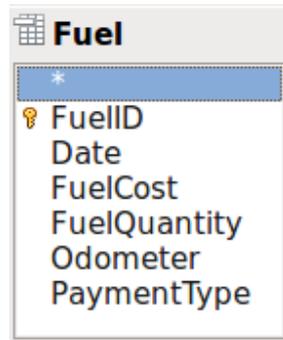
Figure 226: Fuel table in query

Step 3: Add fields to the table at the bottom

1) Double-click the *FuelID* field in the Fuel table.

2) Double-click the *Odometer* field.

3) Double-click the *FuelQuantity* field.

4) Double-click the *FuelCost* field.

The query table at the bottom of the Query Design dialog should now have four columns (Figure 227).

Field	FuelID	Odometer	FuelQuantity	FuelCost
Alias				
Table	Fuel	Fuel	Fuel	Fuel
Sort				
Visible	☑	☑	☑	☑

Figure 227: Query table

Step 4: Set the criterion for the query

We want the query to include FuelID values that are greater than 0.

1) Type *>0* in the *Criterion* cell under *FuelID* in the query table.

2) Click the **Run Query** icon in the Query Design toolbar(circled in red in Figure 228), or click **View > Run Query**, or press *F5*.

Figure 228: Run Query icon in Query Design toolbar

Base presents the results of the query in the area above the query table.

Figure 229 shows the Fuel table with my entries. The query results based upon the Fuel table are shown in Figure 230.

	FuelID	Date	FuelCost	FuelQuantity	Odometer	PaymentType
▷	0	04/19/20	$16.00	14.690	704.2	Kevin
	1	04/19/20	$7.00	6.430	778.7	Dan
	2	04/19/20	$20.00	19.570	1032.3	Dan
	3	04/19/20	$16.00	15.150	1239.4	Cash
	4	04/19/20	$16.00	15.144	1493.4	Kevin
⚙	<AutoField>					

Figure 229: Fuel table

	FuelID	Odometer	FuelQuantity	FuelCost
▷	1	778.7	6.430	$7.00
	2	1032.3	19.570	$20.00
	3	1239.4	15.150	$16.00
	4	1493.4	15.144	$16.00
⚙	<AutoField>			

Figure 230: Query of Fuel table

Step 5: Save and close the query

Since this query contains the final odometer reading for our calculations, name it *End-Reading* when saving it. Then close the query. Now click the **Save** icon in the main database window.

Step 6: Create the query to calculate the fuel economy

1) Click **Create Query in Design View** in the *Tasks* area of the main window to open a new query.

2) Base opens the LibreOffice Base: Query Design window and the Add Table or Query dialog.

3) Add the Fuel table to the query just as you did in **Step 2: Add tables to window** but **do not** close the Add Table or Query dialog.

4) Add the End-Reading query to this query.

   a) Click **Queries** to get the list of queries in the database (Figure 231).

   b) Click **End-Reading**.

   c) Click **Add**, and then click **Close**.

   d) Base closes the Add Table or Query dialog and displays the *Fuel* table and *End-Reading* query in the upper area of the Query Design window.
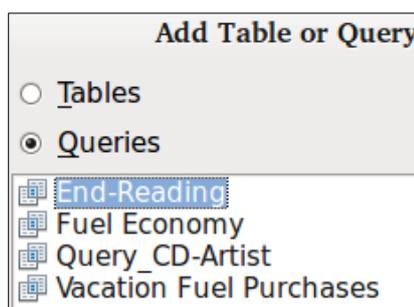
Figure 231: Selecting queries to add to another query

Step 7: Add fields to the table at the bottom of the query

We are going to calculate the fuel economy. To do this we need the fuel quantity and distance traveled. Since the fuel quantity we want to use is the final odometer reading, we will use the *End-Reading* query to get it. We will also use the *Odometer* field from both the *Fuel* table and *End-Reading* query.
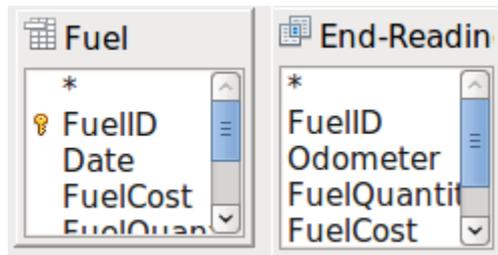
Figure 232: Tables in this query

1) Double-click *FuelQuantity* in the *End-Reading* query.

2) Double-click *Odometer* in the *End-Reading* query.

3) Double-click *Odometer* in the *Fuel* table.

Field	FuelQuantity	Odometer	Odometer
Alias			
Table	End-Reading	End-Reading	Fuel
Sort			
Visible	☑	☑	☑

Figure 233: Added fields to the query

Step 8: Enter the FuelID difference field

We want the difference between the *FuelID* value of the *Fuel* table and *FuelID* value of the *End-Reading* query to equal one (1).

1) Type *"End-Reading"."FuelID" - "Fuel"."FuelID"* in the field to the right of the *Odometer* field of the *Fuel* table (Figure 234).

2) Type = *'1'* in the *Criterion* cell of this column.

3) Leave the *Visible* cell of this column unchecked.

4) Calculate the distance traveled:

   – Type in the next empty *Field* cell (Figure 235):
     "End-Reading"."Odometer" - "Fuel"."Odometer"

   – In the *Alias* row, type *Distance*.

   – Type > *'0'* in the *Criterion* cell.

5) Calculate fuel economy: Type
   ("End-Reading"."Odometer" - "Fuel"."Odometer")/"End-Reading"."FuelQuantity"
   in the next column to the right of the word *Field* (Figure 236).

6) Type *Fuel Economy* as the alias.

Figure 234: Typing in calculation of fields

Figure 235: Field for distance traveled calculations

Figure 236: Fuel economy calculation field

📝 **Note**

When entering fields for these calculations, you must follow this format: table or query name followed by a period followed by the field name. For hyphenated or multiple-word names (table or query), use double quotes around the table or query name. The query will then add the rest of the double quotes as in Figure 236.

Use the arithmetical symbol between the two. More than one calculation can be done by using parentheses to group the arithmetical operations.

Step 9: Run the query and make some modification

After we run the query to make sure it works correctly, we will hide all of the fields that we do not need.

FuelQuantity	Odometer	Odometer	Distance	Fuel Economy
6.430	778.7	704.2	74.5	11.59
19.570	1032.3	778.7	253.6	12.96
15.150	1239.4	1032.3	207.1	13.67
15.144	1493.4	1239.4	254	16.77

Figure 237: Result of running the fuel economy query

1) Click the **Run Query** icon in the Query Design toolbar (Figure 228). The results are shown in Figure 237.

   Two of the column headers are identical. By giving these two headers different aliases, we can distinguish them.

2) Add Aliases: Type the aliases as they are listed in Figure 238.

Field	FuelQuantity	Odometer	Odometer
Alias		End	Begin
Table	End-Reading	End-Reading	Fuel

Figure 238: Query table with Odometer aliases added

3) Run the query again. The results are in Figure 239.

FuelQuantity	End	Begin	Distance	Fuel Economy
6.430	778.7	704.2	74.5	11.59
19.570	1032.3	778.7	253.6	12.96
15.150	1239.4	1032.3	207.1	13.67
15.144	1493.4	1239.4	254	16.77

Figure 239: Query run with aliases

Step 10: Close, save, and name the query

My suggestion for a name is *Fuel Economy*.

1) Click the **Save** icon.
2) Name the query.
3) Close the query.
4) Save the database file.

There are obviously other calculations that can be made in this query such as cost per distance traveled and how much of the cost belongs to each of the payment types.

> **Note**
>
> To fully use queries requires a knowledge of set operations (*unions*, *intersections*, *and*, *or*, *complements*, or any combinations of these). Having a copy of the RDBMS manuals, is also extremely useful.

Creating reports

Reports provide information found in the database arranged in a useful way. In this respect, they are similar to queries. They are different in that they are designed to be distributed to people. Queries are only designed to answer a question about the database. Reports are generated from the database's tables, views, or queries.

All reports are based upon a single table, view, or query, so you need first to decide what fields you want to use in the report. If you want to use fields from different tables, you must first combine these fields in a single query or view. Then you can create a report from this.

For example, a report on vacation expenses includes both fuel costs and meal costs. These values are contained in fields of two different tables: Vacations and Fuel. So this report requires you to create a query or view.

> ⚠️ **Caution**
>
> Dynamic reports update only the *data* that is changed or added to a table or query. They do **not** show any modifications made to the table or query itself. For example, **after** creating the report below, open the Fuel Economy query created in the previous section. For the "End-Reading"."Odometer" – "Fuel"."Odometer" column, change the number 1 to the number 3. (See Figure 234). The report will be identical before and after you make the change. But if you add more data to the query and run the report again, it will contain the new data. However, all data will be based upon "End-Reading"."Odometer" – "Fuel"."Odometer" having the value 1. **No data** will be present in the report for which "End-Reading"."Odometer" – "Fuel"."Odometer" has the value 3.

Creating a report: Example

We will create a report on vacation expenses. Certain questions need to be asked before creating the report.

- What information do we want in the report?
- How do we want the information arranged?
- What fields are required to provide this information?
- Will a query or view have to be created because these fields are in different tables?
- Are any calculations required in the data before being added to the report?

The expenses for our vacation are motel, tolls, miscellaneous, breakfast, lunch, supper, snacks, and fuel. One possible report could list the totals of each of these expense groups. Another could list the expense totals for each day of the vacation. A third could list the totals for each expense group for each type of payment. (This would let us know where the money came from to pay the expenses.) Once you create a query to do any one of these, you can create a report based upon the query.

We will create two reports, one listing the expenses each day (other than fuel) and the second listing fuel statistics. The fields we need for the first report from the Vacations table are: Date, Motel, Tolls, Breakfast, Lunch, Supper, Snack Cost, and Miscellaneous. This report only requires the Vacations table. Had the report listed the total expenses for each of these fields, we would have to create a query to provide us with these totals, which is beyond the scope of this chapter.

The second report involves the Fuel table. Since this table includes fuel purchases at times other than during the vacation, we need to create a query that contains only the fuel purchased during vacation periods.

Report Wizard vs Report Design View

1) When you open the Report Wizard, the Report Builder also opens. As you make your selections in the wizard, these appear in layout in the Report Builder. When you have finished making your selections, you save the report, name it and then close it.

2) When using Design View to create a report, you open the Report Builder to design the layout of it. (There is only one layout available when the wizard is used.)

Vacations table report

To create a new report:

1) Click the **Reports** icon in the *Database* area of the main Base window (Figure 196), or select **View > Reports**, or press *Alt+R*.

2) In the *Tasks* list, click **Use Wizard to Create Report**. The Report Wizard dialog and the Report Builder window open.

Step 1: Field selection

1) Select **Table: Vacations** in the *Tables or queries* drop-down list.

2) Use the **>** to move these fields from the *Available fields* list to the *Fields in report* list: Date, Motel, Tolls, Miscellaneous, Breakfast, Lunch, Supper, and SnCost. The other buttons (**<**, **>>**, **<<**, up arrow, and down arrow) and the double-click action perform similar functions to the equivalent interactions on other wizard pages that we described earlier in this chapter.

3) Click **Next**.
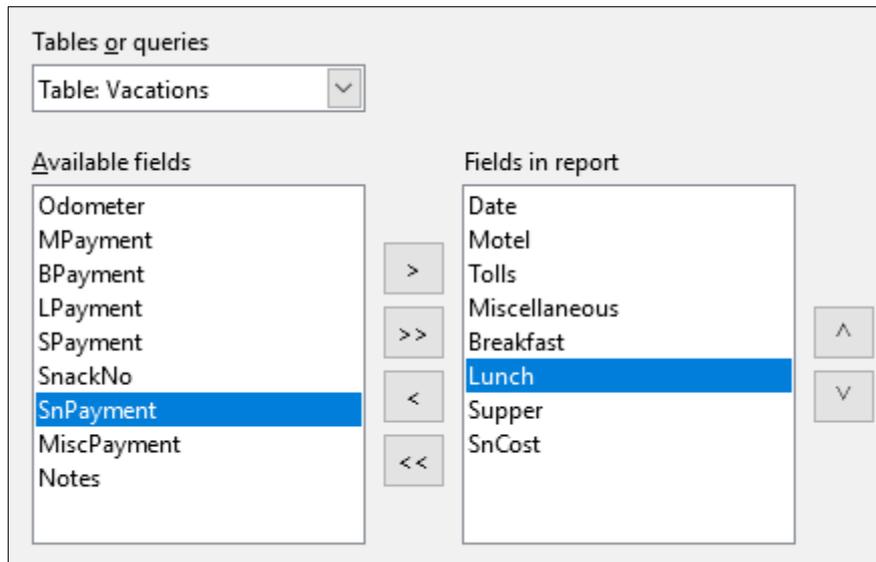
Figure 240: Adding fields to a report

Step 2: Labeling fields

Change any field labels you wish. We will shorten *Miscellaneous* to *Misc.* and expand *SnackCost* into two words.
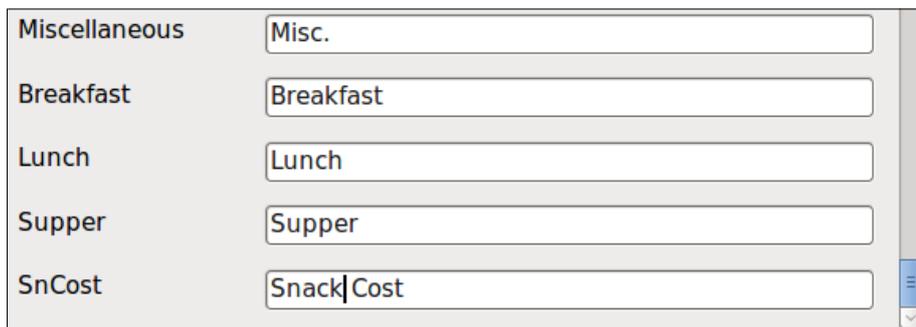
Figure 241: Giving aliases to fields

1) Shorten *Miscellaneous* to *Misc.*

2) Change *SnCost* into *Snack Cost*.

3) Click **Next**.

Step 3: Grouping

1) Since we are grouping by the date, use the **>** button to move the *Date* field from the *Fields* list to the *Groupings* list.

2) You can use the **<** button to return an entry in the *Groupings* list to the *Fields* list. You can use the up and down arrows to re-order entries in the *Groupings* list. You can double-click to move a field from one list to the other.

3) Click **Next**.
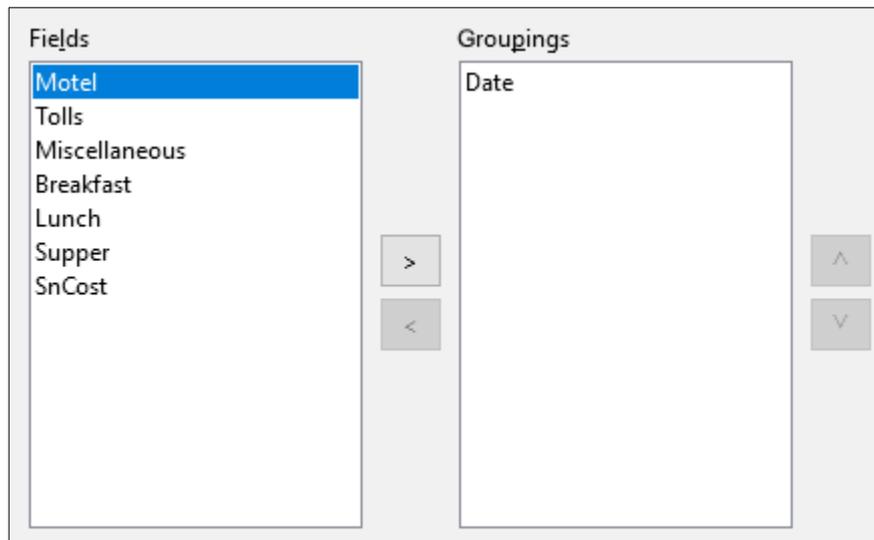
Figure 242: Selecting fields for grouping data

Step 4: Sort options

We do not want to do any additional sorting.

• Click **Next**.

Step 5: Choose layout

1) Select **Columnar, three columns** in the *Layout of data* list.

2) *Layout of headers and footers* have no possible selections.

3) Select **Landscape** as the *Orientation* for the page layout.

4) Click **Next**.
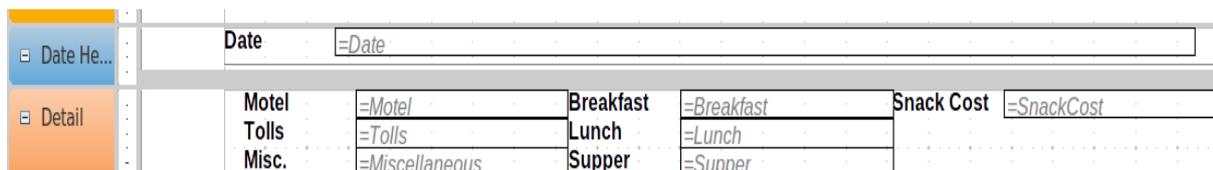
Figure 243: Report Builder template determined by the Report Wizard

Figure 243 shows part of the final template that has been built up in the Report Builder as you reach the end of the wizard.

Step 6: Create report

1) Title the report: *Vacation Expenses*.

2) Select the **Dynamic report** option.

3) Select the **Create report now** option.

4) Click **Finish**.

5) LibreOffice opens the output report in read-only mode in Writer.

The report (Figure 244) has been created, but it needs some editing. The date could be formatted better, and all the numbers need to be formatted as currency. It could use a heading that includes its name, its author, and the date it was prepared. If the report had more than one page, the page numbers could be put in a footer of each page, perhaps including the total number of pages. But to do these things, you must use Report Builder.

Date	05/25/07				
Motel	50	Breakfast	11	Snack Cost	5
Tolls		Lunch	15		
Misc.	2	Supper	13		
Date	05/26/07				
Motel	48	Breakfast	13	Snack Cost	7
Tolls	4	Lunch	10		
Misc.		Supper	15		
Date	05/27/07				
Motel		Breakfast		Snack Cost	
Tolls		Lunch			
Misc.		Supper			
Date	09/10/08				
Motel		Breakfast		Snack Cost	
Tolls		Lunch			
Misc.		Supper			

Figure 244: Report without modifications

Report Builder: another way to create reports

With Report Builder, you can create complex and stylish database reports. You can define group and page headers, group and page footers, and calculation fields. Report Builder is installed with LibreOffice.

When we used the Report Wizard, we created a template in Report Builder for our report. If we edit our report, we open Report Builder with this template. By modifying the template, we also modify the report. For example, we can change the Date field's format, and it will change the format of all the dates contained in that field in the above report. Similarly, we can change the field formatting of any of the other fields and change the format everywhere that field appears in the report.

Report Builder can also create reports by itself. To do this, click **Create Report in Design View**. For instructions on how to use the Report Builder, see Chapter 6, Reports, in the *Base Guide*.

Accessing other data sources

LibreOffice allows data sources to be accessed and then linked into LibreOffice documents. For example, a mail merge links an external document containing a list of names and addresses into a letter, with one copy of the letter being generated for each entry.

To access a data source that is not a *.odb file:

1) Select **File > New > Database**, or click the arrow at the right of the **New** icon in the Standard toolbar and select the **Database** option from the menu, to open the Database Wizard .

2) Select **Connect to an existing database**. Select the required database type from the drop-down list. Click **Next**.

3) The remaining steps in the Database Wizard may vary depending on which database type you have chosen.

4) At some stage the wizard may prompt you to browse to, and select, the database of interest. You will normally select to register the database and open the database for editing.

5) Finally click **Finish** to exit the wizard. Name and save the database in the location of your choice.

Accessing a spreadsheet as a data source

Accessing a spreadsheet is similar to accessing other databases:

1) Select **File > New > Database**, or click the arrow at the right of the **New** icon in the Standard toolbar and select the **Database** option from the menu, to open the Database Wizard dialog.

2) Select **Connect to an existing database**. Select **Spreadsheet** from the drop-down list. Click **Next**.

3) Click **Browse** to locate the spreadsheet you want to access. If the spreadsheet is password protected, check the *Password required* box. Click **Next**.

4) Make sure that the **Yes, register the database for me** and **Open the database for editing** options are selected.

5) Click **Finish** to exit the wizard. Name and save the database in the location of your choice.

> **Note**
>
> Using this method of accessing a spreadsheet, you cannot change anything in the spreadsheet using Base. You can only view the contents of the spreadsheet, run queries, and create reports based upon the data already entered into the spreadsheet.
>
> All changes in a spreadsheet must be made in the spreadsheet itself, using Calc. After modifying the spreadsheet and saving it, you will see the changes in the database. If you create and save an additional sheet in your spreadsheet, the database will have a new table the next time you access it.

Registering *.odb databases

Databases created by LibreOffice are in the *.odb (OpenDocument Database) format. Other programs can also produce databases in this format. Registering a *.odb database is simple:

1) Choose **Tools > Options > LibreOffice Base > Databases**.

2) Under *Registered Databases*, click **New**. LibreOffice displays the Create Database Link dialog.

3) **Browse** to where the database is located.

4) Make sure the registered name is correct.

5) Click **OK**.

> **Note**
>
> Sometimes after updating LibreOffice to a newer version, your list of registered database files disappears. When that happens, you can use these steps to re-register your database files with your latest version of LibreOffice.

Using data sources in LibreOffice

Having registered the data source, whether a spreadsheet, text document, external database or other accepted data source, you can use it in other LibreOffice components including Writer and Calc.

Viewing data sources

Open a document in Writer or Calc. To view the data sources available, press *Ctrl+Shift+F4* or select **View > Data Sources**. This brings up a list of registered databases, which will include Bibliography and any other registered database, such as the Automobile database created earlier in this chapter.

To view each database, click the drop-down arrow for the database's name (see Figure 245). This expands to show *Queries* and *Tables*. Click the drop-down arrow for *Tables* to view the individual tables created. Now click on a table to see all the records held in it.
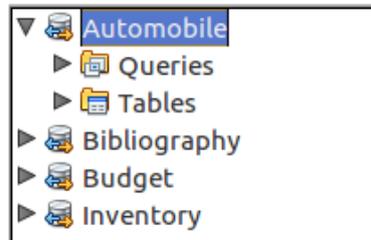
Figure 245: Databases in Data Sources window

Editing data sources

Some data sources (but not spreadsheets) can be edited in the Data Sources window. A record can be edited, added, or deleted.

View a table's data

If you click on a table, its rows and columns of data appear on the right side of the Data Sources window. Editing this data requires only a click in the cell whose data should be changed, change the data, and click in the row above or below it to save the new data.

Beneath the records are five small buttons. The first four move the cursor to the beginning, to the left, to the right, and to the end respectively. The fifth button, with a small star, inserts a new record.

Figure 246: Data Sources navigation buttons

To delete a record, right-click on the gray box to the left of a row to highlight the entire row, and select **Delete Rows** from the context window to remove the selected row.

Figure 247: Deleting a row in the Data Sources window

Launching Base to work on data sources

You can launch LibreOffice Base at any time from the Data Sources window. Just right-click on a database or its *Tables* or *Queries* components and select **Edit Database File** from the context menu. Once in Base, you can edit, add, and delete tables, queries, forms, and reports.

Using data sources in Writer and Calc

Data can be placed into Writer and Calc documents from the tables in the Data Sources window. In Writer, values from individual fields can be inserted. Or a complete table can be created in the Writer document. One common way to use a data source is to perform a mail merge.

Figure 248: Toolbar for the Data Sources window

> ### 💡 Tip
>
> Choosing **Tools > Mail Merge Wizard** or clicking on the **Mail Merge** icon (circled in red in Figure 248) in the Data Sources window launches the Mail Merge Wizard which steps you through creating a mail merge document. See Chapter 14 in the *Writer Guide*.

Writer documents

To insert a field from a table opened in the Data Sources window into a Writer document, click on the field name (the gray square at the top of the field list) and, with the left mouse button held down, drag the field onto the document. In a Writer document, it will appear as <FIELD> (where FIELD is the name of the field you dragged).

For example, to enter the cost of meals and who paid for them on a certain date of a vacation:

1) Open the list of data sources (*Ctrl+Shift+F4*) and select the *Vacations* table in the *Automobile* database.

2) Use this sentence: "On (date), our breakfast cost (amount) paid by (name), our lunch cost (amount) paid by (name), and our supper cost (amount) paid by (name)." But only type "On, our breakfast cost paid by, our lunch cost paid by, and our supper cost paid by."

3) To replace (date), click the field name *Date* in the Data Sources window and drag it to the right of the word *On*. Insert an extra space if necessary. The result: *On <Date>*. If you have field shadings turned on (**View > Field Shadings**), *<Date>* has a gray background. Otherwise it does not.

4) To replace first (amount), click the *Breakfast* field name and drag it to the right of *our breakfast cost*. Make sure you have the proper spacing between the field names and the words before and after them. Result: *breakfast cost <Breakfast>*.

5) To replace the first (name), click the *BPayment* field name and drag it to the right of *paid by*. Result: *paid by <BPayment>*.

6) In the same way, fill in the rest of the fields in the sentence.

   – Use *<Lunch>* and *<LPayment>* for the second set of (amount) and (name) in the sentence.

   – Use *<Supper>* and *<SPayment>* for the third set of (amount) and (name) in the sentence.

7) Final result: *On <Date>, our breakfast cost <Breakfast> paid by <BPayment>, our lunch cost <Lunch> paid by <LPayment>, and our supper cost <Supper> paid by <SPayment>.*

8) Add data to the fields of the sentence:

   – Click the gray box to the left of the row of data you want to add. That row should be highlighted like the second row of Figure 249.

   – Click the **Data to Fields** icon in the Table Data toolbar (circled in Figure 249). This should fill the fields with the data from the row you chose.

- Click another row and then click this icon again. The data in the sentence changes to reflect this selected row of data.

- Save the document if you want to use it as an example later.

Figure 249: Selected row in Data Sources window

Adding data in table format is a little easier and takes perhaps fewer steps. Some of the steps will be quite similar.

1) Navigate to the place you want to place the table and click the location.

2) *Ctrl+Click* the gray box to the left of each row of the data source that you want to be a row in your table if the rows are not consecutive. To select consecutive rows, click the gray box to the left of the top desired row and Shift+click the bottom desired row.

3) Click the *Data to Text* icon to open the Insert Database Columns dialog (Figure 250). (The *Data to Text* icon is to the left of the **Data to Fields** icon in Figure 249.)

Figure 250: Insert Database Columns dialog

4) Move the fields you want in your table from the *Database columns* list to the *Table column(s)* list.

- To place the fields in the order you select, click the field and use the single right arrow to move the fields in the order you desire. You can also limit the fields you use to less than all of the fields available.

- To use all of the fields, use the double arrow pointing to the right to move all of them at one time (this icon may have a different appearance in some environments). The order of the fields in the table you create will be the same as in the data source table.

- To remove a single field from the *Table column(s)* list, click the field and use the single arrow pointing to the left.

- You can double-click a field in one list to move it to the other list.

5) To start over, click the double arrow pointing to the left (this icon may have a different appearance in some environments).

6) Select the settings for your table. Use the default settings as in Figure 250.

7) Click **OK**. Save the document.

Calc spreadsheets

There are two ways to transfer data into a Calc spreadsheet. One enters the data into the spreadsheet cells. The other creates complete new records in the spreadsheet. While you can directly access the data inserted into the spreadsheet cells, new records created in the spreadsheet are read-only.

Entering data directly to the spreadsheet cells uses the *Data to Text* icon as when making a table in a Writer document. But there are certain differences.

The steps are straightforward.

1) Click the cell of the spreadsheet which you want to be the top left cell of your data, including the column names.

2) Use *Ctrl+Shift+F4* to open the Data Sources window and select the table whose data you want to use.

3) Select the rows of data you want to add to the spreadsheet:
   – Click the gray box to the left of the row (the row header) you want to select if only selecting one row. That row is highlighted.
   – To select multiple rows, hold down the *Ctrl* key while clicking the gray box of the rows you need. Those rows are highlighted.
   – To select all the rows, click the gray box in the upper left corner. All rows are highlighted.

4) Click the *Data to Text* icon to insert the data into the spreadsheet cells.

5) Save the spreadsheet.

Adding records to a spreadsheet is fairly easy. You need to have the Data Sources window open, your spreadsheet open, and the table you want to use selected.

1) Drag and drop the gray box containing the field name for the table's ID field (the column header) to where you want the record to appear in the spreadsheet.

2) Repeat until you have copied all of the fields you need to where you want them in the spreadsheet.

3) Select **File > Save,** or click the **Save** icon on the Standard toolbar, to name and save the spreadsheet.

4) Close the file.

5) Next time you open the spreadsheet, the fields will be populated with data from the first record of the table, and the Form Navigation toolbar will appear at the bottom of the spreadsheet.

6) Click the arrows on the Form Navigation toolbar to view the different records of the table. (The arrows are circled in red in Figure 251.) The number in the box changes when you change the record number by clicking an arrow. The data in the fields changes to reflect the data for that particular record number.

Figure 251: Navigation arrows of a form

Getting Started Guide

Chapter 9
Getting Started with Math

LibreOffice's Formula (Equation) Editor

Introduction

LibreOffice Math allows you to create or edit formulas (equations) in a symbolic form, within LibreOffice documents or as stand-alone objects; example formulas are shown below. However, if you want to evaluate numeric values using formulas, then refer to the *Calc Guide* for more information as Math does not carry out any actual calculation.

$$\frac{df(x)}{dx} = \ln(x) + \tan^{-1}(x^2) \quad or \quad NH_3 + H_2O \rightleftharpoons NH_4^+ + OH^-$$

The Formula Editor in Math uses a markup language to represent formulas. This markup language is designed to be easily read wherever possible; for example, **a over b** produces the fraction $\frac{a}{b}$.

Getting started

Using the Formula Editor, you can create a formula as a separate document or file for a formula library, or insert formulas directly into a document using LibreOffice Writer, Calc, Impress, or Draw.

Formulas as separate documents or files

To create a formula as a separate document or file, use one of the following methods to open an empty formula document in LibreOffice Math (Figure 252):

- On the Menu bar, go to **File > New > Formula**.
- On the Standard toolbar, click the triangle to the right of the **New** icon and select **Formula**.
- From the Start Center, click **Math Formula**.
- From within LibreOffice Math, use the keyboard shortcut *Ctrl+N*.
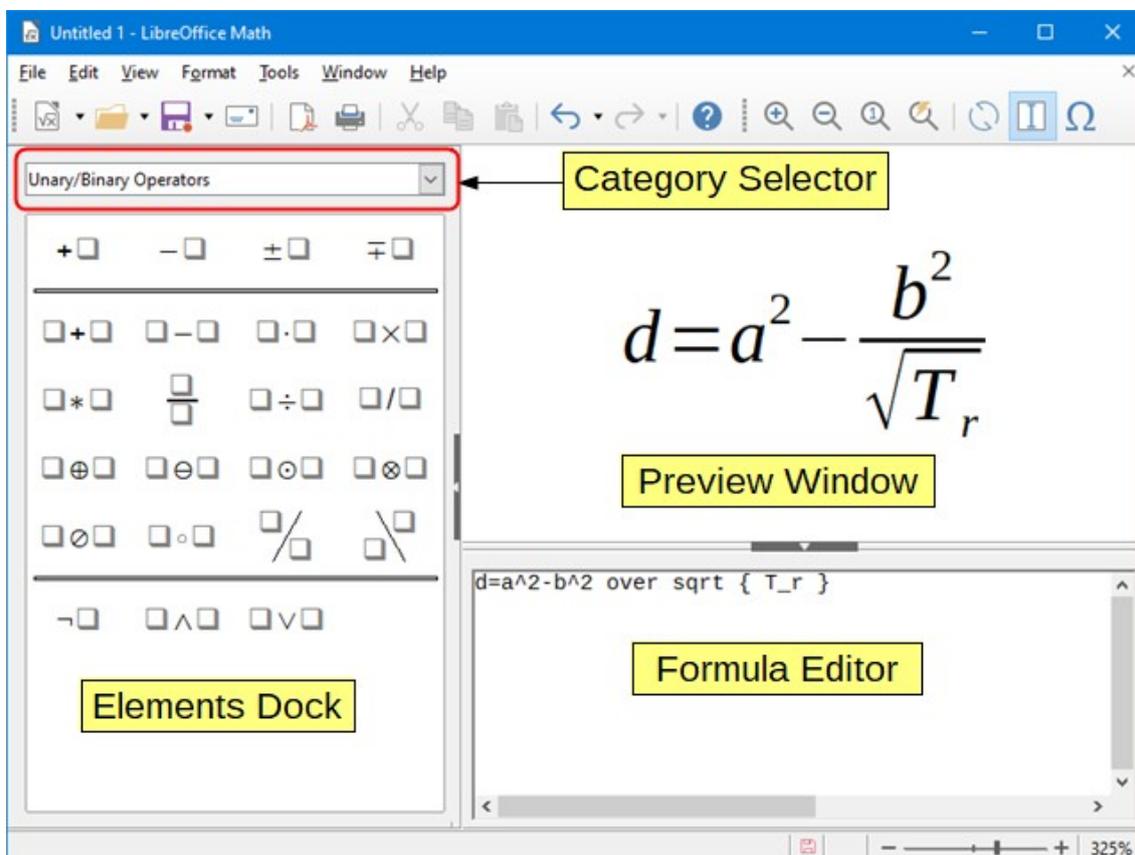
Figure 252: An empty formula document in Math

As you enter the markup language in the Formula Editor, the formula will appear in the Preview window during and after input of the markup language. The Elements Dock to the left of the Preview window may also appear, if these have been selected in **View** on the Menu bar. For more information on creating formulas, see "Creating formulas" on page 279.

Formulas in LibreOffice documents

To insert a formula into a LibreOffice document, open the document in Writer, Calc, Draw, or Impress. The component you are using affects how you position the cursor to insert the formula.

- In Writer, click in the paragraph where you want to insert the formula.
- In Calc, click in the spreadsheet cell where you want to insert the formula.
- In Draw and Impress, the formula is inserted into the center of the drawing or slide.

Then, go to **Insert > Object > Formula** on the Menu bar to open the Formula Editor. Alternatively, go to **Insert > Object > OLE Object** on the Menu bar to open the Insert OLE Object dialog, select **Create new** and the *Formula* option from the list of object types, then click **OK** to open the Formula Editor. The Elements Dock to the left of the Preview window and/or the Elements dialog as a floating dialog may also appear, if these have been selected in **View** on the Menu bar.

Figure 253 shows an example Writer document with the formula box selected ready for a formula to be entered.
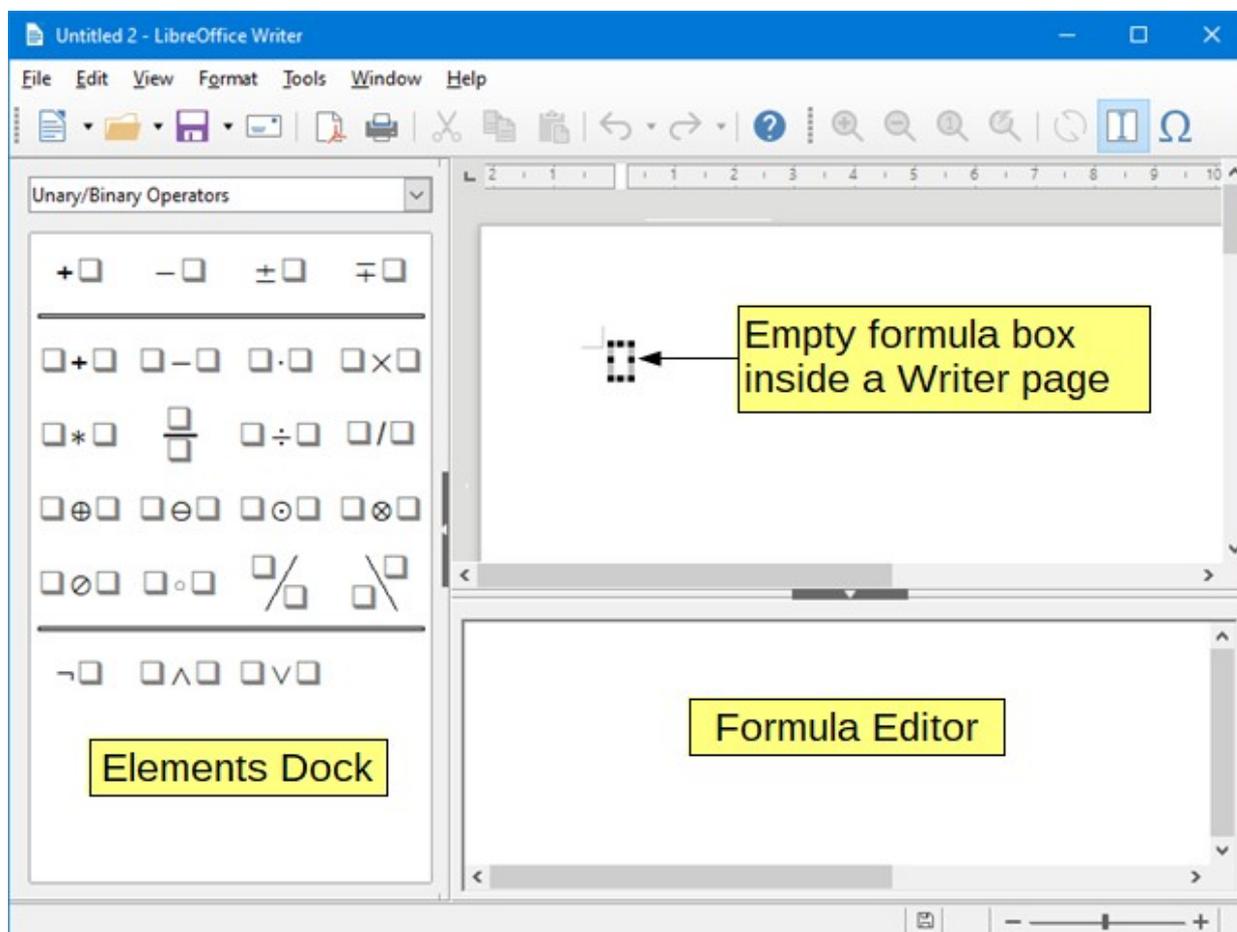
Figure 253: Empty formula in a Writer document

When you have completed entering the markup language for your formula, close the Formula Editor by pressing the *Esc* key or by clicking an area outside the formula in your document. Double-clicking on the formula object in the document will open the Formula Editor again so you can edit the formula.

Formulas are inserted as OLE objects into documents. You can, as with any OLE object, change how the object is placed within your document. For more information on OLE objects, see "Formulas in Writer" on page 297, "Formulas in Calc, Draw, and Impress" on page 303, and the user guides for Writer, Calc, Draw, and Impress.

If you frequently insert formulas into documents, it is recommended to add the Formula button to the Standard toolbar or create a keyboard shortcut. See "Customization" on page 304 for more information.

Creating formulas

You can insert a formula using one of the following methods:

- In the Elements dock, select a category from the drop-down list, then a symbol.
- Right-click in the Formula Editor and select a category, then a symbol from the context menu.
- Enter markup language directly in the Formula Editor.

> **Note**
>
> Using the Elements dock or the context menus to insert a formula provides a convenient way to learn the markup language used by Math.

> **Tip**
>
> When using the Elements dock, it is recommended to have *Extended tips* selected in the LibreOffice Options. This will help you identify the categories and symbols you want to use in your formula. Go to **Tools > Options > LibreOffice > General** and select **Extended tips** in the *Help* section.

Elements dock

The Elements dock can be used when entering your formula data. The Elements dock also provides an Example category which gives you example formulas to use as a starting point for your formula or equation.

1) Go to **View > Elements** on the Menu bar to open the Elements dock (Figure 254).
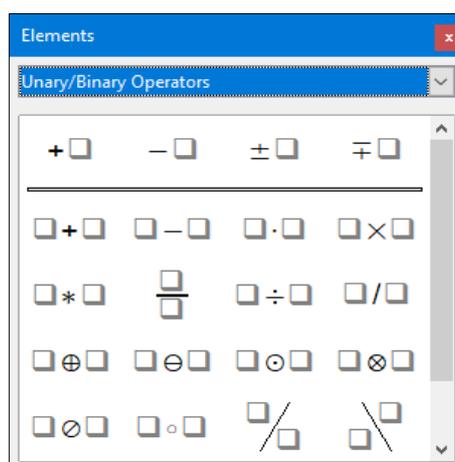
Figure 254: Elements dock

2) Select the category you want to use in your formula from the drop-down list at the top of the Elements dock.

3) Select the symbol you want to use in your formula from the Elements dock. The symbols that are available change according to the selected category.

Note

The Elements dock can either be a floating dialog, as shown in Figure 254, or positioned to the left of the Formula Editor, as shown in Figure 252 and Figure 253.

Context menu

The Formula Editor also provides a context menu to access categories and symbols. Right-click in the Formula Editor to open the context menu. Select a category and then select the markup example that you want to use from the sub-context menu, an example is shown in Figure 255.

Note

The Elements Dock and context menu contain only the most common commands that are used in formulas. For some seldom-used commands, you must always enter the command using the markup language. For a complete list of commands, see Appendix A, *Commands Reference*, in the *Math Guide*.
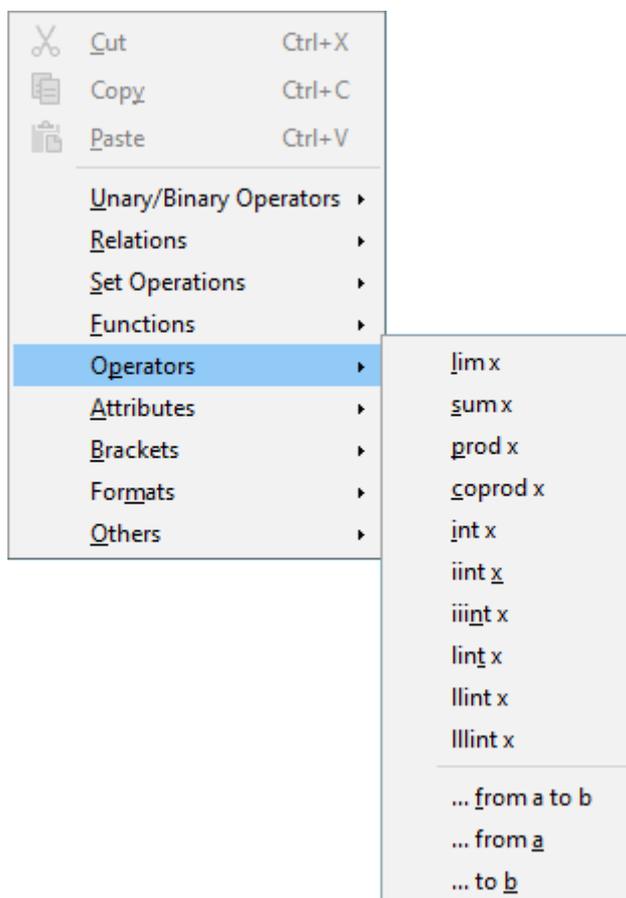
Figure 255: Context menu in Formula Editor

Markup language

Markup language is entered directly into the Formula Editor. For example, typing the markup language `5 times 4` into the Formula Editor creates the simple formula 5×4. If you are experienced in using markup language, it can be the quickest way to enter a formula. Table 3 shows some examples of using markup language to enter commands. For a full list of commands that can be used in the Formula Editor, see Appendix A, Commands Reference, in the *Math Guide*.

Table 3: Example commands using markup language

Display	Command	Display	Command
$a = b$	`a = b`	$\sqrt{a}$	`sqrt {a}`
a^2	`a^2`	a_n	`a_n`
$\int f(x)dx$	`int f(x) dx`	$\sum a_n$	`sum a_n`
$a \leq b$	`a <= b`	∞	`infinity`
$a \times b$	`a times b`	$x \cdot y$	`x cdot y`

Greek characters

Using markup language

Greek characters are commonly used in formulas, but Greek characters cannot be entered into a formula using the Elements dock or the context menu. Use the English names of Greek characters in markup language when entering Greek characters into a formula. See Appendix A, *Commands Reference*, in the *Math Guide* for a list of characters that can be entered using markup language.

- For a lowercase Greek character, type a percentage % sign, then type the character name in lowercase using the English name. For example, typing %lambda creates the Greek character λ.

- For an UPPERCASE Greek character, type a percentage % sign, then type the character name in UPPERCASE using the English name. For example, typing %LAMBDA creates the Greek character Λ.

- For an *italic* Greek character, type a percentage % sign followed by the i character, then the English name of the Greek character in lower or UPPER case. For example, typing %iTHETA creates the *italic* Greek character Θ.

Symbols dialog

Greek characters can also be entered into a formula using the Symbols dialog.

1) Make sure your cursor is in the correct position in the Formula Editor.

2) Go to **Tools > Symbols** on the Menu bar, or click the **Symbols** icon in the Tools toolbar, to open the Symbols dialog (Figure 256).

3) Select *Greek* from the *Symbol set* drop-down list. For *italic* characters, select *iGreek* from the drop-down list.

4) Select the Greek character from the symbol list, then click **Insert**. When selected, the name of a Greek character is shown below the symbol list.

5) Click **Close** when you have finished entering Greek characters into your formula.
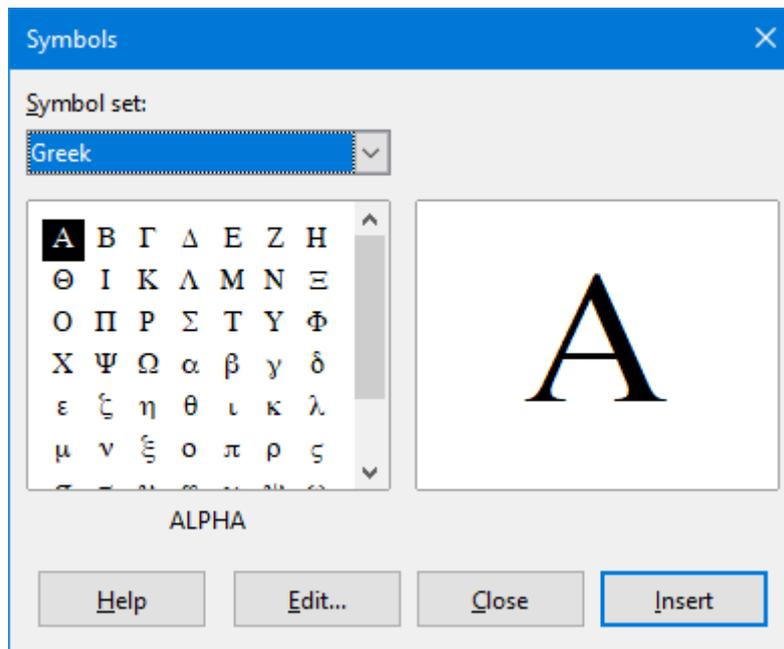
Figure 256: Symbols dialog

Formula examples

Example 1

The simple formula 5×4 can be created using LibreOffice Math as follows:

1) Make sure your cursor is flashing in the Formula Editor, then select the category **Unary/Binary Operators** and symbol **Multiplication** using one of the following methods:

   – In the Elements Dock, select **Unary/Binary Operators** from the drop-down list and then select the **Multiplication** icon ☐×☐.

   – Right-click in the Formula Editor and select **Unary/Binary Operators > a times b** from the context menu.

   – Using markup language, enter 5 `times` 4 in the Formula Editor.

   The first two methods place the formula text `<?>` `times` `<?>` in the Formula Editor and the symbol ☐×☐ appears in the document. For the third method, using markup language in the Formula Editor places the formula 5×4 directly into your document and there is no need to carry out the following steps.

2) Select the first placeholder `<?>` before the word `times` in the Formula Editor and replace it with the character 5. The formula in your document updates automatically.

3) Select the second placeholder `<?>` after the word `times` in the Formula Editor and replace it with the character 4. The formula in your document updates automatically.

> 💡 **Tip**
>
> To move forward from one placeholder to the next placeholder in a formula, press the *F4* key. To move backward from one placeholder to the previous placeholder in a formula, use the key combination *Shift+F4*.

> **Note**
>
> If necessary, you can prevent a formula in a document from updating automatically. Go to **View** on the Menu bar and deselect **AutoUpdate display**. To then manually update a formula, press the *F9* key or select **View > Update** on the Menu bar.

Example 2

You want to enter the formula $\pi \simeq 3.14159$ where the value of pi is rounded to 5 decimal places. You know the name of the Greek character (pi), but do not know the markup associated with the `Is Similar Or Equal` symbol $\simeq$.

1) Make sure your cursor is flashing in the Formula Editor.

2) Enter `%pi` in the Formula Editor to enter the Greek character for pi (π).

3) Select the category **Relations** and symbol **Is Similar Or Equal** using one of the following methods:

    – In the Elements dock, select **Relations** from the drop-down list and then select the **Is Similar Or Equal** icon ☐≃☐.

    – Right-click in the Formula Editor and select **Relations > a simeq b** from the context menu.

4) Delete the first placeholder <?> before the word `simeq` in the Formula Editor.

5) Select the second placeholder <?> after the word `simeq` in the Formula Editor and replace it with the characters `3.14159`. The formula $\pi \simeq 3.14159$ now appears in your document.

Editing formulas

How you edit a formula and switch into formula editing mode depends on whether the formula is in Math or another LibreOffice component.

1) In Math, double-click on a formula element in the formula that appears in the Preview window to select the formula element in the Formula Editor, or directly select a formula element in the Formula Editor.

2) In Writer, Calc, Impress, or Draw, double-click on the formula, or right-click on the formula and select **Edit** from the context menu, to open the Formula Editor and enter editing mode. The cursor is positioned at the start of the formula in the Formula Editor.

> **Note**
>
> If you cannot select a formula element using your cursor, click on the **Formula Cursor** icon in the Tools toolbar to activate the formula cursor.

3) Select the formula element you want to change using one of the following methods:

    – Click on the formula element in the Preview window, positioning the cursor at the beginning of the formula element in the Formula Editor, then select the formula element in the Formula Editor.

    – Double-click on the formula element in the Preview window to select the formula element in the Formula Editor.

    – Position the cursor in the Formula Editor at the formula element you want to edit, then select that formula element.

    – Double-click directly on the formula element in the Formula Editor to select it.

4) Make your changes to the formula element you have selected.

5) Go to **View > Update** on the Menu bar, or press the *F9* key, or click on the **Update** icon on the Tools toolbar to update the formula in the Preview window or your document.

6) In Math, save your changes to the formula after editing.

In Writer, Calc, Impress, or Draw, click anywhere in your document away from the formula to leave editing mode, then save the document to save your changes to the formula.

Formula layout

This section provides some advice on how to lay out complex formulas in Math or in your document.

Using braces

Math knows nothing about order of operation within a formula. You must use braces (curly brackets) to state the order of operations that occur within a formula. The following examples show how braces can be used in a formula.

Example 1

`2 over x + 1` gives the result $\frac{2}{x}+1$

Math has recognized that the 2 before and the x after the over as belonging to the fraction, and has represented them accordingly. If you want x+1 rather than x to be the denominator, you must bracket them together using braces so that both will be placed there.

Inserting braces into `2 over {x + 1}` gives the result $\frac{2}{x+1}$ where x+1 is now the denominator.

Example 2

`– 1 over 2` gives the result $\frac{-1}{2}$

Math has recognized the minus sign as a prefix for the 1 and has therefore placed it in the numerator of the fraction. If you wish to show that the whole fraction is negative, with the minus sign in front of the fraction, you must put the fraction in braces to signify to Math that the characters belong together.

Adding braces into the markup language `– {1 over 2}` gives the result $-\frac{1}{2}$ and the whole fraction is now negative.

Example 3

When braces are used in markup language, they are used to define the layout of the formula and are not displayed or printed. If you want to use braces within a formula, use the commands `lbrace` and `rbrace` within the markup language.

`x over {–x + 1}` gives the result $\frac{x}{-x+1}$

Replace the braces using the commands lbrace and rbrace in the markup language. Write `x over lbrace –x + 1 rbrace` and the result is $\frac{x}{\{-x+1\}}$

Brackets (parentheses) and matrices

If you want to use a matrix in a formula, you have to use a matrix command. For example, `matrix { a # b ## c # d }` gives the resulting matrix $\begin{matrix} a & b \\ c & d \end{matrix}$ in your formula, where rows are separated by two hashes (##) and entries within each row are separated by one hash (#).

Normally, when you use brackets within a matrix, the brackets do not scale as the matrix increases in size. For example, `( matrix { a # b ## c # d } )` gives the result $(\begin{smallmatrix} a & b \\ c & d \end{smallmatrix})$

To overcome this problem of brackets with a matrix, Math provides scalable brackets that grow in size to match the size of a matrix. The commands `left(` and `right)` have to be used to create scalable brackets within a matrix. For example, `left( matrix { a # b ## c # d } right)` gives the result $\begin{pmatrix} a & b \\ c & d \end{pmatrix}$ where the matrix is now bracketed by scalable brackets.

Scalable brackets can also be used with any element of a formula, such as fraction, square root, and so on.

> **Tip**
>
> Use the commands `left[` and `right]` to obtain square brackets. A list of all brackets available within Math can be found in Appendix A, *Commands Reference*, of the *Math Guide*.

> **Tip**
>
> If you want all brackets to be scalable, go to **Format > Spacing** on the Menu bar to open the Spacing dialog. Click on **Category**, select *Brackets* from the drop-down list, and then select the option **Scale all brackets**.

Unpaired brackets

When using brackets in a formula, Math expects that for every opening bracket there will be a closing one. If you forget to add a closing bracket, Math places an inverted question mark next to where the closing bracket should have been placed. This inverted question mark disappears when all the brackets are paired. However, an unpaired bracket is sometimes necessary and you have the following options.

Non scalable brackets

A backslash \ is placed before a non scalable bracket to indicate that the following character should not be regarded as a bracket, but as a literal character.

For example, the unpaired brackets in the formula `[ a; b [` are deliberate, but gives a result with an inverted question mark. To remove the inverted question mark and create unpaired brackets, backslashes are added. The formula now becomes `\ [ a; b \ [` and the result $[a;b[$ shows unpaired brackets without any inverted question marks.

Scalable brackets

To create unpaired scalable brackets or braces in a formula, the markup commands `left`, `right`, and `none` are used.

Example

You want to create the formula $|x| = \begin{cases} x \text{ for } x \geq 0 \\ -x \text{ for } x < 0 \end{cases}$ and in the Formula Editor you enter `abs x = lbrace stack {x "for" x >= 0 # -x "for" x < 0}`. However, this gives an incorrect result. To remove inverted question marks and create the correct formula, you have to use the markup commands `left`, `right`, and `none`. Change your entry in the Formula Editor to abs `x = left lbrace stack {x "for" x >= 0 # -x "for" x < 0} right none` and this creates the correct formula.

Recognizing functions

In the basic installation of Math, Math outputs functions in normal characters and variables in italic characters. However, if Math fails to recognize a function, you can tell Math that you have just entered a function. Enter the markup command `func` before a function forces Math to recognize the following text as a function and uses normal characters.

For a full list of functions within Math, see Appendix A, *Commands Reference*, of the *Math Guide*.

Some Math functions have to be followed by a number or a variable. If these are missing, Math places an inverted question mark where the missing number or variable should be. To remove the inverted question mark and correct the formula, you have to enter a number, a variable, or a pair of empty brackets as a placeholder.

> **Tip**
>
> You can navigate through errors in a formula using the key *F3* (next error) or the key combination *Shift+F3* (previous error).

Formulas over multiple lines

Suppose you want to create a formula that requires more than one line, for example $\begin{matrix} x=3 \\ y=1 \end{matrix}$. Your first reaction would normally be to press the *Enter* key. However, if you press the *Enter* key, the markup language in the Formula Editor goes to a new line, but the resulting formula does not have two lines. You must type the macro command `newline` each time you want to create and display a new line in a formula.

Example
```
x = 3
y = 1
```
gives the incorrect result $x=3\,y=1$

`x = 3 newline y = 1` gives the correct result $\begin{matrix} x=3 \\ y=1 \end{matrix}$

It is not possible in Math to create multiple line formulas when a line ends with an equals sign and you want to continue the calculation on a new line without completing the term on the right side of the equals sign. If you require a multiple line formula to have an equals sign at the end of a line without a term after the equals sign, then use either empty quotes "", or empty braces {}, or the space characters grave ` or tilde ~.

By default, the alignment of a multiple line formula is center aligned. For more information on alignment using the equals sign, see "Customization" on page 304.

Spacing between the elements in a formula is not set by using space characters in the markup language. If you want to add spaces into your formula, use one of the following options:

- Grave ` to add a small space.
- Tilde ~ for a large space.
- Add space characters between quotes " ". These spaces will be considered as text.

Any spaces at the end of a line in the markup language are ignored by default. For more information, see "Customization" on page 304.

Adding limits to sum/integral commands

The sum and integral commands can take the parameters `from` and `to` if you want to set the lower and upper limits respectively. The parameters `from` and `to` can be used singly or together as shown by the following examples. For more information on the sum and integral commands, see Appendix A, *Commands Reference*, of the *Math Guide*.

Examples

`sum from k = 1 to n a_k` gives the result $\displaystyle\sum_{k=1}^{n} a_k$

`int from 0 to x f(t) dt` gives the result $\displaystyle\int_{0}^{x} f(t)\,dt$

`int_0^x f(t) dt` gives the result $\int_{0}^{x} f(t)\,dt$

`int from Re f` gives the result $\displaystyle\int_{\Re} f$

`sum to infinity 2^{-n}` gives the result $\displaystyle\sum^{\infty} 2^{-n}$

Writing derivatives

When writing derivatives, you have to tell Math that it is a fraction by using the `over` command. The `over` command is combined with the character d for a total derivative or the `partial` command for a partial derivative to achieve the effect of a derivative. Braces {} are used each side of the element to surround the element and make the derivative as shown by the following examples.

Examples

`{df} over {dx}` gives the result $\dfrac{df}{dx}$

`{partial f} over {partial y}` gives the result $\dfrac{\partial f}{\partial y}$

`{partial^2 f} over {partial t^2}` gives the result $\dfrac{\partial^2 f}{\partial t^2}$

> **Note**
>
> To write function names with primes, as is normal in school notation, you must first add the symbols to the catalog. See "Customization" on page 304 for more information.

Markup language characters as normal characters

Characters that are used as controls in markup language cannot be entered directly as normal characters. These characters are: %, {, }, &, |, _, ^, and ". To overcome this limitation in markup language, use one of the following methods:

- Use double quotes either side of the character to mark that character as text, for example `2"%"= 0.02` will appear in your formula as $2\%=0.02$. However, this method cannot be used for the double-quote character itself, see "Text in formulas" below.
- Add the character to the Math Catalog, for example the double quote character.
- Use commands, for example `lbrace` and `rbrace` give you literal braces $\{\}$.

> ### Note
>
> The Special Characters dialog used by other LibreOffice components is not available in Math. If you are going to regularly require special characters in Math, then it is recommended to add the characters to the Math Catalog, see "Customization" on page 304 for more information.

Text in formulas

To include text in a formula, you have to enclose any text in double-quotes, for example `x " for " x >= 0` in markup language will create the formula $x \text{ for } x \geq 0$. All characters, except double quotes, can be used in text. However, if you require double quotes in your formula text, then you have to create your text with double quotes in LibreOffice Writer, then copy and paste the text into the Formula Editor as shown in Figure 257.

The font used for text in a formula will be the default font that has been set in the Fonts dialog. For more information on how to change fonts used for in formulas, see "Changing formula appearance" on page 289.

By default, text alignment is left-justified in formulas. For more information on how to change text alignment, see "Adjusting formula alignment" on page 295.
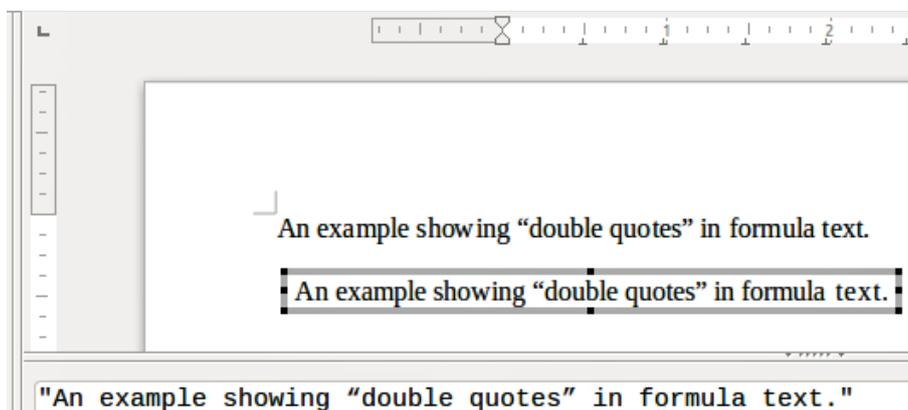
Figure 257: Example of double quotes in formula text

Formatting commands are not interpreted within text used in formulas. If you want to use formatting commands within formula text, then you must break up the text using double quotes in the Formula Editor.

Example

Entering the following in the Formula Editor:

```
"In " color blue bold "isosceles" "triangles, the base angles are
equal"
```

creates the following text in a formula   In **isosceles** triangles, the base angles are equal

Aligning formulas using equals sign

LibreOffice Math does not have a command for aligning formulas on a particular character. However, you can use a matrix to align formulas on a character and this character is normally the equals sign (=).

Example

Creating the matrix:

```
matrix{ alignr x+y # {}={} # alignl 2 ## alignr x   # {}={} # alignl
2-y }
```

gives the following result where formulas are aligned on the equals sign $\begin{matrix} x+y & = & 2 \\ x & = & 2-y \end{matrix}$

> **Note**
>
> The empty braces each side of the equals sign are necessary because the equals sign is a binary operator and requires an expression on each side. You can use spaces, or ` or ~ characters each side of the equals sign, but braces are recommended as they are easier to see within the markup language.

You can reduce the spacing on each side of the equals sign if you change the inter-column spacing of the matrix. See "Adjusting formula spacing" on page 292 for more information.

Changing formula appearance

Formula font size

Current formula font size

To change the font size used for a formula already inserted in Math or another LibreOffice component:

1) Click in the markup language in the Formula Editor.

2) Go to **Format > Font size** on the Menu bar to open the Font Sizes dialog (Figure 258).

3) Select a different font size using the *Base size* spinner or type a new font size in the *Base size* box.

4) Click **OK** to save your changes and close the dialog. An example result when you change font size is shown below.

Example

Default font size 12pt: $\pi \simeq 3.14159$

After font size change to 18pt: $\pi \simeq 3.14159$
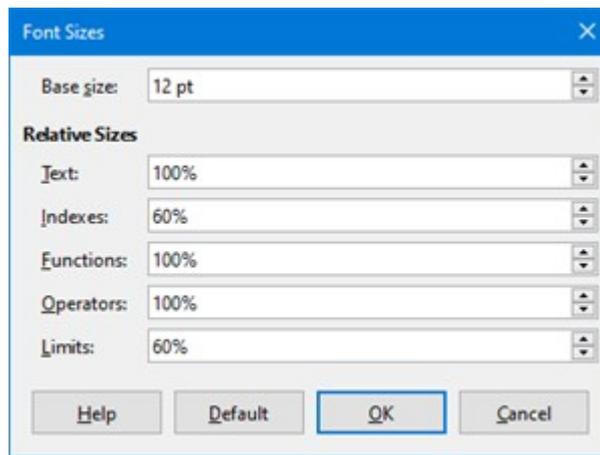
Figure 258: Font Sizes dialog

Default formula font size

To change the default font size used for all formulas in Math or another LibreOffice component:

1) Before inserting any formulas in your document, go to **Format > Font size** on the Menu bar to open the Font Sizes dialog (Figure 258).

2) Select a different font size using the *Base size* spinner or type a new font size in the *Base size* box.

3) Click **Default** and confirm your changes to the base size font. Any formulas created from this point on will use the new base size font for formulas.

4) Click **OK** to save your changes and close the Font Sizes dialog.

📝 **Note**

If you have already inserted formulas into your document and you change the default font size, only formulas inserted after the change in default font size will use the new default settings. You have to individually change the font size of formulas already inserted if you want these formulas to use the same font size as the default settings.

💡 **Tip**

There is an extension "Formatting of All Math Formulas" that allows you to change font name and font size for all or only for selected formulas in your document. You can download it from the official extension site:
https://extensions.libreoffice.org/extensions/formatting-of-all-math-formulas

Font size options

The Font Sizes dialog (Figure 258) specifies the font sizes for your formula. Select a base size and all elements of the formula will be scaled in relation to this base.

- **Base size** – all elements of a formula are proportionally scaled to the base size. To change the base size, select or type in the desired point (pt) size. You can also use other units of measure or other metrics, which are then automatically converted to points. For example, if you enter 1in or 1″, Math converts the value to 72 pt.

- **Relative Sizes** – in this section, you can determine the relative sizes for each type of element with reference to the base size.

  – *Text* – select the size for text in a formula relative to the base size.

  – *Indexes* – select the relative size for the indexes in a formula in proportion to the base size.

- *Functions* – select the relative size for names and other function elements in a formula in proportion to the base size.

- *Operators* – select the relative size of the mathematical operators in a formula in proportion to the base size.

- *Limits* – select the relative size for the limits in a formula in proportion to the base size.

- **Default** – clicking this button saves any changes as a default for all new formulas. A confirmation message appears before saving any changes.

Formula fonts

Current formula fonts

To change the fonts used for the current formula in Math or another LibreOffice component:

1) Click in the markup language in the Formula Editor.
2) Go to **Format > Fonts** on the Menu bar to open the Fonts dialog (Figure 259).
3) Select a new font for each of the various options from the drop-down lists.
4) If the font you want to use does not appear in the drop-down list, click **Modify** and select the option from the context menu to open a fonts dialog. Select the font you want to use and click **OK** to add it to the drop-down list for that option.
5) Click **OK** to save your changes and close the Fonts dialog.
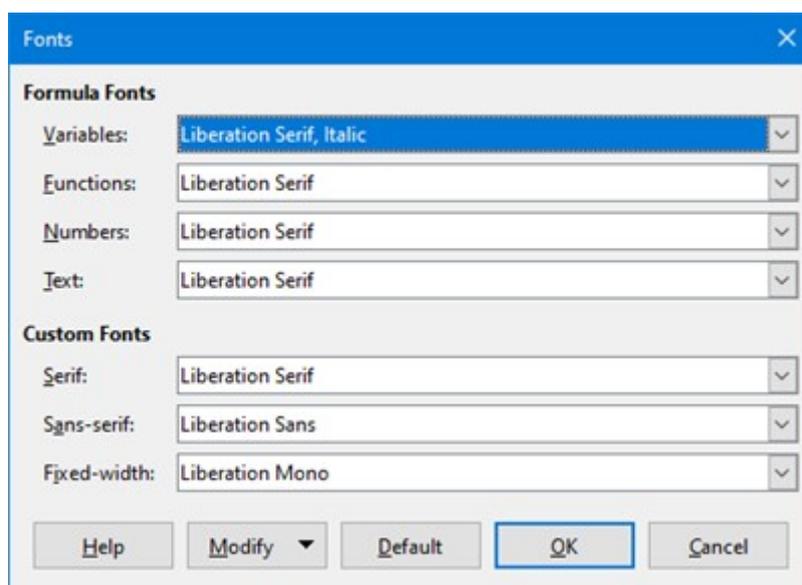
Figure 259: Fonts dialog

Default formula fonts

To change the default fonts used for all formulas in Math or another LibreOffice component:

1) Before inserting any formulas in your document, go to **Format > Fonts** on the Menu bar to open the Fonts dialog (Figure 259).
2) Select a new font for each of the various options from the drop-down lists.
3) If the font you want to use does not appear in the drop-down list, click **Modify** and select the option from the context menu to open a fonts dialog. Select the font you want to use and click **OK** to add it to the drop-down list for that option.
4) Click **Default** and confirm your changes to the fonts. Any formulas created from this point on will use the new font for formulas.
5) Click **OK** to save your changes and close the Fonts dialog.

> 📝 **Note**
>
> If you have already inserted formulas into your document and you change the default fonts, only formulas inserted after the change in default fonts will use the new default settings. You have to individually change the font of formulas already inserted if you want these formulas to use the same font as the default settings.

Formula font options

Defines the fonts that can be applied to formula elements.

- **Formula Fonts** – defines the fonts used for the variables, functions, numbers and inserted text that form the elements of a formula.
  - *Variables* – selects the fonts for the variables in your formula. For example, in the formula x=SIN(y), x and y are variables and will reflect the assigned font.
  - *Functions* – selects the fonts for names and properties of functions. For example, the functions in the formula x=SIN(y) are =SIN( ).
  - *Numbers* – selects the fonts for the numbers in a formula.
  - *Text* – defines the fonts for the text in a formula.
- **Custom Fonts** – in this section of the Fonts dialog (Figure 259), fonts are defined which format other text components in a formula. The three basic fonts Serif, Sans and Fixed are available. Other fonts can be added to each standard installed basic font using the **Modify** button. Every font installed on a computer system is available for use.
  - *Serif* – specifies the font to be used for the font serif format. Serifs are the small "guides" that can be seen, for example, at the bottom of a capital A when the Times serif font is used. Using serifs is quite helpful since it guides the eye of a reader in a straight line and can speed up reading.
  - *Sans-serif* – specifies the font to be used for sans font formatting.
  - *Fixed-width* – specifies the font to be used for fixed font formatting.
- **Modify** – click one of the options from the context menu to access the Fonts dialog, where the font and attributes can be defined for the respective formula and for custom fonts.
- **Default** – clicking this button saves any changes as a default for all new formulas. A confirmation message appears before saving any changes.

> 📝 **Note**
>
> When a new font is selected for a formula, the old font remains in the list alongside the new one and can be selected again.

> 📝 **Note**
>
> Variables should be written in *italics*, so make sure that the *Italic* option is selected. For the font you want to use. For all other elements, use the basic form of a font. The style can be easily altered in the formula itself by using the commands `italic` or `bold` to set these characteristics and `nitalic` or `nbold` to unset them.

Adjusting formula spacing

Use the Spacing dialog (Figure 260) to determine the spacing between formula elements. The spacing is specified as a percentage in relation to the defined base size for font sizes.
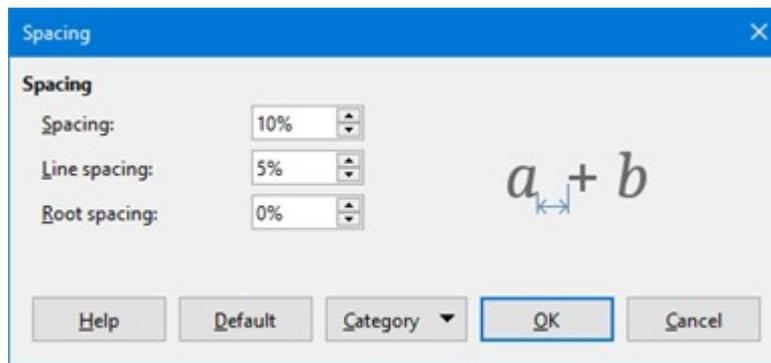
Figure 260: Spacing dialog

Current formula spacing

To change the spacing used for the current formula in Math or another LibreOffice component:

1) Click in the markup language in the Formula Editor.

2) Go to **Format > Spacing** on the Menu bar to open the Spacing dialog (Figure 260).

3) Click **Category** and select one of the options from the drop-down list. The options in the Spacing dialog change according to the category selected.

4) Enter new values for the spacing category and click **OK**.

5) Check the result in your formula. If not to your satisfaction, repeat the above steps.

Default formula spacing

To change the default spacing used for all formulas in Math or another LibreOffice component:

1) Before inserting any formulas in your document, go to **Format > Spacing** on the Menu bar to open the Spacing dialog (Figure 260).

2) Click **Category** and select one of the options from the drop-down list. The options in the Spacing dialog change according to the category selected.

3) Enter new values for the spacing category.

4) Click **Default** and confirm your changes to the formula spacing. Any formulas created from this point on will use the new spacing for formulas.

5) Click **OK** to save your changes and close the Spacing dialog.

> 📝 **Note**
>
> If you have already inserted formulas into your document and you change the spacing, only formulas inserted after the change in spacing will use the new default settings. You have to individually change the spacing of formulas already inserted if you want these formulas to use the same spacing as the default settings.

Spacing options

Use Category in the Spacing dialog (Figure 260) to determine the formula element for which you would like to specify the spacing. The appearance of the dialog depends on the selected category. A preview window shows you which spacing is modified through the respective boxes.

- **Category** – pressing this button allows you to select the category for which you would like to change the spacing.

- **Spacing** – defines the spacing between variables and operators, between lines, and between root signs and radicals.

  – *Spacing* – determines the spacing between variables and operators.

  – *Line spacing* – determines the spacing between lines.

- *Root spacing* – determines the spacing between the root sign and radicals.
- **Indexes** – defines the spacing for superscript and subscript indexes.
  - *Superscript* – determines the spacing for superscript indexes.
  - *Subscript* – determines the spacing for subscript indexes.
- **Fractions** – defines the spacing between the fraction bar and the numerator or denominator.
  - *Numerator* – determines the spacing between the fraction bar and the numerator.
  - *Denominator* – determines the spacing between the fraction bar and the denominator.
- **Fraction Bars** – defines the excess length and line weight of the fraction bar.
  - *Excess length* – determines the excess length of the fraction line.
  - *Weight* – determines the weight of the fraction line.
- **Limits** – defines the spacing between the sum symbol and the limit conditions.
  - *Upper limit* – determines the spacing between the sum symbol and the upper limit.
  - *Lower limit* – determines the spacing between the sum symbol and the lower limit.
- **Brackets** – defines the spacing between brackets and the content.
  - *Excess size (left/right)* – determines the vertical distance between the upper edge of the contents and the upper end of the brackets.
  - *Spacing* – determines the horizontal distance between the contents and the upper end of the brackets.
  - *Scale all brackets* – scales all types of brackets. If you then enter (a over b) in the Formula Editor, the brackets will surround the whole height of the argument. You normally achieve this effect by entering left (a over b right).
  - *Excess size* – adjusts the percentage excess size. At 0% the brackets are set so that they surround the argument at the same height. The higher the entered value is, the larger the vertical gap between the contents of the brackets and the external border of the brackets. The field can only be used in combination with *Scale all brackets*.
- **Matrices** – defines the relative spacing for the elements in a matrix.
  - *Line spacing* – determines the spacing between matrix elements in a row.
  - *Column spacing* – determines the spacing between matrix elements in a column.
- **Symbols** – defines the spacing of symbols in relation to variables
  - *Primary height* – defines the height of the symbols in relation to the baseline.
  - *Minimum spacing* – determines the minimum distance between a symbol and variable.
- **Operators** – defines the spacing between operators and variables or numbers.
  - *Excess size* – determines the height from the variable to the operator upper edge.
  - *Spacing* – determines the horizontal distance between operators and variables.
- **Borders** – adds a border to a formula. This option is particularly useful if you want to integrate the formula into a text file in Writer. When making settings, make sure that you do not use 0 as a size as this creates viewing problems for text that surrounds the insertion point.
  - *Left* – the left border is positioned between the formula and background.
  - *Right* – the right border is positioned between the formula and background.
  - *Top* – the top border is positioned between the formula and background.

– *Bottom* – the bottom border is positioned between the formula and background.

- **Preview Field** – displays a preview of the current selection.
- **Default** – saves any changes as default settings for all new formulas. A confirmation dialog will appear before saving these changes.

Adjusting formula alignment

The alignment settings determine how formula elements located above one another are aligned horizontally relative to each other.

> **Note**
>
> It is not possible to align formulas on a particular character and formula alignment does not apply to text elements. Text elements are always aligned left.

> **Note**
>
> Independent of using formula alignment given below, it is possible to align formulas using the commands `alignl`, `alignc` and `alignr`. These commands also work for text elements.

Current formula alignment

To change the alignment used for the current formula in Math or another LibreOffice component:

1) Click in the markup language in the Formula Editor.
2) Go to **Format > Alignment** on the Menu bar to open the Alignment dialog (Figure 261).
3) Select either *Left*, *Centered*, or *Right* for horizontal alignment.
4) Click **OK** and check the result in your formula. If not to your satisfaction, repeat the above steps.
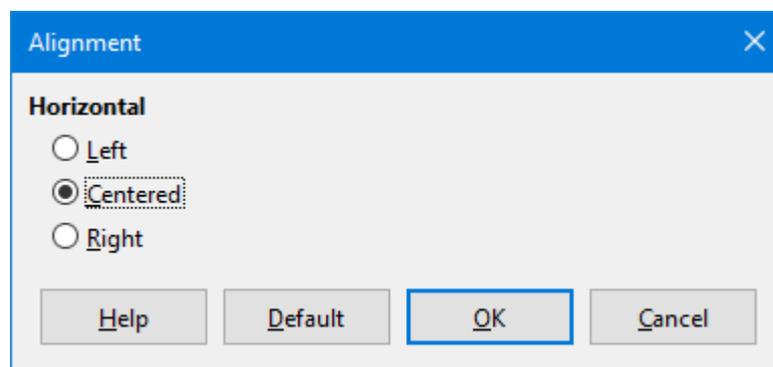
Figure 261: Alignment dialog

Default formula alignment

To change the default alignment used for all formulas in Math or another LibreOffice component:

1) Before inserting any formulas in your document, go to **Format > Alignment** on the Menu bar to open the Alignment dialog (Figure 261).
2) Select either *Left*, *Centered*, or *Right* for horizontal alignment.
3) Click **Default** and confirm your changes to the formula alignment. Any formulas created from this point on will use the new alignment for formulas.
4) Click **OK** and check the result in your formula. If not to your satisfaction, repeat the above steps.

> **Note**
>
> If you have already inserted formulas into your document and you change the formula alignment, only formulas inserted after the change in alignment will use the new default settings. You have to individually change the alignment of formulas already inserted if you want these formulas to use the same alignment as the default settings.

Changing formula color

Character color

Formula color for the characters used in a formula is changed by using the command color in the mark up language. This command only works on the formula element immediately after the color name. For example, entering the markup language `color red ABC 5 times 4` gives the result $\color{red}ABC\,5\times4$.

To change the color of the whole formula, you have to enclose the whole formula within brackets. For example, entering the markup language `color red {ABC 5 times 4}` gives the result $\color{red}ABC\,5\times4$.

For information on the colors available in Math, see Appendix A, Commands Reference, in the *Math Guide*.

Background color

It is not possible to select a background color for formulas in Math. The background color for a formula is by default the same color as the document or frame that the formula has been inserted into. However, in LibreOffice documents, you can use object properties to change the background color for a formula. For more information on using a background color (area fill for objects) with a formula, please refer to the user guides for Writer, Calc, Draw and Impress.

Formula library

If you regularly insert the same formulas into your documents, you can create a formula library using formulas that you have created using the Formula Editor. Individual formulas can be saved as separate files using the ODF format for formulas with the file suffix of .odf, or in MathML format with the file suffix of .mml.

You can use Math, Writer, Calc, Draw, or Impress to create formulas and build up your formula library.

Using Math

1) Create a folder on your computer to contain your formulas and give the folder a memorable name, for example Formula Library.

2) In LibreOffice, go to **File > New > Formula** on the Menu bar, or click on **Math Formula** in the opening splash screen to open Math and create your formula using the Formula Editor. See "Formulas as separate documents or files" on page 277 for more information.

3) Go to **File > Save As** on the Menu bar or use the keyboard shortcut *Ctrl+Shift+S* to open a Save As dialog.

4) Navigate to the folder you have created for your formula library.

5) Type in a memorable name for your formula in the File name text box.

6) Select from the File type drop-down list either *ODF Formula (.odf)* or *MathML 2.0 (.mml)* as the file type for your formula.

7) Click **Save** to save your formula and close the Save As dialog.

Using Writer, Calc, Draw, or Impress

1) Create a folder on your computer to contain your formulas and give the folder a memorable name, for example Formula Library.

2) Open a document using Writer, Calc, Draw, or Impress.

3) Go to **Insert > Object > Formula** on the Menu bar to open the Formula Editor and create your formula. See "Formulas in LibreOffice documents" on page 278 for more information.

4) Right-click on your formula object and select **Save Copy as** from the context menu to open a Save As dialog.

5) Navigate to the folder you have created for your formula library.

6) Type a memorable name for your formula in the File name text box.

7) Select from the File type drop-down list either *ODF Formula (.odf)* or *MathML 2.0 (.mml)* as the file type for your formula.

8) Click **Save** to save your formula and close the Save As dialog.

Using your formula library

You cannot insert a formula from your library into a document by dragging and dropping using the mouse, nor by using **Insert > File** on the Menu bar. You must insert a formula from your library into your document as an OLE object.

1) Open your document in Writer, Calc, Draw, or Impress.

2) Go to **Insert > Object > OLE Object** on the Menu bar to open the Insert OLE Object dialog.

3) Select the option **Create from file**.

4) Click **Search** to open your file browser dialog.

5) Navigate to the folder you have created for your formula library.

6) Select the formula you want to insert and click **Open**, or double-click on the formula you want to insert.

7) Click **OK** to insert your formula as an OLE object in your document and close the dialog.

Formulas in Writer

When a formula is inserted into a document, Writer inserts the formula into a frame and treats the formula as an OLE object. Double-clicking on an inserted formula will open the Formula Editor in Math allowing you to edit the formula.

This section explains what options you can change for each individual formula within a Writer document. Please refer to the chapters on styles in the *Writer Guide* for information on how to change the default settings for frame styles for OLE objects.

Automatic formula numbering

Automatic numbering of formulas for cross reference purposes can only be carried out in Writer. The easiest way to add numbered formulas in sequence is to use the AutoText entry **fn** (for '**formula numbered**').

1) Start a new line in your document.

2) Type *fn* and then press the *F3* key. A two column table with no borders is inserted into your document with the left column containing a sample formula and the right column containing a reference number, as shown below.

$$ABC\,5 \times 4 \tag{1}$$

3) Delete the sample formula and insert your formula as an object in the left column.

4) Alternatively, you can first insert your formula into the document, then carry out Steps 1 and 2 above replacing the sample formula with your formula.
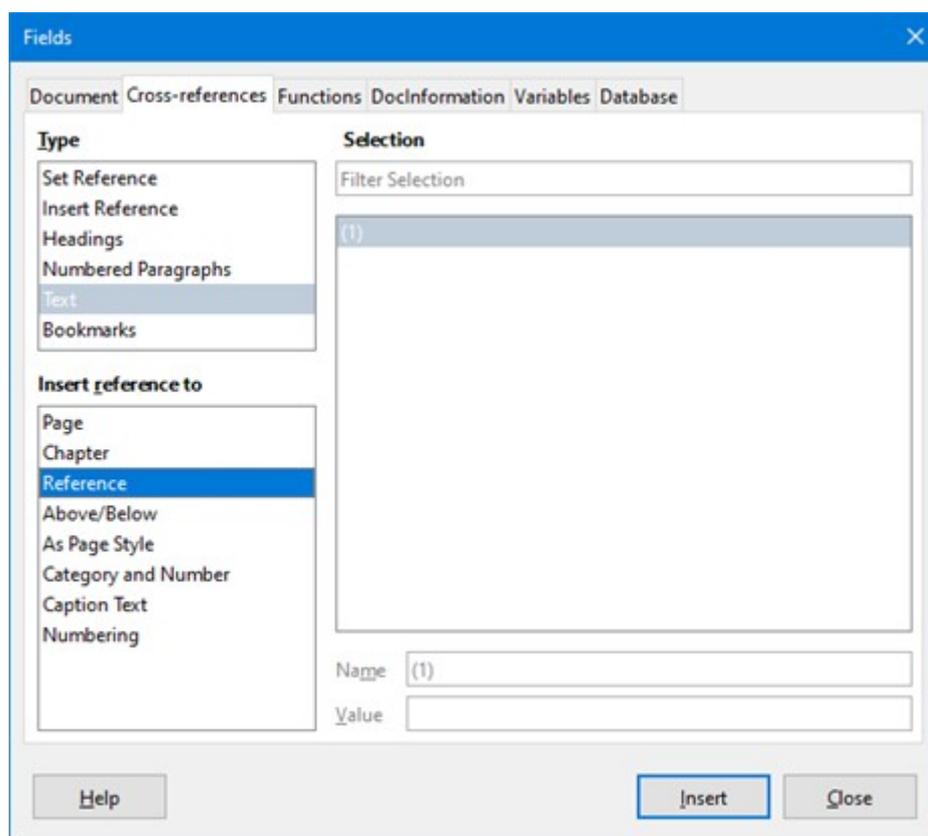
Figure 262: Fields dialog – Cross-references tab

Cross referencing

1) Click in your document where you want the cross reference to appear.

2) Go to **Insert > Cross-reference** on the Menu bar to open the Fields dialog (Figure 262).

3) Click on the *Cross-references* tab, then select **Text** in the *Type* section.

4) In the *Selection* section, select the formula number you want to refer to.

5) In the *Insert reference to* section, select **Reference** and click **Insert**.

6) When you have finished creating cross references, click **Close** to close the Fields dialog.

> ### Tip
>
> To insert the cross reference number without parentheses, select *Numbering* instead of *Reference* in the *Insert reference to* section.

> ### Note
>
> If you want to use square parentheses instead of round ones, or if you want the cross reference number to be separated from the formula by tabs instead of using a table, then refer to the chapter on automatic text in the *Writer Guide*.

Anchoring formulas

A formula is treated as an object within Writer and its default anchoring is **To character** within a paragraph when it is inserted into a document. To change the anchoring of a formula object:

1) Right-click on the selected formula object and select **Anchor** from the context menu.

2) Select a new anchoring option from the context sub-menu. The anchoring positions available are **To Page**, **To Paragraph**, **To Character**, or **As Character**.
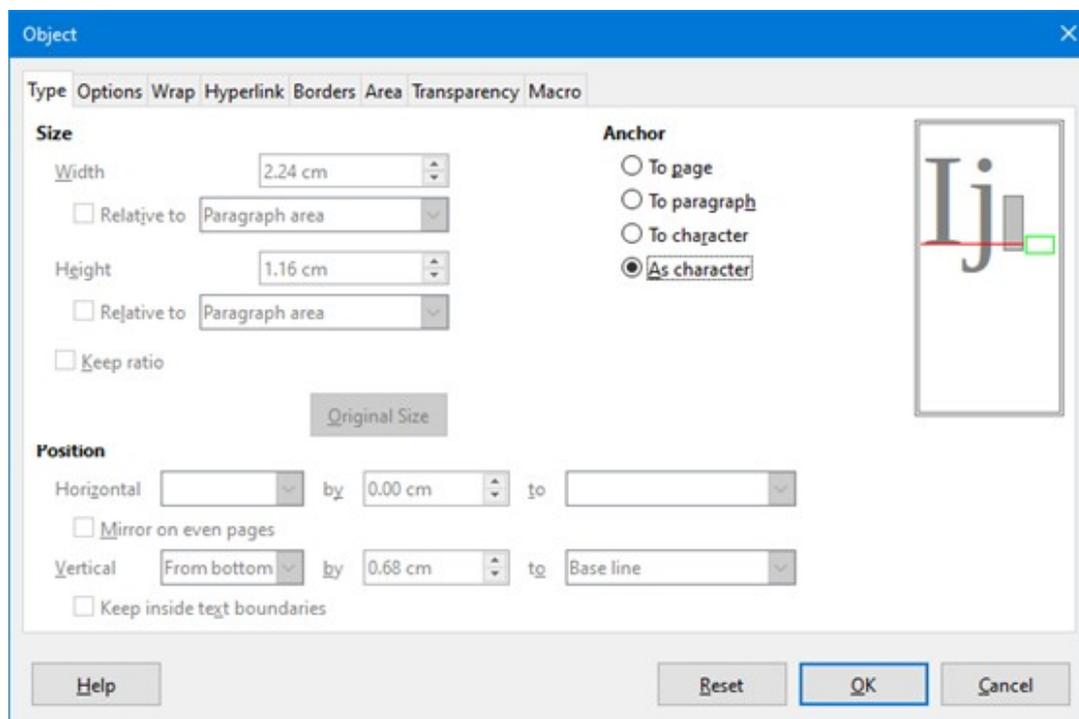
Figure 263: Object dialog – Type tab with Anchor options

3) Alternatively, right-click on the selected formula object and select **Properties** from the context menu, or go to **Format > Frame and Object > Properties** on the Menu bar to open the Object dialog (Figure 263).

4) Make sure the *Type* tab is selected and select a new anchoring position from the *Anchor* section.

5) Click **OK** to save your changes and close the Object dialog.

> **Note**
>
> The anchoring options are not available in the Object dialog when you are making changes to the various options available for frame styles. For more information on how to modify frame styles, please refer to the chapters on styles in the *Writer Guide*.

Vertical alignment

The normal default setting for vertical alignment for formula objects is to use the text base line as a reference. This default setting can be changed by modifying the Formula frame style, see the chapters on styles in the *Writer Guide* for more information.

To change the vertical alignment position of an individual formula object (assuming that the **As character** anchoring option is selected):

1) Right-click on the selected formula object and select **Properties** from the context menu, or go to **Format > Frame and Object > Properties** to open the Object dialog (Figure 263).

2) Make sure the *Type* tab is selected and select a new alignment position from the drop-down list in the *Position* section. The vertical alignment options available are **Top**, **Bottom**, **Center,** or **From bottom**.

3) If necessary, type in the text box a plus or minus value for vertical alignment. This option is only available if **From bottom** vertical alignment has been selected.

4) Select the type of text alignment from the drop-down list in the *Position* section. The text alignment options available are **Base line**, **Character,** and **Row**.

5) Click **OK** to save your changes and close the Object dialog.

> **Note**
>
> If the *Position* section in the Object dialog is greyed out and not available, then go to **Tools > Options > LibreOffice Writer > Formatting Aids** and uncheck the option **Math baseline alignment**. This setting is stored with the document and applies to all formulas within it. Any new documents created will also use this setting.

Object spacing

A formula object, when inserted into a Writer document, has spacing each side of the formula object. The default value used for spacing is set within the frame style for formula objects and can be changed by modifying the Formula frame style, see the chapters on styles in the *Writer Guide* for more information.

You can individually adjust the spacing for each formula object within your document as follows:

1) Create your formula in your Writer document.

2) Right-click on your selected formula object and select **Properties** from the context menu, or go to **Format > Frame and Object > Properties** on the Menu bar to open the Object dialog.

3) Click on the *Wrap* tab to open the Wrap page in the Object dialog (Figure 264).

4) In the *Spacing* section, enter the spacing value for *Left*, *Right*, *Top* and *Bottom* spacing.

5) Click **OK** to save your changes and close the Object dialog.
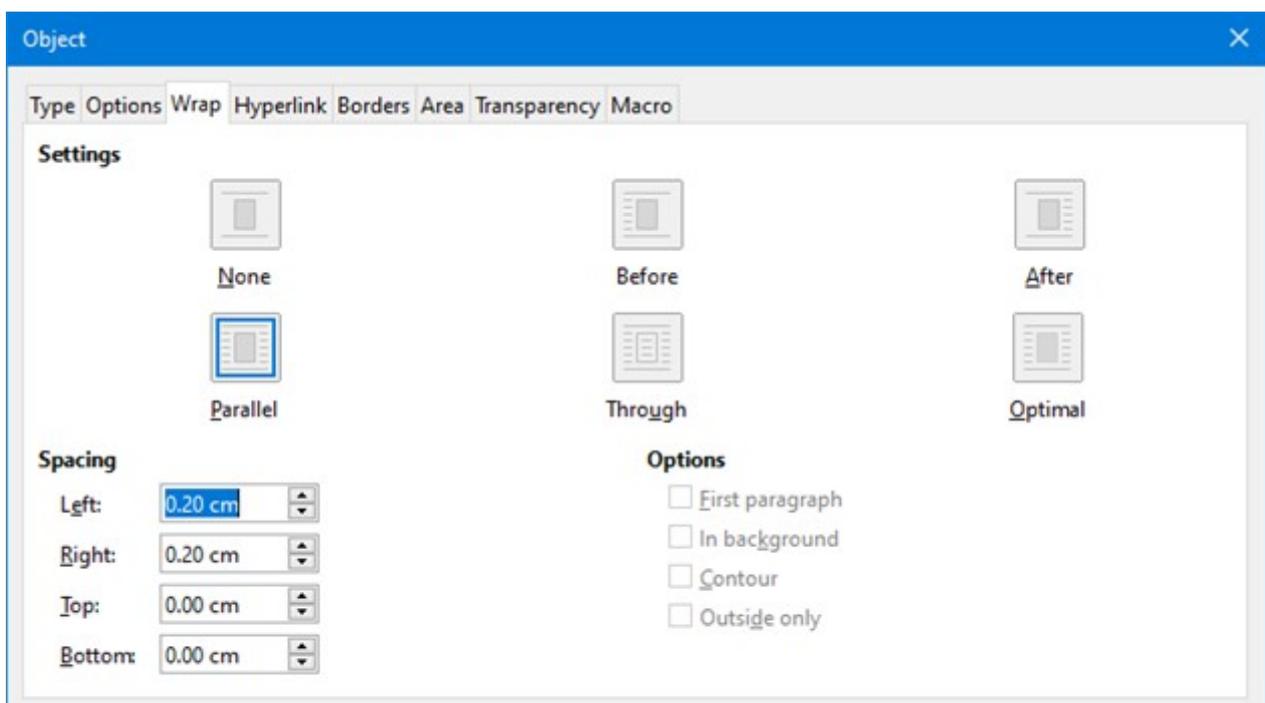
Figure 264: Object dialog – Wrap tab

Text mode

In large formulas placed within a line of text, the formula elements can often be higher than the text height. Therefore, to make large formulas easier to read, it is recommended to always insert a large formula into a separate paragraph of its own so that it is separated from text.

However, if it is necessary to place a large formula within a line of text, double-click on the formula to open the Formula Editor and then go to **Format > Text Mode** on the Menu bar. The Formula Editor will try to shrink the formula to fit the text height. The numerators and denominators of fractions are shrunk, and the limits of integrals and sums are placed beside the integral/sum sign, as shown in the following example.

Example

A formula in a separate paragraph:

$$\sum_{i=2}^{5} i^2$$

and the same formula embedded into a line of text using text mode format: $\sum_{i=2}^{5} i^2$

Background and borders

The default setting for background (area fill) and borders for formula objects is set by the formula frame style. To change this default setting for formula frame style, refer to the chapters on styles in the *Writer Guide*. However, for individual formulas in your document, you can change the background and borders.

> **Note**
>
> The size of the frame that a formula is placed in when inserted into a document cannot be changed. The frame size for a formula object depends on the setting of the formula font size; see "Creating formulas" on page 279 and "Editing formulas" on page 283 for more information.

Backgrounds

1) In your document, select the formula where you want to change the background.
2) Right-click on the formula and select **Properties** from the context menu, or go to **Format > Frame and Object > Properties** on the Menu bar to open the Object dialog.
3) Click on the **Area** tab and use the buttons to select the type of fill you want to use for your formula (Figure 265).
4) Select the options you want to use for your formula background. The options change depending on the type of fill selected.
5) Click **OK** to save your changes and close the Object dialog.

Borders

1) In your document, select the formula where you want to change the borders.
2) Right-click on the formula and select **Properties** from the context menu, or go to **Format > Frame and Object > Properties** on the Menu bar to open the Object dialog.
3) Click on the **Borders** tab and select the options you want to use for your formula borders (Figure 266).
4) Click **OK** to save your changes and close the Object dialog.
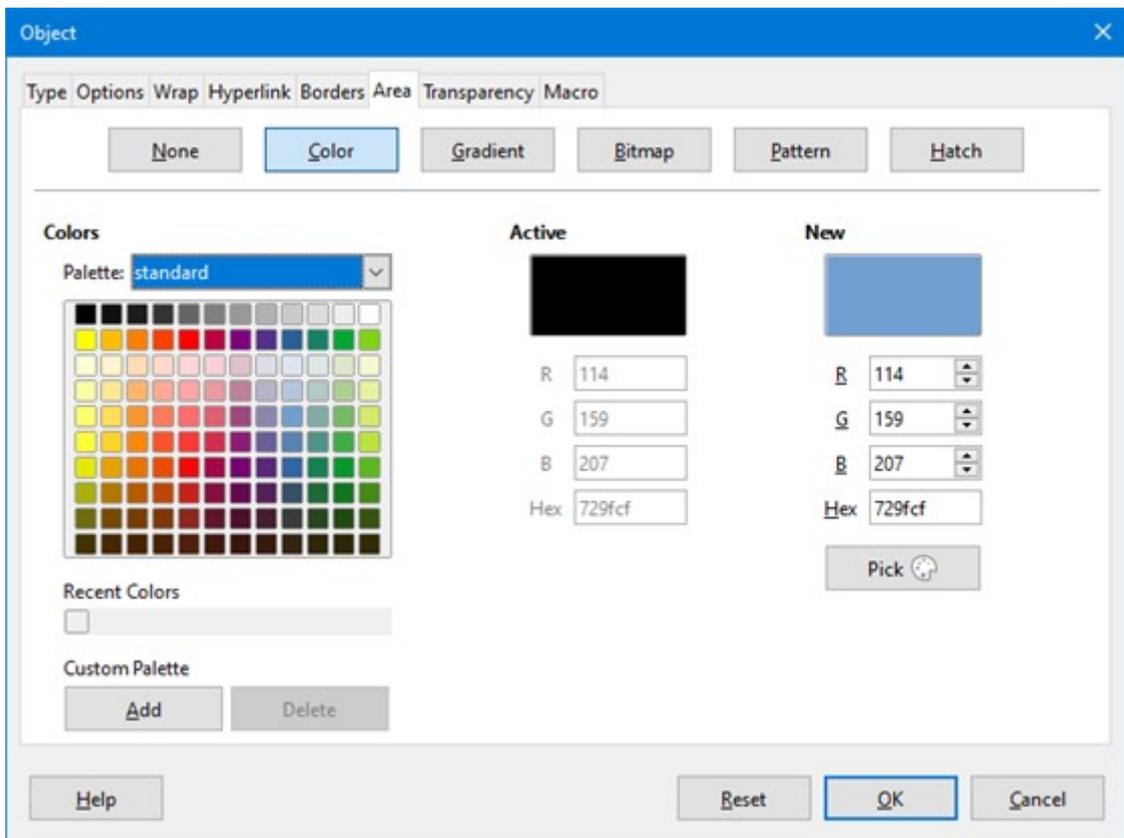
Figure 265: Object dialog – Area tab
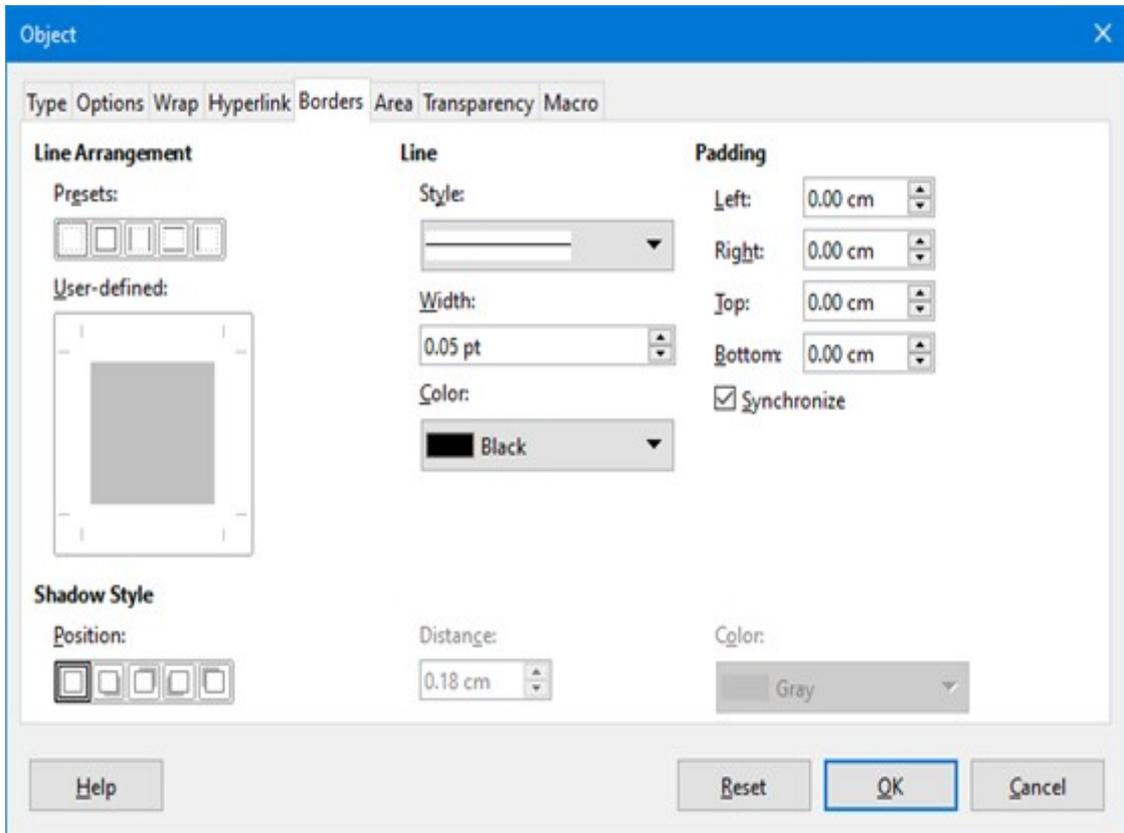
Figure 266: Object dialog – Borders tab

Quick insertion of formulas

You can quickly insert a formula into your Writer document without opening the Formula Editor, if you know the markup language for the formula:

1) Type the formula markup language into your document at the position where you want the formula.

2) Select the markup language.

3) Go to **Insert > Object** on the Menu bar and select **Formula** to create a formula from the selected markup language.

Formulas in Calc, Draw, and Impress

In Calc, Draw, and Impress, formulas are inserted as OLE objects without any background (area fill) or borders. Each formula object is inserted into a spreadsheet, drawing, or slide as follows:

- In Calc, formulas are inserted into a selected cell in a spreadsheet with no style assigned to the formula object.

- In Draw and Impress, formulas are inserted into a central position on your drawing or slide and, by default, are assigned the drawing object style *Object with no fill and no line*. For more information on how to modify or assign drawing object styles, see the *Draw Guide* or the *Impress Guide*.

Anchoring formulas

Calc

A formula object can be anchored into your spreadsheet as **To Page** (default setting), or as **To Cell**. To change the anchoring type of formulas in a Calc spreadsheet:

1) Select the formula object in your spreadsheet.

2) Right-click on the formula and select **Anchor > To Page** or **To Cell** from the context menu

3) Alternatively, go to **Format > Anchor** on the Menu bar and select **To Page** or **To Cell**.

Draw and Impress

When a formula is inserted into a drawing or slide, it is inserted as a floating OLE object and is not anchored to any particular position in a drawing or slide.

Formula object properties

Formula objects in Calc, Draw, and Impress can be modified just like any other object that has been placed in your spreadsheet, drawing, or presentation, with the exception of formula object size and changing the format of any text within a formula. For more information on how to change object properties, see the *Calc Guide*, *Draw Guide* and *Impress Guide*.

The following points will help you select which dialog to use if you want to change the properties of formula objects.

- For formula backgrounds, use the various options in the tabs of the Area dialog.

- For formula borders, use the various options in the Line dialog. Note that formula borders are separate from cell borders in a Calc spreadsheet.

- To accurately re-position a formula object, use the various options in tabs of the Position and Size dialog.

- In Draw and Impress, you can arrange, align, group, flip, convert, break, combine, and edit points of formula objects.

- You cannot change the text attributes of a formula object. The text used in a formula is set when you create the formula in the Formula Editor.
- Formula object size is set by the formula font size when the formula is created in the Formula Editor. The formula object size is protected in the Position and Size dialog, but this can be deselected if you wish. However, this is not recommended as resizing a formula object using the Position and Size dialog could lead to distortion of a formula making it difficult to read.

Formulas in charts

A chart in a Calc spreadsheet is itself an OLE object, therefore, you cannot use the Formula Editor to create and insert a formula into a chart.

To insert a formula into a chart, create the formula first using the Formula Editor and copy the formula to the clipboard. You then create your chart in Calc and paste the formula into your chart. The formula is automatically converted into the correct format for insertion into the chart.

If you want to change the formula at a later date, then you must repeat the whole process of creating, copying, and pasting.

Customization

This section explains how you can customize Math to suit the way you create formulas for use in LibreOffice documents. Also, refer to Chapter 14, *Customizing LibreOffice*, of this Guide for more general information on how to customize LibreOffice.

Chemical formulas

The primary purpose of Math is to create mathematical formulas, but it can also be used to write chemical formulas. However, in chemical formulas, the chemical symbols are normally written in uppercase using non-italic characters. The following table shows some examples of chemical formulas.

Construction	*Example*	*Markup Language*
Molecules	H_2SO_4	`H_2 SO_4`
Isotopes	$^{238}_{92}U$	`U lsub 92 lsup 238`
Ions	SO_4^{2-} or $SO_4^{2\text{-}}$	`SO_4^{2-{}}` *or* `SO_4^{2"-"}`

To create chemical formulas using Math, you have to change the font used for variables to a non-italic font. For more information , see "Formula fonts" on page 291.

For reversible reactions in chemical formulas, there is no symbol you can use for a double arrow in Math. If you have a font available with correct symbols for use in chemical formulas, then you can add these symbols to the Catalog. See "Catalog customization" on page 305 for more information on how to add symbols to the Catalog.

Floating dialogs

The Formula Editor and Elements dock can cover a large part of your document. To help create more space and/or allow you to move either the Formula Editor or Elements dock out of the way, you can turn both of them into floating dialogs.

1) Position the cursor on the frame.
2) Hold down the *Ctrl* key and double-click. This turns the Formula Editor into the Commands dialog (Figure 267) and the Elements dock into the Elements dialog (Figure 268).
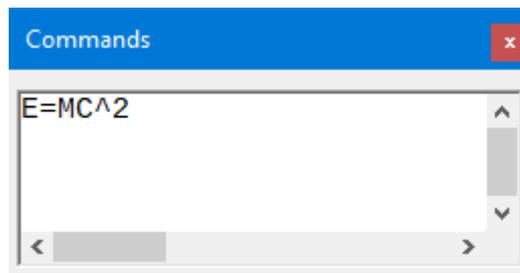
Figure 267: Commands dialog
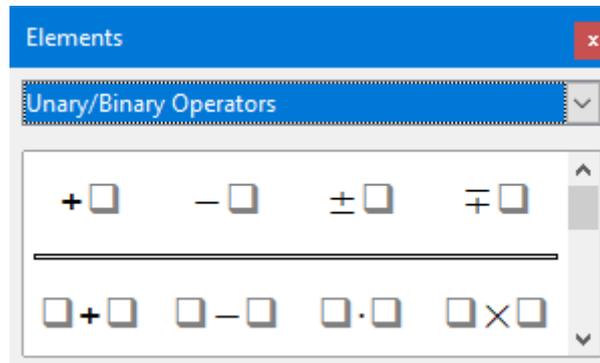
Figure 268: Elements dialog

To return the Commands dialog and Elements dialog back to their default positions:

1) Position the cursor on the frame of the dialog, NOT the title bar at the top of the dialog.

2) Hold down the *Ctrl* key and double-click.

Adding keyboard shortcuts

You can add keyboard shortcuts to LibreOffice to make creating documents much easier and to match your workflow. See Chapter 14, Customizing LibreOffice, for instructions.

Catalog customization

If you regularly use a symbol that is not available in Math, you can add it to the Symbols dialog (Figure 269) by opening the Edit Symbols dialog (Figure 270).

Using the Edit Symbols dialog you can add symbols to a symbol set, edit symbol sets, or modify symbol notations. You can also define new symbol sets, assign names to symbols, or modify existing symbol sets.

Adding symbols

1) Go to **Tools > Symbols** on the Menu bar or click on the **Symbols** icon in the Tools toolbar to open the Symbols dialog.

2) Click the **Edit** button to open the Edit Symbols dialog.

3) Select a font from the *Font* drop-down list.

4) Select a symbol character that you want to add from the preview box. You may have to scroll down in the preview box to locate the symbol you want to use. The small right preview box displays the new symbol.

5) In the *Symbol* box, type a memorable name for the symbol you are adding.

6) In the *Symbol set* box, select a symbol set from the drop-down list to add your new symbol to, or type a new name to create a new symbol set for your new symbol.

7) If required, select a font style from the *Style* drop-down list – **Standard**, **Italic**, **Bold**, or **Bold, Italic**.

8) Click **Add**, then click **OK** to close the Edit Symbols dialog. The new symbol and, if created, new symbol set are now available for use.
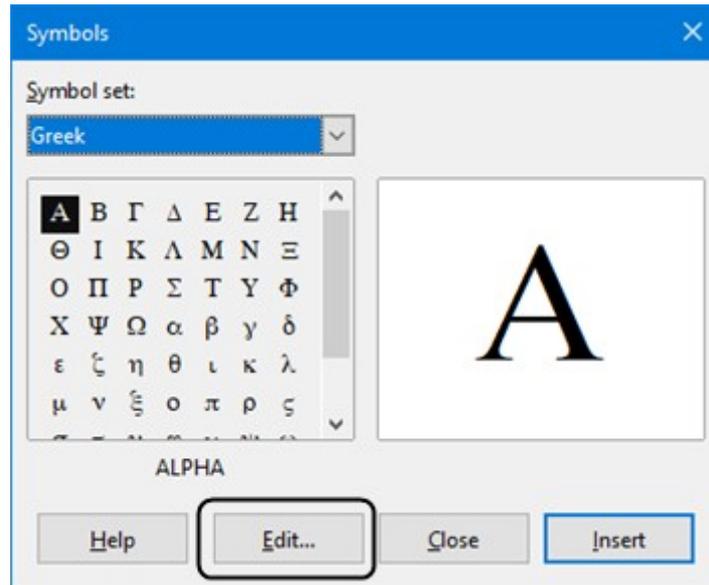
Figure 269: Symbols dialog
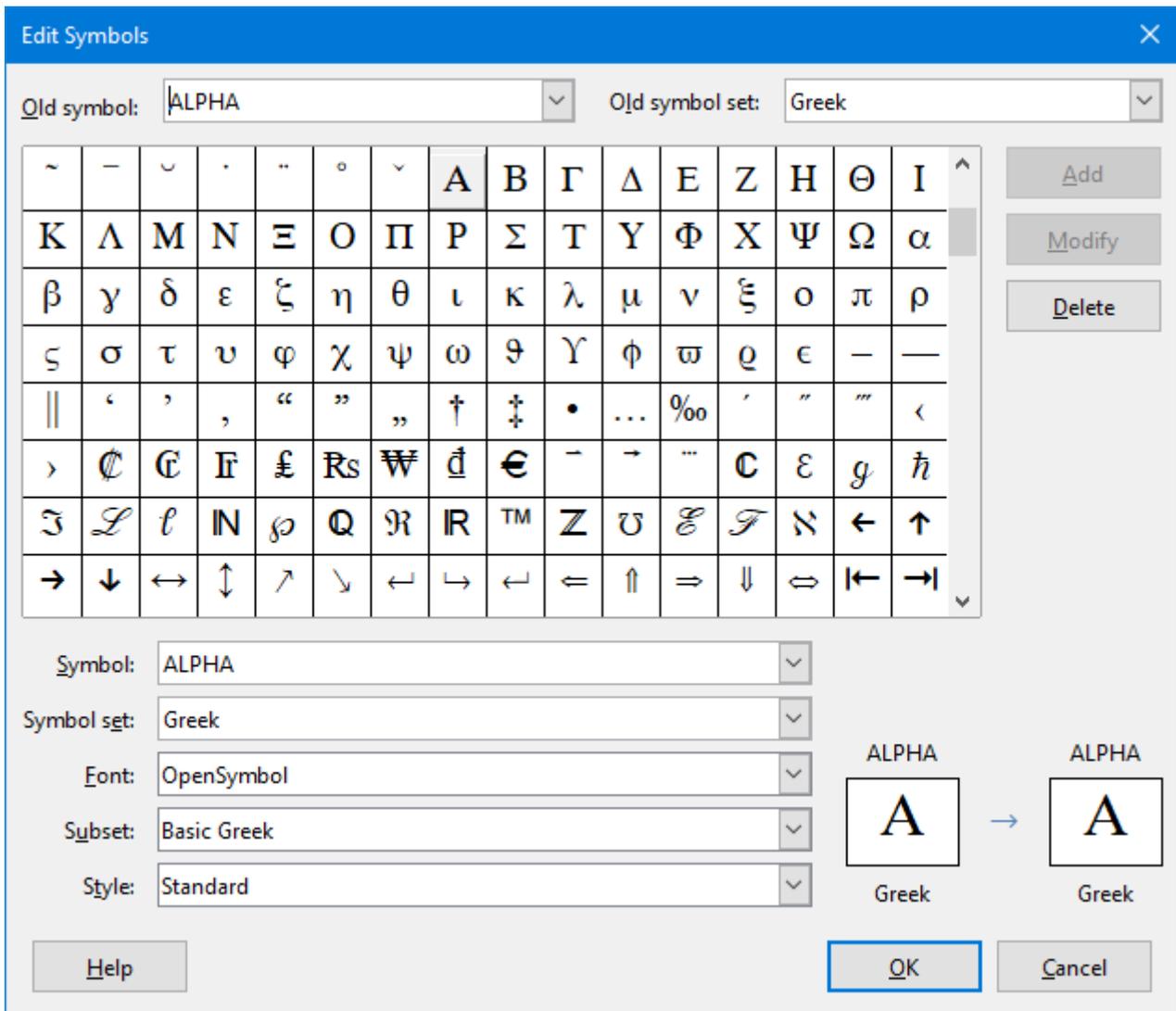
Figure 270: The Edit Symbols dialog

Note

When a new symbol is added to the catalog, you can type a percentage sign (%) followed by the new name into the markup language in the Formula Editor and your new symbol will appear in your formula. Remember that symbol names are case sensitive, for example, `%prime` is a different symbol to `%Prime`.

Note

Numerous free fonts are available that contain several symbols if you cannot find a symbol to use in the fonts already installed on your computer. For example, the STIX font was developed specially for writing mathematical and technical texts. Also, the DejaVu and Lucida fonts have a wide range of symbols that you can use.

Note

When LibreOffice is installed on a computer, only those user-defined symbols that actually occur in the document are stored with it. Sometimes it is useful to embed all the user-defined symbols, so that when the document is transferred to another computer it can be edited by another person. Go to **Tools > Options > LibreOffice Math > Settings**, uncheck the option **Embed only used symbols (smaller file size)**.This setting is only available when you are working with LibreOffice Math.

Editing symbols

Modifying symbol names

You can change the name of a symbol as follows:

1) Select the symbol name you want to change from the *Old symbol* drop-down list. The symbol appears in the left preview pane at the bottom of the Edit Symbols dialog (Figure 270).

2) Type a new name for the symbol in the *Symbol* text box, or select a new name from the *Symbol* drop-down list. The new symbol name appears above the right preview pane at the bottom of the Edit Symbols dialog.

3) Click **Modify** and the symbol name is changed.

4) Click **OK** to close the Edit Symbols dialog.

Moving symbols

You can move a symbol from one symbol set to another as follows:

1) In the *Old symbol set* drop-down list, select the symbol set where the symbol you want to move is located.

2) Select the symbol name you want move from the *Old symbol* drop-down list. The symbol appears in the left preview pane at the bottom of the Edit Symbols dialog (Figure 270).

3) In the **Symbol set** drop-down list, select the symbol set that you want to move the symbol to. The new symbol set name appears below the right preview pane at the bottom of the Edit Symbols dialog.

4) Click **Modify** and the symbol is moved to the new symbol set.

5) Click **OK** to close the Edit Symbols dialog.

Deleting symbols

You can delete a symbol from a symbol set as follows:

1) In the *Old symbol set* drop-down list, select the symbol set from which you want to delete the symbol.
2) Select the symbol name you want delete from the *Old symbol* drop-down list. The symbol appears in the left preview pane at the bottom of the Edit Symbols dialog (Figure 270).
3) Click **Delete** and the symbol is deleted from the symbol set without any confirmation.
4) Click **OK** to close the Edit Symbols dialog.

> **📝 Note**
>
> The only way you can delete a symbol set is by deleting all of the symbols in that set. When you delete the last symbol from a set, the set is also deleted.

Options for editing symbols

- Old symbol – select the name of the current symbol. The symbol, the name of the symbol, and the set that the symbol belongs to are displayed in the left preview pane at the bottom of the Edit Symbols dialog.
- Old symbol set – this list box contains the name of the current symbol set. You can also select a different symbol set using this list box.
- Symbol – lists the names for the symbols in the current symbol set. Select a name from the list or type a name for a newly added symbol.
- Symbol set – this list box contains the names of all existing symbol sets. You can modify a symbol set or create a new one.
- Font – displays the name of the current font and enables you to select a different font.
- Subset – if you selected a non-symbol font in the Font list box, you can select a Unicode subset in which to place your new or edited symbol. When a subset has been selected, all symbols belonging to this subset of the current symbol set are displayed in the Symbol list.
- Style – the current style of font is displayed. You can change the font style by selecting one from the list box.
- Add – click this button to add the symbol shown in the right preview window to the current symbol set. It will be saved under the name displayed in the Symbol list. You must specify a name under Symbol or Symbol set to be able to use the Add button. Names cannot be used more than once.
- Modify – click this button to replace the name of the symbol shown in the left preview window (the old name is displayed in the Old symbol list) with the new name you have entered in the Symbol list.
- Delete – click this button to remove the symbol shown in the left preview window from the current symbol set. There will be confirmation of deletion. Deleting the last remaining symbol of a symbol set also deletes the symbol set.
- Cancel – click this button at any time to close the dialog without saving any of the changes.

Formula spacing

The grave accent (`) inserts an additional small space and the tilde (~) inserts an additional large space into formulas. However, in the basic installation of LibreOffice, these symbols are ignored when they occur at the end of a formula. If you are working with running text in a formula, it may be necessary to include spacing at the end of formulas as well. This customization is only required when you are working with a Math document and is not required when you are inserting a formula into another LibreOffice component.

To add spacing at the end of formula in Math, go to **Tools > Options > LibreOffice Math > Settings** on the Menu bar and uncheck **Ignore ~ and ` at the end of the line** in the *Miscellaneous Options* section.

Extensions

If you create formulas frequently in your documents, you can customize LibreOffice by adding extensions that are designed to help you create formulas. Extensions are easily installed using the Extension Manager. For more information on how to install extensions, see Chapter 14 of the *Getting Started Guide*.

One extension that is recommended for installation is **Dmaths**. This extension is designed for use in Writer and adds a mathematical macro package providing five toolbars for creating formulas. For more information on this extension, go to the website http://www.dmaths.org.

A second extension that is recommended is **Formatting of All Math Formulas**. It allows you to format all Math formulas in your Writer, Calc, Draw, or Impress document. You can change font and font size for all formulas or only for selected formulas. For more information on this extension, go to https://extensions.libreoffice.org/extensions/formatting-of-all-math-formulas.

Exporting and Importing

Math ML format

In addition to exporting documents as PDFs, LibreOffice offers the possibility of saving formulas in the MathML format. This allows you or another person to insert formulas into documents that were created in other software, for example, Microsoft Office or an internet browser.

> **Note**
>
> Some internet browsers do not fully support the MathML format and your formula may not display correctly.

If you are working on a Math document, go to **File > Save as** on the Menu bar or use the keyboard combination *Ctrl+Shift+S* to open the Save as dialog. Select MathML from the list of available file formats to save your formula as MathML.

If you are working in another LibreOffice component, right-click on the formula object and select **Save copy as** from the context menu to open the Save as dialog. Select MathML from the list of available file formats to save the formula object as MathML.

In Math you can also import a MathML formula. Use **Tools > Import MathML from Clipboard**.

Microsoft file formats

To control how formulas in Microsoft format are imported and exported using LibreOffice, go to **Tools > Options > Load/Save > Microsoft Office** on the Menu bar and select or deselect the options for *MathType to LibreOffice Math or reverse*.

- *[L]: Load and convert the object*
- *[S]: Convert and save the object*

[L]: Load and convert the object

Select this option if Microsoft OLE objects are to be converted into the specified LibreOffice OLE object when a Microsoft document is opened in LibreOffice. For formulas, any embedded MathType objects must not exceed the MathType 3.1 specifications to be successfully loaded and converted. Information on MathType format can be found on the website http://www.dessci.com/en.

If a document containing OMML formulas has been saved in .docx format and then converted to the older .doc format, then any OMML objects are converted into graphics, which will be displayed in LibreOffice as graphics.

[S]: Convert and save the object

Select this option if LibreOffice OLE objects are to be converted and saved in Microsoft file format. LibreOffice converts any formulas into a format that can be read and modified by Microsoft Equation Editor and MathType.

When this option is not selected, the formula is treated as an OLE object on conversion into a .doc format and remains linked to LibreOffice. A double-click on the object in Microsoft Office will attempt to launch LibreOffice.

Getting Started Guide

Chapter 10
Printing, Exporting, Emailing and Signing Documents

Quick printing

If the **Print Directly** icon is visible on the Standard toolbar, you can click it to send the entire document with the current default print settings. If the icon is not visible, you can show it by right-clicking on the toolbar, pointing to **Visible Buttons**, and selecting **Print Directly**.

> 📝 **Note**
>
> The **Print Directly** and other printing options are not available when viewing a Base table or query.

You can specify the default printer on the Printer Setup dialog, displayed using **File > Printer Settings**. When further printing options are available, these can be accessed by pressing the **Options** button on the Printer Setup dialog.

Controlling printing

For more control over printing, use the Print dialog (**File > Print**, *Ctrl+P* (⌘*+P for* macOS), or the **Print** icon on the Standard toolbar). The appearance of the Print dialog is different on macOS and may include extra printer controls not described in this chapter.

The Print dialog (Figure 271) has two tabs, from which you can choose a range of options as described in the following sections. The first tab is *General*; it is similar in all LibreOffice components although some of the options available in Writer are unavailable in other components. The second tab is component-specific.

The different components of LibreOffice have different print settings available, as summarized in Table 4.

Table 4: Print options in LibreOffice components

Feature	Writer	Calc	Impress	Draw	Math
Select pages/sheets/slides to print	Yes	Yes	Yes	Yes	Yes
Print multiple pages/sheets/slides on one page	Yes	Yes	Yes	Yes	No
Print a brochure	Yes	No	Yes	Yes	No
Print envelopes	Yes	No	No	No	No
Print labels or business cards	Yes	No	No	No	No
Preview pages/sheets before printing	Yes	Yes	No	No	No

Base forms and reports are printed using the Writer version of the Print dialog and hence provide the facilities in the Writer column of Table 4.
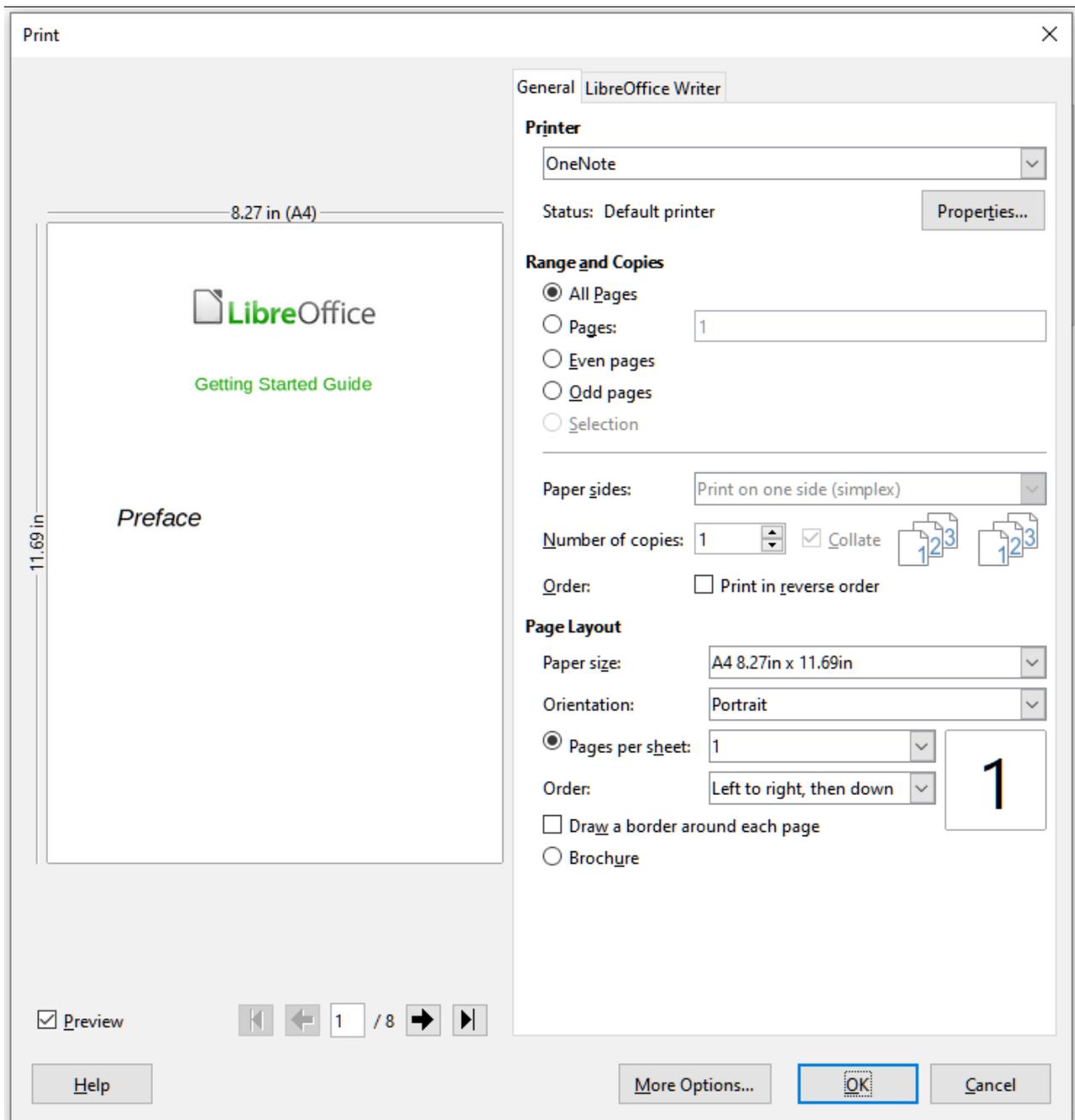
Figure 271: The Print dialog in Writer

Selecting general printing options

On the *General* tab of the Print dialog, you can choose:

- The printer, from the list of available printers
- Which pages to print, the number of copies to print, and whether to collate multiple copies (*Range and Copies* section; see page 314)
- Paper size and print orientation (*Page Layout* section)
- How many pages to print on one sheet of paper and whether to draw a border around each page (*Page Layout* section)
- Whether to print a brochure (see page 319)

Selecting printer and print job options

In the *Printer* section of the *General* tab, click the **Properties** button to display the selected printer's properties dialog where you can choose portrait or landscape orientation, which paper tray to use, and the paper size to print on.

Click the **More Options** button at the bottom of the Print dialog to choose whether to create separate print jobs for collated output, instead of one print job containing all the collated pages (not relevant if only one copy of a document is printed).

Printing multiple pages on a single sheet of paper

You can print multiple pages of a document on one sheet of paper. To do this, in the *Page Layout* section of the *General* tab, select from the **Pages per sheet** drop-down list the number of pages to print per sheet of paper. The preview panel on the left of the Print dialog shows how the printed document will look. This facility is not available in Math.

When printing more than two pages per sheet, you can choose the order in which they are printed across and down the paper (see Figure 272).

<table>
<tr><td>💡</td><td>**Tip**</td></tr>
</table>

In Writer, to print two pages per sheet in "facing pages" (book layout) style, print from Print Preview instead. See page 321.
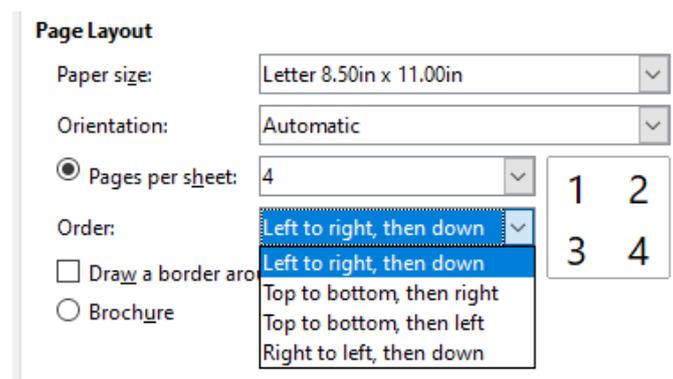
Figure 272: Print order choices

Selecting pages/sheets/slides to print

In addition to printing a full document, in the *Range and Copies* section of the *General* tab, you can choose to print individual pages/sheets/slides, ranges of pages/sheets/slides, or a selection of a document. The details vary slightly between Writer, Calc, Draw, Impress, and Math, as described below.

Writer and Math

Printing an individual page:

5) In the Print dialog, in the *Range and Copies* section, select the **Pages** option. The text box shows the current page number.

6) Enter the page number of the page you want to print. The preview box on the left changes to show the selected page.

Printing a range of pages:

1) In the Print dialog, in the *Range and Copies* section, select the **Pages** option.

2) Enter the page numbers of the pages to print (for example, 1–4 or 1,3,7,11).

Printing a selection of text or graphics (Writer only):

1) In the document, select the material to print, then open the Print dialog.

2) In the *Range and Copies* section of the Print dialog now the **Selection** option is active and selected and the preview box shows the selected material. See Figure 273.
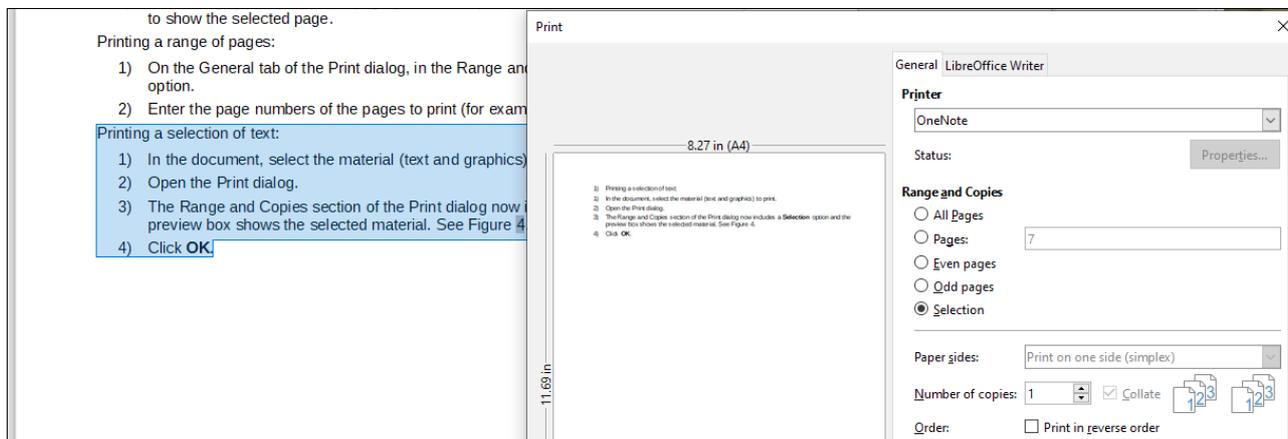
Figure 273: Printing a selection of text

Calc

You can choose individual sheets, ranges of sheets, or selections of sheets for printing.
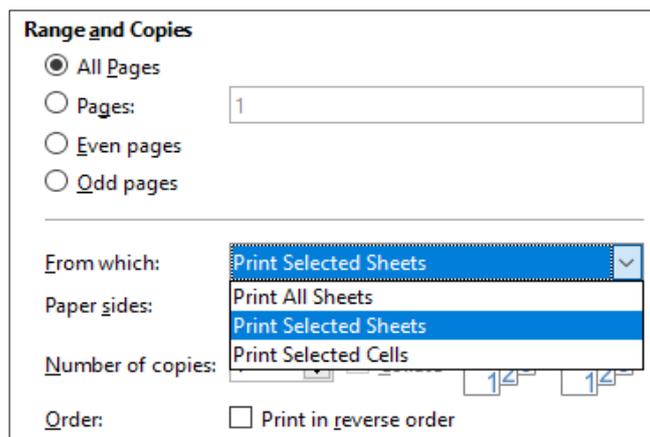
Figure 274: Choosing what to print in Calc

Printing an individual sheet:

1) In the spreadsheet, click on the sheet tab to select the sheet you want to print.

2) Open the Print dialog and choose the *General* tab.

3) In the *Range and Copies* section, choose **Print Selected Sheets** from the *From which* drop-down.

Printing a range of sheets:

1) In the spreadsheet, select the sheets to print.

   a) Select the first sheet.

   b) Hold down the *Control* key.

   c) Click on the additional sheet tabs.

   d) Release the *Control* key when all required sheets are selected.

2) Open the Print dialog and choose the *General* tab.

3) In the *Range and Copies* section, choose **Print Selected Sheets** from the *From which* drop-down.

> ⚠️ **Caution**
>
> After printing, be sure to deselect the extra sheets. If you keep them selected, the next time you enter data on one sheet, you enter data on all the selected sheets. This might not be what you want.

Printing a selection of cells:

1) In the document, select the cells to print.
2) Open the Print dialog and choose the *General* tab.
3) In the *Ranges and Copies* section, choose **Print Selected Cells** from the *From which* drop-down.

Impress and Draw

You can choose individual slides, ranges of slides, or selections of slides for printing.

To print an individual slide or a range of slides, do one of the following:

- In the Print dialog, select the **Slides** option in the *Range and Copies* section (Figure 275) and then enter the numbers of the slides to print (for example, 1-4 or 1,3,7,11).
- Select the slides first and then open the Print dialog, which will show the slide numbers in the box. See Chapter 6, Getting Started with Impress, for information on selecting slides.

Figure 275: Choosing what to print in Impress and Draw

To print a selection from a slide, or a selection from multiple slides:

1) In the document, select the section of the slide to print.
2) Open the Print dialog.
3) Choose the **Selection** option in the *Range and Copies* section.

You can also choose to print only even-numbered slides or only odd-numbered slides.

Choices on the component tabs

Choices on the *LibreOffice [Component]* tab vary with the component.

Writer

On the *LibreOffice Writer* tab (Figure 276) you can choose to print a subset of contents (for example, images or hidden text), print text in black (even if a color is defined for the text), whether to print automatically inserted blank pages, and whether and where to print any comments that are in the document (Figure 277).
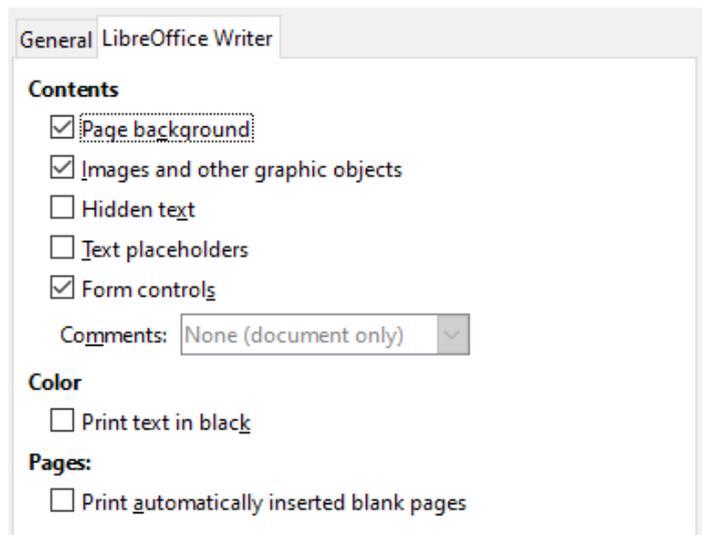
Figure 276: LibreOffice Writer tab of Print dialog

Some selections may not be available all the time. For example, if the document contains no comments, the *Comments* drop-down list is disabled.
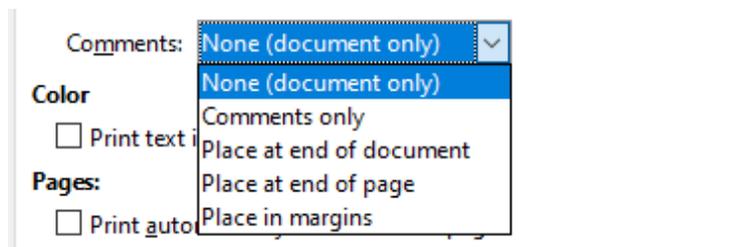
Figure 277: Choosing whether and where to print comments

Calc

The only choice on the *LibreOffice Calc* tab is whether to suppress the printing of blank sheets.

Impress

On the *LibreOffice Impress* tab (Figure 278), you can choose to print slides, handouts, notes, or an outline. See Chapter 6, Getting Started with Impress, for more information on these features.

Handouts prints the slides in reduced size on the page, from one to nine slides per page. The slides can be printed horizontally (landscape orientation) or vertically (portrait orientation) on the page.

Notes prints a single slide per page with any notes entered for that slide in Notes View.

Outline prints the title and headings of each slide in outline format.
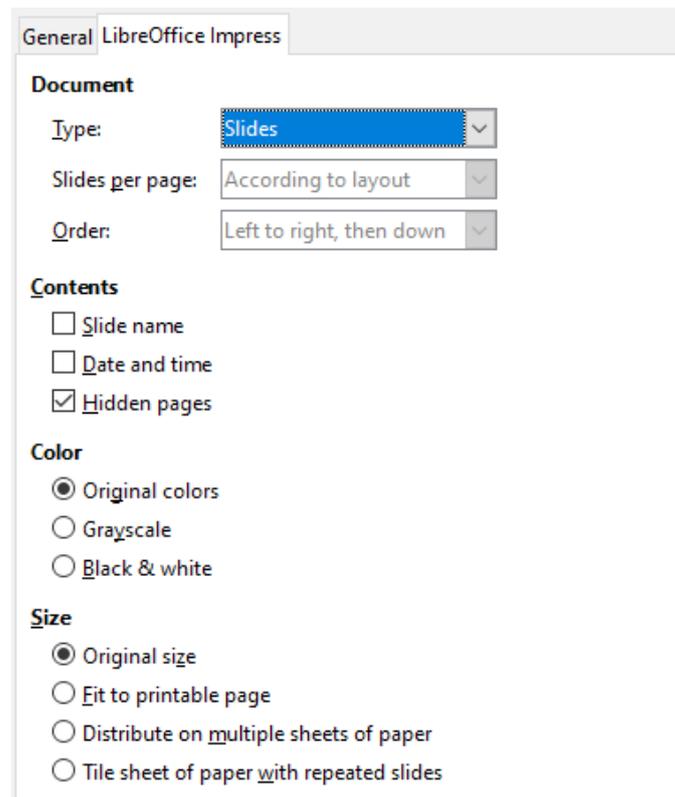
Figure 278: LibreOffice Impress tab of Print dialog

To print slides, handouts, notes, or outlines:

1) In the *Document* section, select the required option under Type (see Figure 279).

2) For Handouts, you can then choose how many slides to print per page, and the order in which they are printed.
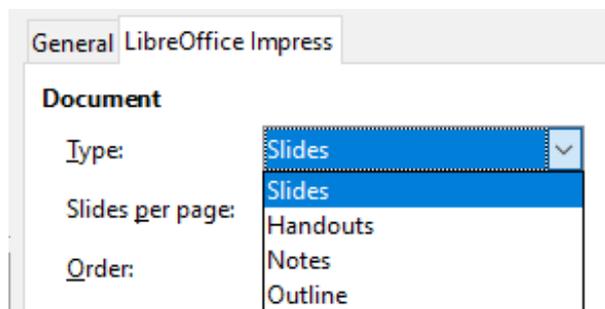
Figure 279: Handouts

Draw

On the *LibreOffice Draw* tab (Figure 280), you can choose print options as shown.
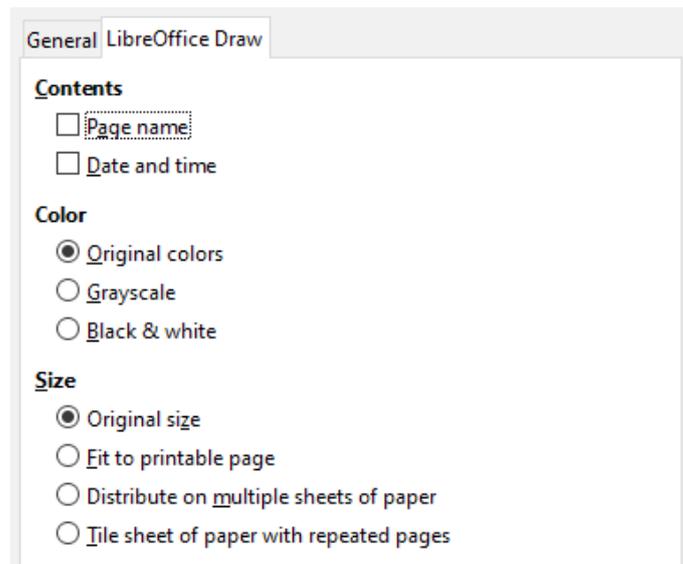
Figure 280: LibreOffice Draw tab of Print dialog

Math

On the *LibreOffice Math* tab (Figure 281), you can choose print options as shown.
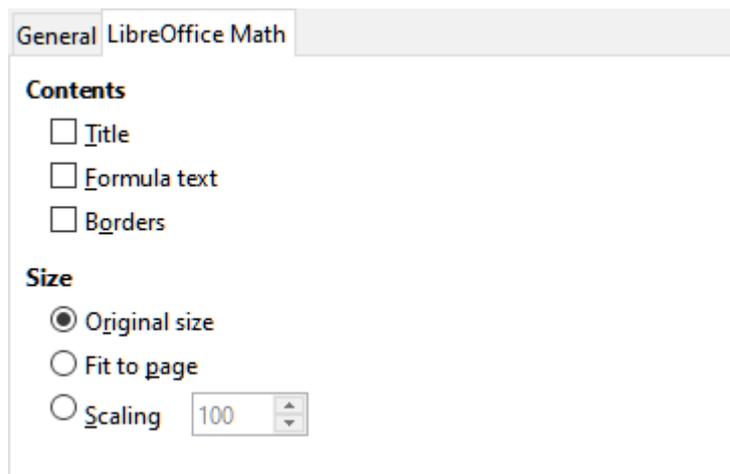
Figure 281 - LibreOffice Math tab of Print dialog

Printing a brochure

In Writer, Impress, and Draw, you can print a document with two pages on each side of a sheet of paper, arranged so that when the printed pages are folded in half, the pages are in the correct order to form a booklet or brochure.

> **Tip**
>
> Plan your document so it will look good when printed half size; choose appropriate margins, font sizes, and so on. You may need to experiment.

To print a brochure on a single-sided printer (simplex):

1) Select the **Brochure** option near the bottom of the *General* tab of the Print dialog. The preview on the left changes to show the sequence in which the pages will be printed. (See Figure 282.)
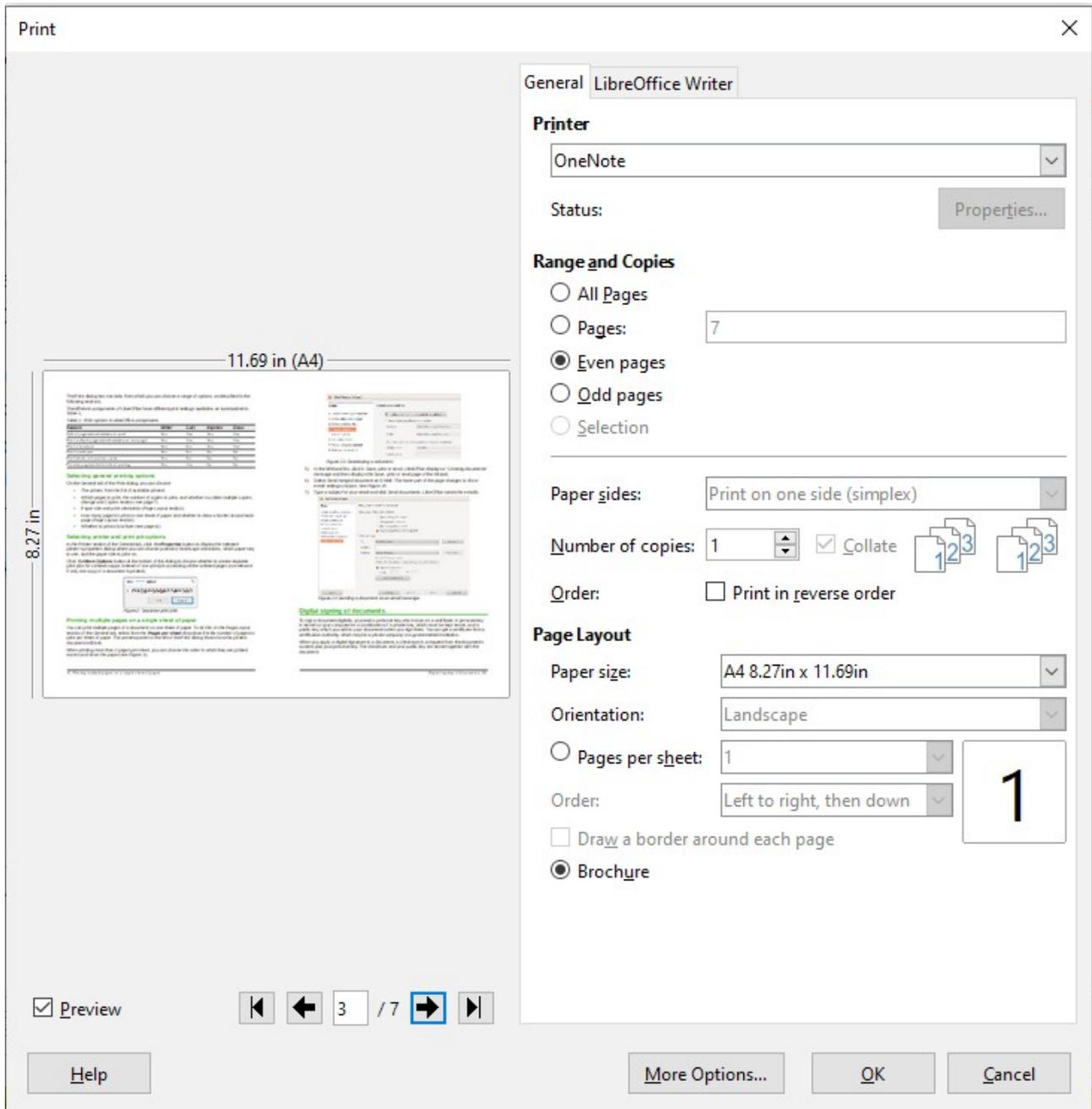
Figure 282: Settings for printing a brochure on a simplex printer

2) Depending on your language settings (**Tools > Options > Language Settings > Languages**), the Writer variant of the Print dialog may include a drop-down menu adjacent to the **Brochure** button (not shown in Figure 282). This provides *Left-to-right script* and *Right-to-left script* options. Select the required setting in this menu.

3) In the *Range and Copies* section, select **Even pages**. Click **OK** to print.

4) Take the printed pages out of the printer and put them back into the printer in the correct orientation to print on the blank side. You may need to experiment to find the correct arrangement for your printer.

5) On the Print dialog, in the *Range and Copies* section, select **Odd pages**. Click **OK**.

Printing envelopes, labels, or business cards using Writer involves two steps: setup and printing.

For details, see Chapter 14, Using Mail Merge, in the *Writer Guide*.

Previewing pages/sheets before printing

You can use the previewing options in Writer and Calc to view the document as it will be printed. Different viewing options are available.

Writer

The normal page view in Writer shows you what each page will look like when printed and you can edit the pages in that view. If you are designing a document to be printed double-sided, you may want to see what facing pages look like. Writer provides two ways to do this:

- **View Layout** (editable view): use the **Book view** button on the status bar.

- **Print Preview** (read-only view).

To use Print Preview:

1) Choose **File > Print Preview** on the Menu bar, or click the **Toggle Print Preview** button on the Standard toolbar, or press *Ctrl+Shift+O (+⌘+O for macOS)*.

   Writer now displays the Print Preview toolbar instead of the Formatting toolbar.

Figure 283: Print Preview toolbar (Writer)

2) Select the required preview icon: **Single Page**, **Two Pages**, **Multiple Pages**, or **Book Preview**.

3) To print the document from this view, click the **Print** icon to open the Print dialog. Choose the print options and click **OK** or **Print** (macOS).

Calc

To preview the sheets in Calc before printing:

1) Choose **File > Print Preview** on the Menu bar, or click the **Toggle Print Preview** button on the Standard toolbar, or press *Ctrl+Shift+O (+⌘+O for macOS)*.

   The Calc window now displays the Print Preview toolbar instead of the Formatting toolbar.

Figure 284: Print Preview toolbar (Calc)

2) To print the document from this view, click the **Print** icon to open the Print dialog.

Exporting to PDF

LibreOffice can export documents to PDF (Portable Document Format). This industry-standard file format is ideal for sending the file to someone else to view using Adobe Reader or other PDF viewers.

> ⚠️ **Warning**
>
> A document in PDF format is not protected against contents tampering or editing by default. The PDF document contents can be edited by specialized software tools, including LibreOffice Draw.

The process and dialogs are the same for Writer, Calc, Impress, and Draw, with a few minor differences mentioned in this section.

> 💡 **Tip**
>
> Unlike Save As, the Export command writes a copy of the current document in a new file with the chosen format, but keeps the current document and format open in your session.

Quick export to PDF

Click the **Export Directly as PDF** icon in the Standard toolbar to export the entire document using the PDF settings you most recently selected on the PDF Options dialog (see below). In Writer, Impress, and Draw, you can also use **File > Export As > Export Directly as PDF**. You are asked to enter the file name and location for the PDF file, but you do not get a chance to choose a page range, the image compression, or other options.

Controlling PDF content and quality

For more control over the content and quality of the resulting PDF, use **File > Export As > Export as PDF** (Writer, Impress, and Draw) or **File > Export as PDF** (Calc and Math). The PDF Options dialog opens. This dialog has six tabs (*General*, *Initial View*, *User Interface*, *Links*, *Security*, and *Digital Signatures*). Select the appropriate settings, and then click **Export**. Then you are asked to enter the location and file name of the PDF to be created, and click **Save** or **Export** (macOS) to export the file.

> 📝 **Note**
>
> You can also open the PDF Options dialog from **File > Export** (not Math). On the Export dialog, select the PDF file format, the file name and location, and click **Save** or **Export** (macOS). Select the appropriate settings and then click **Export**.

General tab of PDF Options dialog

On the *General* tab (Figure 285), you can choose which pages to include in the PDF, the type of compression to use for images (which affects the quality of images in the PDF), and other options. Figure 285 shows the Writer variant of the *General* tab – the corresponding tabs for other LibreOffice components have minor differences from this figure.
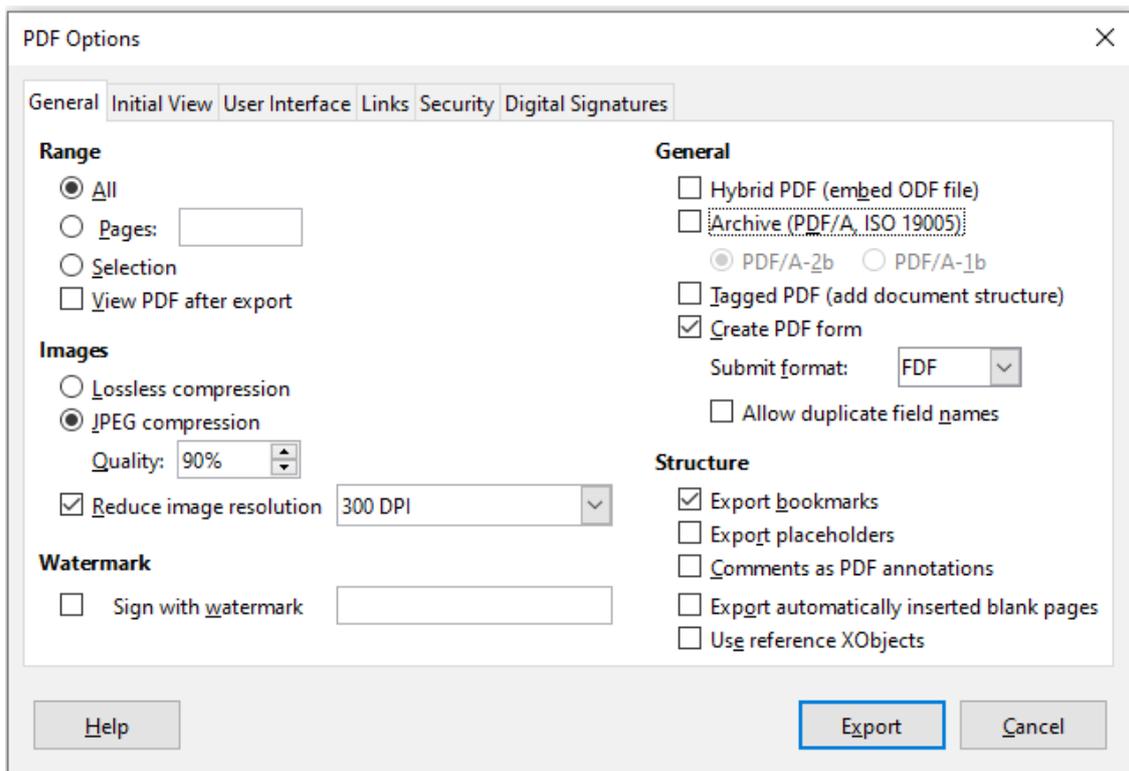
Figure 285: General tab of PDF Options dialog (Writer)

Range section
- **All:** Exports the entire document to PDF.
- **Pages:** To export a range of pages, use the format 3-6 (pages 3 to 6). To export single pages, use the format 7;9;11 (pages 7, 9 and 11). You can also export a combination of page ranges and single pages, by using a format like 3-6;8;10;12.
- **Selection:** Exports all the selected material.
- **View PDF after export:** Your default PDF viewer will open and display the newly exported PDF.

Images section
- **Lossless compression:** Images are stored without any loss of quality. Tends to make large files when used with photographs. Recommended for other kinds of images or graphics.
- **JPEG compression:** Allows for varying degrees of quality. A setting of 90% works well with photographs (small file size, little perceptible loss of quality).
- **Reduce image resolution:** Lower DPI (dots per inch) images have lower quality. For viewing on a computer screen, generally a resolution of 72dpi (for Windows) or 96dpi (GNU/Linux) is sufficient, while for printing it is generally preferable to use at least 300 or 600dpi, depending on the capability of the printer. Higher DPI settings greatly increase the size of the exported file.

Watermark section
- **Sign with watermark:** When this option is selected, a transparent overlay of the text you type in the Watermark Text box will appear on each page of the PDF.

> **Note**
>
> EPS (Encapsulated PostScript) images with embedded previews are exported only as previews. EPS images without embedded previews are exported as empty placeholders.

General section

- **Hybrid PDF (embed ODF file):** Use this setting to export the document as a PDF file containing two file formats: PDF and ODF. In PDF viewers it behaves like a normal PDF file, and it remains fully editable in LibreOffice.

- **Archive (PDF/A, ISO 19005):** PDF/A is an ISO standard for long-term preservation of documents, by embedding all the information necessary for faithful reproduction (such as fonts) while forbidding other elements (including forms, security, and encryption). PDF tags are written. If you select PDF/A, the forbidden elements are grayed-out (not available). The **PDF/A-1b** option refers to the minimum compliance level with PDF/A-1, while the **PDF/A-2b** option refers to the minimum compliance level with PDF/A-2.

- **Tagged PDF:** Tagged PDF contains information about the structure of the document's contents. This can help to display the document on devices with different screens, and when using screen reader software. Some tags that are exported are table of contents, hyperlinks, and controls. This option can increase file sizes significantly.

- **Create PDF form – Submit format:** Choose the format of submitting forms from within the PDF file. This setting overrides the control's URL property that you set in the document. There is only one common setting valid for the whole PDF document: PDF (sends the whole document), FDF (sends the control contents), HTML, and XML. Most often you will choose the PDF format.

  Allow duplicate field names: If enabled, the same field name can be used for multiple fields in the generated PDF file. With this option enabled, you can enter data in the first occurrence of the named field in the PDF document and all fields with the same name will carry your entry. If disabled, field names will be exported using generated unique names.

Structure section

- **Export bookmarks:** Exports headings in Writer documents, and page or slide names in Impress and Draw documents, as "bookmarks" (a table of contents list displayed by most PDF viewers, including Adobe Reader).

- **Export placeholders:** The PDF will include any defined placeholder fields, which can be filled in by users. This option is only available in Writer.

- **Comments as PDF annotations:** You may not want this!

- **Export automatically inserted blank pages:** If selected, automatically inserted blank pages are exported to the PDF. This is best if you are printing the PDF double-sided. For example, books usually have chapters set to always start on an odd-numbered (right-hand) page. When the previous chapter ends on an odd page, LibreOffice inserts a blank page between the two odd pages. This option controls whether to export that blank page.

- **Use reference XObjects:** If you don't know what this means, leave this box unchecked.

Initial View tab of PDF Options dialog

On the *Initial View* tab (Figure 286), you can choose how the PDF opens by default in a PDF viewer. The selections should be self-explanatory.

If you have Complex Text Layout enabled (in **Tools > Options > Language Settings > Languages**), an additional selection is available under the **Continuous facing** button: **First page is left** (normally, the first page is on the right when using the **Continuous facing** option).
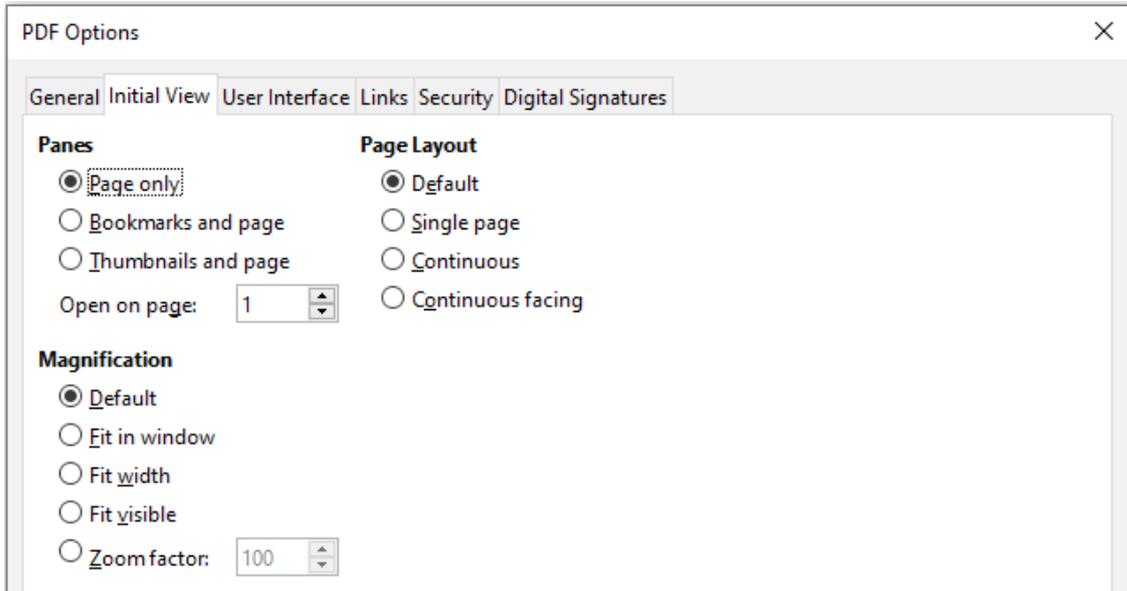
Figure 286: Initial View tab of PDF Options dialog

User Interface tab of PDF Options dialog

On the *User Interface* tab (Figure 287), you can choose more settings to control how a PDF viewer displays the file. Some of these choices are particularly useful when you are creating a PDF to be used as a presentation or a kiosk-type display.
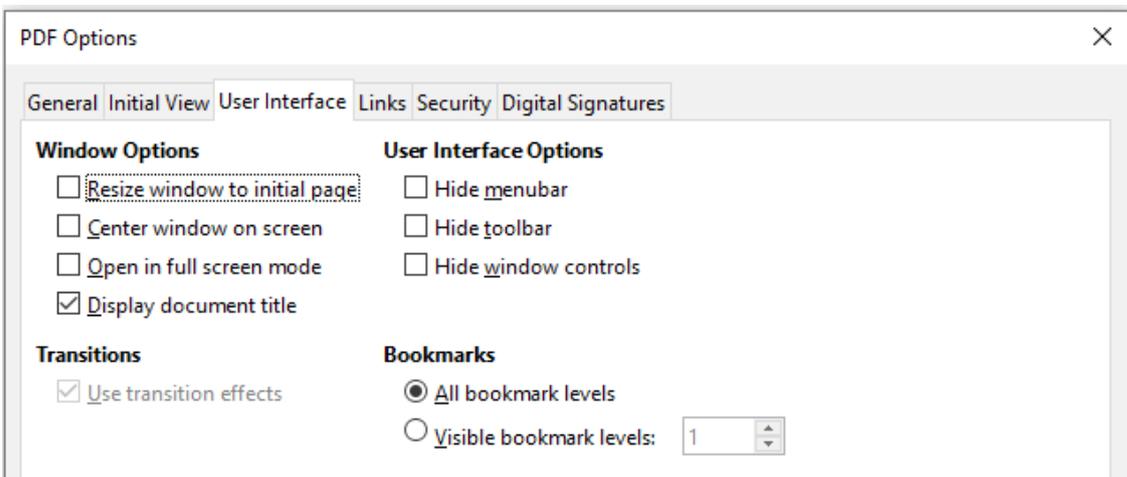
Figure 287: User Interface tab of PDF Options dialog

Window Options section

- **Resize window to initial page:** Causes the PDF viewer window to resize to fit the first page of the PDF.

- **Center window on screen:** Causes the PDF viewer window to be centered on the computer screen.

- **Open in full screen mode:** Causes the PDF viewer to open full-screen instead of in a smaller window.

- **Display document title:** Causes the PDF viewer to display the document's title in the title bar.

User Interface Options section
- **Hide menubar:** Causes the PDF viewer to hide the menu bar.

- **Hide toolbar:** Causes the PDF viewer to hide the toolbar.

- **Hide window controls:** Causes the PDF viewer to hide other window controls.

Transitions

In Impress, displays slide transition effects as their respective PDF effects.

Bookmarks

Select how many heading levels are displayed as bookmarks, if **Export bookmarks** is selected on the *General* tab.

Links tab of PDF Options dialog

On the *Links* tab (Figure 288), you can choose how links are exported to PDF.
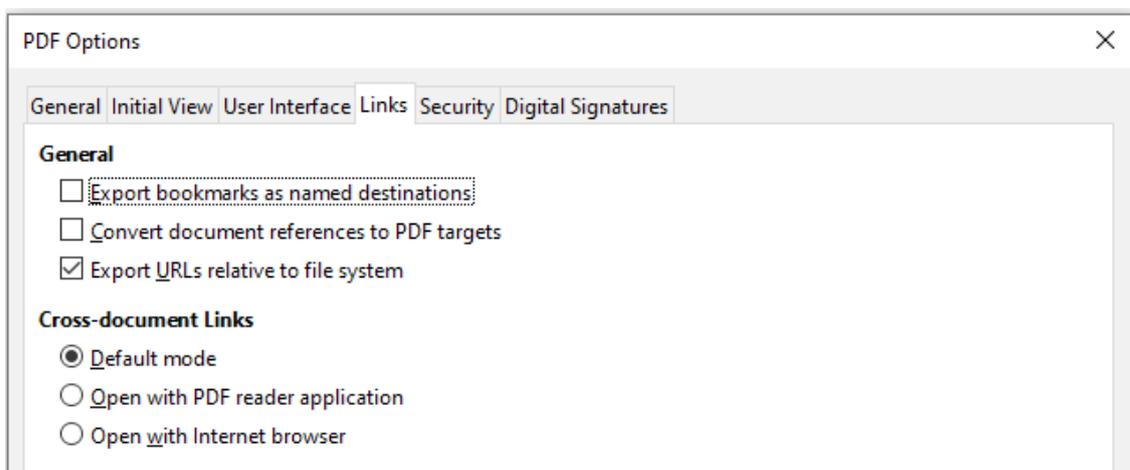
Figure 288: Links tab of PDF Options dialog

Export bookmarks as named destinations

If you have defined Writer bookmarks, Impress or Draw slide names, or Calc sheet names, this option exports them as "named destinations" to which Web pages and PDF documents can link.

Convert document references to PDF targets

If you have defined links to other documents with OpenDocument extensions (such as .odt, .ods, and .odp), this option converts the files' extensions to .pdf in the exported PDF document.

Export URLs relative to file system

If you have defined relative links in a document, this option exports those links to the PDF.

Cross-document Links

Defines the behavior of links clicked in PDF files. Select one among the following alternatives:

- **Default mode:** The PDF links will be handled as specified in your operating system.

- **Open with PDF reader application:** Use the same application used to display the PDF document to open linked PDF documents.

- **Open with Internet browser:** Use the default Internet browser to display linked PDF documents.

Security tab of PDF Options dialog

PDF export includes options to encrypt the PDF (so that it cannot be opened without a password) and apply some digital rights management (DRM) features.
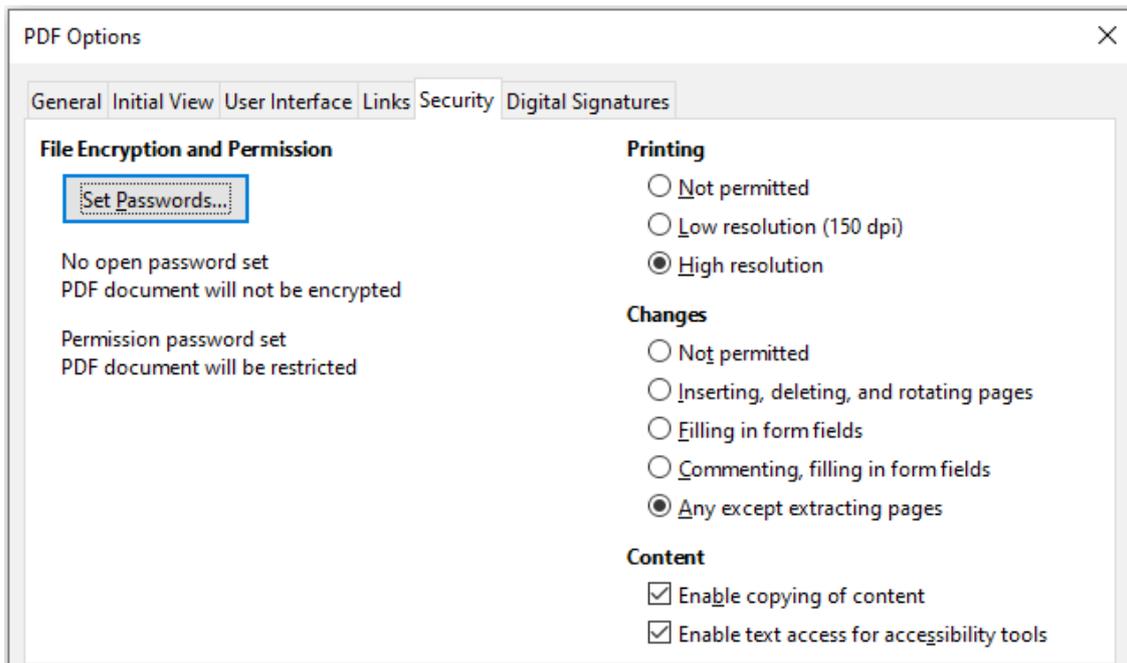
Figure 289: Security tab of PDF Options dialog

- With an open password set, the PDF can only be opened with the password. Once opened, there are no restrictions on what the user can do with the document (for example, print, copy, or change it).
- With a permissions password set, the PDF can be opened by anyone, but its permissions can be restricted. See Figure 289. After you set a password for permissions, the other choices on the Security page become available.
- With both the open password and permission password set, the PDF can only be opened with the correct password, and its permissions can be restricted.

> **Note**
>
> Permissions settings are effective only if the user's PDF viewer respects the settings.

Digital Signatures tab of PDF Options dialog

This tab contains the options related to exporting a digitally signed PDF.

Digital signatures are used to ensure that the PDF was really created by the original author (that is, you), and that the document has not been modified since it was signed.

The signed PDF export uses the keys and X.509 certificates already stored in your default key store location or on a smartcard. The key store to be used can be selected under **Tools > Options > LibreOffice > Security > Certificate** (macOS and Linux only). When using a smartcard, it must already be configured for use by your key store. This is usually done during installation of the smartcard software. Details about using these features is outside the scope of this chapter.
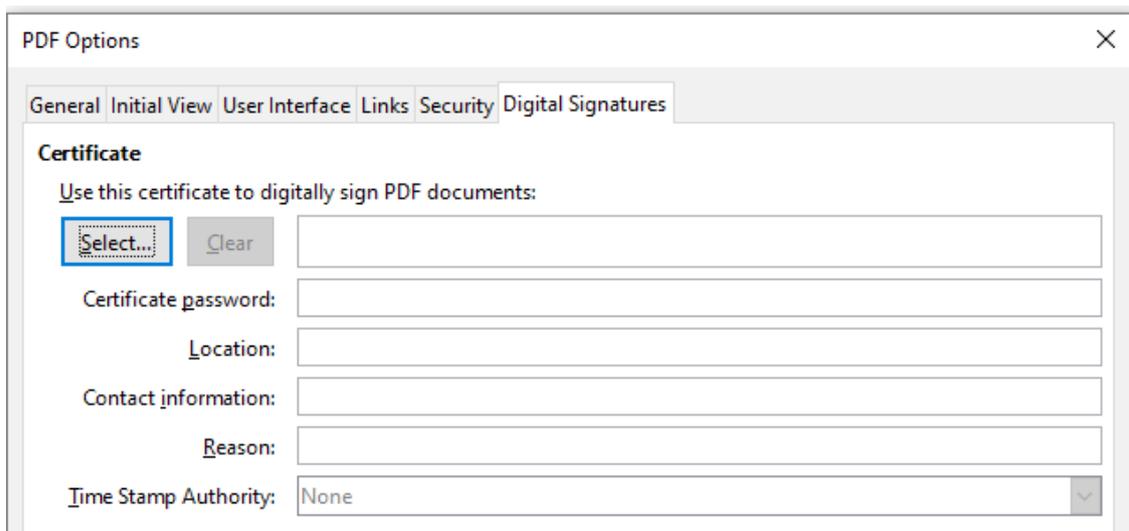
Figure 290: Digital Signatures tab of PDF Options dialog

- *Use this certificate to digitally sign PDF documents*: Click **Select** to open the Select Certificate dialog, where all certificates found in your selected key store are displayed. If the key store is protected by a password, you are prompted for it. When using a smartcard that is protected by a PIN, you are also prompted for that.

  Select the certificate to use for digitally signing the exported PDF, then click **Sign**.

  All other fields on the *Digital Signatures* tab are accessible only after a certificate has been selected.

- **Certificate password:** Enter the password used for protecting the private key associated with the selected certificate. Usually this is the key store password. If the key store password has already been entered in the Select Certificate dialog, the key store may already be unlocked and not require the password again.

  When using a smartcard, enter the PIN here. Some smartcard software will prompt you for the PIN again before signing.

- **Location, Contact information, Reason:** Optionally enter additional information about the digital signature that will be applied to the PDF. This information will be embedded in the appropriate PDF fields and will be visible to anyone viewing the PDF. Each or all of the three fields may be left blank.

- **Time Stamp Authority:** Optionally select a Time Stamping Authority (TSA) URL. During the PDF signing process, the TSA will be used to obtain a digitally signed timestamp that is then embedded in the signature. Anyone viewing the PDF can use this timestamp to verify when the document was signed.

  The list of TSA URLs that can be selected is maintained under **Tools > Options > LibreOffice > Security > TSAs**. If no TSA URL is selected (the default), the signature will not be timestamped, but will use the current time from your local computer.

Exporting to EPUB format (Writer only)

EPUB format is becoming popular since mobile devices such as smartphones, tablets, and e-readers appeared on the market. The EPUB format is implemented as an archive file consisting of HTML files carrying the content, along with images and other supporting files. Writer can export a file to EPUB.

Quick export to EPUB

Choose **File > Export As > Export Directly as EPUB** to export the entire document using the EPUB settings you most recently selected on the EPUB Export dialog (see below). You are asked to enter the file name and location for the EPUB file, but you do not get a chance to select other options.

Controlling export to EPUB

For more control over the content and quality of the resulting EPUB file, use **File > Export As > Export as EPUB**. The EPUB Export dialog opens (Figure 291).
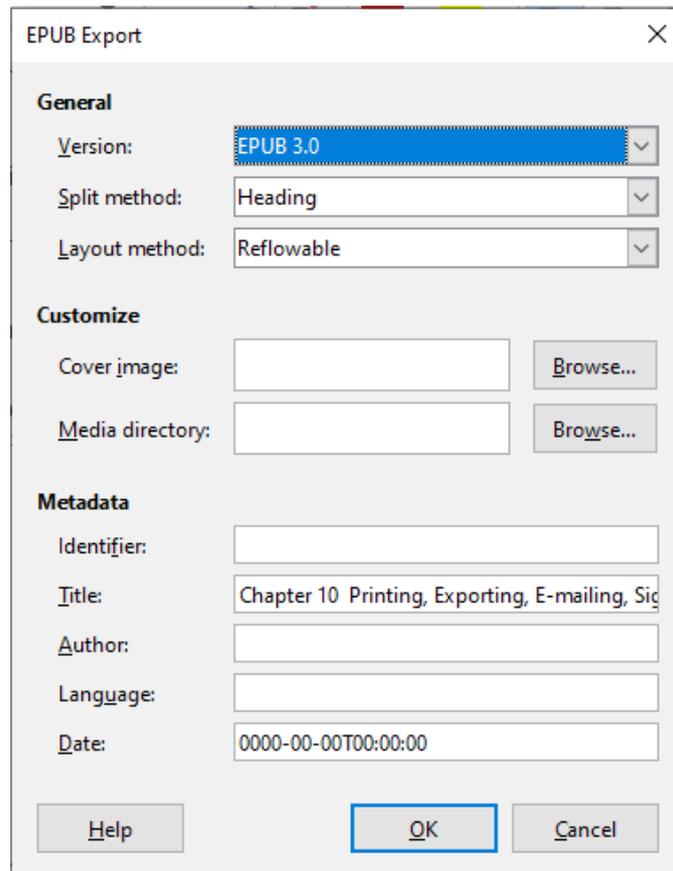
Figure 291: EPUB Export dialog

The EPUB Export dialog has the following fields:

Version
> Choose the EPUB version for the exported file. Values are EPUB 2.0 and EPUB 3.0.

Split method
> Select the method to start a new section. Choose **Heading** to start the section on a heading, according to the document's chapter numbering. Choose **Page break** to start the section on a page break.

Layout method
> Choose **Reflowable** to have the ebook display change to fit the screen size and the user's preference (so page size and header/footer content is not exported). Choose **Fixed** to have the ebook layout remain the same under all conditions.

Customize - Cover image
> The path to the image file for the cover page. If no image is specified, the EPUB file will automatically use any image with a name like cover.gif, cover.jpg, cover.png, or cover.svg. A custom cover image is embedded in the EPUB file.

Customize - Media directory
> The path to the optional directory for the cover image, metadata, and multimedia files. If you do not specify a directory, the exporter looks for custom media and custom metadata in the current document directory inside a folder with the same name as the document file name.

Metadata
> The basic information for the file that provides tags to help searches. These fields provide another chance to edit metadata that is picked up by default from **File > Properties** in Writer.

Exporting to other formats

LibreOffice uses the term "export" for some file operations involving a change of file type. If you cannot find what you want under **File > Save As**, look under **File > Export** (not available in Math) as well.

LibreOffice can export files to XHTML. In addition, Draw and Impress can export to Adobe Flash (SWF) and a range of image formats.

To export to one of these formats, choose **File > Export**. On the Export dialog, specify a file name for the exported document, then select the required format in the **Save as type** or **File format** (macOS) list and click the **Save** or **Export** (macOS) button.

Emailing documents

LibreOffice provides several ways to send documents quickly and easily as email attachments in one of three formats: OpenDocument (LibreOffice's default format), Microsoft Office formats, or PDF.

> **Note**
>
> With Linux or macOS, documents can only be sent from the LibreOffice menu if a mail program has been set up in **Tools > Options > Internet > Email**. With Windows, LibreOffice uses the email program set up as the default.

To send the current document in OpenDocument format:

1) Choose **File > Send > Email Document**. LibreOffice opens your default email program. The document is attached to a new email.

2) In your email program, enter the recipient, subject, and any text you want to add, then send the email.

File > Send > Email as OpenDocument [Text, **Spreadsheet]** has the same effect in Writer or Calc.

If you choose **Email as Microsoft [Word, Excel]** in Writer or Calc, LibreOffice first creates a file in one of those formats and then opens your email program with the file attached to a new email.

Similarly, if you choose **Email as PDF**, LibreOffice first creates a PDF using your default PDF settings (as when using the **Export Directly as PDF** function) and then opens your email program with the PDF file attached to a new email.

Emailing a document to several recipients

To email a document to several recipients, you can use the features in your email program or you can use LibreOffice Writer's mail merge facilities to create the document and send it. See Chapter 14, Mail Merge, in the *Writer Guide* for details.

Digital signing of documents

To sign a document digitally, you need a personal key, also known as a certificate. A personal key is stored on your computer as a combination of a private key, which must be kept secret, and a public key, which you add to your documents when you sign them. You can get a certificate from a certification authority, which may be a private company or a governmental institution.

When you apply a digital signature to a document, a checksum is computed from the document's content plus your personal key. The checksum and your public key are stored together with the document.

When someone later opens the document on any computer with a recent version of LibreOffice, the program will compute the checksum again and compare it with the stored checksum. If both are the same, the program will signal that you see the original, unchanged document. In addition, the program can show you the public key information from the certificate. You can compare the public key with the public key that is published on the web site of the certificate authority. Whenever someone changes something in the document, this change breaks the digital signature.

For a more detailed description of how to get and manage a certificate, and signature validation, see "Applying Digital Signatures" in the LibreOffice Help.

Applying a digital signature

The following procedure is an example of how to digitally sign a document. The actual procedure depends on how your computer is set up and the computer operating system.

1) Choose **File > Digital Signatures > Digital Signatures**.

   – If you have set LibreOffice to warn you when the document contains comments (see "Removing personal data" on page 333), you may see a message box asking whether you want to want to continue signing the document. Click **Yes** to continue.

   – If you have not saved the document since the last change, a message box appears. Click **Yes** to save the file.

2) The Digital Signatures dialog opens. Click **Sign Document** to add a public key to the document.

3) In the Select Certificate dialog, select your certificate and click **Sign** to return to the Digital Signatures dialog.

   The certificate used is displayed in the dialog with an icon next to its name. This icon indicates the status of the digital signature.

4) Click **Close** to apply the digital signature.

A signed document shows an icon in the status bar. You can double-click the icon to view the certificate. More than one signature can be added to a document.
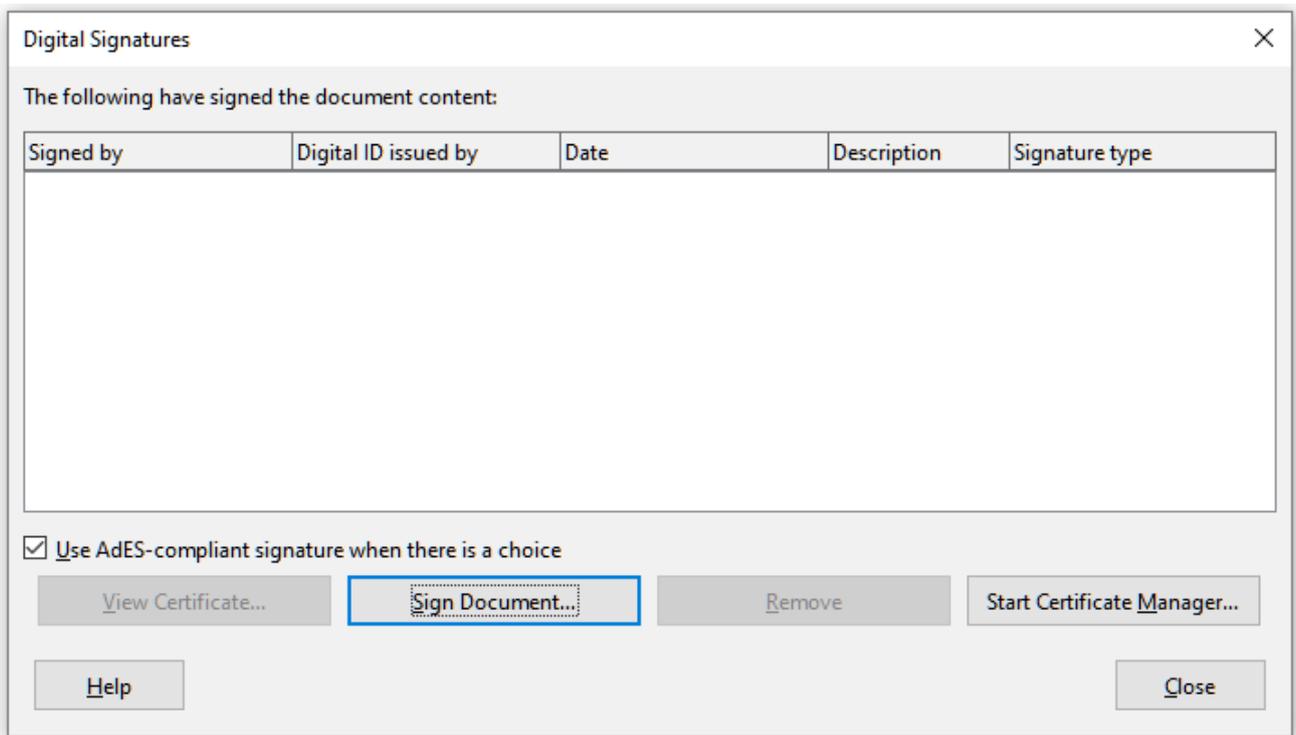
Figure 292: Signatures of the document

When you click on the **Sign Document** button, the dialog (Figure 293) for certificate selection asks for an optional description.

Changing the value of an existing description invalidates the signature.
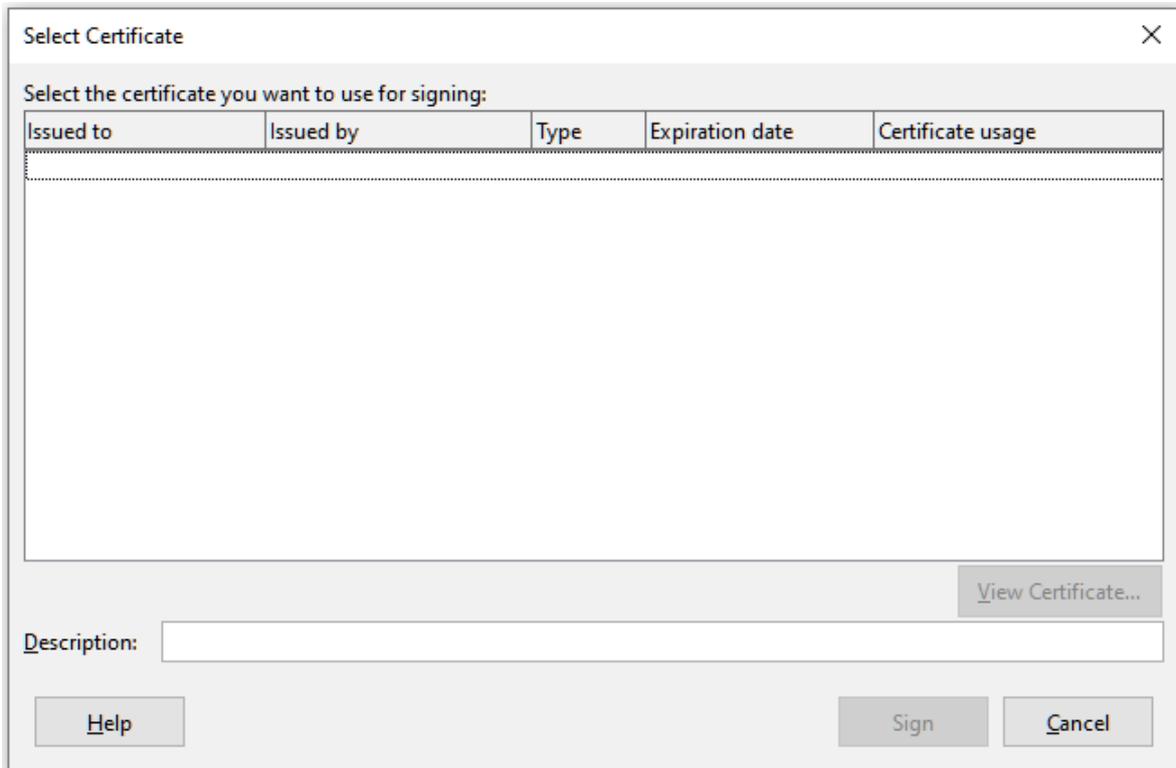
Figure 293: Signatures can have a description

Signing multiple times with same signature

LibreOffice provides a field for a signature description, so multiple signatures from the same author are allowed, because each signature can have a different meaning.

When you select **File > Digital Signatures > Digital Signatures**, the dialog (Figure 292) lists existing signatures together with their description (if they have any).

Including a signature line (Writer and Calc)

You can generate a graphic box representing a signature line using **Insert > Signature Line** (see Figure 294), and you can optionally sign the signature line using a digital certificate.
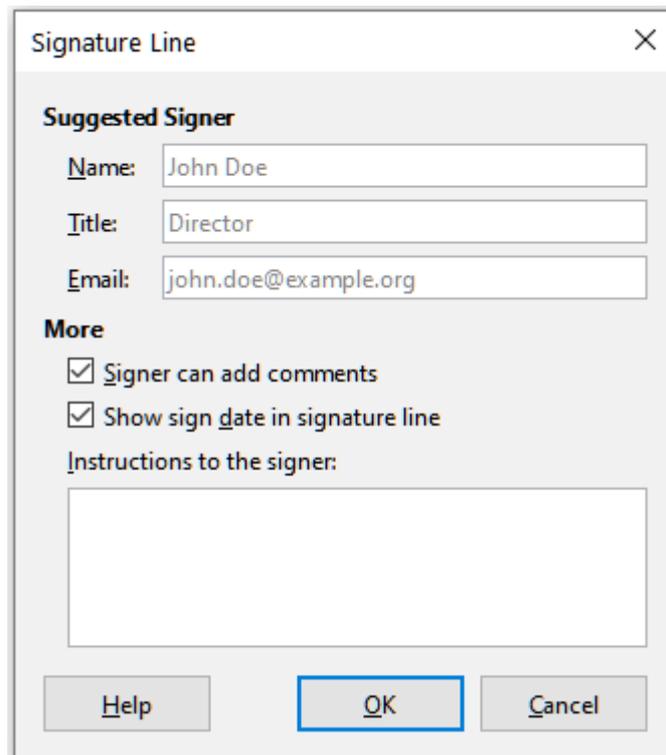
Figure 294: Creating a signature line for a document

Figure 295: Signature line

Removing personal data

You may wish to ensure that personal data, versions, notes, hidden information, or recorded changes are removed from files before you send them to other people or create PDFs from them.

In **Tools > Options > LibreOffice > Security > Options**, you can set LibreOffice to warn you when files contain certain information and automatically remove personal information on saving.

To remove personal and some other data from a file, go to **File > Properties**. On the *General* tab, uncheck **Apply user data** and then click the **Reset Properties** button. This removes any names in the created and modified fields, deletes the modification and printing dates, and resets the editing time to zero, the creation date to the current date and time, and the version number to 1.

To remove version information, either go to **File > Versions**, select the versions from the list and click **Delete**; or use **File > Save As** and save the file with a different name.

Redaction (Writer, Calc, and Impress)

You can redact documents to remove or hide sensitive information, to allow the selective disclosure of information in a document while keeping other parts of the document secret. For example, when a document is subpoenaed in a court case, information not specifically relevant to the case at hand is often redacted.

To redact a document:

1) Open the document in LibreOffice.

2) Click **Tools > Redact** on the Menu bar, and wait for the document to be prepared for redaction and transferred to Draw. The Redaction toolbar (Figure 296) opens.
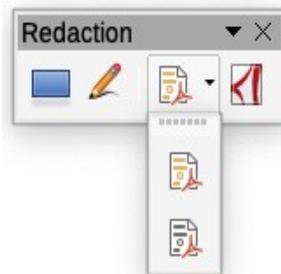
Figure 296: Redaction toolbar

3) Do the redaction by using the **Rectangle Redaction** and **Freeform Redaction** tools on the Redaction toolbar. The shapes will be transparent and in gray so you can see what you are redacting.

4) Optionally use the **Export Directly as PDF** tool to make an in-redaction copy of the document in PDF to use as a verbatim copy for review. The redacted items will be in transparent grey.

5) To finalize the redaction, select the desired option (black or white) on the **Redacted Export** tool. The transparent grey shapes are converted to opaque black or white shapes and the document is exported as a pixellized PDF. There will be no selectable text in it, and the redacted content will be non-existent.

Auto-redaction

To partially automate the redaction process, you can define certain words (such as names) to be redacted wherever they are found in the document. To do this, choose **Tools > Auto-Redact** on the Menu bar to open the Automatic Redaction dialog (Figure 297). Here you can load a list of terms (targets), add targets, delete targets, edit targets, and save a list of targets.
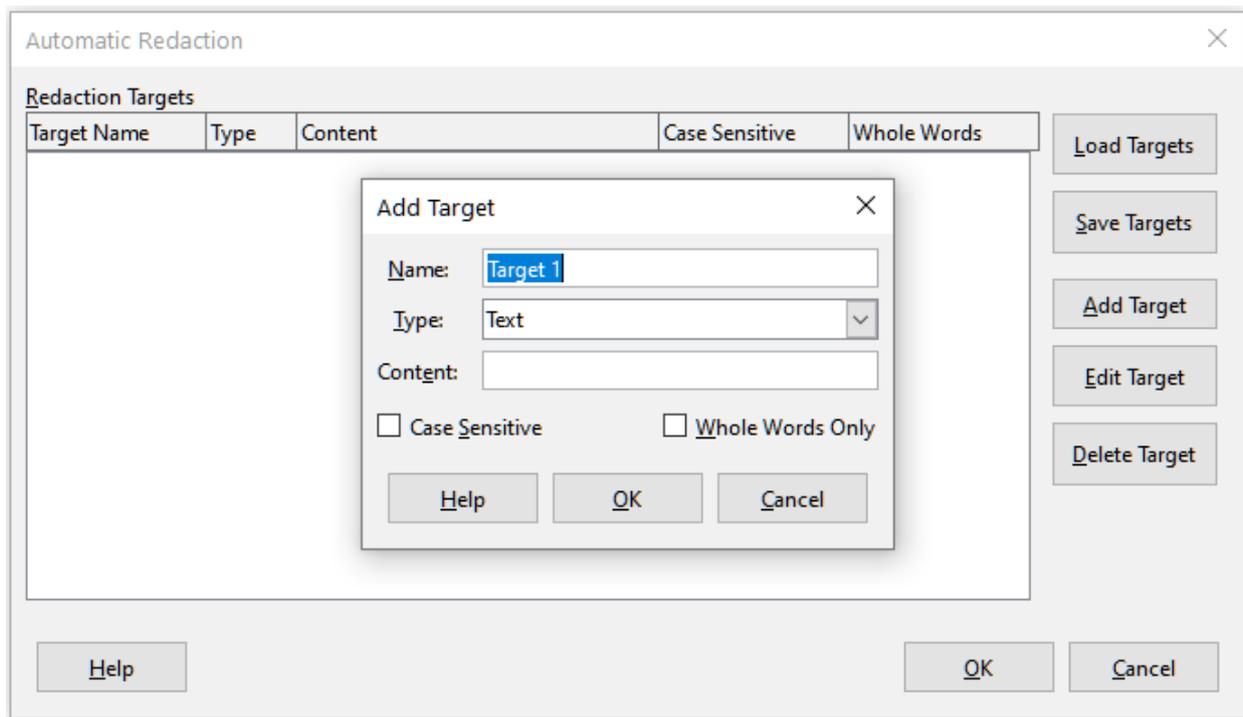
Figure 297: Automatic Redaction dialog

Getting Started Guide

Chapter 11
Images and Graphics

Pictures, Drawing Tools, Gallery, Fontwork

Introduction

You can add graphic and image files, including photos, drawings, and scanned images, to LibreOffice documents. LibreOffice can import various vector (line drawing) and raster (bitmap) file formats. The most commonly used graphic formats are GIF, JPG, PNG, and BMP. See Appendix B for a full list of the graphic formats LibreOffice can import.

Images in LibreOffice are of these basic types:

- Image files, such as photos, drawings, PDF documents, and scanned images
- Diagrams created using LibreOffice's drawing tools
- Artwork created using clip art or Fontwork
- Charts created using LibreOffice's Calc component

This chapter covers images, diagrams, and Fontwork.

More detailed descriptions on working with drawing tools can be found in the *Draw Guide* and *Impress Guide*. Instructions on how to create charts are given in the *Calc Guide*.

Creating and editing images

You might create images (also called 'pictures' in LibreOffice) using a graphics program, scan them, or download them from the Internet (make sure you have permission to use them), or use photos taken with a digital camera. LibreOffice can import various vector (line drawing) images, and can rotate and flip such images. LibreOffice also supports raster (bitmap) file formats, the most common of which are GIF, JPG, PNG, and BMP. It can also import SmartArt images from Microsoft Office files.

To edit photos and other bitmap images, use a bitmap editor. To edit line drawings, use a vector drawing program. You do not need to buy expensive programs. For many graphics, LibreOffice Draw is sufficient. Open-source (and usually no-cost) tools such as GIMP (bitmap editor) and Inkscape (vector drawing program) are excellent. These and many other programs work on Windows, macOS, and Linux.

Adding images to a document

Images can be added to a document in several ways: by inserting an image file, directly from a graphics program or a scanner, by dragging them from the clip art internal gallery, or by copying and pasting from a source being viewed on your computer.

Inserting an image file

When the image is in a file stored on the computer, you can insert it into a LibreOffice document using one of the following methods:

Drag and drop

1) Open a file browser window and locate the image you want to insert.
2) Drag the image into the LibreOffice document and drop it where you want it to appear. A faint vertical line marks where the image will be dropped.

This method embeds (saves a copy of) the image file in the document. To link the file instead of embedding it, hold down the *Ctrl+Shift* keys while dragging the image.

Insert Image dialog

1) Click in the LibreOffice document where you want the image to appear.

2) Choose **Insert > Image** from the Menu bar or click the **Insert Image** icon in the Standard toolbar.

3) On the Insert Image dialog, navigate to the file to be inserted, and select it.

4) At the bottom of the dialog (Figure 298) is a **Link** option. See page 339 for the use of **Link**.

5) Click **Open**.

> ### Note
>
> If you choose the **Link** option, a message box appears when you click **Open**. It asks if you want to embed the graphic instead. Choose **Keep Link** if you want the link, or **Embed Graphic** if you do not. To prevent this message from appearing again, deselect the option **Ask when linking a graphic** at the bottom of the message.
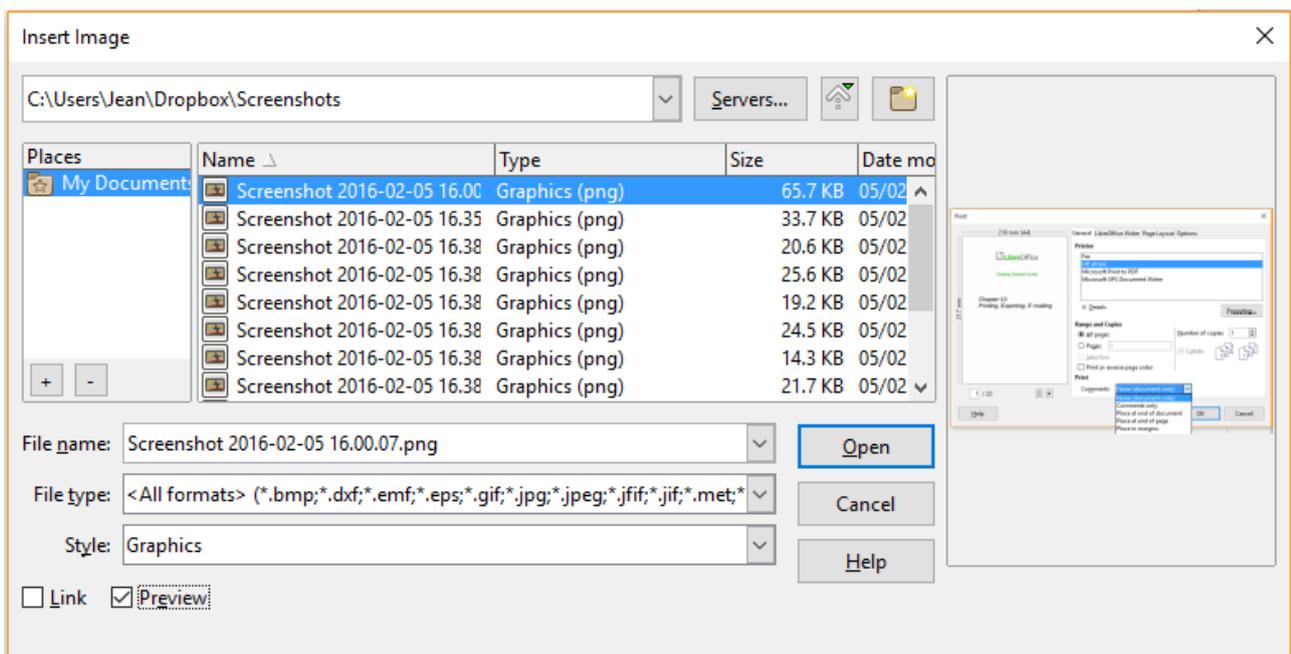
Figure 298: Insert Image dialog

Copy and paste

Using the clipboard, you can copy images into a LibreOffice document from another LibreOffice document and from other programs. To do this:

1) Open both the source document and the target document.

2) In the source document, select the image to be copied.

3) Depending on the program used to open the source document, perform the interactions necessary to copy the image to the clipboard.

4) Switch to the target document.

5) Click to place the cursor where the image is to be inserted.

6) Press *Ctrl+V,* or right-click and select **Paste** from the context menu, or click the **Paste** icon on the Standard toolbar, to insert the image.

> ### Caution
>
> If the application from which the image was copied is closed before the image is pasted into the target, the image stored in the clipboard could be lost.

Linking an image file

If the **Link** option in the Insert Image dialog is selected, LibreOffice creates a link to the file containing the image instead of saving a copy of the image in the document. The result is that the image is displayed in the document, but when the document is saved, it contains only a reference to the image file, not the image itself. The document and the image remain as two separate files, and they are merged together only when you open the document again.

Linking an image has two advantages and one disadvantage:

- Advantage – You can modify the image file separately without changing the document because the link to the file remains valid, and the modified image will appear when you next open the document. This can be a big advantage if you (or someone else, perhaps a graphic artist) is updating images.

- Advantage – Linking can reduce the size of the document when it is saved, because the image file itself is not included. File size is usually not a problem on a modern computer with a reasonable amount of memory, unless the document includes many large image files; LibreOffice can handle quite large files.

- Disadvantage – If you send the document to someone else, or move it to a different computer, you must also send the image files, or the receiver will not be able to see the linked images. You need to keep track of the location of the images and make sure the recipient knows where to put them on another machine, so that the document can find them. For example, you might keep images in a subfolder named Images (under the folder containing the document); the recipient of the file needs to put the images in a subfolder with the same name and in the same place relative to the document.

> **Note**
>
> When inserting the same image several times in the document, LibreOffice embeds only one copy of the image file.

Embedding linked images

If you originally linked the images, you can easily embed one or more of them later if you wish.

1) Open the document in LibreOffice and choose **Edit > Links to External Files**.
2) In the Edit Links dialog (Figure 299), select the files you want to change from linked to embedded.
3) Click the **Break Link** button.
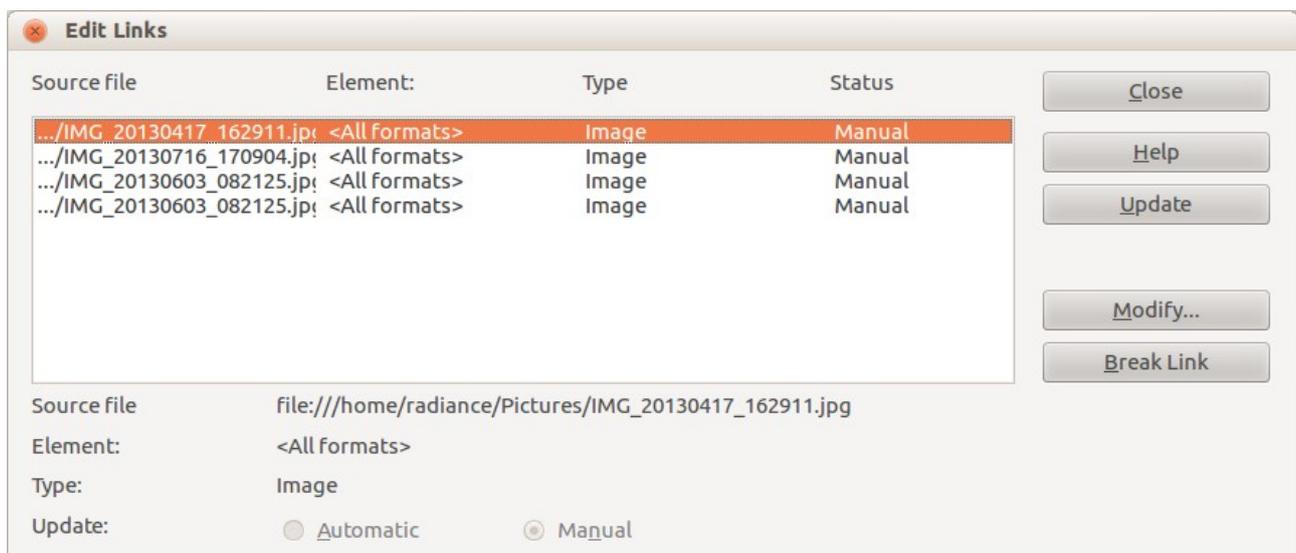
Figure 299: The Edit Links dialog

Inserting an image using a scanner

If a scanner is connected to your computer, LibreOffice can call the scanning application and insert the scanned item into the LibreOffice document as an image. To start this procedure, choose **Insert > Media > Scan > Select Source** on the Menu bar. Then place the cursor where you want the graphic to be inserted, and choose **Insert > Media > Scan > Request**.

Although this practice is quick and easy, it is unlikely to result in a high-quality image of the correct size. You may get better results by scanning material into a graphics program and cleaning it up there before inserting the resulting image into LibreOffice.

Inserting an image from the Gallery

The Gallery (Figure 300) provides a convenient way to group reusable objects such as graphics and sounds that you can insert into your documents. The Gallery is available in the Writer, Calc, Impress, and Draw components of LibreOffice. See "Managing the LibreOffice Gallery" on page 344. You can copy or link an object from the Gallery into a document.
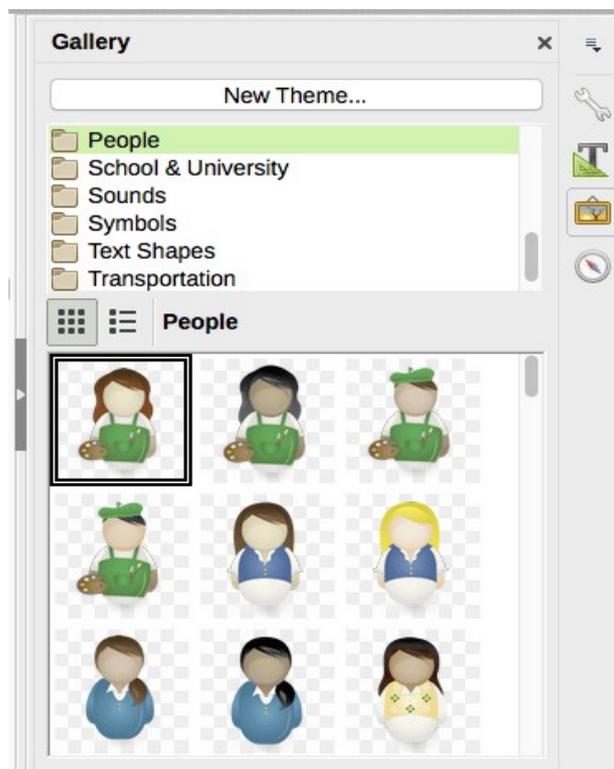
Figure 300: The Gallery in the Sidebar

To insert an object:

1) Click the **Gallery** icon on the Sidebar.
2) Select a theme from the list provided.
3) Select an object with a single click.
4) Drag and drop the image into the document, or right-click on the object and choose **Insert**.

To insert an object as a link, hold down the *Shift* and *Ctrl* keys and drag and drop the object into the document.

Inserting an image as a background

To insert an image as the background to a Writer page, paragraph, cell, or other object, right-click the image in the Gallery and choose either **Insert as Background > Page** or **Insert as Background > Paragraph** as required.

Modifying, handling, and positioning images

LibreOffice provides many tools for cropping, resizing, modifying, filtering, and positioning images; wrapping text around images; and using images as backgrounds and watermarks. These tools are described in relevant chapters of the other guides. Some sophisticated adjustments are best done in an image manipulation program and the results brought into LibreOffice, rather than using LibreOffice's built-in tools.

Using the Image toolbar

When you insert an image or select one already present in the document, the Image toolbar appears. Two other toolbars can be opened from this one: the Image Filter toolbar, which can be torn off and placed elsewhere on the window, and the Color toolbar, which opens as a separate floating toolbar. From these three toolbars, you can apply small corrections to the image or obtain special effects: transparency, color adjustment, flipping and rotating, and applying special-effects filters. For more information, see the *Writer Guide*.

Cropping images

When you are only interested in a section of the image for the purpose of your document, you may wish to crop (cut off) parts of it. LibreOffice provides two ways to crop an image: the Crop Image tool and the *Crop* tab of the Image dialog (accessed by right-clicking on the image in Writer and selecting the Properties option in the context menu). The Crop Image tool provides a quick and easy way to crop an image; but for more control, use the Image dialog.

> **Note**
>
> If you crop an image in LibreOffice, the image itself is not changed. LibreOffice hides, not cuts off, part of the image. If you export the document to HTML, the original image is exported, not the cropped image. For export, crop images in an external editor.

Resizing an image

To fit the image into your document, you may need to resize it. A quick and easy way to resize is by dragging the image's sizing handles:

1) Click the image, if necessary, to show the green sizing handles.
2) Position the pointer over one of the sizing handles. The pointer changes shape, giving a graphical representation of the direction of the resizing.
3) Click and drag to resize the image.

> **Tip**
>
> The corner handles resize both the width and the height of the image simultaneously, while the other four handles resize only one dimension at a time. To retain the original proportions of the image, hold down the *Shift* key while dragging one of these handles.

For more accurate resizing of images, use the *Type* tab of the Image dialog.

Rotating or flipping an image

To quickly flip an image vertically or horizontally, or rotate it, right-click the image and select **Rotate or Flip** in the context menu, then choose the desired option.

Writer provides more rotation options than the other LibreOffice components – see the *Writer Guide* for more information.

Other settings

The Image dialog has ten tabs:

- **Type:** define the size and anchor of the image and its position on the page.
- **Options**: give the image a descriptive name, define the alternative text to be displayed when the mouse hovers over the image, and protect some of the image settings from changes.
- **Wrap:** choose how text wraps around the image, and the spacing between the image and the text.
- **Hyperlink**: associate a hyperlink to the image, or create an image map.
- **Image**: flip or rotate the image, and display the original location of the file in case the image is linked rather than embedded.
- **Crop:** cut off portions of the image, scale it and set its size.
- **Borders**: create borders around the image and add a shadow.
- **Area**: change the background (color, bitmap, gradient, pattern, or hatching) of the image. This setting produces the desired results only for images with a transparent color.
- **Transparency**: set the transparency and gradient options for the image.
- **Macro**: associate a macro to the image. You can choose among the predefined macros or write your own.

Saving modified images

In previous versions of LibreOffice, if you saved an embedded image (by right-clicking and choosing **Save** in the context menu), the saved image was the original one; modifications like rotations, cropping, and color effects were not included in the saved image.

Starting from LibreOffice 6, you can choose whether to save the original image or the modified image through a confirmation dialog that pops up when you choose **Save**.

Exporting images

If you need to make complex adjustments to the image, or want to save the image for use in another document, you can export the image directly from your document. Right-click on the image to select it and open the context menu. Then choose **Save** to open the Image Export dialog. Depending on the original format of the image, LibreOffice will let you save the picture in many different formats. Give a name to the image, select the desired image format in the file type filter list, and click **Save**. Before the image is finally saved another dialog (not shown) opens, where you can choose various image size and format options. The content of this dialog depends on the output file type selected.

Compressing images

If you insert a large image in your document and resize it to fit into the layout of the page, the complete full size original image is stored in the document file to preserve its content, resulting in a large document file to store or send by mail.

If you can accept some loss of quality of the image rendering or want to resize it, you can compress or resize the image object to reduce its data volume while preserving its display in the page layout.

Right-click to select the image and open the context menu. Then choose **Compress** to open the Compress Image dialog (Figure 301). Note that the **Calculate New Size** button updates the image information on the dialog on each parameter set you change. Click **OK** to apply the compression

settings. If the resulting image is not acceptable, press *Ctrl+Z* to undo and choose another compression setting. For more information, see the Help.
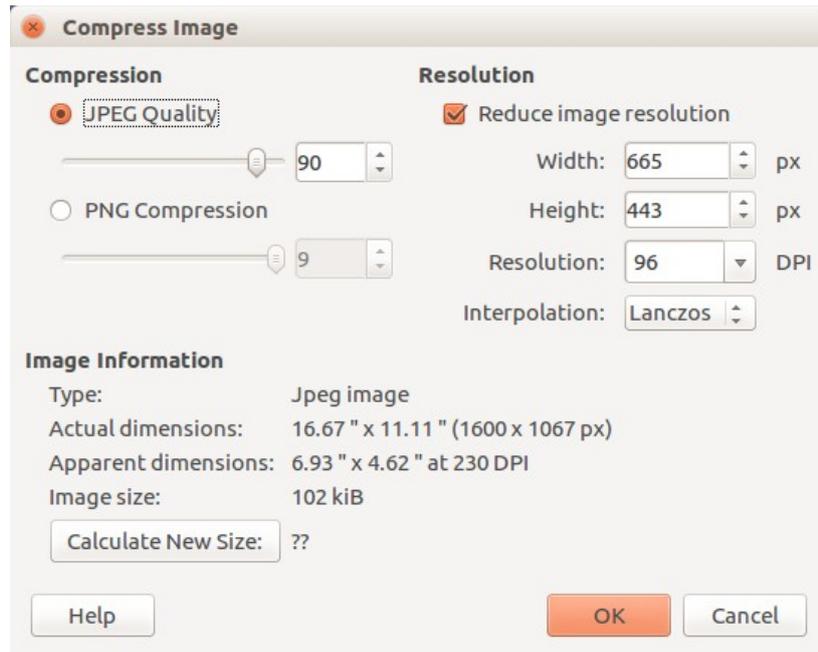
Figure 301: The Compress Image dialog

Positioning images

When you add an image to a text document, you need to choose how to position it with respect to the text and other images. Positioning is controlled by four settings:

- **Arrangement** refers to the placement of an image on an imaginary vertical axis. Arrangement controls how images are stacked upon each other or relative to the text.
- **Alignment** refers to the vertical or horizontal placement of an image in relation to the chosen anchor point.
- **Anchoring** refers to the reference point for the images. This point could be the page, or frame where the object is, a paragraph, or even a character. An image always has an anchor point.
- **Text wrapping** refers to the relation of images to the surrounding text, which may wrap around the graphic on one or both sides, be overprinted behind or in front of the graphic, or treat the graphic as a separate paragraph or character.

The settings can be accessed in a number of ways, depending on the nature of the images:

- From the **Format** menu: **Anchor**, **Wrap**, and **Arrange** (both for images and drawing objects).
- From the context menu displayed when you right-click the graphic; this menu also includes an **Align** option.
- For images, from the *Type* and *Wrap* tabs of the Image dialog. Note that you cannot control the arrangement using the dialog.
- For drawing objects, from the *Position and Size* tab of the Position and Size dialog.
- For an embedded object (such as a Calc spreadsheet or Draw document), from the OLE-Object toolbar.

For details on all of these settings, see Chapter 11, Images and Graphics, in the *Writer Guide*.

Adding captions to images

You can add captions to Writer images in three ways: automatically, by using the Caption dialog, or manually. See the *Writer Guide* for details.

Managing the LibreOffice Gallery

Graphics in the Gallery are grouped by themes, such as Arrows, Diagrams, and People. You can create other groups or themes and add your own pictures or find extensions containing more graphics. Click on a theme to see its contents displayed in the Gallery window.

You can display the Gallery in Icon View (Figure 300) or Detailed View (Figure 302), and you can hide or show the Gallery by clicking on the Sidebar's **Hide** button.
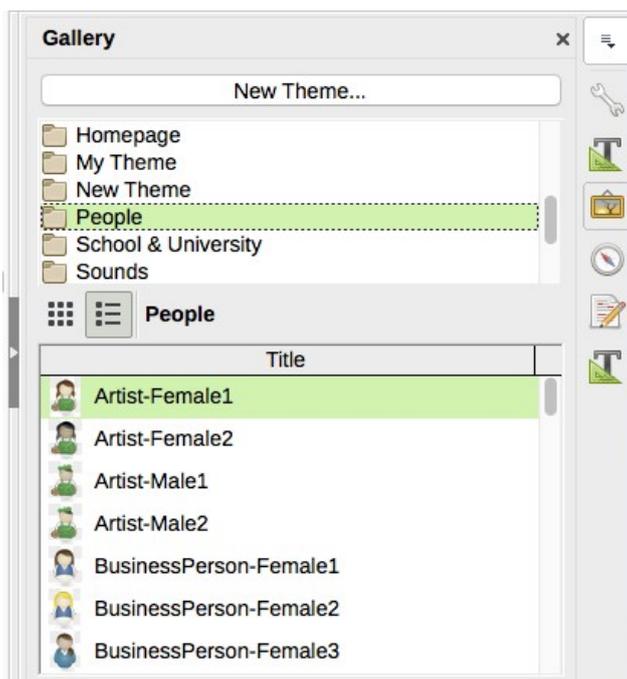
Figure 302: Gallery in Detailed View

> **Note**
>
> The default themes supplied with LibreOffice can not be customized, although new themes can be added; see "Adding a new theme to the Gallery" on page 345. The locked themes are easily recognizable by right-clicking on them; the only available option in the context menu is **Properties**.

Adding objects to the Gallery

You may wish to add to a My Theme folder in the Gallery any images that you use frequently, for example, a company logo. You can then easily insert these graphics into a document later.

1) Right-click on the My Theme folder and select **Properties** from the context menu.
2) In the theme's Properties dialog, click the *Files* tab (Figure 303).
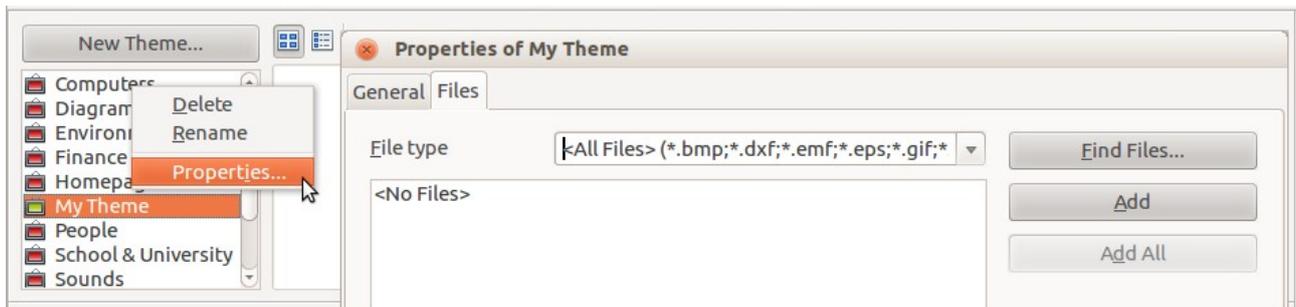
Figure 303: Gallery Properties dialog

To add several files at once:

1) In the Properties dialog, click the **Find Files** button.

2) The Select Path dialog (not shown) opens. You can enter the path for the file's directory in the path text box, or you can navigate to locate the file's directory.

3) Click the **Select Folder** button to start the search. A list of graphic files is then displayed in the Properties dialog. You can use the file type drop-down list to limit the files displayed.

4) To add all of the files shown in the list, click **Add All**. Otherwise, select the files to add and then click **Add** (hold down either the *Shift* key or the *Ctrl* key while clicking on the files).

To add a single file:

1) In the Properties dialog, click **Add** to open the Gallery dialog.

2) Use the navigation controls to locate the image to add to the theme. Select it and then click **Open** to add it to the theme.

3) Click **OK** on the Properties dialog to close it.

Adding a new theme to the Gallery

To add a new theme to the Gallery:

1) Click the **New Theme** button above the list of themes (Figure 302).

2) In the Properties of New Theme dialog, click the *General* tab and type a name for the new theme.

3) Click the *Files* tab and add images to the theme, as described earlier.

Deleting images and themes from the Gallery

To delete an image from a theme, right-click on the name of the image file or its thumbnail in the Gallery, then click **Delete** in the context menu. A message appears, asking if you want to delete this object. Click **Yes**.

> **Note**
>
> Deleting the name of a file from the list in the Gallery does not delete the file from the hard disk or other location.

To delete a theme from the Gallery, select it from the list of themes, right-click, then click **Delete** in the context menu.

Location of the Gallery and the objects in it

Graphics and other objects shown in the Gallery can be located anywhere on your computer's hard disk, on a network drive, or other removable media. When you add graphics to the Gallery, the files are not moved or copied; the location of each new object is simply added as a reference.

In a workgroup, you may have access to a shared Gallery (where you cannot change the contents unless authorized to do so) and a user Gallery, where you can add, change, or delete objects.

The location of the user Gallery is specified in **Tools > Options > LibreOffice > Paths**. You can change this location, and you can copy your gallery files (SDV) to other computers.

Gallery contents provided with LibreOffice are stored in a different location. You cannot change this location.

> **Note**
>
> Gallery themes can be packed for distribution through the LibreOffice extensions framework. In that case, the location of the graphic files is determined by the extension settings. To get more gallery themes, visit the LibreOffice extensions website at https://extensions.libreoffice.org.

Creating an image map

An image map defines areas of an image (called hotspots) with hyperlinks to web addresses, other files on the computer, or parts of the same document. Hotspots are the graphic equivalent of text hyperlinks (described in Chapter 12, Creating HTML Files). Clicking on a hotspot causes LibreOffice to open the linked page in the appropriate program (for example, the default browser for an HTML page; LibreOffice Calc for an ODS file; a PDF viewer for a PDF file). You can create hotspots of various shapes and include several hotspots in the same image.

To use the image map editor:

1) In the LibreOffice document, click on the picture in which you want to create the hotspots.
2) Choose **Tools > ImageMap** on the Menu bar. The ImageMap Editor dialog opens. The main part of the dialog shows the image on which the hotspots are defined.
3) Use the tools and fields in the dialog to define the hotspots and links necessary. A hotspot is identified by a line indicating its shape. The information needed for the hotspot includes the address pointed to by the hyperlink and the text you want to be displayed when the mouse pointer is moved over the hotspot.
4) Click the **Apply** icon to apply the settings.
5) When done, click the **Save** icon to save the image map to a file, then close the dialog.

For details, see Chapter 11, Images and Graphics, in the *Writer Guide*.

Using LibreOffice's drawing tools

You can use LibreOffice's drawing tools to create graphics such as simple diagrams using rectangles, circles, lines, text, and other predefined shapes. You can also group several drawing objects to make sure they maintain their relative position and proportion.

You can place the drawing objects directly on a page in the document or insert them into a frame.

You can also use the drawing tools to annotate photographs, screen captures, or other illustrations produced by other programs, but this is not recommended because:

• You cannot include images in a group with drawing objects, so they may not remain aligned in your document.
• If you convert a document to another format, such as HTML, the drawing objects and the graphics will not remain associated; they are saved separately.

In general, if you need to create complex drawings, it is recommended to use LibreOffice Draw, which includes many more features such as layers, styles, and so on.

Creating drawing objects

To begin using the drawing tools, display the Drawing toolbar (Figure 304) by clicking **View > Toolbars > Drawing** or by clicking on the **Show Draw Functions** icon on the Standard toolbar.

> ☼ **Tip**
>
> If you are planning to use the drawing tools repeatedly, you can tear off (undock) this toolbar and move it to a convenient place as a floating toolbar in the window.

1	Select	7	Rectangle	13	Right Triangle	19	Flowchart
2	Insert Line	8	Rectangle, Rounded	14	Basic Shapes	20	Callouts
3	Lines and Arrows	9	Square	15	Symbol Shapes	21	Insert Text Box
4	Curves and Polygons	10	Ellipse	16	Block Arrows	22	Fontwork
5	Curve	11	Circle	17	Stars and Banners	23	Points
6	Polygon	12	Isosceles Triangle	18	Callouts	24	Toggle Extrusion
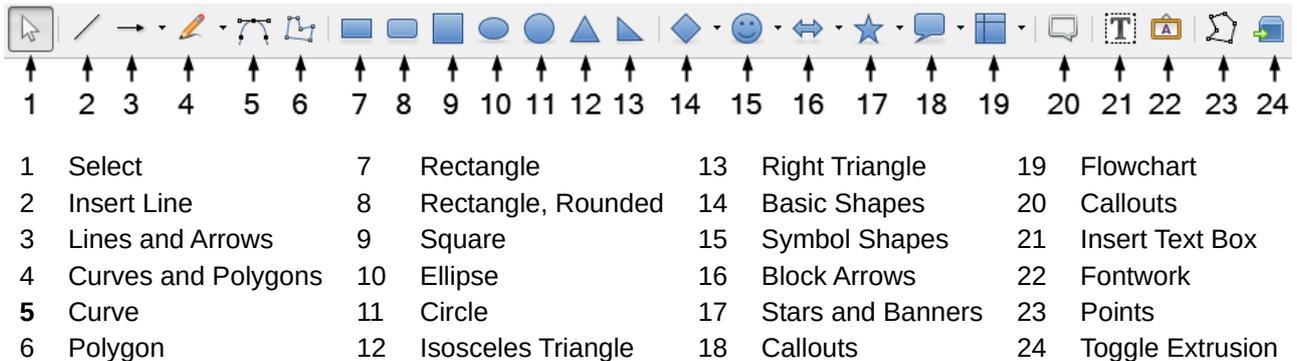
Figure 304: The Drawing toolbar (Writer version)

To use a drawing tool:

1) Click in the document where you want the drawing to be anchored. You can change the anchor later, if necessary.

2) Choose the tool from the Drawing toolbar (Figure 304). The mouse pointer changes to a drawing-functions pointer and the normal Formatting toolbar changes to Drawing Object Properties toolbar (Figure 305).

3) Move the cross-hair pointer to the place in the document where you want the graphic to appear and then click and drag to create the drawing object. Release the mouse button. The selected drawing function remains active, so that you can draw another object of the same type.

4) To cancel the selected drawing function, press the *Esc* key or click on the **Select** icon (the arrow at the left-hand end of the Drawing toolbar).

5) You can now change the properties (fill color, line type and weight, anchoring, and others) of the drawing object using either the Drawing Object Properties toolbar (Figure 305) or the choices and dialogs reached by right-clicking on the drawing object.

Setting or changing properties for drawing objects

To set the properties for a drawing object before you draw it:

1) On the Drawing toolbar (Figure 304), click the **Select** tool.

2) On the Drawing Object Properties toolbar (Figure 305), click on the icon for each property and select the value you want for that property.

3) For more control, or to define new attributes, you can click on the **Area** or **Line** icons on the toolbar to display detailed dialogs.

The default you set applies to the current document and session. It is not retained when you close the document or close LibreOffice, and it does not apply to any other document you open. The defaults apply to all the drawing objects except text objects.

To change the properties for an existing drawing object, select the object and continue as described above.

You can also specify the position and size, rotation, and slant and corner radius properties of the drawing object: right-click on the drawing object and then choose **Position and Size** in the context menu. Choose any properties, as required.

1	Line Color	8	Wrap Off	15	Align	22	Group
2	Arrow Style	9	Page Wrap	16	Bring to Front	23	Enter Group
3	Line Style	10	Optimal Page Wrap	17	Forward One	24	Exit Group
4	Line Width	11	Wrap Left	18	Back One	25	Ungroup
5	Area Style / Filling	12	Wrap Right	19	Send to Back	26	Insert Caption
6	Fill Color	13	Wrap Through	20	To Foreground		
7	Anchor	14	Rotate	21	To Background		
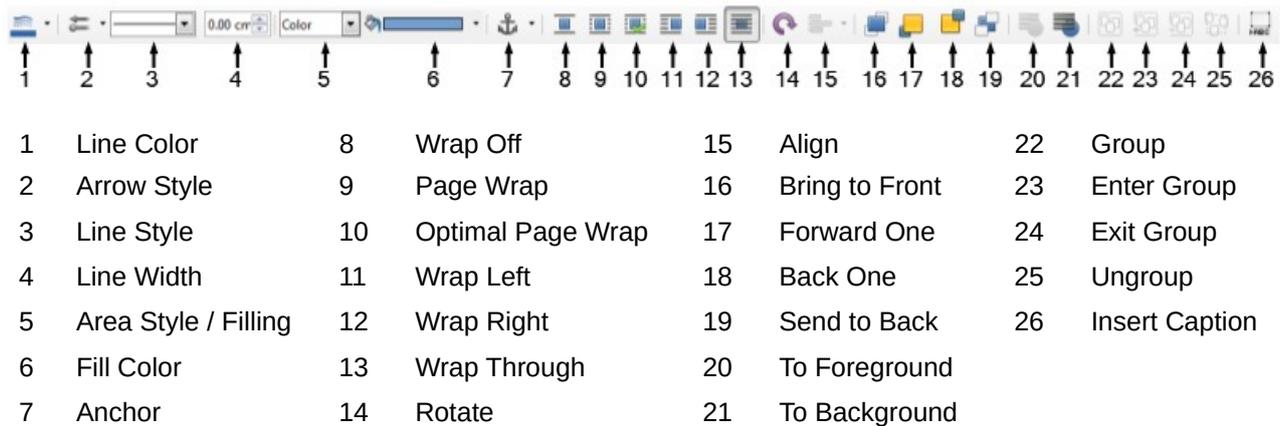
Figure 305: Drawing Object Properties toolbar

Resizing a drawing object

An object is resized in a similar way to an image. Select the object, click on one of the eight handles around it and drag it to its new size. The object will be scaled up or down. When you grab the handle of an object and drag it, LibreOffice will resize disproportionately; if you also press the *Shift* key, the resizing will keep object proportions.

For more sophisticated control of the size of the object, choose **Format > Frame and Object > Properties** on the Menu bar. Use the *Type* tab to set the position and size independently. If the **Keep ratio** option is selected, then the two dimensions change so that the proportion is maintained, resulting in a scaled resizing.

Grouping drawing objects

Grouping drawing objects makes it easier to handle several objects as a single entity, while preserving their relative sizes and positions. When objects are grouped, any editing operations carried out on that group are applied to all members of the group. If you click on one member of the group, the whole group is selected.

To group drawing objects:

1) Select one object, then hold down the *Shift* key and select the others you want to include in the group. The bounding box expands to include all the selected objects.

2) With the objects selected, hover the mouse pointer over one of the objects and choose **Format > Group > Group** from the Menu bar, or click the **Group** icon on the Drawing Object Properties toolbar, or right-click and choose **Group** in the context menu.

> **Note**
>
> You cannot include an embedded or linked graphic in a group with drawing objects.

You can edit an individual member of a group without ungrouping or breaking the group. Select the group and go to **Format > Group > Enter Group** on the Menu bar, or right-click and select **Enter Group** from the context menu, or click the **Enter Group** icon in the Drawing Object Properties toolbar. When you have finished editing an individual member of a group, go to **Format > Group > Exit Group** on the Menu bar, or right-click and select **Exit Group** from the context menu, or click the **Exit Group** icon in the Drawing Object Properties toolbar.

To ungroup or break apart a group of objects, select the group then go to **Format > Group > Ungroup** on the Menu bar, or right-click and select **Ungroup** in the context menu, or click the **Unroup** icon in the Drawing Object Properties toolbar.

Using Fontwork

With Fontwork you can create graphical text art objects to make your work more attractive. There are many different settings for text art objects (line, area, position, size, and more), so you have a large choice.

Fontwork is available with the Writer, Calc, Impress, and Draw components of LibreOffice, but you will notice small differences in the way that each component displays it.

Creating a Fontwork object

1) On the Fontwork toolbar (**View > Toolbars > Fontwork**) or the Drawing toolbar (**View > Toolbars > Drawing**), click the Fontwork Gallery icon, or choose **Insert > Fontwork** in the Menu bar.

2) In the Fontwork Gallery dialog (Figure 306), select a Fontwork style, then click **OK**. The Fontwork object will appear in your document. Notice the colored squares around the edge (indicating that the object is selected) and the yellow dot; these are discussed in "Moving and resizing Fontwork objects" on page 351.

Figure 306: The Fontwork Gallery dialog

3) Double-click the object to edit the Fontwork text (see Figure 307). Select the text and type your own text in place of the black Fontwork text that appears over the object.

Figure 307: Editing Fontwork text

4) Click anywhere in a free space or press *Esc* to apply your changes.

Editing a Fontwork object

Now that the Fontwork object is created, you can edit some of its attributes. To do this, you can use the Fontwork toolbar, the Formatting toolbar, or menu options as described in this section. If the selected Fontwork object is a 3-D object, you can also use the 3D-Settings toolbar.

Using the Fontwork toolbar

Make sure that the Fontwork toolbar, shown in Figure 308, is visible. If you do not see it, go to **View > Toolbars > Fontwork**. Click on the different icons to edit Fontwork objects.
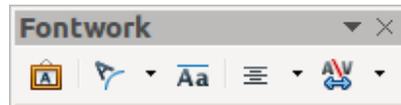
Figure 308: The floating Fontwork toolbar

Fontwork Shape: Edits the shape of the selected object. You can choose from a palette of shapes.
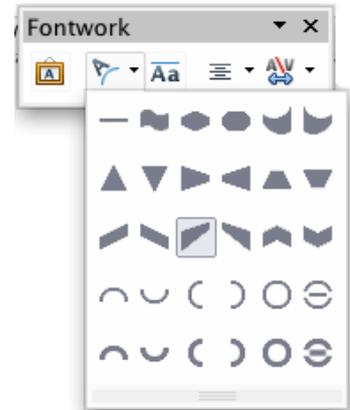
Figure 309: Fontwork toolbar showing palette of shapes

Fontwork Same Letter Heights: Changes the height of characters in the object. Toggles between normal height (some characters taller than others, for example capital letters, d, h, l and others) and all letters the same height.

Figure 310: Left: normal letters; right: same letter heights

Fontwork Alignment: Changes the alignment of characters. Choices are left align, center, right align, word justify, and stretch justify. The effects of the text alignment can only be seen if the text spans over two or more lines. In the stretch justify mode, all the lines are filled completely.
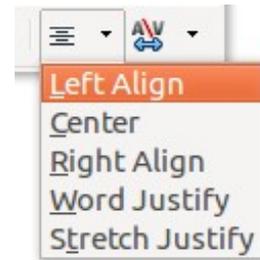
Fontwork Character Spacing: Changes the character spacing and kerning in the object. Select from the choices in the drop-down list.
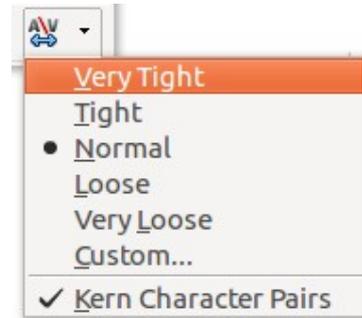
Using the Formatting toolbar

You can customize the Fontwork object with several more attributes. Click on the object; the Formatting toolbar changes to show the options for customizing the object. These choices are the same as the ones for other drawing objects, described earlier in this chapter. See also the *Draw Guide* for details.

Using menu options

You can use some of the choices on the Format menu to anchor, align, arrange, and group selected Fontwork objects, wrap text around them, and flip them horizontally and vertically.

You can also right-click on a Fontwork object and choose many of the same options from the pop-up menu. The pop-up menu also provides quick access to the Line, Area, and Position and Size dialogs. On the Position and Size dialog, you can enter precise values for size and position. For more information on all of these menu options, see the *Draw Guide*.

Using the 3D-Settings toolbar

If the selected Fontwork object is a 3-D object, you can also use the options on the 3D-Settings toolbar. You can also change a 2-D Fontwork object into a 3-D object (or change a 3-D object into a 2-D object) by clicking the **Toggle Extrusion** icon on the Fontwork toolbar. For more information, see the *Draw Guide*.

Moving and resizing Fontwork objects

When you select a Fontwork object, eight colored squares (known as handles) appear around the edge of the object, as shown below. You can drag these handles to resize the object.

A yellow dot also appears on the object. This dot may be along an edge of the object, or it may be somewhere else; as in the example on the right. If you hover the pointer over this yellow dot, the pointer turns into a hand symbol. You can drag the dot in different directions to distort the object.

Hovering the pointer over other parts of the object turns the pointer into the usual symbol for dragging the object to another part of the page.

For precise control of the location and size of the object, use the Position and Size dialog.

Generating a QR code

A QR code (short for Quick Response code) is a type of barcode. QR codes often contain data that points to a website or application. From LibreOffice 6.4, Writer, Calc, Impress, and Draw can generate QR codes.

1) Choose **Insert > Object > QR Code** on the Menu bar to open the QR Code Generator dialog (Figure 311).

Figure 311: QR Code Generator dialog

2) Fill in the *URL/Text* field, select a correction factor (the complexity of the graphic generated), and the width of the border around it, then click **OK**. Figure 312 shows the code generated by the input in Figure 311.

Figure 312: QR code example

Getting Started Guide

Chapter 12
Creating HTML Files

Saving Documents as HTML Files

Introduction

HTML (Hypertext Markup Language) capabilities in LibreOffice make it possible to save and export documents in HTML format.

This chapter describes how to do the following in Writer, Calc, Impress, and Draw:

- Create hyperlinks within a document and to other documents such as web pages, PDFs, and other files.
- Save and export documents as HTML files.
- Create, edit, and save HTML documents using Writer/Web.

When creating a document that you plan to deliver as an HTML file, you need to consider the following:

- In an HTML document, hyperlinks are active (clickable), but other cross-references inserted by LibreOffice are not active links.
- An object such as an image is saved as a separate file. However, if that object has been placed in a frame (for example, with an associated caption), it is not saved and does not appear in the HTML document; instead, the name of the frame appears.

Relative and absolute hyperlinks

Hyperlinks stored within a file can be either relative or absolute.

A relative hyperlink says, *Here is how to get there starting from where you are now* (meaning from the folder in which your current document is saved), while an absolute hyperlink says, *Here is how to get there no matter where you start from*.

An absolute link will stop working if the target is moved. A relative link will stop working if the start and target locations change relative to each other. For instance, if you have two spreadsheets in the same folder linked to each other and you move the entire folder to a new location, an absolute hyperlink will break but a relative one will not.

To change the way that LibreOffice stores the hyperlinks in your file, select **Tools > Options > Load/Save > General** on the Menu bar and choose if you want URLs (Universal Resource Locators) saved relatively when referencing the file system, or the Internet, or both.

LibreOffice will always display an absolute hyperlink. It does this even when you have saved a relative hyperlink. This 'absolute' target address will be updated if you move the file.

Note

HTML files containing links relative to the file system that will be uploaded to a web server require the files be in a folder structure matching that of the web server. Otherwise, the links will point to the wrong folder.

Tip

When you rest the mouse pointer on a hyperlink, a help tip displays the absolute reference, because LibreOffice uses absolute path names internally. The complete path and address can only be seen when you view the result of the HTML export (for example, saving a spreadsheet as an HTML file), by loading the HTML file as text, or by opening it with a text editor.

Creating hyperlinks

When you type text (such as a website address or URL) that can be used as a hyperlink, and then press the *Spacebar* or the *Enter* key, LibreOffice automatically creates the hyperlink and applies formatting to the text (usually a color and underlining). If this does not happen, you can enable this feature by going to the **AutoCorrect** dialog (**Tools > AutoCorrect > AutoCorrect Options** in Writer) on the Menu bar and selecting **URL Recognition** on the *Options* tab. If you do not want automatic hyperlink creation, you can turn it off by deselecting the **URL Recognition** option.

If you do not want LibreOffice to convert a specific URL to a hyperlink, you can go to **Edit > Undo** on the Menu bar, or press *Ctrl+Z* immediately after the formatting has been applied, or place the cursor in the hyperlink, right-click, and select **Remove Hyperlink** from the context menu.

> ## 💡 Tip
>
> To change the color of hyperlinks, go to **Tools > Options > LibreOffice > Application Colors**, scroll to **Unvisited links** and/or **Visited links**, pick the new colors, and click **OK**. Caution: This will change the color for *all* hyperlinks in *all* components of LibreOffice; this may not be what you want.
>
> In Writer and Calc (but not Draw or Impress), you can also change the Internet link character style or define and apply new styles to selected links.

Using the Navigator

You can use the Navigator in Writer or Calc to insert a hyperlink to another part of the same document or to another document.

1) Open the documents containing the items you want to cross-reference.

2) Click the **Navigator** icon in the Sidebar, select **View > Navigator** on the Menu bar, or press *F5*.

3) Click the triangle to the right of the **Drag Mode** icon and select **Insert as Hyperlink** (Figure 313). The **Drag Mode** icon changes shape depending on the type of insert that was previously selected. The default icon for Drag Mode is to show the Hyperlink icon.
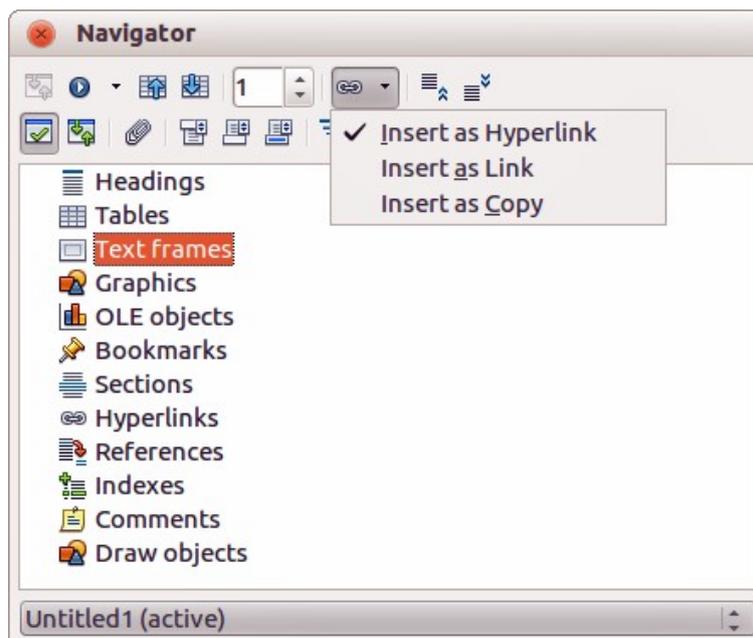
Figure 313: Inserting a hyperlink using the Navigator

4) Select the document from the drop-down list at the bottom of the Navigator that contains the item that you want to link to.

5) In the Navigator list, select the item that you want to insert as a hyperlink.

6) Drag the item to where you want to insert the hyperlink in the document. The name of the item is inserted in the document as an active hyperlink.

When using the Navigator to insert a hyperlink to an object such as a graphic, it is recommended to have the hyperlink show a useful name, for example *2009 Sales Graph*. You need to give such objects useful names instead of leaving them as the default names, for example *Image6*, or you will have to edit the name of the resulting link using the Hyperlink dialog, as described below.

You can also use the Navigator to insert a hyperlink from one document (the source) to a specific place in another document (the target). Open the Navigator in the target document and drag the item to the position in the source document where you want the hyperlink to appear.

Using the Hyperlink dialog

You can use the Hyperlink dialog to insert a hyperlink and modify all hyperlinks.

1) Highlight the existing text you want to use as a link.

2) Click the **Insert Hyperlink** icon on the Standard toolbar or go to **Insert > Hyperlink** on the keyboard on the Menu bar, or press *Ctrl+K* to open the Hyperlink dialog (Figure 314).

3) On the left side, select one of the four categories of hyperlink:

    – **Internet**: the hyperlink points to a web address, normally starting with https://, or an FTP (File Transfer Protocol) address, normally starting ftp://.

    – **Mail**: the hyperlink opens an email message that is pre-addressed to a particular recipient.

    – **Document**: the hyperlink points to another document or to another place in the current document.

    – **New document**: the hyperlink creates a new document.

4) The Hyperlink dialog changes depending on the type of hyperlink selected. Enter all necessary details to create the hyperlink, as described below.

5) Click **Apply** or **OK** to create the hyperlink. If the Apply button is clicked, the dialog remains open allowing you to create another hyperlink.

6) Click **Close** to close the Hyperlink dialog.
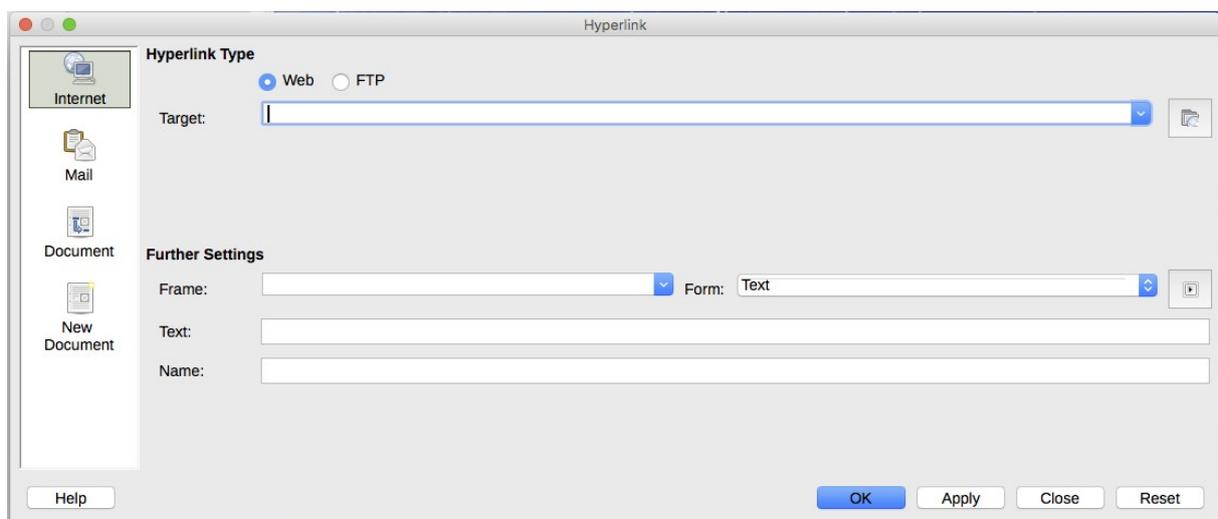
Figure 314: Hyperlink dialog showing details for Internet links

The dialog changes according to the choice made for the hyperlink category in the left panel. A full description of all the choices and their interactions is beyond the scope of this chapter. Here is a summary of the most common choices.

- For an *Internet* hyperlink, choose the type of hyperlink (Web or FTP), and enter the required web address (URL). In the case of FTP, also enter the login name and password.

- For a *Mail* hyperlink, specify the address of the receiver and the subject.

- For a *Document* hyperlink, specify the document path (click the **Open File** icon to open a file browser) or leave this blank if you want to link to a target in the same document. Optionally specify the target in the document (for example a specific slide). Click the **Target in Document** icon to open the Target in Document dialog where you can select the type of target; or, if you know the name of the target, you can type it into the box.

- For a *New Document* hyperlink, specify whether to edit the newly created document immediately (**Edit now**) or just create it (**Edit later**). Enter the file name and select the type of document to create (text, spreadsheet, and so on). Click the **Select Path** icon to open a file browser and choose where to store the file.

The *Further settings* section in the bottom right part of the dialog is common to all the hyperlink categories, although some choices are more relevant to some types of links.

- *Frame* determines how the hyperlink will open in a Web browser.

- *Form* specifies if the link is to be presented as text or as a button.

- *Text* specifies the text that will be visible to the user. If you do not enter anything here, LibreOffice uses the full URL or path as the link text. Note that if the link is relative and you move the file, this text will not change, though the target will.

- *Name* is applicable to HTML documents. It specifies text that will be added as a NAME attribute in the HTML code behind the hyperlink.

- *Events* icon opens the Assign Macro dialog. Select a macro to run when the link is clicked. See Chapter 13, Getting Started with Macros, for more information.

Editing hyperlinks

To edit an existing link:

1) Click anywhere in the hyperlink text.

2) Click the **Insert Hyperlink** icon on the Standard toolbar, or go to **Edit > Hyperlink** on the Menu bar, or press *Ctrl+K*, or right-click and select **Edit Hyperlink** from the context menu.

3) In the Hyperlink dialog, make your changes and click **Apply** to save the changes. The Hyperlink dialog remains open, allowing you to continue editing hyperlinks. Click **Apply** after editing each hyperlink.

4) When you are finished editing hyperlinks, click **Close**.

The standard (default) behavior for activating hyperlinks within LibreOffice is to use *Ctrl+click*. This behavior can be changed in **Tools > Options > LibreOffice > Security > Options** by deselecting the option **Ctrl-click required to open hyperlinks**. If clicking in your links activates them, check that page to see if the option has been deselected.

Removing hyperlinks

You can remove the link from hyperlink text and leave just the text by right-clicking on the link and selecting **Remove Hyperlink** from the context menu. You may then need to re-apply some formatting to match the text with the rest of your document.

To remove the link text or button from the document, select it and press the *Delete* key.

Saving and exporting documents as HTML files

The easiest way to create HTML documents in LibreOffice is to start with an existing document. In Writer, you can get a good idea of how it will appear as a web page by using **View > Web**. However, Web view does not show you which features will or will not be saved correctly in HTML format. Refer to "Relative and absolute hyperlinks" on page 354 for what to consider before creating a web page from a document.

Writer documents

Saving a Writer document as HTML

To save a Writer document as HTML, go to **File > Save As** on the Menu bar and select **HTML Document (Writer)** as the file type in the Save As dialog. You may be prompted to confirm that you wish to continue using the HTML format.

Saving a document as HTML produces a set of files. LibreOffice generates the image files and the HTML file necessary to create an HTML page in a browser. The number of files generated by the format conversion depends on the number of images and objects in the original text document.

> **Tip**
>
> Use an empty folder to save your document as HTML file and images.

The file names are created following a simple rule summarized in Table 5.

Table 5: File types created when saving as HTML format

File	Contents
Myfile.html	The text contents, page layout, text attributes, meta tags, and styles.
Myfile_html_[random number].gif	GIF images of visible contents of OLE objects.
Myfile_html_[random number].png, jpg, or bmp	Images inserted in the text document as PNG, BMP, or JPEG keep their original format.

> **Note**
>
> The HTML transformation of the text document is limited by the HTML 4.0 Transitional specification. Text documents in office suites have a richer set of resources that will not appear in HTML, for example page formatting. Do not expect the same layout fidelity when saving a file in HTML format.

Saving as HTML may require more work directly on the HTML code to adjust the layout of the web page. See "Creating, editing, and saving HTML files using Writer/Web" on page 364.

Exporting a single web page

Another way to create a HTML file is to use **File > Export** and specify XHTML (Extensible Hypertext Markup Language) as the file type. LibreOffice will generate one XHTML 1.1 file per text document. The image files are embedded in the XHTML file. XHTML files created by exporting a text document in LibreOffice have significant better layout rendering but fail to render objects other than images.

  Notes
Writer does not replace multiple spaces in the original document with the HTML code for non-breaking spaces. If you want to have extra spaces in your HTML file or web page, you need to insert non-breaking spaces in LibreOffice. To do this, press *Ctrl+Spacebar* instead of just *Spacebar*. The *Tab* character is not rendered on exporting to XHTML. Instead, use borderless tables to position contents instead of the *Tab* character in a line. This also affects bullet and number lists that insert by default a *Tab* character between the bullet or number and the text. Use a list style where the *Tab* character is replaced by a space. Objects different from usual image formats are not rendered in LibreOffice XHTML output. These include drawings, spreadsheets, charts, and OLE object in general. To render an OLE object in XHTML, first transform its visible contents into an image and then replace the object in your document with the image.

The use of styles in the text document is strongly recommended for getting the best results when exporting to HTML or XHTML.

Saving as a series of web pages

Writer can save a large document as a series of web pages (HTML files) with a table of contents page.

1) Decide which headings in the document should start on a new page and make sure all those headings have the same paragraph style (for example, Heading 1).

2) Go to **File > Send > Create HTML Document** on the Menu bar to open the Name and Path of the HTML Document dialog (Figure 315).
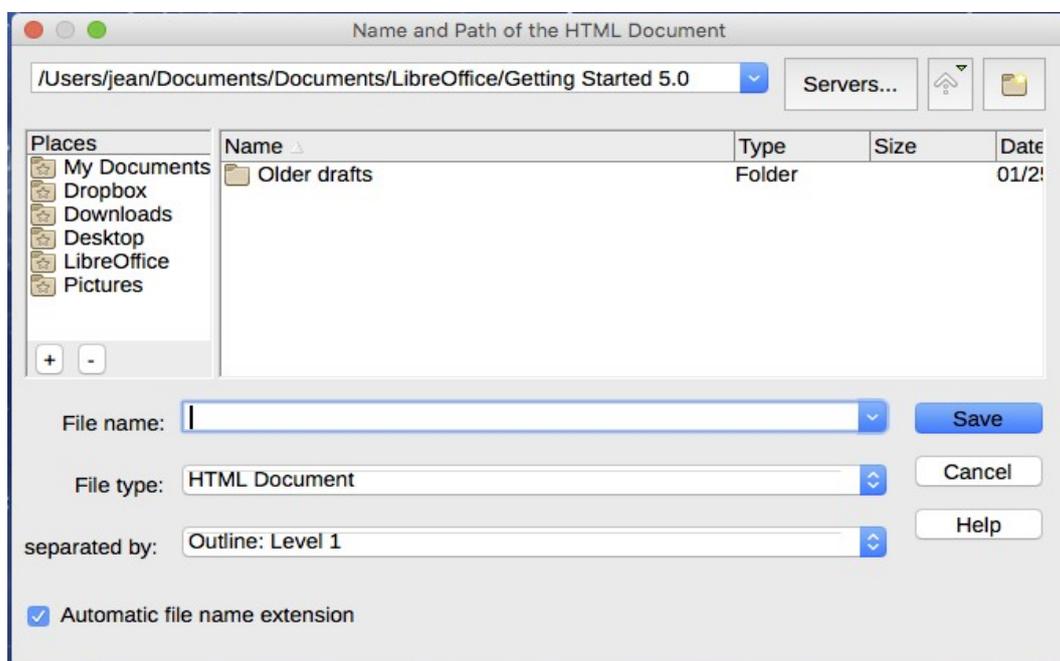
Figure 315: Creating a series of web pages from one document

3) Type the file name to save the pages under.

4) Specify which style indicates a new page by using the *separated by* drop-down list at the bottom of the dialog (for example, **Style: Heading 1**).

5) Click **Save** to create the multi-page HTML document. The resulting HTML files conform to the HTML 4.0 Transitional standard.

Calc spreadsheets

Calc can save files as HTML documents. Go to **File > Save As** on the Menu bar and select **HTML Document (Calc)** as the file type in the Save As dialog.

If the file contains more than one sheet, the additional sheets will follow one another in the HTML file. Links to each sheet will be placed at the top of the document.

Calc also allows the insertion of links directly into the spreadsheet using the Hyperlink dialog. See "Creating hyperlinks" on page 355 for more information on hyperlinks.

Impress presentations

Impress presentations cannot be saved in HTML format, but have to be exported as HTML documents. The HTML files created will then use the default settings that you have not changed.

> ## Notes
>
> Saving in HTML format does not retain animation and slide transitions.
>
> You can click **Create** on the HTML Export dialog at any step in the following procedure.

1) Go to **File > Export** on the Menu bar and specify the file name and location of where to save the web page version of your presentation.

2) Select **HTML Document (Impress)** as the file type and click **Export** or **Save** to open the HTML Export dialog / wizard (Figure 316).
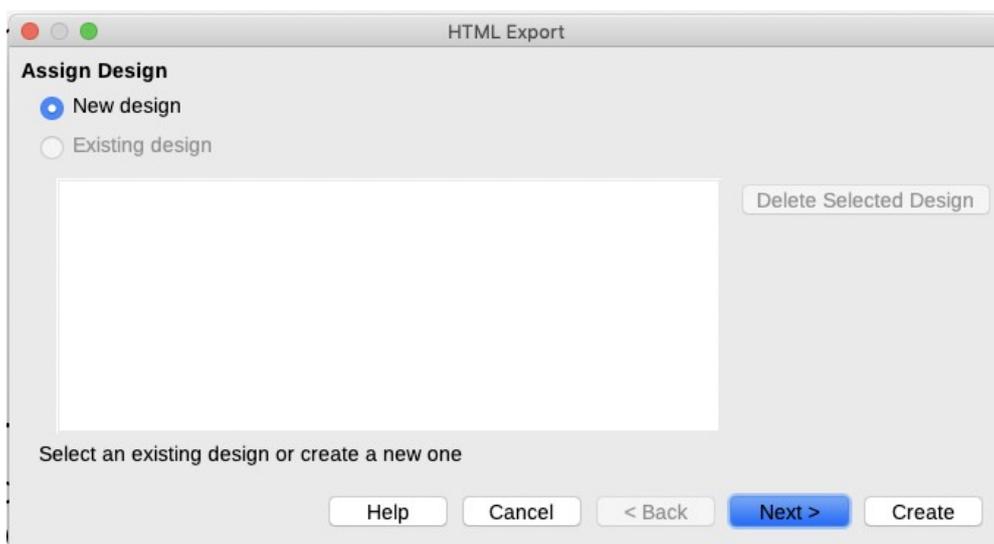
Figure 316: HTML Export dialog - Assign Design page

3) On the Assign Design page, you can choose to create a new design and select or delete an existing design. Select **New design** or **Existing design** and click **Next**. If you have not previously saved a web page design, the **Existing design** choice is not available.

   – *New design* – creates a new design in the next pages of the wizard.

   – *Existing design* – loads an existing design from the design list to use as a starting point for the steps that follow. The list box displays all existing designs.

   – *Delete Selected Design* deletes the selected design from the design list. If you delete a design, you will only delete the design information. An export file will not be deleted by this action.

4) Specify the publication type for the web pages (Figure 317), then click **Next**. The publication type defines the basic settings for the intended export. The choices are:

– *Standard HTML format* – creates standard HTML pages from export pages.

– *Standard HTML with frames* – creates standard HTML pages with frames. The exported page will be placed in the main frame and the frame to the left will display a table of contents in the form of hyperlinks.

– *Single-document HTML* – creates a single file containing the text of the presentation, but not the layout or images.

– *Automatic* – creates a default HTML presentation as a kiosk export in which the slides are automatically advanced after a specified amount of time.

– *WebCast* – in a WebCast export, automatic scripts will be generated with Perl or ASP support. This enables the speaker (for example, a speaker in a telephone conference using a slide show on the Internet) to change the slides in the web browsers used by the audience.

Options are also provided to create a title page and to display your notes.

For more information on the options available for this page of the HTML Export dialog, click **Help** to open the help pages.
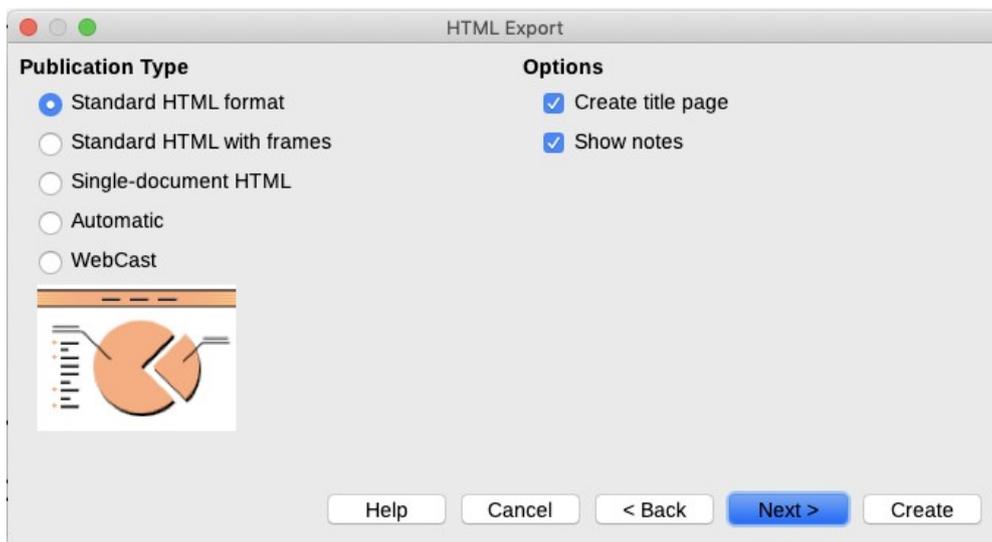
Figure 317: HTML Export dialog – publication type and options page

5) Specify the options for saving images, monitor resolution, and effects used for the web pages (Figure 318), then click **Next.** The options on this page are as follows:

– *Save Images As* – determines the image format. You can also define the compression value for the export.

– *Monitor Resolution* – defines the resolution for the target screen. Depending on the selected resolution, the image will be displayed in a reduced size. You can specify a reduction of up to 80% from the original size. When selecting a resolution, consider what the majority of your viewers might be using. If you specify a high resolution, then a viewer with a medium-resolution monitor will have to scroll sideways to see the entire slide, which is probably not desirable.

– *Effects* – specifies whether sound files defined as an effect for slide transitions are exported and whether any hidden slides are exported.

For more information on the options available for this page of the HTML Export dialog, click **Help** to open the help pages.
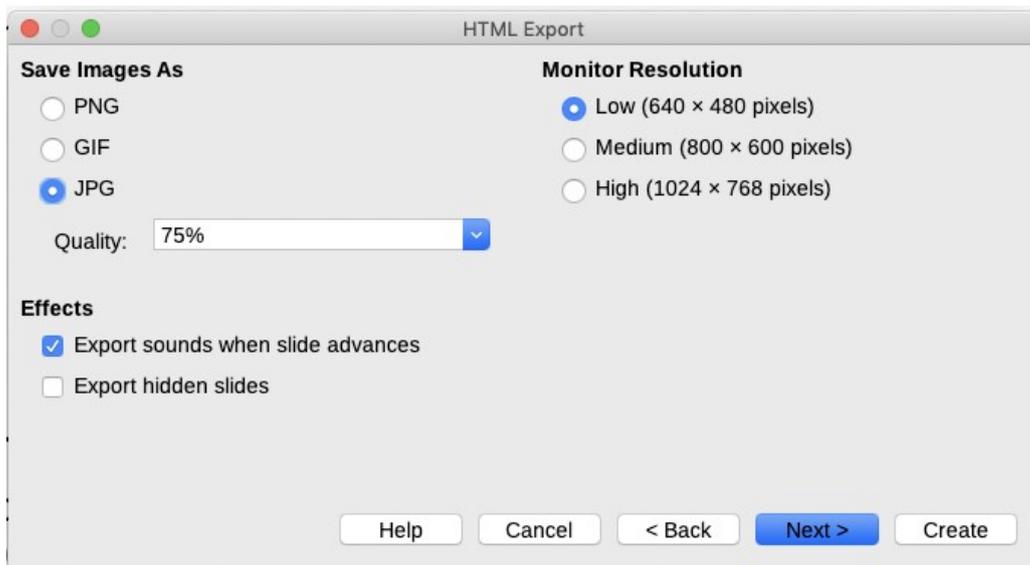
Figure 318: HTML Export dialog – image format, monitor resolution, and effects page

6) Specify the Information for the title page to be used with the web version of your presentation (Figure 319). The title page normally contains the author's name, an email address, a home page address, and any additional information you may want to include. This page is only available if you have selected to create a title page (option only applicable to the *Standard HTML format* and *Standard HTML with frames* publication types).
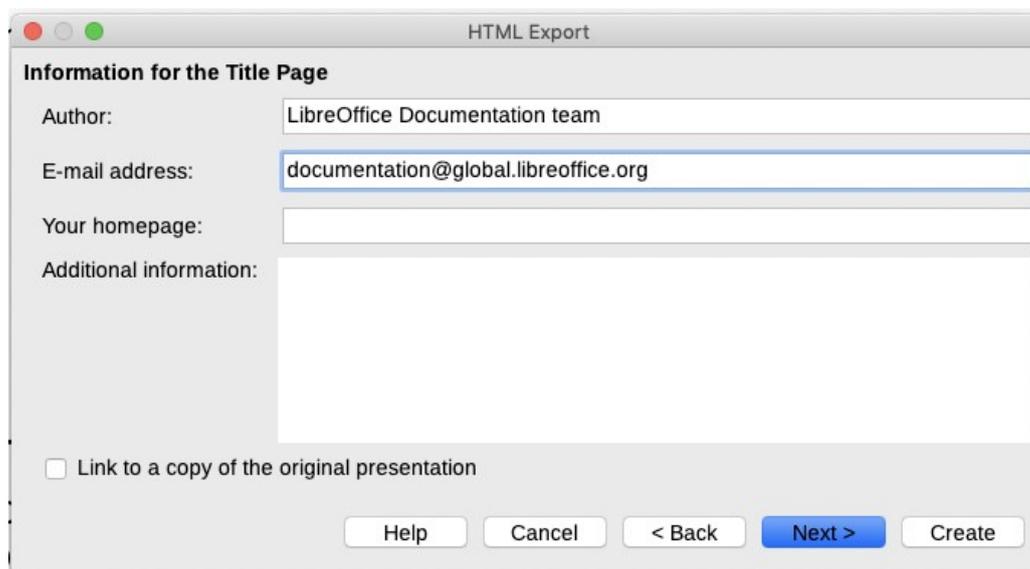
Figure 319: HTML Export dialog – title page information page

7) Select **Link to a copy of the original presentation** if you want to create a hyperlink to download a copy of the presentation file, and then click **Next**.

8) Select the button style to be used for the web pages from the designs available (Figure 320) and then click **Next**.

   If you do not select a button style, LibreOffice will create a text navigator.

   This page is not available if you have selected either *Automatic* or *WebCast* publication type.
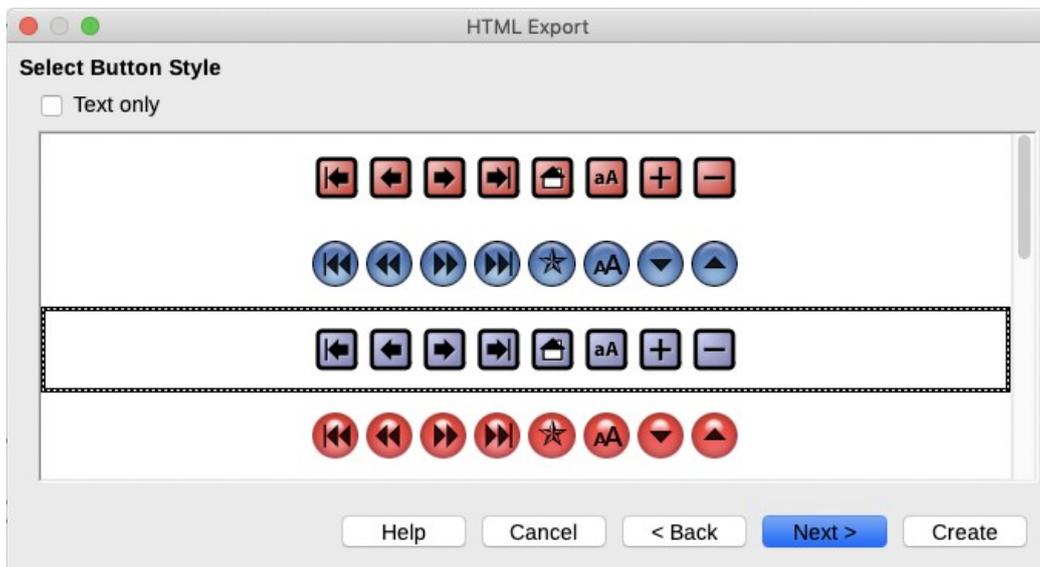
Figure 320: HTML Export dialog – button style page

9) Select the color scheme to be used for the web pages (Figure 321), including colors for text, links, and background. This page is not available if you have selected either *Automatic* or *WebCast* publication type.
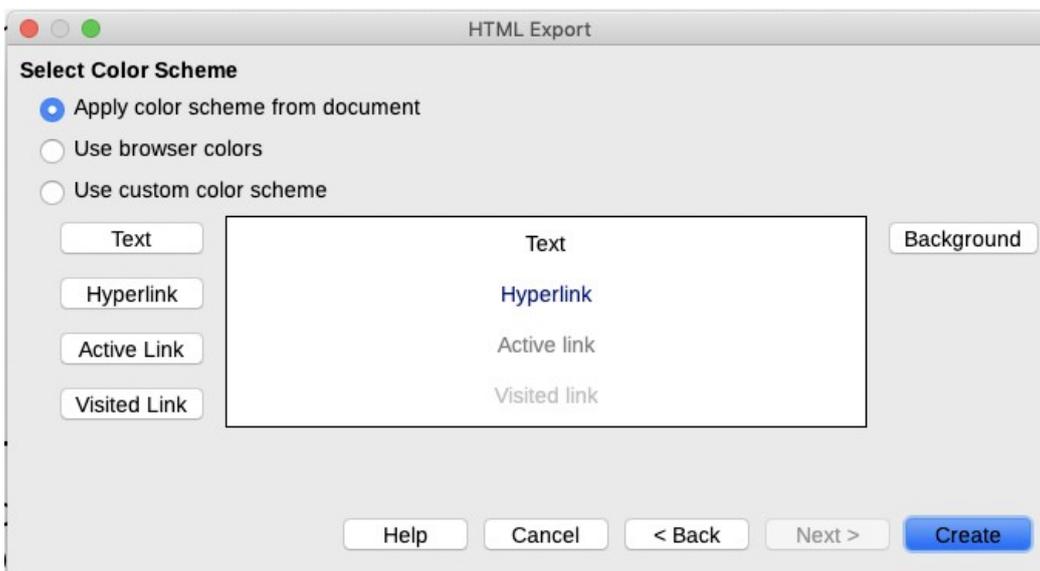
Figure 321: HTML Export dialog – color scheme page

10) Click **Create**.

11) If you have created a new design for your web pages, a small Name HTML design dialog opens. Type a name for the design and click **OK**.

> 📝 **Note**
>
> Depending on the size of your presentation and the number of graphics it contains, the HTML export function creates several HTML, JPG, and GIF files. It is recommended to create a folder to hold all the files created for the web version of your presentation. If you simply save to your desktop and not in a specific folder, these separate HTML and graphics files will be placed all over your desktop.

Draw documents

Draw documents cannot be saved in HTML format, but have to be exported as HTML documents. Exporting drawings from Draw is similar to exporting a presentation from Impress. Go to **File > Export** and select **HTML Document (Draw)** as the file type, then follow the procedure above for exporting Impress presentations.

Creating, editing, and saving HTML files using Writer/Web

LibreOffice Writer can create, edit, and save files in HTML format using a configuration called Writer/Web.

Writer/Web display modes
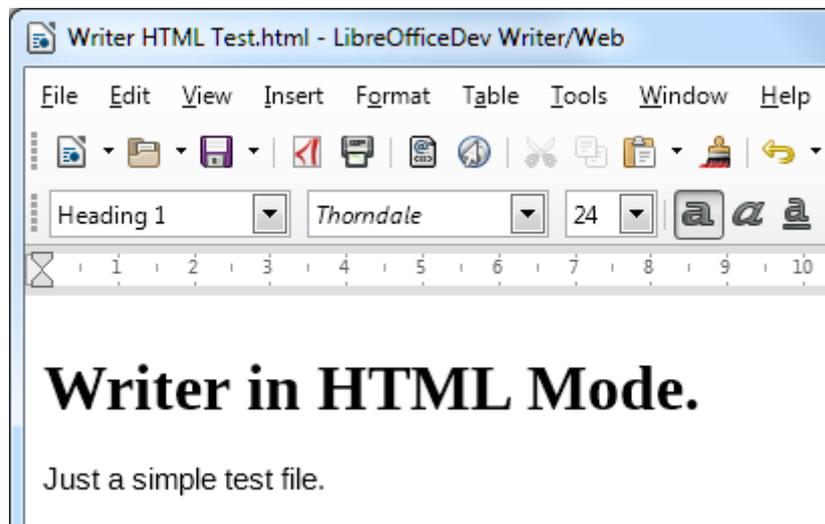
In addition to the Normal and Web display modes for editing (Figure 322), Writer/Web has a third editing mode called HTML Source mode (Figure 323). This view is available when creating a new HTML document or opening an existing one. With the HTML Source mode, you can directly edit HTML tags such as <p>, <ul>, <table>, and so on to compose web page elements. In that mode you must be familiar with the HTML markup language.

You normally add content to an HTML document using the Web display mode, because it will render the contents as if displayed in a browser. Use the HTML Source editing mode to tweak the formatting.

Note
Because HTML markup language has fewer formatting possibilities than a text document in OpenDocument Format, Writer/Web cannot provide all formatting features for HTML documents and some formatting dialogs have fewer options available. For example, a HTML paragraph has no tab settings.

Figure 322: Web display mode for Writer/Web

Figure 323: HTML Source display mode

Creating and editing a HTML document

To create a HTML document, choose **File > New > HTML Document**. Writer/Web opens a blank document in Web display mode. You can now add content to the document by typing or pasting text, images, tables, and other objects. Use all the Writer/Web formatting resources including styles to format the content. When you have finished, save the document with the HTML file type.

If you need to add HTML content directly into the document, enter HTML Source editing mode by clicking the **HTML Source** icon on the Standard toolbar, or choosing **View > HTML Source** from the Menu bar. If you haven't saved a new document, Writer/Web will ask you to do so before it switches to HTML Source editing mode. In that mode, Writer/Web turns into a notepad-like text editor (Figure 323).

> **Note**
>
> The HTML markup content generated by Writer/Web is limited to the production of a displayable document in a web browser. It does not consider other components of a website such as external cascading style sheets (CSS), external JavaScript, or other script languages. Use the HTML Source mode to manually insert links to these external components into the page.

Checking a web page in a browser

It is important to check your web pages (HTML documents) in a web browser such as Mozilla Firefox, Google Chrome, Microsoft Edge, or Safari. Not all browsers render HTML files the same way, so if possible, check the contents in several browsers.

To make LibreOffice open your default web browser and display the contents of a document, go to **File > Preview in Web Browser** on the Menu bar, or click the **Preview in Web Browser** icon in the Standard toolbar. You can also open any web browser and then open the HTML file in it.

Getting Started Guide

Chapter 13
Getting Started with Macros

Using the Macro Recorder … and Beyond

Introduction

A macro is a set of commands or keystrokes that are stored for later use. An example of a simple macro is one that enters your address into an open document. You can use macros to automate both simple and complex tasks. Macros are very useful when you have to repeat the same task in the same way.

The simplest way to create a macro is to record a series of actions through LibreOffice's user interface. LibreOffice saves recorded macros using the open source LibreOffice Basic scripting language, which is a dialect of the well-known BASIC programming language. Such macros can be edited and enhanced after recording using the built-in LibreOffice Basic Integrated Development Environment (IDE).

The most powerful macros in LibreOffice are created by writing code using one of the four supported scripting languages (LibreOffice Basic, BeanShell, JavaScript, and Python). This chapter provides an overview of LibreOffice's macro facilities, mostly focused on its default macro scripting language, LibreOffice Basic. Some examples are included for the BeanShell, JavaScript, and Python scripting languages but fuller descriptions of the facilities for these languages are beyond the scope of this chapter.

Your first macros

Adding a macro

The first step in learning macro programming is to find and use existing macros. This section assumes that you have a macro that you want to use, which may be in an email, on a web page, or even in a book. For this example, the macro in Listing 1 is used. You should create a library and module to contain your macro; see "Macro organization" on page 378 for more information.

Listing 1: Simple macro that says hello

```
Sub HelloMacro
  Print "Hello"
End Sub
```

Use the following steps to create a library which will contain your macro:

1) Go to **Tools > Macros > Organize Macros > Basic** to open the LibreOffice Basic Macros dialog (Figure 324).

2) Click **Organizer** to open the LibreOffice Basic Macro Organizer dialog (Figure 325) and select the *Libraries* tab.

3) Set the *Location* drop-down to **My Macros & Dialogs**, which is the default location.

4) Click **New** to open the New Library dialog (not shown here).

5) Enter a library name, for example *TestLibrary*, and click **OK**.

6) On the LibreOffice Basic Macro Organizer dialog, select the *Modules* tab (Figure 326).

7) In the *Module* list, expand *My Macros* and select your library (in the example, *TestLibrary*). A module named *Module1* already exists and can contain your macro. If you wish, you can click **New** to create another module in the library.

8) Select *Module1*, or the new module that you created, and click **Edit** to open the Integrated Development Environment (IDE) (Figure 327). The IDE is a text editor and associated facilities that are built into LibreOffice and allow you to create, edit, run, and debug macros.

Figure 324: LibreOffice Basic Macros dialog

Figure 325: LibreOffice Basic Macro Organizer dialog, Libraries tab

Figure 326: LibreOffice Basic Macro Organizer dialog, Modules tab

Figure 327: Integrated Development Environment window

9) When a new module is created, it contains a comment and an empty macro named `Main`, which does nothing.

10) Add the new macro either before `Sub Main` or after `End Sub`. Listing 2 shows the new macro has been added before `Sub Main`.

11) Click the **Compile** icon on the Macro toolbar to compile the macro.

12) Place the cursor in the `HelloMacro` subroutine and click the **Run** icon on the Macro toolbar, or press the *F5* key, to run the `HelloMacro` subroutine in the module. A small dialog will open with the word "Hello" displayed. If the cursor is not in a subroutine or function, a dialog will open; select the macro to run.

13) Click **OK** to close this small dialog.

14) To select and run any macro in the module, click the **Select Macro** icon on the Standard toolbar or go to **Tools > Organize Macros > Basic**.

15) Select a macro and then click **Run**.

Listing 2: Module1 after adding the new macro

```
REM  *****  BASIC  *****

Sub HelloMacro
  Print "Hello"
End Sub

Sub Main

End Sub
```

Recording a macro

If you have to repeatedly enter the same information, you can copy this information after it has been entered into your document for the first time, then paste the information into your document each time you want to use it. However, if something else is copied to the clipboard, the contents of the clipboard are changed. This means that you have to re-copy your repeated information. To overcome this problem, you can create a macro that enters your repeated information.

> **Note**
>
> For some cases when you want to repeatedly enter information into a document, it may be more convenient to create an AutoText. See Chapter 2, Working with Text: Basics, in the *Writer Guide* for more information.

Make sure macro recording is enabled by going to **Tools > Options > LibreOffice > Advanced** and selecting the option **Enable macro recording** under *Optional Features*. By default, this feature is turned off in LibreOffice.

1) Go to **Tools > Macros > Record Macro** to start recording a macro. A small dialog with a **Stop Recording** button is displayed indicating that LibreOffice is recording a macro.

2) Type the desired information or perform an appropriate series of operations. As an example, type your name.

3) Click **Stop Recording** on the small dialog and the LibreOffice Basic Macros dialog opens (similar to Figure 324 on page 368, but with different action buttons).

4) Open the library container *My Macros*.

5) Find the library named *Standard* in *My Macros*. Note that every library container has a library named *Standard*.

6) Select the *Standard* library and click **New Module** to create a new module to contain the macro. This opens the New Module dialog.

7) Type a descriptive name for the new module, for example *RecordsInsertText*, and click **OK** to create the module. The LibreOffice Basic Macros dialog now displays the name of the new module in the *Standard* library.

8) In the **Macro Name** text box, type a name for the macro you have just recorded, for example `EnterMyName`.

9) Click **Save** to save the macro and close the LibreOffice Basic Macros dialog.

If you followed all of the above steps, the *Standard* library now contains a module named *RecordsInsertText* and this module contains the *EnterMyName* macro.

> ### Note
>
> When LibreOffice creates a new module, it automatically adds the macro named *Main*.

Running a macro

1) Go to **Tools > Macros > Run Macro** to open the Macro Selector dialog (Figure 328).

2) For example, select your newly created macro *EnterMyName* and click **Run**.

3) Alternatively, go to **Tools > Macros > Organize Macros > Basic** to open the LibreOffice Basic Macros dialog (Figure 324), select your macro and click **Run**.

Figure 328: Macro Selector dialog

Viewing and editing macros

To view and/or edit the macro that you created:

1) Go to **Tools > Macros > Organize Macros > Basic** to open the LibreOffice Basic Macros dialog.

2) Select your new macro *EnterMyName* and click **Edit**.The Basic IDE will open and the macro *EnterMyName* will be shown as in Listing 3.

This first macro is not complicated. A little explanation will significantly help you in understanding macros. The discussion starts with first line of the macro and describes features through the whole listing.

Listing 3: Generated EnterMyname macro

```
REM  *****  BASIC  *****
Sub Main

End Sub
```

```
sub EnterMyName
rem ----------------------------------------------------------
rem define variables
dim document    as object
dim dispatcher as object
rem ----------------------------------------------------------
rem get access to the document
document    = ThisComponent.CurrentController.Frame
dispatcher = createUnoService("com.sun.star.frame.DispatchHelper")

rem ----------------------------------------------------------
dim args1(0) as new com.sun.star.beans.PropertyValue
args1(0).Name = "Text"
args1(0).Value = "Your name"

dispatcher.executeDispatch(document, ".uno:InsertText", "", 0, args1())
end sub
```

Commenting with REM

All comments in Basic macro coding begin with REM, which stands for remark. All text after REM on the same line is ignored.

> ### 💡 Tip
>
> As a short cut, you can use the single quote character (') to start a comment.

LibreOffice Basic is not case-sensitive for keywords, so REM, Rem, and rem can all start a comment. If you use symbolic constants defined by the Application Programming Interface (API), it is safer to assume that the names are case-sensitive. Symbolic constants are an advanced topic not covered by this user guide and are not required when using the macro recorder in LibreOffice.

Defining subroutines with SUB

Individual macros are stored in subroutines and these subroutines begin with the keyword SUB. The end of a subroutine is indicated by the words END SUB. The code starts by defining the subroutine named Main, which is empty and does nothing. The next subroutine, EnterMyName, contains the generated code for your macro.

There are advanced topics that are beyond the scope of this user guide, but knowing about them might be of interest:

- You can write a macro so that values can be passed to the subroutine. The values are called arguments. However, recorded macros in LibreOffice do not accept arguments.
- Another kind of subroutine is called a function, which is a subroutine that can return a value as a result of its work. Functions are defined by the keyword FUNCTION at the beginning. Recorded macros in LibreOffice create subroutines only.

Defining variables using DIM

You can write information on a piece of paper so that you can look at it later. A variable, like a piece of paper, contains information that can be changed and read. The DIM keyword originally stood for Dimension and was used to define the dimensions of an array. The DIM statement used in the EnterMyName macro is similar to setting aside a piece of paper to be used to store a message or note.

In the EnterMyName macro, the variables document and dispatcher are defined as the type object. Other common variable types include string, integer, and date. A third variable, named args1, is an array of property values. A variable of type array allows a single variable to contain

multiple values, similar to storing multiple pages in a single book. Values in an array are usually numbered starting from zero. The number in the parentheses indicates the highest usable number to access a storage location. In this example, there is only one value, and it is numbered zero.

Explaining macro code

The following is an explanation of the code used in the `EnterMyName` macro. You may not understand all the details, but the explanation of each line of code may give you some idea of how a macro works.

```
sub EnterMyName
```

Defines the start of the `EnterMyName` macro.

```
dim document    as object
```

Defines `document` as an object variable. Objects are a specific variable type with multiple fields (sometimes they are called properties) and actions (also they are called methods). The fields can be perceived like variables (including an object) and actions like subroutines which allow us to operate with the object.

> 📝 **Note**
>
> Sometimes the word service is used. A service is supplied by a type of object which are distinguished in order to point out how they are used.

```
dim dispatcher as object
```

Defines `dispatcher` as an object variable.

```
document = ThisComponent.CurrentController.Frame
```

`ThisComponent` refers to the current document.

`CurrentController` is a property referring to a service that controls the document. For example, when you type, it is the current controller that takes note of what you type. `CurrentController` then dispatches the changes to the document frame.

`Frame` is a controller property that returns the main frame for a document. Therefore, the variable named `document` refers to a document's frame, which receives dispatched commands.

```
dispatcher = createUnoService("com.sun.star.frame.DispatchHelper")
```

Most tasks in LibreOffice are accomplished by dispatching a command. LibreOffice includes a `DispatchHelper` service, which provides an easy way to dispatch a URL using one call instead of multiple ones and does most of the work when using dispatches in macros. The method `CreateUnoService` accepts the name of a service and it tries to create an instance of that service. On completion, the dispatcher variable contains a reference to a `DispatchHelper`.

```
dim args1(0) as new com.sun.star.beans.PropertyValue
```

Declares the `args1` array of properties. Each property has a name and a value. In other words, it is a name/value pair. The created array has one property at index zero.

The `com.sun.star.beans.PropertyValue` expression is a Universal Network Objects (UNO) structure. Structures are special variable types that contain other variables united by logical basis. They can be convenient to operate with sets of heterogeneous information that should be treated as a single whole. An explanation of UNO and user structures goes far beyond the scope of this book. For more information on creating and using structures, see the LibreOffice Help system and other Basic guides.

```
args1(0).Name = "Text"
```

```
args1(0).Value = "Your name"
```

> Gives the property the name "Text" and the value "Your name", which is the text that is inserted when the macro is run.

```
dispatcher.executeDispatch(document, ".uno:InsertText", "", 0, args1())
```

> This is where the magic happens. The dispatch helper sends a dispatch to the document frame (stored in the variable `document`) with the command `.uno:InsertText`. The next two arguments, frame name and search flags, are beyond the scope of this book. The last argument is the array of property values to be used while executing the command `InsertText`.

```
end sub
```

> The last line of the code ends the subroutine.

Creating a macro

When creating a macro, it is important to ask two questions before recording:

1) Can the task be written as a simple set of commands?
2) Can the steps be arranged so that the last command leaves the cursor ready for the next command or entering text or data into the document?

A more complicated example of a macro

A common task is to copy rows and columns of data from a website and format them as a table in a text document as follows:

1) Copy the data from the website to the clipboard.
2) To avoid strange formatting and fonts, paste the text into a Writer document as unformatted text.
3) Reformat the text with tabs between columns so that it can be converted into a table using **Table > Convert > Text to Table**.

With the two questions given above in mind, inspect the text to see if a macro can be recorded to format the text. An example of copied data showing the FontWeight constants group from the API website is shown in Figure 329. The first column in this example indicates a constant name and each name is followed by a space and a tab, and each line has two trailing spaces.

DONTKNOW	The font weight is not specified/known.
THIN	specifies a 50% font weight.
ULTRALIGHT	specifies a 60% font weight.
LIGHT	specifies a 75% font weight.
SEMILIGHT	specifies a 90% font weight.
NORMAL	specifies a normal font weight.
SEMIBOLD	specifies a 110% font weight.
BOLD	specifies a 150% font weight.
ULTRABOLD	specifies a 175% font weight.
BLACK	specifies a 200% font weight.

Figure 329: Example of copied data

The first column in the table should contain a numeric value, the second column the name, and the third column the description. This conversion is easily accomplished for every row except for DONTKNOW and NORMAL, which do not contain a numeric value, but the values are between 0 and 100 and can be entered manually.

The data can be cleaned up in several ways, all of them easy to accomplish. The example given below uses keystrokes that assume the cursor is at the start of the line with the text THIN.

1) Make sure macro recording is enabled by going to **Tools > Options > LibreOffice > Advanced** and selecting the option **Enable macro recording**. By default, this feature is turned off when LibreOffice is installed on your computer.

2) Go to **Tools > Macros > Record Macro** to start recording.

3) Press *Ctrl+Right Arrow* to move the cursor to the start of "specifies".

4) Press *Backspace* twice to remove the tab and the space.

5) Press *Tab* to add the tab without the space after the constant name.

6) Press *Delete* to delete the lower case "s" and then press *Shift+S* to add an upper case "S".

7) Press *Ctrl+Right Arrow* twice to move the cursor to the start of the number.

8) Press *Ctrl+Shift+Right Arrow* to select and move the cursor before the % sign.

9) Press *Ctrl+C* to copy the selected text to the clipboard.

10) Press *End* to move the cursor to the end of the line.

11) Press *Backspace* twice to remove the two trailing spaces.

12) Press *Home* to move the cursor to the start of the line.

13) Press *Ctrl+V* to paste the selected number to the start of the line.

14) Pasting the value also pasted an extra space, so press *Backspace* to remove the extra space.

15) Press *Tab* to insert a tab between the number and the name.

16) Press *Home* to move to the start of the line.

17) Press *Down Arrow* to move to the next line.

18) Stop recording the macro and save the macro, see "Recording a macro" on page 370.

It takes much longer to read and write the steps than to record the macro. Work slowly and think about the steps as you do them. With practice this becomes second nature.

The generated macro code in Listing 4 has been modified to contain the step number in the comments to match the code to the steps above.

Listing 4: Copying numeric value to start of the column

```
sub CopyNumToCol1
rem ----------------------------------------------------------
rem define variables
dim document   as object
dim dispatcher as object
rem ----------------------------------------------------------
rem get access to the document
document   = ThisComponent.CurrentController.Frame
dispatcher = createUnoService("com.sun.star.frame.DispatchHelper")

rem (3) Press Ctrl+Right Arrow to move the cursor to the start of "specifies".
dispatcher.executeDispatch(document, ".uno:GoToNextWord", "", 0, Array())

rem (4) Press Backspace twice to remove the tab and the space.
dispatcher.executeDispatch(document, ".uno:SwBackspace", "", 0, Array())
```

```
rem ----------------------------------------------------------------
dispatcher.executeDispatch(document, ".uno:SwBackspace", "", 0, Array())

rem (5) Press Tab to add the tab without the space after the constant name.
dim args4(0) as new com.sun.star.beans.PropertyValue
args4(0).Name = "Text"
args4(0).Value = CHR$(9)

dispatcher.executeDispatch(document, ".uno:InsertText", "", 0, args4())

rem (6) Press Delete to delete the lower case s ....
dispatcher.executeDispatch(document, ".uno:Delete", "", 0, Array())

rem (6) ... and then press Shift+S to add an upper case S.
dim args6(0) as new com.sun.star.beans.PropertyValue
args6(0).Name = "Text"
args6(0).Value = "S"

dispatcher.executeDispatch(document, ".uno:InsertText", "", 0, args6())

rem (7) Press Ctrl+Right Arrow twice to move the cursor to the number.
dispatcher.executeDispatch(document, ".uno:GoToNextWord", "", 0, Array())

rem ----------------------------------------------------------------
dispatcher.executeDispatch(document, ".uno:GoToNextWord", "", 0, Array())

rem (8) Press Ctrl+Shift+Right Arrow to select the number.
dispatcher.executeDispatch(document, ".uno:WordRightSel", "", 0, Array())

rem (9) Press Ctrl+C to copy the selected text to the clipboard.
dispatcher.executeDispatch(document, ".uno:Copy", "", 0, Array())

rem (10) Press End to move the cursor to the end of the line.
dispatcher.executeDispatch(document, ".uno:GoToEndOfLine", "", 0, Array())

rem (11) Press Backspace twice to remove the two trailing spaces.
dispatcher.executeDispatch(document, ".uno:SwBackspace", "", 0, Array())

rem ----------------------------------------------------------------
dispatcher.executeDispatch(document, ".uno:SwBackspace", "", 0, Array())

rem (12) Press Home to move the cursor to the start of the line.
dispatcher.executeDispatch(document, ".uno:GoToStartOfLine", "", 0, Array())

rem (13) Press Ctrl+V to paste the selected number to the start of the line.
dispatcher.executeDispatch(document, ".uno:Paste", "", 0, Array())

rem (14) Press Backspace to remove the extra space.
dispatcher.executeDispatch(document, ".uno:SwBackspace", "", 0, Array())

rem (15) Press Tab to insert a tab between the number and the name.
dim args17(0) as new com.sun.star.beans.PropertyValue
args17(0).Name = "Text"
args17(0).Value = CHR$(9)

dispatcher.executeDispatch(document, ".uno:InsertText", "", 0, args17())
```

```
rem (16) Press Home to move to the start of the line.
dispatcher.executeDispatch(document, ".uno:GoToStartOfLine", "", 0, Array())

rem (17) Press Down Arrow to move to the next line.
dim args19(1) as new com.sun.star.beans.PropertyValue
args19(0).Name = "Count"
args19(0).Value = 1
args19(1).Name = "Select"
args19(1).Value = false

dispatcher.executeDispatch(document, ".uno:GoDown", "", 0, args19())
end sub
```

Cursor movements are used for all operations (as opposed to searching). If run on the DONTKNOW line, the word weight is moved to the front of the line, and the first "The" is changed to "She". This is not perfect, but you should not run the macro on the lines that did not have the proper format. You need to do these manually.

Running a macro quickly

It is tedious to repeatedly run the macro using **Tools > Macros > Run Macro** when the macro can be run from the IDE (Figure 327 on page 369).

Here are a few tips to do the work easier. If you create a temporary macro using the same name, you can add that macro into the *Main* subroutine and delete your macro after using.

1) Go to **Tools > Macros > Organize Macros > Basic** to open the LibreOffice Basic Macros dialog (Figure 324 on page 368).
2) Select your macro and click **Edit** to open the macro in the IDE.
3) Unless you changed the first macro, it is the empty macro named *Main*. Modify *Main* so that it reads as shown in Listing 5.
4) Now, you can run *CopyNumToCol1* when you run the *Main* macro by clicking the **Run** icon in the Macro toolbar of the IDE, or pressing *F5*.
5) Go to **Tools > Customize** and select the *Keyboard* tab in the Customize dialog.
6) Select a shortcut key in the *Shortcut Keys* list. Then select *LibreOffice Macros*, and further, a library container, a library, and a module in the *Category* list where your modified *Main* macro is. Select the *Main* macro in the *Function* list and click the **Modify** button.

Now you can run your macro by the shortcut. This is very fast and easy, especially for temporary macros that will be used a few times and then discarded. See "How to run a macro" on page 382 for more information.

Listing 5: Modify Main to call CopyNumToCol1

```
Sub Main
  CopyNumToCol1
End Sub
```

Macro recorder failures

Sometimes the macro recorder has a failure and knowledge of LibreOffice internal workings helps to understand how and why the macro recorder sometimes fails. The primary offender is related to the dispatch framework and its relationship to the macro recorder.

Dispatch framework

The purpose of the dispatch framework is to provide uniform access to components (documents) for commands that usually correspond to menu items. Using **File > Save**, the shortcut keys *Ctrl+S*, or clicking the **Save** icon on the Standard toolbar are all commands that are translated into the same "dispatch command".

The dispatch framework can also be used to send "commands" back to the user interface (UI). For example, after saving a new document, the list of recent files is updated.

A dispatch command is text, for example `.uno:InsertObject` or `.uno:GoToStartOfLine`. The command is sent to the document frame and this passes on the command until an object is found that can handle the command.

How the macro recorder uses the dispatch framework

The macro recorder records the generated dispatches. The recorder is a relatively simple tool to use and the same commands that are issued are recorded for later use. The problem is that not all dispatched commands are complete. For example, inserting an object generates the following code:

```
dispatcher.executeDispatch(document, ".uno:InsertObject", "", 0, Array())
```

It is not possible to specify what kind of object to create or insert. If an object is inserted from a file, you cannot specify which file to insert.

If while recording a macro you use **Tools > Options** to open and modify configuration items, the generated macro does not record any configuration changes. In fact, the generated code is commented so it will not even be run.

```
rem dispatcher.executeDispatch(document, ".uno:OptionsTreeDialog", "", 0, Array())
```

If a dialog is opened, a command to open the dialog is likely to be generated. Any work done inside the dialog is not usually recorded. Examples of this include macro organization dialogs, inserting special characters, and similar types of dialogs. Other possible problems using the macro recorder include things such as inserting a formula, setting user data, setting filters in Calc, actions in database forms, and exporting a document to an encrypted PDF file. You never know for certain what will work unless you try it. For example, the actions from the search dialog are properly captured.

Other options

When the macro recorder is not able to solve a specific problem, the usual solution is to write code using the LibreOffice objects. Unfortunately, there is a steep learning curve for these LibreOffice objects. It is usually best to start with simple examples and then increase the scope of macros as you learn more. Learning to read generated macros is a good place to start.

Macro organization

In LibreOffice, macros are grouped in modules, modules are grouped in libraries, and libraries are grouped in library containers. A library is usually used as a major grouping for either an entire category of macros, or for an entire application. Modules usually split functionality, such as user interaction and calculations. Individual macros are subroutines and functions. Figure 330 shows an example of the hierarchical structure of macro libraries in LibreOffice.

Go to **Tools > Macros > Organize Macros > Basic** to open the LibreOffice Basic Macros dialog (Figure 324 on page 368). All available library containers are shown in the *Macro From* list. Every document is a library container, capable of containing multiple libraries. The application itself acts as two library containers, one container for macros distributed with LibreOffice called *LibreOffice Macros*, and one container for personal macros called *My Macros*.

The *LibreOffice Macros* are stored with the application runtime code, which may not be editable to you unless you are an administrator. This helps protect these macros because they should not be changed and you should not store your own macros in the *LibreOffice Macros* container.

Unless your macros are applicable to a single document, and only to a single document, your macros will probably be stored in the *My Macros* container. The *My Macros* container is stored in your user area or home directory.

Figure 330: Macro Library hierarchy

If a macro is contained in a document, then a recorded macro will attempt to work on that document, because it primarily uses "ThisComponent" for its actions.

Every library container contains a library named *Standard*. It is better to create your own libraries with meaningful names than to use the *Standard* library. Not only are meaningful names easier to manage, but they can also be imported into other library containers whereas the *Standard* library cannot.

> ⚠ **Caution**
>
> LibreOffice allows you to import libraries into a library container, but it will not allow you to overwrite the library named *Standard*. Therefore, if you store your macros in the *Standard* library, you cannot import them into another library container.

Just as it makes good sense to give your libraries meaningful names, it is prudent to use meaningful names for your modules. By default, LibreOffice uses names such as *Module1*, *Module2*, and so on.

As you create your macros, you must decide where to store them. Storing a macro in a document is useful if the document will be shared and you want the macro to be included with the document. Macros stored in the application library container named *My Macros*, however, are globally available to all documents.

Macros are not available until the library that contains them is loaded. However, in contrast to other libraries, the *Standard* and *Template* libraries are automatically loaded. A loaded library is displayed differently from a library that is not loaded. To load the library and the modules it contains, double-click on the library.

Where are macros stored?

LibreOffice stores user-specific data in a subdirectory of the home directory for the user. The location is operating system specific. Go to **Tools > Options > LibreOffice > Paths** to view where other configuration data are stored. User macros written in Basic are stored in `LibreOffice\4\ user\basic`. Each library is stored in its own directory off the basic directory.

For casual use, it is not necessary to understand where macros are stored. If you know where they are stored, however, you can create a backup, share your macros, or inspect them if there is an error.

Go to **Tools > Macros > Organize Dialogs** to open the LibreOffice Basic Macro Organizer dialog (Figure 325 on page 368). Alternatively, go to **Tools > Macros > Organize Macros > Basic** to open the LibreOffice Basic Macros dialog (Figure 324 on page 368) and then click the **Organizer** button.

Importing macros

The LibreOffice Basic Macro Organizer dialog allows you to import macro libraries into your document as well as creating, deleting, and renaming libraries, modules, and dialogs.

1) On the *Libraries* tab, select the library container to use and then click **Import** to import macro libraries.

2) Navigate to the directory containing the library to import (Figure 331). There are usually two files from which to choose, `dialog.xlb` and `script.xlb`. It does not matter which of these two files you select; both will be imported. Macros can be stored in libraries inside LibreOffice documents. Select a document rather than a directory on disk to import libraries contained in a document.

> **Note**
>
> You cannot import the library named *Standard*.

Figure 331: Navigating to a macro library

> **Tip**
>
> On Linux, the LibreOffice-specific files are stored in the home directory of a user, in a subdirectory whose name begins with a dot prefix (usually .config/). Directories and files with names beginning with a dot prefix may be hidden and not shown in a normal selection dialog. If using LibreOffice dialogs, rather than the operating system specific dialogs, type the name of the desired directory in the *Name* field.

3) Select a file and click **Open** to continue and open the Import Libraries dialog (Figure 332).

Figure 332: Choose library import options

4) Select the following options for importing libraries:

   a) If no options are selected, the library is copied to your user macro directory. However, if the library you are importing has the same name and you are importing into the same location, it will not be copied.

   b) Select **Replace existing libraries** if the library you want to import has the same name and you want to replace the existing library.

   c) Select **Insert as reference (read-only)** if you want to use the library as reference, but not import it into the document. When a library is used as a reference, it remains in its current location and is fully functional, but cannot be modified in the Basic IDE.

5) Click **OK** to import the macro library you selected.

Downloading macros to import

Macros are available for download. Some macros are contained in documents, some as regular files that you must select and import, and some as macro text that should be copied and pasted into the Basic IDE. See "Adding a macro" on page 367 on how to add macros to your macro library and "Viewing and editing macros" on page 371 on how to edit macros using the Basic IDE.

Some macros are available as free downloads on the Internet (see Table 6).

Table 6. Macro examples

Location	Description
http://www.pitonyak.org/oo.php	Reference materials regarding macros.
http://www.pitonyak.org/database/	Reference materials regarding database macros.
https://wiki.documentfoundation.org/Macros	Lots of links to macros.
http://forum.openoffice.org/en/forum/	Forums, with many examples and help.

How to run a macro

Although you can use **Tools > Macros > Run** to run all macros, this is not efficient for frequently run macros. See "Running a macro" on page 371 for more information.

A more common technique for frequently used macros is to link the macro to a toolbar icon, menu item, keyboard shortcut, or a button embedded in a document. While choosing a method, it is also good to ask questions such as:

- Should the macro be available for only one document, or globally for all documents?
- Is the macro for a specific document type, such as a Calc document?
- How frequently will the macro be used?

The answers will determine where to store the macro and how to make it available. For example, you will probably not add a rarely used macro to a toolbar. To help determine your choices, see Table 7.

Table 7. Where to store a macro

Type of macro	*LibreOffice (for all components)*	*A specific document type*	*One document*
Toolbar	No	Yes	Yes
Menu	No	Yes	Yes
Shortcut	Yes	Yes	No
Event	Yes	No	Yes

Toolbars, menu items, and keyboard shortcuts

To add a menu item, keyboard shortcut, or toolbar icon that calls a macro, use the Customize dialog.

The Customize dialog contains pages to configure menus, keyboard shortcuts, toolbars, and events. To open this dialog, go to **Tools > Customize**. Use of the *Menus*, *Toolbars*, *Context Menus*, and *Keyboard* tabs are covered in Chapter 14, Customizing LibreOffice.

Events

Whenever something happens in LibreOffice, it is called an event. For example, opening a document, changing status of modified, or moving the mouse cursor are all events. LibreOffice allows events to trigger the execution of a macro; the macro is then called an event handler. Full coverage of event handlers is well beyond the scope of this chapter, but a little knowledge can accomplish much.

> ⚠️ **Caution**
>
> Be careful when you configure an event handler. For example, assume that you write an event handler that is called every time that a document is modified, but you make a mistake so the event is not properly handled. One possible result is that your event handler will force you to kill LibreOffice.

1) Go to **Tools > Customize** to open the Customize dialog and select the *Events* tab (Figure 333). The events in the Customize dialog are related to the entire application and specific documents.

2) In the *Save In* drop-down, select **LibreOffice**, or a specific document from the menu to save your event.

3) A common use is to assign the Open Document event to call a specific macro. The macro then performs certain setup tasks for the document. Select the desired event and click **Macro** to open the Macro Selector dialog (similar to Figure 328 on page 371 but with different action buttons).

4) Select the desired macro and click **OK** to assign the macro to the event. The *Events* tab will show that the event has been assigned to a macro.

Many objects in a document can be set to call macros when events occur. The most common use is to add a control, such as a button, into a document. Even double-clicking on a graphic opens a dialog with a *Macros* tab that allows you to assign a macro to an event.

Figure 333: Events tab in Customize dialog

Using extensions

An extension is a package that can be installed into LibreOffice to add new functionality. Extensions can be written in almost any programming language and may be simple or sophisticated. Extensions can be grouped into types, for example:

- Calc add-ins, which provide new functionality for Calc, including new functions that act like normal built-in functions.
- New components and functionality, which normally include some level of User Interface (UI) integration such as new menus or toolbars.
- Chart add-ins with new chart types.
- Linguistic components such as spelling checkers.
- Document templates and images.

Although individual extensions can be found in several places, there is currently an extension repository at: http://extensions.libreoffice.org/ and some documentation at http://libreplanet.org/wiki/Group:OpenOfficeExtensions/List.

For more about obtaining and installing extensions, see Chapter 14, Customizing LibreOffice.

Writing macros without the recorder

The examples covered in this chapter are created using the macro recorder and the dispatcher. You can also write macros that directly access the objects that comprise LibreOffice if you are confident in writing computer code. In other words, you can create a macro that directly manipulates a document.

Directly manipulating LibreOffice internal objects is an advanced topic that is beyond the scope of this chapter. A simple example, however, demonstrates how this works.

Listing 6: Append the text "Hello" to the current document

```
Sub AppendHello
  Dim oDoc
  Dim sTextService$
  Dim oCurs

  REM ThisComponent refers to the currently active document.
  oDoc = ThisComponent

  REM Verify that this is a text document.
  sTextService = "com.sun.star.text.TextDocument"
  If NOT oDoc.supportsService(sTextService) Then
    MsgBox "This macro only works with a text document"
    Exit Sub
  End If
  REM Get the view cursor from the current controller.
  oCurs = oDoc.currentController.getViewCursor()

  REM Move the cursor to the end of the document.
  oCurs.gotoEnd(False)

  REM Insert text "Hello" at the end of the document.
  oCurs.Text.insertString(oCurs, "Hello", False)
End Sub
```

Overview of BeanShell, JavaScript, and Python macros

Many programmers may not be familiar with LibreOffice Basic, so LibreOffice supports macros written in three other languages that may be more familiar: BeanShell, JavaScript, and Python.

Macros are organized in the same way for all four scripting languages. The *LibreOffice Macros* container holds all the macros that are supplied in the LibreOffice installation. The *My Macros* library container holds your macros that are available to any of your LibreOffice documents. Each document can also contain your macros that are not available to any other document.

When you use the macro recording facility, LibreOffice creates the macro in LibreOffice Basic. To use the other available scripting languages, you must write the code yourself.

When you select to run a macro using **Tools > Macros > Run Macro**, LibreOffice displays the Macro Selector dialog. This dialog enables selection and running of any available macro, coded in any of the available languages (Figure 334).

When you select to edit a macro using **Tools > Macros > Edit Macros**, LibreOffice displays the LibreOffice Basic IDE. This dialog enables selection and editing of any available LibreOffice Basic macro, but not macros in other languages.

Figure 334: Macro Selector dialog

The component model used in LibreOffice is known as Universal Network Objects or UNO. LibreOffice macros in any scripting language use a UNO runtime application programming interface (API). The XSCRIPTCONTEXT interface is provided to macro scripts in all four languages, and provides a means of access to the various interfaces which they might need to perform some action on a document.

BeanShell macros

BeanShell is a Java-like scripting language that was first released in 1999.

When you select **Tools > Macros > Organize Macros > BeanShell**, LibreOffice displays the BeanShell Macros dialog (Figure 335).

Figure 335: BeanShell Macros dialog

Click the **Edit** button on the BeanShell Macros dialog to access the BeanShell Debug Window (Figure 336).

Figure 336: BeanShell Debug Window

Listing 7 is an example of a BeanShell macro that inserts the text "Hello World from BeanShell" in cell A1 of the active Calc spreadsheet.

Listing 7: Sample BeanShell macro

```
import com.sun.star.uno.UnoRuntime;
import com.sun.star.sheet.XSpreadsheetView;
import com.sun.star.text.XText;

model = XSCRIPTCONTEXT.getDocument();

controller = model.getCurrentController();

view = UnoRuntime.queryInterface(XSpreadsheetView.class, controller);

sheet = view.getActiveSheet();

cell = sheet.getCellByPosition(0, 0);

cellText = UnoRuntime.queryInterface(XText.class, cell);

textCursor = cellText.createTextCursor();

cellText.insertString(textCursor, "Hello World from BeanShell", true);

return 0;
```

JavaScript macros

JavaScript is a high-level scripting language that was first released in 1995.

When you select **Tools > Macros > Organize Macros > JavaScript**, LibreOffice displays the JavaScript Macros dialog (Figure 337).


Figure 337: JavaScript Macros dialog

Click the **Edit** button on the JavaScript Macros dialog to access the Rhino JavaScript Debugger (Figure 338). Detailed instructions for using this tool can be found on Mozilla's website at https://developer.mozilla.org/en-US/docs/Mozilla/Projects/Rhino/Debugger.

Figure 338: Rhino JavaScript Debugger

Listing 8 is an example of a JavaScript macro that inserts the text "Hello World from JavaScript" in cell A1 of the first sheet in a Calc spreadsheet.

Listing 8: Sample JavaScript macro

```
importClass(Packages.com.sun.star.uno.UnoRuntime);
importClass(Packages.com.sun.star.sheet.XSpreadsheetDocument);
importClass(Packages.com.sun.star.container.XIndexAccess);
importClass(Packages.com.sun.star.table.XCellRange);
importClass(Packages.com.sun.star.table.XCell);

documentRef = XSCRIPTCONTEXT.getDocument();
```

```
spreadsheetInterface = UnoRuntime.queryInterface(XSpreadsheetDocument,
documentRef);

allSheets = UnoRuntime.queryInterface(XIndexAccess,
spreadsheetInterface.getSheets());

theSheet = allSheets.getByIndex(0);

Cells = UnoRuntime.queryInterface(XCellRange,theSheet);

cellA1 = Cells.getCellByPosition(0,0);

theCell = UnoRuntime.queryInterface(XCell,cellA1);

theCell.setFormula("Hello World from JavaScript");
```

Python macros

Python is a high-level, general-purpose programming language that was first released in 1991.

When you select **Tools > Macros > Organize Macros > Python**, LibreOffice displays the Python Macros dialog (Figure 339).


Figure 339: Python Macros dialog

Facilities to edit and debug Python scripts are not currently integrated into the standard LibreOffice user interface. However, you can edit Python scripts with your preferred text editor or an external IDE. The Alternative Python Script Organizer (APSO) extension eases the editing of Python scripts, in particular when embedded in a document. Using APSO you can configure your preferred source code editor, start the integrated Python shell and debug Python scripts. For more information search for Python in the LibreOffice Help system and visit the *Designing & Developing Python Applications* section of The Document Foundation's wiki, https://wiki.documentfoundation.org/Macros/Python_Design_Guide.

Listing 9 is an example of a Python macro that sets cell A1 of the first sheet in a Calc spreadsheet to the text "Hello World from Python".

Listing 9: Sample Python macro

```
import uno

def HelloWorld():
    doc = XSCRIPTCONTEXT.getDocument()
    cell = doc.Sheets[0]['A1']
    cell.setString('Hello World from Python')
    return
```

Finding more information

Numerous resources are available that provide help with writing macros. Use **Help > LibreOffice Help,** or press the *F1* key, to open the LibreOffice help pages. The upper left corner of the LibreOffice help system contains a drop-down list that determines which help set is displayed. To view the help for Basic, choose **Basic** from this list.

Included material

Many excellent macros are included with LibreOffice. Use **Tools > Macros > Organize Macros > Basic** to open the LibreOffice Basic Macros dialog. Expand the *Tools* library in the *LibreOffice* library container. Inspect the *Debug* module — some good examples include *WritedbgInfo* (document) and *printdbgInfo* (sheet).

Online resources

The following links and references contain information regarding macro programming:

https://wiki.documentfoundation.org/Macros

https://ask.libreoffice.org/ (a Q & A site where volunteers answer questions related to LibreOffice)

http://forum.openoffice.org/en/forum/ (Apache OpenOffice community forum; volunteers answer questions about LibreOffice as well)

https://wiki.documentfoundation.org/Documentation/Other_Documentation_and_Resources (look in Programmers section for BASIC Programmers' Guide and Developers' Guide; the latter contains a detailed explanation)

Printed and ebook materials

There are currently no books specific to LibreOffice macros that are available for download.

Information in the following books is mostly applicable to LibreOffice; the books are available for purchase in both printed and ebook form from their publishers:

Dr. Mark Alexander Bain's Learn OpenOffice.org Spreadsheet Macro Programming.
See http://www.packtpub.com/openoffice-ooobasic-calc-automation/book.

Roberto Benitez's Database Programming with OpenOffice.org Base & Basic.
See http://www.lulu.com/product/paperback/database-programming-with-openofficeorg-base-basic/3568728.

Getting Started Guide

Chapter 14
Customizing LibreOffice

Introduction

This chapter describes some common customization that you may wish to carry out.

You can customize menus, toolbars, and keyboard shortcuts in LibreOffice, add new menus and toolbars, and assign macros to events.

Other customizations are made easy by extensions that you can install from the LibreOffice website or from other providers.

> **Note**
>
> Customization to menus and toolbars can be saved in a template. To do so, first save them in a document and then save the document as a template as described in Chapter 3, Using Styles and Templates.

Customizing menu content

You can add and rearrange menus on the Menu bar or context (right-click) menus; add, rearrange, and remove commands on menus, and make other changes.

To customize menus, choose **Tools > Customize**. On the Customize dialog, go to the Menus tab (Figure 340) or the Context Menus tab.

Figure 340: The Menus tab of the Customize dialog

Modifying an existing menu

In this example, we are customizing a menu in the Calc component of LibreOffice.

1) In the *Scope* drop-down list in the upper right of the Customize dialog, choose whether to save this changed menu for Calc or for a selected document.

2) In the *Target* drop-down list, select the menu that you want to customize. The list includes all the sub-menus as well as the main menus. The commands on the selected menu are shown in the *Assigned Commands* list.

3) To add a command to the selected menu, click on a command in the *Available Commands* list and then click the large right arrow. You can narrow the search by using the *Search* box on the top left or selecting the *Category* in the drop-down list. Use the up and down arrows on the far right-hand side to move the command into the position where you want it in the list.

4) To remove a command from the selected menu, click on it in the *Assigned Commands* list and then click the large left arrow.

5) To insert a separator or submenu, select the item directly before where you want the inserted item to appear, and use the commands in the **Insert** drop-down.

Figure 341: Insert drop-down

6) To rename a menu item, select it in the *Assigned Commands* list and choose **Rename** from the **Modify** drop-down.

Figure 342: Modify drop-down

7) When you have finished making all your changes, click **OK** to save them.

Creating a new menu

On the Menus tab of the Customize dialog, click the symbol next to *Target* and select **Add** from the drop-down list (Figure 343), to display the New Menu dialog shown in Figure 344.

Figure 343: Location of command to add a new menu

1) Type a name for the new menu in the *Menu name* box.

2) Use the up and down arrow buttons to move the new menu into the required position on the Menu bar. Click **OK** to save and return to the Customize dialog.

Figure 344: Adding a new menu

The new menu now appears on the list of menus in the Customize dialog. It will appear on the Menu bar itself after you save your customizations.

After creating a new menu, you need to add some commands to it, as described above for modifying a menu.

Creating an accelerator

You can allocate a letter in a custom menu's name to be used as a keyboard shortcut. (That letter will become underlined.) When you press *Alt+that letter*, that menu or command will be invoked. Existing submenus can also be edited to change the letter which is used to select them using the keyboard when the menu is open.

To create an accelerator:

1) Select a menu item from the *Assigned Commands* list on the Customize dialog.
2) Click the **Modify** button and select **Rename**.
3) Add a tilde (~) in front of the letter to use as an accelerator.
4) Click **OK** to save the change.

If for example you put a tilde before the "A" in a menu item *Art*, the "A" would now be underlined. Press *Alt+A* and either the *Art* submenu will open or the *Art* button will be actioned (as appropriate).

> ⚠️ **Caution**
>
> When assigning an accelerator, be careful not to use a letter that is already assigned to a menu or command associated with a menu item. The same letter-key combinations can be used for commands associated with different menu items but not for those associated with the same menu or menu item.

Customizing toolbars

You can customize toolbars in several ways, including choosing which icons are visible and locking the position of a docked toolbar (as described in Chapter 1, Introducing LibreOffice), and adding or deleting icons (commands) in the list of those available on a toolbar. You can also create new toolbars. This section describes how to create new toolbars and add or delete icons on existing toolbars.

To get to the Toolbars tab of the Customize dialog (Figure 345), do any of the following:

- On the toolbar, right-click in the toolbar and choose **Customize Toolbar**.
- Choose **View > Toolbars > Customize** from the Menu bar.
- Choose **Tools > Customize** from the Menu bar and click on the *Toolbars* tab.

Figure 345: The Toolbars tab of the Calc Customize dialog

Modifying existing toolbars

The procedures for creating and modifying a toolbar are similar to those for menus. In this example, we are customizing a toolbar in the Calc component of LibreOffice.

To modify an existing toolbar:

1) In the *Scope* drop-down list on the upper right of the Customize dialog, choose whether to save this changed toolbar for Calc or for a selected document.

2) In the *Target* drop-down list, select the toolbar that you want to customize. The current toolbar content is displayed in the *Assigned Commands* list.

3) Select a command in the *Available Commands* list on the left. You can narrow your search by using the *Search* box on the top left or choosing a category in the drop-down list just below.

4) Click on the large right arrow to add the selected command to the *Assigned Commands* list for the toolbar (on the right). Use the up and down arrows in the far right to position the command in the toolbar.

5) To remove a command from a toolbar, select it in the *Assigned Commands* list on the right and click the large left arrow.

6) To show or hide a command assigned to a toolbar, select or clear the checkbox by its icon in the *Assigned Commands* list on the right.

7) To insert a separator, select the item directly before where you want the separator to appear, and use the command in the **Insert** drop-down.

8) To rename a toolbar item, select it in the *Assigned Commands* list and choose **Rename** from the **Modify** drop-down.

9) When you have finished making all your changes, click **OK** to save them.

Creating a new toolbar

To create a new toolbar:

1) Choose **Tools > Customize** on the Menu bar.

2) On the Toolbars page of the Customize dialog, click the symbol next to *Target* and select **Add** from the list, to display the Name dialog (Figure 346).

3) On the Name dialog, type the new toolbar's name and choose from the *Save In* drop-down list where to save this new toolbar: for the application (for example, Writer) or for a selected document.

The new toolbar now appears on the list of toolbars in the Customize dialog. After creating a new toolbar, you need to add some commands to it, as described above.

Figure 346: Naming a new toolbar

Choosing icons for toolbar commands

Toolbar buttons usually have icons, not words, on them, but not all of the commands have associated icons.

To choose an icon for a command, select the command and click **Modify > Change Icon**. On the Change Icon dialog (Figure 347), scroll through the available icons, select one, and click **OK** to assign it to the command.

To use a custom icon, create it in a graphics program and import it into LibreOffice by clicking the **Import** button on the Change Icon dialog. Custom icons should be 16 x 16 pixels in size to achieve the best quality and should not contain more than 256 colors.

Figure 347: Change Icon dialog

Assigning shortcut keys

In addition to using the built-in keyboard shortcuts (listed in Appendix A), you can define your own. You can assign shortcuts to standard LibreOffice functions or your own macros and save them for use with the entire LibreOffice suite.

> ⚠️ **Caution**
>
> Be careful when reassigning your operating system's or LibreOffice's predefined shortcut keys. Many key assignments, such as *F1* for Help, are always expected to provide certain results. Although you can easily reset the shortcut key assignments to the LibreOffice defaults, changing some common shortcut keys can cause confusion, especially if other users share your computer.

To adapt shortcut keys to your needs, use the Customize dialog, as described below.

1) Select **Tools > Customize > Keyboard**. The Customize dialog opens with the *Keyboard* tab displayed (Figure 348).

2) To have the shortcut key assignment available in all components of LibreOffice, select **LibreOffice** in the upper right.

3) Next select the required function from the *Category* and *Function* lists.

4) Now select the desired shortcut keys in the *Shortcut Keys* list and click the **Modify** button.

5) Click **OK** to accept the change. Now the chosen shortcut keys will execute the function chosen in step 3 above whenever they are pressed.

> **Note**
>
> All existing shortcut keys for the currently selected function are listed in the *Keys* selection box. If the *Keys* list is empty, it indicates that the chosen key combination is free for use. If it were not, and you wanted to reassign a shortcut key combination that is already in use, you must first delete the existing key.
>
> Shortcut keys that are grayed-out in the listing on the Customize dialog, such as *F1*, *F6*, and *F10 for Calc* on a Windows 10 installation, are not available for reassignment.

Figure 348: Customizing a keyboard shortcut

Saving changes to a file

Changes to the shortcut key assignments can be saved in a keyboard configuration file for use a later time, thus permitting you to create and apply different configurations as the need arises, or in another way, create a standard keyboard configuration file to be distributed among many users in a company. To save keyboard shortcuts to a file:

1) After making your keyboard shortcut assignments, click the **Save** button at the right of the Customize dialog (Figure 348).

2) In the Save Keyboard Configuration dialog, enter a name for the keyboard configuration file in the File name box, or select an existing file from the list. If you need to, browse to find a file from another location (the file extension is .cfg for Configuration).

3) Click **Save**. A confirmation dialog appears if you are about to overwrite an existing file, otherwise there will be no feedback and the file will be saved.

Loading a saved keyboard configuration

To load a saved keyboard configuration file and replace your existing configuration, click the **Load** button at the right of the Customize dialog, and then select the configuration file from the Load Keyboard Configuration dialog.

Resetting the shortcut keys

To reset all of the keyboard shortcuts to their default values, click the **Reset** button near the bottom right of the Customize dialog. Use this feature with care; no confirmation dialog will be displayed.

Assigning macros to events

In LibreOffice, when something happens, we say that an event occurred. For example, a document was opened, a key was pressed, or the mouse moved. You can associate a macro with an event, so the macro is run when the event occurs. A common use is to assign the "open document" event to run a macro that performs certain setup tasks for the document.

To associate a macro with an event, use the Events tab of the Customize dialog. For more information, see Chapter 13, Getting Started with Macros.

Adding functionality with extensions

An extension is a program that can be installed into LibreOffice to add new functionality and improve your productivity. Template sets, spelling dictionaries, clipart galleries, macros, and dialog libraries can be packaged as LibreOffice extensions.

Several extensions are shipped bundled with LibreOffice and are installed with the program. These can only be removed by changing the installation options. Others can be downloaded from various websites. The official extension repository is located at extensions.libreoffice.org. These extensions are free of charge.

Some extensions from other sources are free of charge; others are available for a fee. Check the descriptions to see what licenses and fees apply to the ones that interest you.

Download the extension to your computer in any folder that you want (usually folder Download).

Installing extensions

To install an extension that is listed in the repository, follow these steps:

1) In LibreOffice, select **Tools > Extension Manager** on the Menu bar. In the Extension Manager dialog (Figure 349), click the **Get more extensions online** link.

2) A browser window will open. Find the extension you want and download it to your computer.

3) After the extension is downloaded and saved, return to the Extension Manager dialog and click **Add**. Find and select the extension you want to install and click **Open**. The extension begins installing. You may be asked to accept a license agreement.

4) When the installation is complete, the extension is listed in the Extension Manager dialog.

To install an extension that is not listed in the repository, download the extension, then continue with step 3 above.

Updating extensions

Click the **Check for Updates** button on the Extension Manager dialog to check for updates to installed extensions.

Removing and disabling extensions

To remove (uninstall) an extension that you installed, select the extension in the main window of the Extension Manager dialog and click the **Remove** button.

To disable an extension without removing (uninstalling) it, select the extension in the main window of the Extension Manager dialog and click the **Disable** button, which then changes to **Enable**.

Figure 349: Extension Manager dialog

Adding custom colors

Versions of LibreOffice before 5.3 had a Colors page in **Tools > Options**, where you could add custom colors to a color palette, for example to exactly match a corporate color scheme. This page has been removed. The method for defining a custom color is now as follows:

1) Insert any drawing object, such as a square, into any document.

2) Right-click on the object and choose **Area** from the context menu.

3) Go to the *Color* tab (Figure 350). From the *Palette* drop-down in the *Colors* area, choose which palette you wish to add the new color to. Under *New*, define the new color using RGB or Hex notation, or click the **Pick** button to select the color on the Pick a Color dialog (Figure 351).

4) Click **Add** in the lower left corner, enter a name for the new color in the pop-up dialog, and click **OK** to save.

5) Delete the drawing object from the document, if it is not needed.

Figure 350: Defining a new color

Figure 351: Defining a color by picking it from a color chart

Adding fonts

LibreOffice supports PostScript (.pfb), TrueType (.ttf), and OpenType (.otf) font file formats. Other font formats exist, and may be supported by your operating system, but these formats may be limited in selection and quality.

If you have administration privileges, you can install additional fonts through your operating system; they will then be available for use by LibreOffice and will appear in Writer's font lists.

Finding free-licensed fonts

In addition to proprietary fonts from sources like Adobe, hundreds of free-licensed fonts are available. You can use, share, and edit free-licensed fonts as you please. Most are available at no cost. Many are clones or near-variations of classic fonts, but some are original fonts.

Many Linux distributions include a few free-licensed fonts in their package repositories. Other places where you can find free-licensed fonts include The League of Movable Type (theleagueofmoveabletype.com), Open Font Library (fontlibrary.org).

LibreOffice

Getting Started Guide

Appendix A
Keyboard Shortcuts

Introduction

You can use LibreOffice without requiring a pointing device, such as a mouse or touchpad, by using its built-in keyboard shortcuts.

This appendix lists some of the most common built-in keyboard shortcuts that apply to multiple components of LibreOffice. For shortcuts specific to Writer, Calc, Impress, Draw, Math, or Base, read the relevant component guide or search the application Help.

To assist the user with identification of useful keyboard shortcuts, their existence is indicated by text on menu items and in the tooltips of toolbar icons. For example, in Writer:

- The menu item **File > Open** includes text indicating that *Ctrl+O* is an equivalent shortcut.
- The **Underline** icon in the Formatting toolbar has a tooltip indicating that *Ctrl+U* is an equivalent shortcut.
- The **Paste** item in the right-click context menu includes text indicating that *Ctrl+V* is an equivalent shortcut (providing that **Tools > Options > LibreOffice > View > Visibility > Shortcuts** is not set to *Hide*).

The software provides further information about the available shortcuts in the list presented on the *Keyboard* tab of the **Tools > Customize** dialog.

> ⚠️ **Warning**
>
> Some of the shortcuts listed here may not work if your operating system uses the same shortcuts for other tasks.
>
> To resolve any conflicts, assign different keys to these shortcuts by reconfiguring either LibreOffice (see Chapter 14, Customizing LibreOffice, in this book) or your operating system (see system documentation).

Assistive tools in LibreOffice

In addition to keyboard shortcuts, LibreOffice supports some assistive technology tools like screen magnification software, screen readers, and on-screen keyboards. Please note that except for the Windows platform, accessibility support relies on Java technology for communications with assistive technology tools. This means that the first program startup may take a few seconds longer, because the Java runtime environment has to be started as well.

A current list of supported assistive tools can be found on the Wiki at https://wiki.documentfoundation.org/Accessibility

Tip for Macintosh users

Some keystrokes are different on macOS from those used in Windows and Linux. The following table gives some common substitutions for the instructions in this chapter. For a more detailed list, see the application Help.

Windows or Linux	macOS equivalent	Effect
Right-click	Control+click and/or right-click depending on computer setup	Open a context menu
Ctrl (Control)	⌘ (Command)	Used with other keys
F5	Shift+⌘+F5	Open the Navigator
F11	⌘+T	Open the Sidebar Styles deck

Getting help

Shortcut Keys	Result
F1	Opens the LibreOffice Help contents in the user's default browser. If the local Help package is not installed, LibreOffice opens the online Help located at https://help.libreoffice.org
Shift+F1	Turns the cursor into the What's This? question mark. Shows the tip for an item underneath the cursor. The shortcut does not work with the online help.
Shift+F2	Shows tip for a selected item. The shortcut does not work with the online help.

General keyboard shortcuts

Opening menus and menu items

Shortcut Keys	Result
Alt+<?>	Opens a menu where <?> is the underlined character of the menu you want to open. For example, Alt+F opens the menu File.
	With the menu open, you will again find underlined characters. You can access these menu items directly by pressing the underlined character key. Where two menu items have the same underlined character, press the character key again to move to the next item.
	There may be instances where an item in a menu has no underlined character. This will have to be clicked directly.
Esc	Closes an open menu.
F6	Repeatedly pressing F6 switches the focus and circles through the following objects:
	• Menu bar
	• Every toolbar from top to bottom and from left to right
	• Every free window from left to right
	• Document
Shift+F6	Switches focus through objects in the opposite direction.
Ctrl+F6	Switches the focus to the document.
F10 or Alt	Switches focus to the Menu bar and back.

Accessing a menu command

Press *Alt* or *F6* or *F10* to select the first item on the Menu bar (the File menu). With the right-arrow, the next menu to the right is selected; with the left-arrow, the previous menu. The *Home* and *End* keys select the first and the last item on the Menu bar.

The down-arrow opens a selected menu. An additional down-arrow or up-arrow moves the selection through the menu commands. The right-arrow opens any existing submenus.

Press *Enter* to run the selected menu command.

Running a toolbar command

Press *F6* repeatedly until the first icon on the toolbar is selected. Use the right and left arrows to select any icon on a horizontal toolbar. Similarly, use the up and down arrows to select any icon on a vertical toolbar. The *Home* key selects the first icon on a toolbar, and the *End* key the last.

> ### Note
>
> If the first object in the toolbar has an editable text field, like the Load URL or the Paragraph Style, the *Home*, *End*, left and right arrow keys work on the text instead. In these cases you can use *Tab* and *Shift+Tab* to navigate to other objects.

Press *Enter* to action the selected icon. If the selected icon normally demands a consecutive mouse action, such as inserting a rectangle, then pressing the *Enter* key is not sufficient: in these cases press *Ctrl+Enter*.

Press *Ctrl+Enter* on an icon for creating a draw object. A draw object will be placed into the middle of the view, with a predefined size.

Press *Ctrl+Enter* on the Selection tool to select the first draw object in the document. If you want to edit, size, or move the selected draw object, first use *Ctrl+F6* to move the focus into the document.

Navigating and selecting with the keyboard

You can navigate through a document and make selections with the keyboard.

- To move the cursor, press the key or key combination given in the following table.
- To select the characters under the moving cursor, additionally hold down the Shift key when you move the cursor.

Key	*Function*	*Plus Ctrl key*
Right, left arrow keys	Moves the cursor one character to the left or to the right.	Moves the cursor one word to the left or to the right.
Up, down arrow keys	Moves the cursor up or down one line.	Moves the cursor up or down one paragraph.
Home	Moves the cursor to the beginning of the current line.	Moves the cursor to the beginning of the document.
End	Moves the cursor to the end of the current line.	Moves the cursor to the end of the document.
PgUp	Scrolls up one page.	Moves the cursor to the header.
PgDn	Scroll down one page.	Moves the cursor to the footer.

Controlling dialogs

When you open any dialog, one element (such as a button, an option field, an entry in a list box, or a checkbox) is highlighted or indicated by a dotted box around the field or button name. This element is said to have the focus on it.

Shortcut Keys	*Result*
Enter	Activates selected button. In most cases where no button is selected, Enter is equivalent to clicking OK.
Esc	Closes dialog without saving any changes made while it was open. In most cases, Esc is equivalent to clicking Cancel. When an open drop-down list is selected, Esc closes the list.
Spacebar	Checks an empty checkbox. Clears a checked checkbox.
Up, down arrow keys	Moves focus up and down a list. Increases or decreases value of a variable. Moves focus vertically within a section of dialog.
Left, right arrow keys	Moves focus horizontally within a section of a dialog.

Shortcut Keys	Result
Tab	Advances focus to the next section or element of a dialog.
Shift+Tab	Returns focus to the previous section or element in a dialog.
Alt+Down Arrow	Shows items in a drop-down list.

Controlling macros

Shortcut Keys	Result
Ctrl+* (multiplication sign: on number pad only)	Runs a macro field. (See Chapter 13 for more about macros.)
Shift+Ctrl+Q	Stops a running macro.

Managing documents

Shortcut Keys	Result
Ctrl+F4 or Alt+F4	Closes the current document. Closes LibreOffice when the last open document is closed.
Ctrl+O	Launches the Open dialog to open a document.
Ctrl+S	Saves the current document. If you are working on a previously unsaved file, the shortcut launches the Save As dialog.
Ctrl+N	Creates a new document.
Shift+Ctrl+N	Opens the Templates dialog.
Ctrl+P	Opens the Print dialog to print the document.
Ctrl+Q	Closes the application.
Del	In the Save and Open dialogs, deletes the selected files or folders. Items can be retrieved from the Recycle Bin (Trash), if your desktop has one.
Shift+Del	In the Save and Open dialogs, deletes the selected files or folders. Items are permanently deleted: they can not be retrieved from the Recycle Bin.
Backspace	In the Save and Open dialogs, shows contents of the current folder's parent folder.

Editing

Shortcut Keys	Result
Ctrl+X, Shift+Del	Cuts selected items.
Ctrl+C, Ctrl+Ins	Copies selected items to the clipboard.
Ctrl+V, Shift+Ins	Pastes copied or cut items from the clipboard.
Ctrl+Shift+V	Opens the Paste Special dialog.
Ctrl+Alt+Shift+V	Pastes unformatted text.
Ctrl+A	Selects all.
Ctrl+Z	Undoes last action.
Ctrl+Y	Redoes last action.
Ctrl+Shift+Y	Repeats last command.
Ctrl+F	Opens the Find toolbar.
Ctrl+H	Opens the Find & Replace dialog.

Shortcut Keys	Result
Ctrl+Shift+F	Searches for the last entered search term.
Ctrl+Shift+I	Shows or hides the cursor in read-only text.

Selecting rows and columns in a database table opened by View > Data Sources (Ctrl+Shift+F4)

Shortcut keys	Result
Spacebar	Toggles row selection, except when the row is in edit mode.
Ctrl+Spacebar	Toggles row selection.
Shift+Spacebar	Selects the current column.
Ctrl+Page Up	Moves pointer to the first row.
Ctrl+Page Down	Moves pointer to the last row.

Shortcut keys for drawing objects

Shortcut keys	Result
Select the toolbar with F6. Use the Down Arrow and Right Arrow to select the desired toolbar icon and press Ctrl+Enter.	Inserts a drawing object.
Select the document with Ctrl+F6 and press Tab.	Selects a drawing object.
Tab	Selects the next drawing object.
Shift+Tab	Selects the previous drawing object.
Ctrl+Home	Selects the first drawing object.
Ctrl+End	Selects the last drawing object.
Esc	Ends drawing object selection.
Esc (in Handle Selection Mode)	Exits Handle Selection Mode and returns to Object Selection Mode.
Up/Down/Left/Right Arrow	Move the selected point (the snap-to-grid functions are temporarily disabled, but end points still snap to each other).
Alt+Up/Down/Left/Right Arrow	Moves the selected drawing object one pixel (in Selection Mode). Re-sizes a drawing object (in Handle Selection Mode). Rotates a drawing object (in Rotation Mode). Opens the properties dialog for a drawing object. Activates the Point Selection mode for the selected drawing object.
Spacebar	Selects a point of a drawing object (in Point Selection mode) / Cancel selection. The selected point blinks once per second.
Shift+Spacebar	Selects an additional point in Point Selection mode.
Ctrl+Tab	Selects the next point of the drawing object (Point Selection mode). In Rotation mode, the center of rotation can also be selected.

Shortcut keys	Result
Ctrl+Shift+Tab	Selects the previous point of the drawing object (Point Selection mode).
Ctrl+Enter	A new drawing object with default size is placed in the center of the current view.
Ctrl+Enter at the Selection icon	Activates the first drawing object in the document.
Esc	Leaves the Point Selection mode. The drawing object is selected afterwards. Edits a point of a drawing object (Point Edit mode).
Any text or numerical key	If a drawing object is selected, switches to edit mode and places the cursor at the end of the text in the drawing object. A printable character is inserted.
Alt key while creating or scaling a graphic object	The position of the object's center is fixed.
Shift key while creating or scaling a graphic object	The ratio of the object's width to height is fixed.

Defining keyboard shortcuts

In addition to using the built-in keyboard shortcuts listed in this Appendix, you can define your own. See Chapter 14, Customizing LibreOffice, for instructions.

Further reading

For help with LibreOffice's keyboard shortcuts, or using LibreOffice with a keyboard only, search the application Help using the "shortcut keys" or "accessibility" keywords.

Getting Started Guide

Appendix B
Open Source,
Open Standards,
OpenDocument

Introduction

LibreOffice is a productivity suite that is compatible with other major office suites and available on a variety of platforms. It is open source software and therefore free to download, use, and distribute. If you are new to LibreOffice, this appendix will provide some information regarding its history, its community, and some of its technical specifications.

A short history of LibreOffice

The OpenOffice.org project began when Sun Microsystems released the source code ("blueprints") for its StarOffice® software to the open source community on October 13, 2000. OpenOffice.org 1.0, the product, was released on April 30, 2002. Major updates to OpenOffice.org included version 2.0 in October 2005 and version 3.0 in October 2008. On January 26, 2010, Oracle Corporation acquired Sun Microsystems.

On September 28, 2010, the community of volunteers who develop and promote OpenOffice.org announced a major change in project structure. After ten years' successful growth with Sun Microsystems as founding and principle sponsor, the project launched an independent foundation called The Document Foundation, to fulfill the promise of independence written in the original charter. This foundation is the cornerstone of a new ecosystem where individuals and organizations can contribute to and benefit from the availability of a truly free office suite.

Unable to acquire the trademarked OpenOffice.org name from Oracle Corporation, The Document Foundation named its product LibreOffice. Continuing the version numbers from OpenOffice.org, LibreOffice 3.3 was released in January 2011 and version 6.4 was released in January 2020.

In February 2012, The Document Foundation was incorporated in Berlin as a German Stiftung. You can read more about The Document Foundation at: www.documentfoundation.org.

The LibreOffice community

The Document Foundation's mission is:

> "...to facilitate the evolution of the OpenOffice.org Community into a new open, independent, and meritocratic organizational structure within the next few months. An independent Foundation is a better match to the values of our contributors, users, and supporters, and will enable a more effective, efficient, transparent, and inclusive Community. We will protect past investments by building on the solid achievements of our first decade, encourage wide participation in the Community, and co-ordinate activity across the Community."

Some of our corporate supporters include GNOME Foundation, Google, Red Hat, and Collabora. Additionally, over 450,000 people from nearly every part of the globe have joined this project with the idea of creating the best possible office suite that all can use. This is the essence of an "open source" community!

With its open source software license, LibreOffice is key in the drive to provide an office suite that is available to anyone, anywhere, for commercial or personal use. The software has been translated into many languages and runs on all major operating systems. New functionality can be added in the form of extensions.

The LibreOffice community invites contributors in all areas, including translators, software developers, graphic artists, technical writers, editors, donors, and end-user support. Whatever you do best, you can make a difference in LibreOffice. The community operates internationally in all time zones and in many languages, linked through the internet at www.libreoffice.org and www.documentfoundation.org.

How is LibreOffice licensed?

LibreOffice is distributed under both the Mozilla Public License (MPL) 2.0 (www.libreoffice.org/about-us/licenses/) and the GNU Lesser General Public License (LGPL) 3.0+ (www.gnu.org/licenses/lgpl-3.0.en.html).

What is "open source"?

The four essential rights of open-source software are embodied within the Free Software Foundation's family of the GNU General Public License (GPL):

- The right to use the software for any purpose.
- Freedom to redistribute the software for free or for a fee.
- Access to the complete source code of the program (that is, the "blueprints").
- The right to modify any part of the source, or use portions of it in other programs.

The basic idea behind open source is very simple: When programmers can read, redistribute, and modify the source code for a piece of software, the software evolves. People improve it, people adapt it, people fix bugs.

For more information on Free and Open Source software, visit these websites:

Open Source Initiative (OSI): www.opensource.org

Free Software Foundation (FSF): www.fsf.org

What are "open standards"?

An open standard provides a means of doing something that is independent of manufacturer or vendor, thus enabling competing software programs to freely use the same file formats. HTML, XML, and ODF are examples of open standards for documents.

An open standard meets the following requirements:

- It is well documented with the complete specification publicly available, either free or at a nominal charge.
- It can be freely copied, distributed and used. The intellectual property of the standard is made irrevocably available on a royalty-free basis.
- It is standardized and maintained in an independent, open forum (also called "standards organization") using an open process.

What is OpenDocument?

OpenDocument (ODF) is an XML-based file format for office documents (text documents, spreadsheets, drawings, presentations, and more), developed at OASIS (www.oasis-open.org/who/), an independent, international standards group. OpenDocument version 1.2 was adopted by the International Standards Organization and named ISO/IEC 26300:2015 standard[2].

Unlike other file formats, ODF (ISO/IEC 26300:2015) is an open standard. It is publicly available, royalty-free, and without legal or other restrictions; therefore ODF files are not tied to a specific office suite and anybody can build a program that interprets these files. For this reason ODF is quickly becoming the preferred file format for government agencies, schools and other companies who prefer not to be too dependent on any one software supplier.

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2   www.iso.org/standard/66363.html, www.iso.org/standard/66375.html, and www.iso.org/standard/66376.html

---

LibreOffice saves documents in OpenDocument Format by default. LibreOffice 3 adopted version 1.2 of the OpenDocument standard and LibreOffice 6 continues to use this standard. LibreOffice can also open and save many other file formats, as summarized below.

For a full list of file formats that LibreOffice can read and write, see www.en.wikipedia.org/wiki/LibreOffice#Supported_file_formats

OpenDocument filename extensions

The most common filename extensions used for OpenDocument documents are:

*.odt for word processing (text) documents

*.ods for spreadsheets

*.odp for presentations

*.odb for databases

*.odg for graphics (vector drawings)

*.odc for charts

*.odf for formulas (scientific formulas and equations)

File formats LibreOffice can open

LibreOffice can open a wide variety of file formats in addition to the OpenDocument formats, including Portable Document Format (PDF).

Opening text documents

In addition to OpenDocument formats (.odt, .ott, .oth, .odm, and .fodt), Writer can open the formats used by OpenOffice.org 1.x (.sxw, .stw, and .sxg), the following text document formats, and a variety of legacy formats not listed below:

Microsoft Word 6.0/95/97/2000/XP/Mac) (.doc and .dot)	
Microsoft Word 2003 XML (.xml)	
Microsoft Word 2007/2010 XML (.docx, .docm, .dotx, .dotm)	
Microsoft WinWord 5 (.doc)	WordPerfect Document (.wpd)
Microsoft Works (.wps)	Lotus WordPro (.lwp)
Abiword Document (.abw, .zabw)	ClarisWorks/Appleworks Document (.cwk)
MacWrite Document (.mw, .mcw)	Rich Text Format (.rtf)
Text CSV (.csv and .txt)	StarWriter formats (.sdw, .sgl, .vor)
DocBook (.xml)	Unified Office Format text (.uot, .uof)
T602 Document (.602, .txt)	Hangul WP 97 (.hwp)
Apple Pages 4 (.pages)	eBook (.pdb)
HTML Document (.htm, .html)	
... and many others	

Most of these file types are automatically detected by LibreOffice, so they can be opened without explicitly selecting the document type in the file picker.

When opening .htm or .html files (used for web pages), LibreOffice customizes Writer for working with these files.

Opening spreadsheets

In addition to OpenDocument formats (.ods, .ots, and .fods), Calc can open the formats used by OpenOffice.org 1.x (.sxc and .stc) and the following spreadsheet formats:

Microsoft Excel 97/2000/XP (.xls, .xlw, and .xlt)
Microsoft Excel 4.x–5.0/95 (.xls, .xlw, and .xlt)
Microsoft Excel 97-2003 (.xml)
Microsoft Excel 2007-365 (.xlsx, .xlsm, .xltx, .xltm)
Microsoft Excel 2007-2010 binary (.xlsb)
Lotus 1-2-3 (.wk1, .wks, and .123)
Data Interchange Format (.dif)
Rich Text Format (.rtf)
Text CSV (.csv and .txt)
StarCalc formats (.sdc and .vor)
dBASE (.dbf)
SYLK (.slk)
Unified Office Format spreadsheet (.uos, .uof)
HTML Document (.htm and .html files, including Web page queries)
Quattro Pro 6.0 (.wb2)
Apple Numbers 2 (.numbers)
... and many others

Opening presentations

In addition to OpenDocument formats (.odp, .odg, .otp, and .fopd), Impress can open the formats used by OpenOffice.org 1.x (.sxi and .sti) and the following presentation formats:

Microsoft PowerPoint 97/2000/XP (.ppt and .pot)
Microsoft PowerPoint 2007-365 (.pptx, .pptm, .potx, .potm)
StarDraw and StarImpress (.sda, .sdd, .sdp, and .vor)
Unified Office Format presentation (.uop, .uof)
CGM – Computer Graphics Metafile (.cgm)
Portable Document Format (.pdf)
Apple Keynote 5 (.key)
... and many others

Opening graphic files

In addition to OpenDocument formats (.odg and .otg), Draw can open the formats used by OpenOffice.org 1.x (.sxd and .std) and the following graphic formats:

Adobe Photoshop (*.psd)
AutoCAD Interchange Format (*.dxf)
Corel Draw (*.cdr)
Corel Presentation Exchange (*.cmx)
Microsoft Publisher 98-2010 (*.pub)
Microsoft Visio 2000-2013 (*.vdx; *.vsd; *.vsdm; *.vsdx)
WordPerfect Graphics (*.wpg)

BMP	JPEG, JPG	PCX	RAS	TGA
DXF	MET	PGM	SDA	TIF, TIFF
EMF	PBM	PNG	SDD	WMF
EPS	PCD	PPM	SVG	XBM
GIF	PCT	PSD	SVM	XPM

Opening formula files

In addition to OpenDocument Formula (.odf) files, Math can open the format used by OpenOffice.org 1.x (.sxm), StarMath, (.smf), and MathML (.mml) files.

When opening a Word document that contains an embedded equation editor object, if the option for it (**MathType to LibreOffice Math or reverse**) is checked in **Tools > Options > Load/Save > Microsoft Office**, the object will be automatically converted to a LibreOffice Math object.

File formats LibreOffice can save to

Saving in an OpenDocument format guarantees the correct rendering of the file when it is transferred to another person or when the file is reopened with a later version of LibreOffice or with another program. It is strongly recommended that you use OpenDocument as the default file formats. However, you can save files in other formats, if you wish.

> ### Tip
>
> When sharing a document that you do not expect the recipient to modify, the preferred option is to convert the document to PDF. LibreOffice provides a very straightforward way to convert documents to PDF. See Chapter 10, Printing, Exporting, Emailing, and Signing, in this guide.

Saving text documents

In addition to OpenDocument formats (.odt, .ott, and .fodt), Writer can save in these formats:

Office Open XML Text (.docx)	Microsoft Word 2007–365 (.docx, .dotx)
Microsoft Word 97–2003 (.doc)	Microsoft Word 2003 XML (.xml)
Rich Text Format (.rtf)	Text (.txt)
Text Encoded (.txt)	Unified Office Format text (.uot, .uof)
HTML Document (.html and .htm)	DocBook (.xml)

Encryption support within the Microsoft Word 97/2000/XP filter allows password protected Microsoft Word documents to be saved.

> ### Note
>
> The .rtf format is a common format for transferring text files between applications, but you are likely to experience loss of formatting and images. For this reason, other formats should be used.

Saving spreadsheet files

In addition to OpenDocument formats (.ods, .ots, and .fods), Calc can save in these formats:

Office Open XML Spreadsheet (.xlsx)	Data Interchange Format (.dif)
Microsoft Excel 2007–365 XML (.xlsx)	dBase (.dbf)
Microsoft Excel 97–2003 (.xls and .xlw)	SYLK (.slk)
Microsoft Excel 97–2003 Template (.xlt)	Text CSV (.csv and .txt)
Microsoft Excel 2003 XML (.xml)	Unified Office Format spreadsheet (.uos)
HTML Document (Calc) (.html and .htm)	

Saving presentations

In addition to OpenDocument formats (.odp, .otp, .fodp, and .odg), Impress can save in these formats:

> Microsoft PowerPoint 2007–365 (.pptx, .potm)
> Microsoft PowerPoint 2007–365 AutoPlay (.ppsx)
> Microsoft PowerPoint 97–2003 (.ppt)
> Microsoft PowerPoint 97–2003 Template (.pot)
> Microsoft PowerPoint 97–2003 AutoPlay (.pps)
> Office Open XML Presentation (.pptx, .potm, .ppsx)
> Unified Office Format presentation (.uop)

Impress can also export to MacroMedia Flash (.swf) and any of the graphics formats listed for Draw.

Saving drawings

Draw can save in the OpenDocument Drawing formats (.odg, .otg, and .fodg).

Draw can export to MacroMedia Flash (.swf) and any of the following graphics formats: BMP, EMF, EPS, GIF, JPEG, PNG, SVG, TIFF, and WMF.

Writer/Web can save in these formats

> HTML document (.html and .htm), as HTML 4.0 Transitional
> Text and Text Encoded (LibreOffice Writer/Web) (.txt)

Exporting to other formats

Different from the command Save as, LibreOffice uses the term "export" to create a new file with another format without leaving the current content and file format. If you cannot find the file type you are looking for under Save As, look under Export for additional types.

PDF is the well known export format since OpenOffice.org 1.5 and EPUB is a new format for export since LibreOffice 6.0. See Chapter 10, Printing, Exporting, E-mailing, and Signing Documents, for more information about exporting to those formats.

LibreOffice can also export files to HTML and XHTML. To publish on a Wiki server, export the documents with MediaWiki (.txt) format. In addition, Draw and Impress can export to Adobe Flash (.swf) and a range of image formats.

To export to one of these formats, choose **File > Export**. On the Export dialog, specify a file name for the exported document, then select the desired format in the file format list and click the **Export** or **Save** button as appropriate.

LibreOffice

LibreOffice Documentation Team

Getting Started Guide

Introduction to LibreOffice

6.4

About this book:

If you have never used LibreOffice before, or you want an introduction to all of its components, book is for you. Anyone who wants to get up to speed quickly with LibreOffice will find this book valuable. You may be new to office software, or you may be familiar with another office suite.

This book introduces LibreOffice and its components:
Writer (word processing)   Calc (spreadsheet)   Impress (presentations)
Draw (vector graphics)   Math (equation editor)   Base (database)

It also covers features common to all components, including styles, templates, a gallery of clip art, macros, and printing.

About the authors:

This book was written by volunteers from the LibreOffice community. Profits from sales of the printed edition will be used to benefit the community.

A PDF version of this book can be downloaded free from:
https://documentation.libreoffice.org/en/

About LibreOffice:

LibreOffice is the free, libre, and open source personal productivity suite from The Document Foundation. It runs on Windows, macOS, and GNU/Linux. Support and documentation is free from our large, dedicated community of users, contributors, and developers.
You too can get involved with volunteer work in many areas: development, quality assurance, documentation, translation, user support, and more.

You can download LibreOffice free from https://libreoffice.org/download/

Fantastic Community. Fun Project. Free Office Suite.