# Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

LIBREOFFICE SERIES SPECIAL EDITION

LIBREOFFICE SERIES
SPECIAL EDITION

50

# LIBREOFFICE

## GOLDEN JUBILEE EDITION Parts 1-50

# CONTENTS

**Click on the Article to go to it**

## About Full Circle

Full Circle is a free, independent, magazine dedicated to the Ubuntu family of Linux operating systems. Each month, it contains helpful how-to articles and reader-submitted stories.

Full Circle also features a companion podcast, the Full Circle Podcast which covers the magazine, along with other news of interest.

**Please note:** this Special Edition is provided with absolutely no warranty whatsoever; neither the contributors nor Full Circle Magazine accept any responsibility or liability for loss or damage resulting from readers choosing to apply this content to theirs or others computers and equipment

# Welcome to another Special Edition of Full Circle Magazine....

## The LibreOffice Golden Jubilee Edition...

We continue our assembly of Elmer Perry's LibreOffice series in this Jubilee Compilation.

Here is a special reprint of the series 'Libre Office', Parts 1-50 from issues #46 through #98, which the observant among you will note is not an unbroken run. Fear not, you are missing nothing: Elmer took a couple of issues off.

Please bear in mind the original publication date; current versions of hardware and software may differ from those illustrated, so check your hardware and software versions before attempting to emulate the tutorials in these special editions. You may have later versions of software installed or available in your distributions' repositories.

There was **a slight problem with Part 32 - Issue 79** which is explained in **Appendix 1**.

**Enjoy!**


**Find Us**

**Website:**
http://www.fullcirclemagazine.org/
**Forums:**
http://ubuntuforums.org/forumdisplay.php?f=270
**IRC**: #fullcirclemagazine on chat.freenode.net

**Editorial Team**

**Editor:** Ronnie Tucker
(aka: RonnieTucker)
ronnie@fullcirclemagazine.org

**Webmaster**: Lucas Westermann
admin@fullcirclemagazine.org

**Editing & Proofreading**
Mike Kennedy, Gord Campbell, Robert Orsino, Josh Hertel, Bert Jerred, Jim Dyer and Emily Gonyer

Our thanks go to Canonical and the many translation teams around the world.

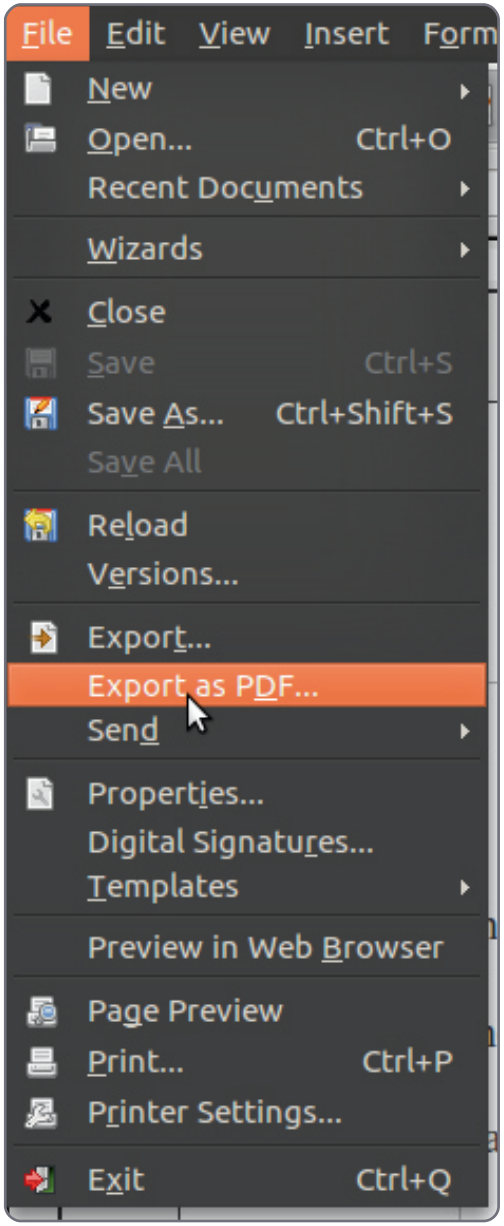
# LibreOffice - Part 1

NEW SERIES!

LibreOffice
The Document Foundation

In this how-to, I will introduce you to the LibreOffice suite, and give you a description of each of the modules in the suite. As we go through the series, I will go into greater detail on each module of the suite, as well as ways to share information between the modules.

LibreOffice is slated as the default office suite for Ubuntu 11.04, and the suite contains several modules that allow you to create text documents, spreadsheets, presentations, and drawings. The suite is multi-platform, and available for Linux, Windows, and Mac OS. The suite allows you to save and read documents in the default Open Document Format (ODF), as well as several versions of Microsoft Office, rich text format (RTF), and DocBook. This feature alone makes it a great suite for both the home and office.




If you can't wait until April to try LibreOffice in Ubuntu, you can install it through the PPA. Type the following three commands in the terminal (Applications > Accessories > Terminal):

```
sudo add-apt-repository ppa:libreoffice/ppa

sudo apt-get update

sudo apt-get install libreoffice
```

The last command may take a while to complete. On my system, I had to completely remove OpenOffice before LibreOffice would install from the PPA. Not sure if this glitch was specific to my machine or if it is impossible to have both installed using PPAs. If you want to use both OpenOffice and LibreOffice, your best choice is to install them manually by downloading them from libreoffice.org and openoffice.org.

[Editors note: *When I installed LibreOffice from the above PPA it automatically uninstalled my OpenOffice.*]

One of the most powerful and useful features of the suite is the ability to create a PDF file from the current document. Exporting to PDF gives you greater control over a finished document. The recipient can easily change a file in the ODF or Microsoft Office format. However, the PDF format makes tampering with the document more difficult. You'll find the Export or Export to PDF in most of the modules under File > Export or File > Export to PDF.

Start LibreOffice from the Applications menu: Applications > Office > LibreOffice. With no

documents open, LibreOffice displays the Welcome screen. The Welcome screen gives you quick access to the different modules in the suite.


Text Document opens the Writer module. Writer is a full-featured word processor. You can write everything from a simple letter to a novel in Writer. With the Writer word processor, you can create layouts for term papers, technical documents, and product or software documentation. Writer sometimes has problems translating complex layouts from Microsoft Word's format, but, as a general rule, you will not have many problems.

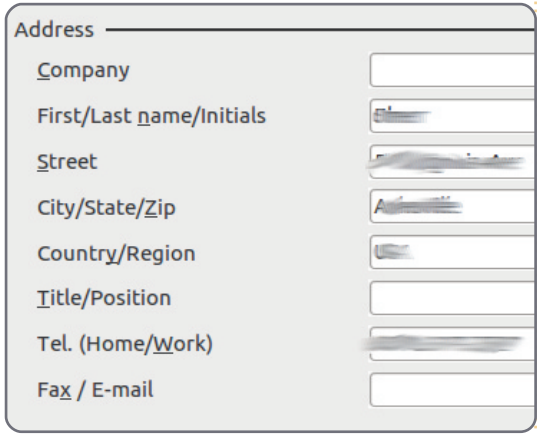
Spreadsheet runs Calc. Calc is compatible with Microsoft Excel. Calc allows you to create a spreadsheet with automatic calculations and formulas. You can also use Calc for data collections to import into other documents. With Calc, you can add graphs and charts to display your data and calculations visually. Tables, graphs, and charts from Calc are easily imported into other LibreOffice documents. Calc gives you the ability to have more than one spreadsheet in one document, allowing you to have monthly, yearly, or other related spreadsheets in one document.

Presentation opens Impress. Impress is LibreOffice's version of Microsoft's PowerPoint, and holds up nicely as a replacement for PowerPoint. Impress has all the features you would expect from a presentation program: slide transitions, object embedding, sound, text effects, graphics, etc. I've used Impress for teaching and seminars, and Impress always gives me what I need.

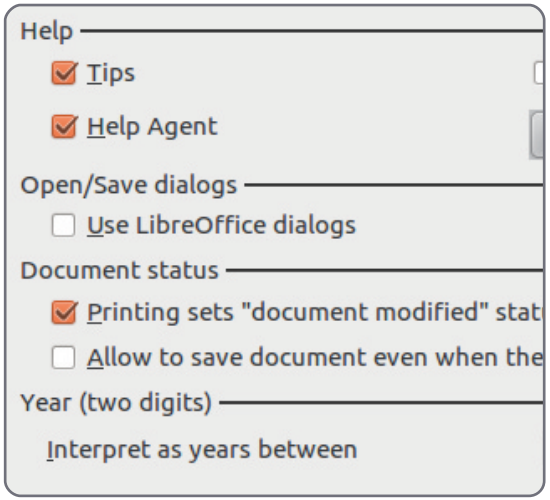
Drawing starts the Draw module. In Draw, you create simple vector drawings for use in other documents. You could easily make a organizational chart or logo in Draw.

Database opens the Base module. Use Base to create a database using several different engines, depending on what is installed on your system. Base is handy for importing data into other documents in the suite. If you have a need for an inventory or sales database, you might want to give Base a try.

Formula runs the Math module. Have you ever needed to embed a complex math formula into a document? Formula is your answer. Formula gives you the power to create well-formatted formulas for use in other documents. Formula is ideal when you are creating scientific or technical documents, and need to insert a formula or algorithm along with your text.

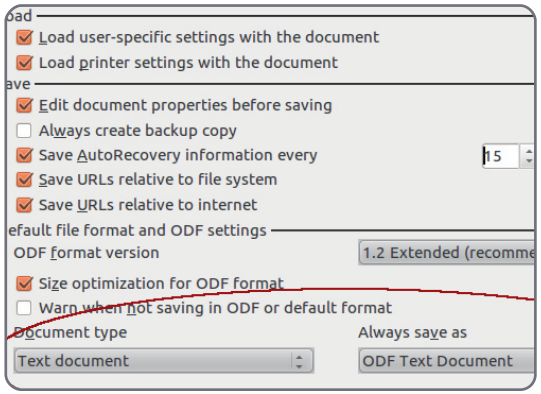



Before we get started with LibreOffice, let's look at some of the options that relate to all the modules. Open Tools > Options > LibreOffice > User Data. Here you enter what personal data you want to make available to the program. You can transfer some of the information entered here into documents. Some of the document properties come from the data in these fields. For example, the document author is taken from the name fields. The program also uses the name fields for revision authors.

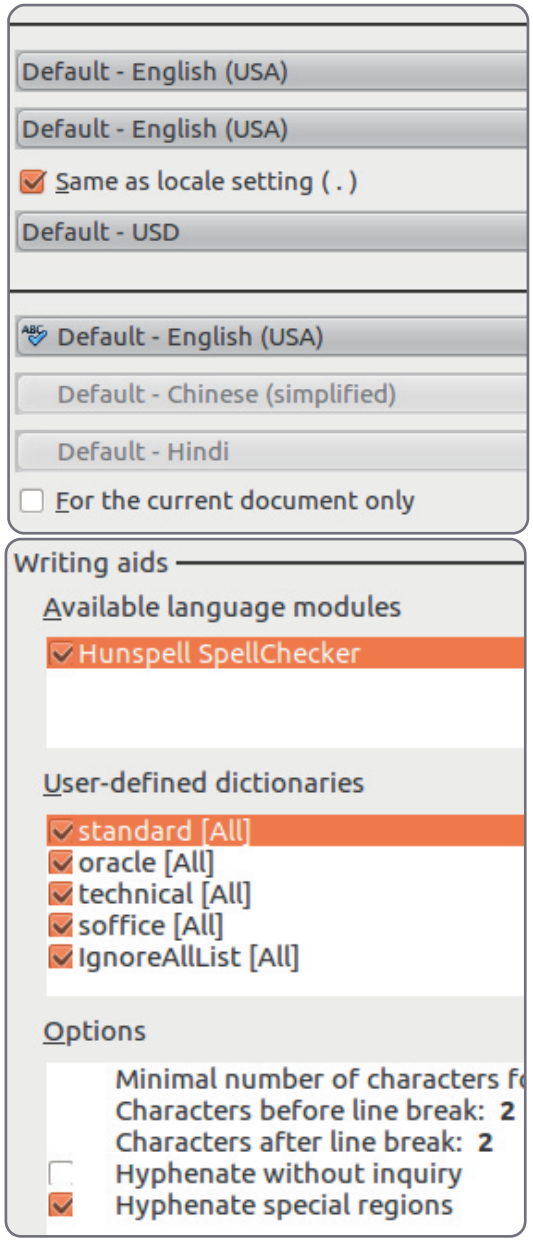



Next, if you are new to LibreOffice, access Tools > Options > LibreOffice > General, and check the Tips and Help Agent. While you learn LibreOffice, you might want to turn on extended tips. Extended

tips will show a detailed pop-up balloon for every item as you move the mouse over it. Without Extended tips, you get a two or three word description for toolbar buttons only. With the Help Agent on, a help box occasionally displays in the bottom right corner. Clicking on the box will take you to the documentation page for the current task. This greatly speeds up the learning process with LibreOffice. The Help Agent is similar to Microsoft's Office Assistant.



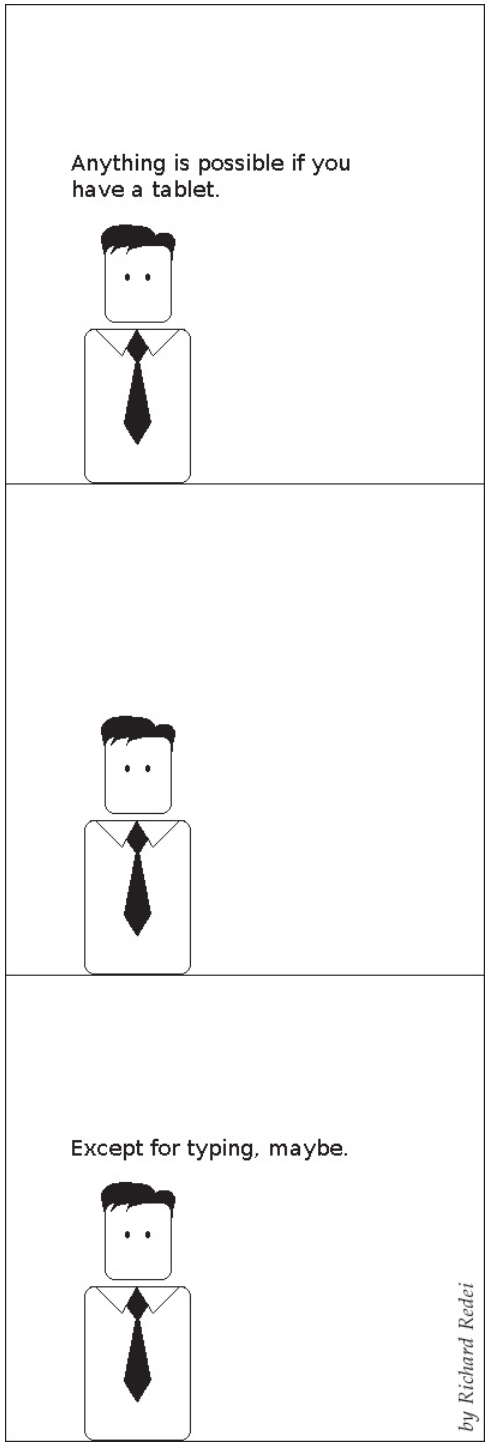

Now, Tools > Options > Save/Load > General. Here you can set the default format for different document types. If you need to always save in one of the Microsoft formats, you can set LibreOffice to do this automatically rather than having to always select the needed format. Select the document type from the drop-down box under Document Type. Select the default format for the document type under Always Save As drop-down box.




> **If you need to always save in one of the Microsofts formats, you can set LibreOffice to do this automatically...**

Under Tools > Options > Language Settings > Languages, you set up your language options. There is a check box under the language settings that allow you to change the options only for the current document. Language Settings > Writing Aids sets options for dictionaries, spell check, and hyphenation.

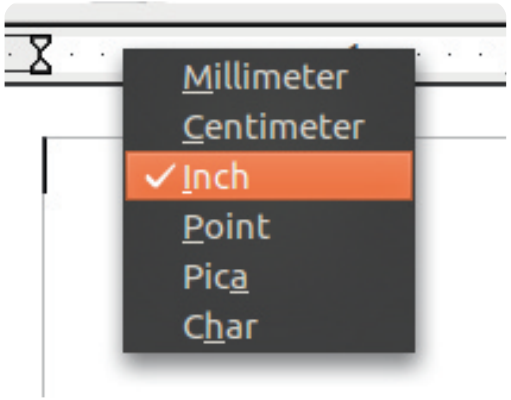
Feel free to browse the rest of the options. We will touch on the options for each module as we get to it. Next time, we will begin with the basics of using the Writer module.

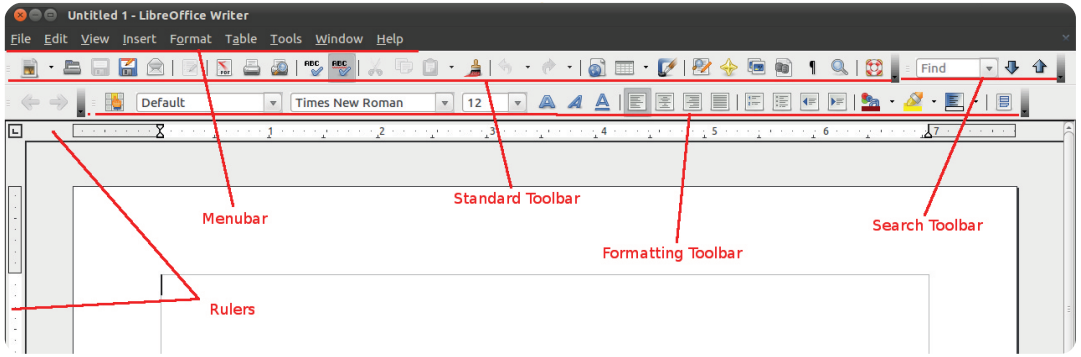


# LibreOffice - Part 2

In my last article, I introduced you to the different modules of the LibreOffice program. Today, I want to show you the basic setup and manual formatting methods for the Writer module. The Writer module allows you to create formatted text-based documents. You can use Writer (below) for something as simple as a letter or journal, or something as complex as a manuscript or thesis paper.

First, we will look at the Writer window. Starting from the top, you have the menu bar. The menu bar gives you access to all the different tools and actions you can perform on a document. Below the menu bar sits the standard toolbar. This gives you quick access to common commands such as open, save, and print. Beside the standard toolbar sits the search toolbar. Below the standard toolbar, you find the formatting toolbar - it displays icons for often-used formatting tools. The toolbar is context-sensitive, and will change when you are working with elements like drawing objects. If you have tips turned on, hovering the mouse pointer over the icons in the toolbars will show a pop-up description of what the icon does.

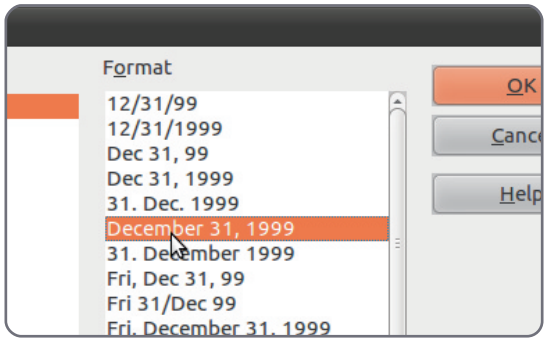



Below the formatting toolbar, and to the left, you have the horizontal and vertical rulers. The rulers are guides to help you when laying out a document. By default for the English language, the rulers display in inches. There are two ways to change the measurement units of the rulers. Right-click anywhere on the rulers (shown left), and Writer displays a pop-up menu of the different measurement units. This method works best when you need the change just for the current document. However, if you need a different measurement unit as the default, you need to change it in the Options. Go to Tools > Options > LibreOffice Writer > View. Here you can set the defaults for the vertical and horizontal rulers, or chose to work without rulers.

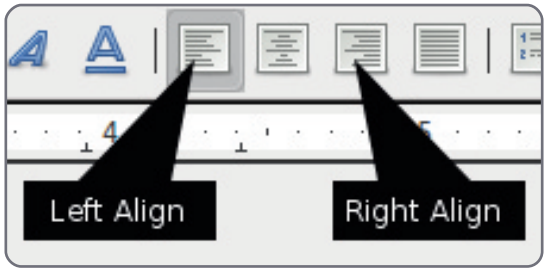
Now, we will create a simple letter, and I will show you how to manually format the different paragraphs of the letter. Open LibreOffice and start a new Writer document. We will place the current date at the top of the document, and align it to the right. Go to Insert > Field > Date. This will give you the date in the default date format (MM/DD/YY). You will notice the date highlighted in gray. This lets you know it is a field you have inserted into the document.

Let's change the formatting of




our date. Double-click the date, and a dialog window (above) will display showing the different options for displaying the date. Select the one you want and click OK.

We need to right-align our date,

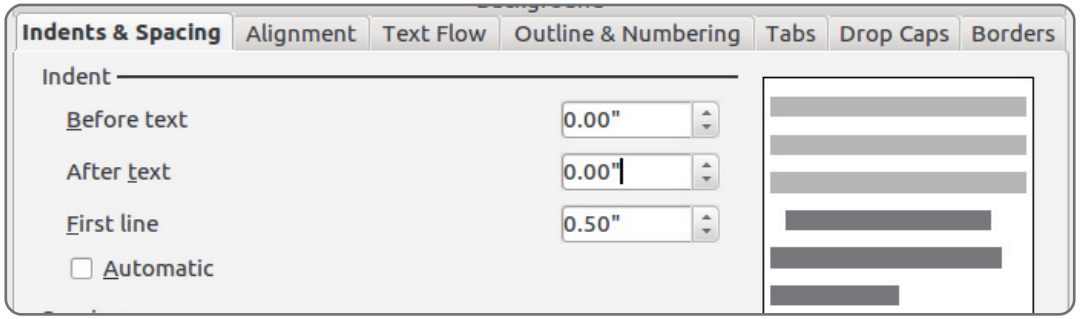


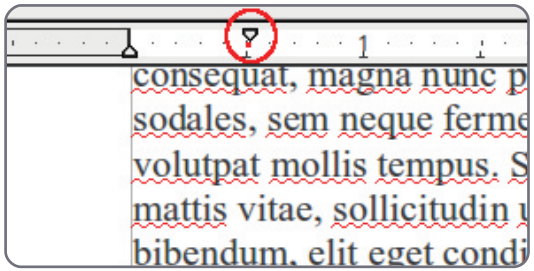

so, find the alignment icons on the formatting toolbar, and click on the


right-align icon. Our date will move to the right margin. Use the End key on your keyboard to move to the end of the current line, and press Enter. We don't want to stay right-aligned for a new paragraph, so click the left-align icon to move the start of the paragraph back to the left. Type in your salutation and press Enter.

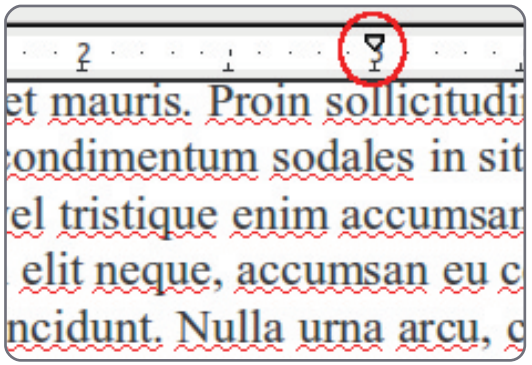
For the body paragraphs of our letter, we want to indent the first line of each paragraph. When you are not concerned with accuracy, you can apply the indentation using the horizontal ruler. On the horizontal ruler, you will notice two triangles on the left margin (above left and right), one pointing up and the other pointing down. The bottom triangle - the one pointing up - manually adjusts the left indent for the entire paragraph. You will note there is one just like it on the right, which is used to adjust the right indent for the paragraph. The top triangle on the left - the one pointing down - adjusts the paragraph's first-line indent. Click on the top triangle and drag it to about 0.5" (1.27 cm).

If you need more accurate indents, you can access the paragraph style dialog (below left) by double-clicking on the gray part of the horizontal ruler. You can also access the paragraph style dialog by going to Format > Paragraph. Here you have many options for formatting your paragraph. Today, we are concerned with only the first line indent, so change First line to 0.5" (1.27 cm). Click OK. You will notice the top triangle (first-line indent, shown below) has changed to the position you gave it in the dialog.




Now, we can type our paragraph. Type in your first paragraph, and press Enter. Notice that the next paragraph is indented just like the previous one. Writer will use this paragraph style until we tell it to do differently.




Once we have typed the body of our letter, we need to add a signature block, but we don't want our signature block the same as the rest of the body paragraphs. Using either the drag method or the paragraph style dialog, change the indent to 3" (7.62 cm). Now, type in your closing and press Enter. Rather than typing in your name, let's use the name field to insert your name. This will work only if you filled out the User data in the options: Insert > Fields > Author. Your letter is now done, and you can print and send it.

While manual formatting is okay on small documents, larger documents need more control. If you decide to change the formatting of paragraphs on a larger document, going through each paragraph and changing the style is tedious. In a larger document, we will need a way to change all like paragraphs at once. Next time, we will talk about using styles to accomplish this.

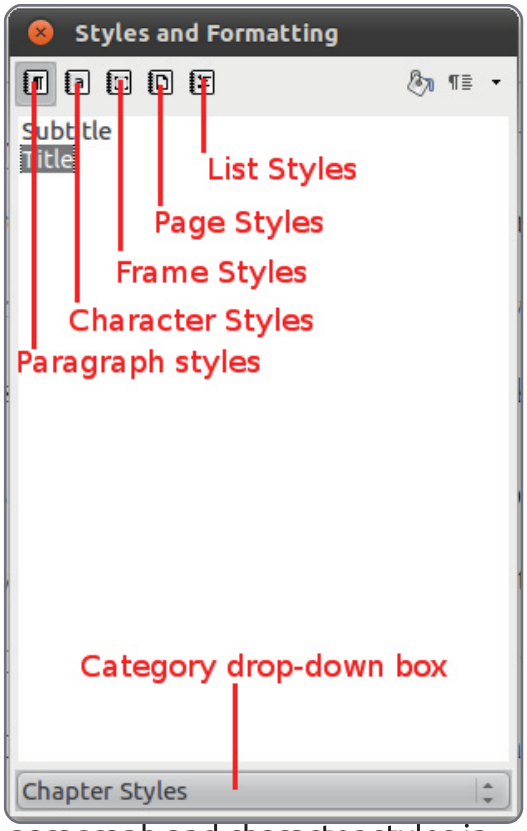
LibreOffice
The Document Foundation

# LibreOffice - Part 3

In my last article, I wrote about changing the layout of paragraphs to format your document. While this approach is okay on short documents, it creates a lot of work should you decide to change something in a large document. This is where the use of styles will make things easier.

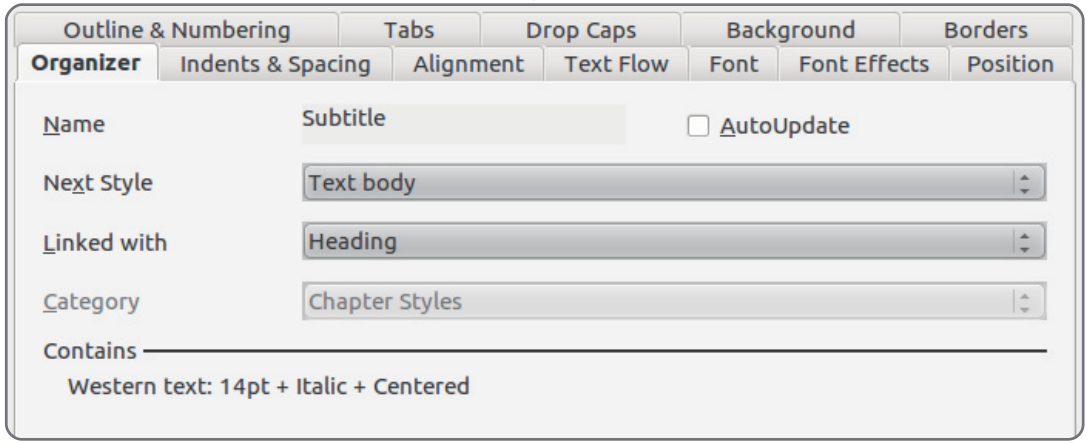
LibreOffice writer has five different style types: paragraph, character, frame, page, and list. You can access all the styles by clicking on the Styles and Formatting button on the formatting toolbar. This will pop up the Styles and Formatting window. You can dock the Styles and Formatting window on the left by holding down the Ctrl key and double-clicking the empty space in the Styles and Formatting window toolbar.

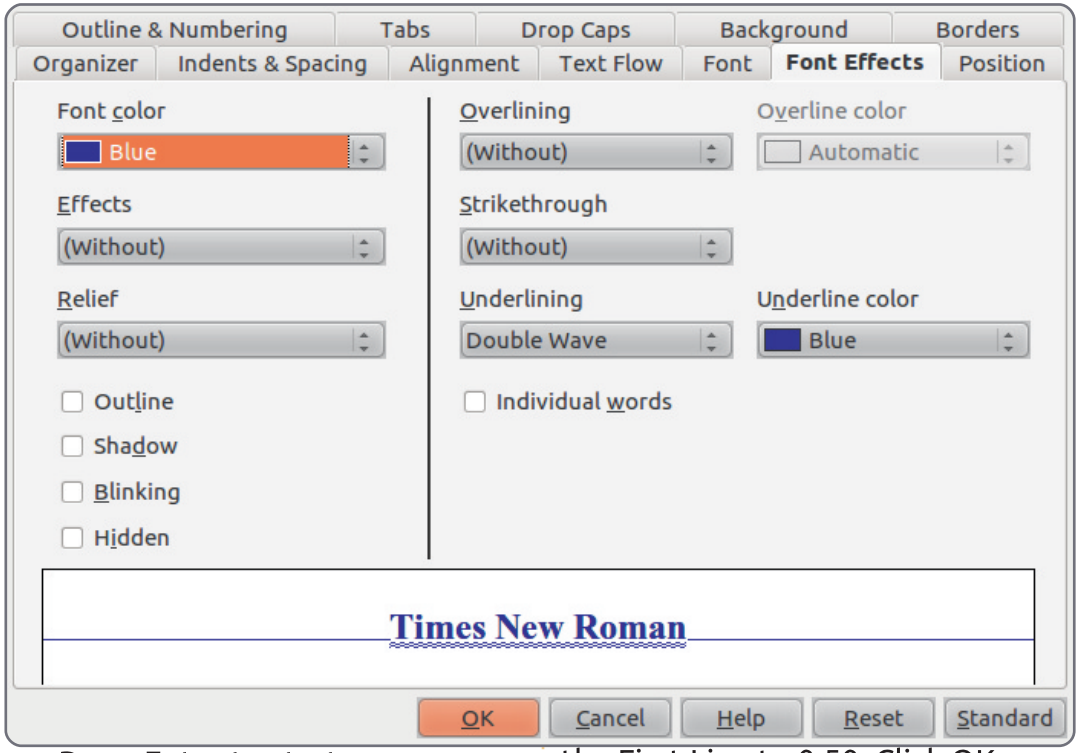
The styles toolbar (right)has seven icons. The first five give you access to the different style types. In order from the left, they are paragraph, character, frame, page, and list. We will concentrate on paragraph and character styles in this article.




Open a new text document and type in a title. Open the Styles and Formatting window. The paragraph icon should be selected by default. At the bottom of the Styles and Formatting Window is a drop-down box. Click on the box and select Chapter Styles. Double-click "title". Your title will center, enlarge, and become bold. Now, let's change the default styling for titles. In the Styles and Formatting window, right-click on the "title" style and select modify. The dialog that pops up looks a lot like the dialog from the last article, but there are a few new tabs that are not in the standard paragraph dialog. The first is the organizer. The organizer (below) shows you the name for the style, the next style to use, and the linked style. You will see that the next style is "subtitle", but we don't want to use a subtitle, so we will change this to the "text body" style. This makes it so that when we hit Enter to start a new paragraph the next paragraph will use the "text body" style. The "title" style is linked with the "Heading" style. When styles are linked, any changes to the parent style affects the styles linked to it. As an example, if you change the text in the "Heading" to blue, all the styles linked to it will have blue text as well.

Now, let's format our title differently from the default. Click on the Font Effects tab. The Font Effects (next page, top left) allow you to change the look of the font, including color, strike-through, underline, shadow, and relief. The dialog shows you how the effects make your text look. Change the color to blue, underlining to Double Wave, and underline color to blue. Click OK.






Press Enter to start a new paragraph. Notice the style changed to "text body" just like we set up in the organizer tab. Now, type in three paragraphs of text to use for our example document.

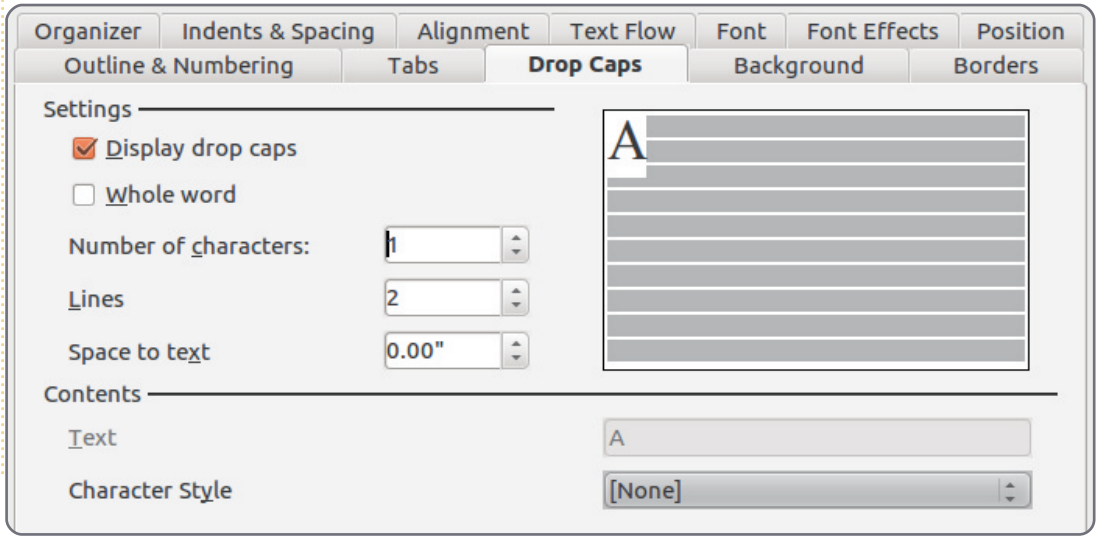
Next, we will modify the "text body" style and create two new ones based on the "text body" style. Back in the Styles and Formatting window, click the drop-down box and select the Text Styles category. Right-click on "text body" and select modify. On the Indents & Spacing tab, change the line spacing to 1.5 lines, and the First Line to 0.50. Click OK. Notice that our changes affected all three paragraphs.

Now, let's create a paragraph for long quotes. Move the cursor to anywhere in the second paragraph. In the styles window, right-click text body and select New. On the organizer tab, give it the name of "Blockquote." Change the next style to "text body", as we rarely have two long quotes in a row. You will notice that because we created the new style by right-clicking on text body, it is automatically linked to "text body". To create a new style not linked to another, change the Linked with to "None".

Now, let's change the formatting of our new style. On the Indents & Spacing tab, change the "before text" and "after text" to 0.50. Change the First Line back to 0.00. On the Font tab, change the typeface to italic. Click OK, and you will notice a new paragraph named "Blockquote" has been added to your list. Again, move your cursor to anywhere in the second paragraph and double-click "Blockquote." Now, you will see the first line indent has been taken away, the paragraph is indented on both sides, and the text is italicized.

Now, we want to change the first paragraph, giving it some drop caps. Since we want the first paragraph of each chapter to look this way, we will create another style. Again, right-click on "text body" and select New. Name the new style "First Paragraph", and change the next style to "Text Body." On the Indents & Spacing tab, change the First Line back to 0.00. On the Drop Caps tab (shown below), check "Display drop caps", set "Number of characters" to 1 and set "Lines" to 2. Click OK. Again, no changes are seen yet. Move your cursor into the first paragraph and double-click your new style.

We need this new paragraph style to follow every new chapter

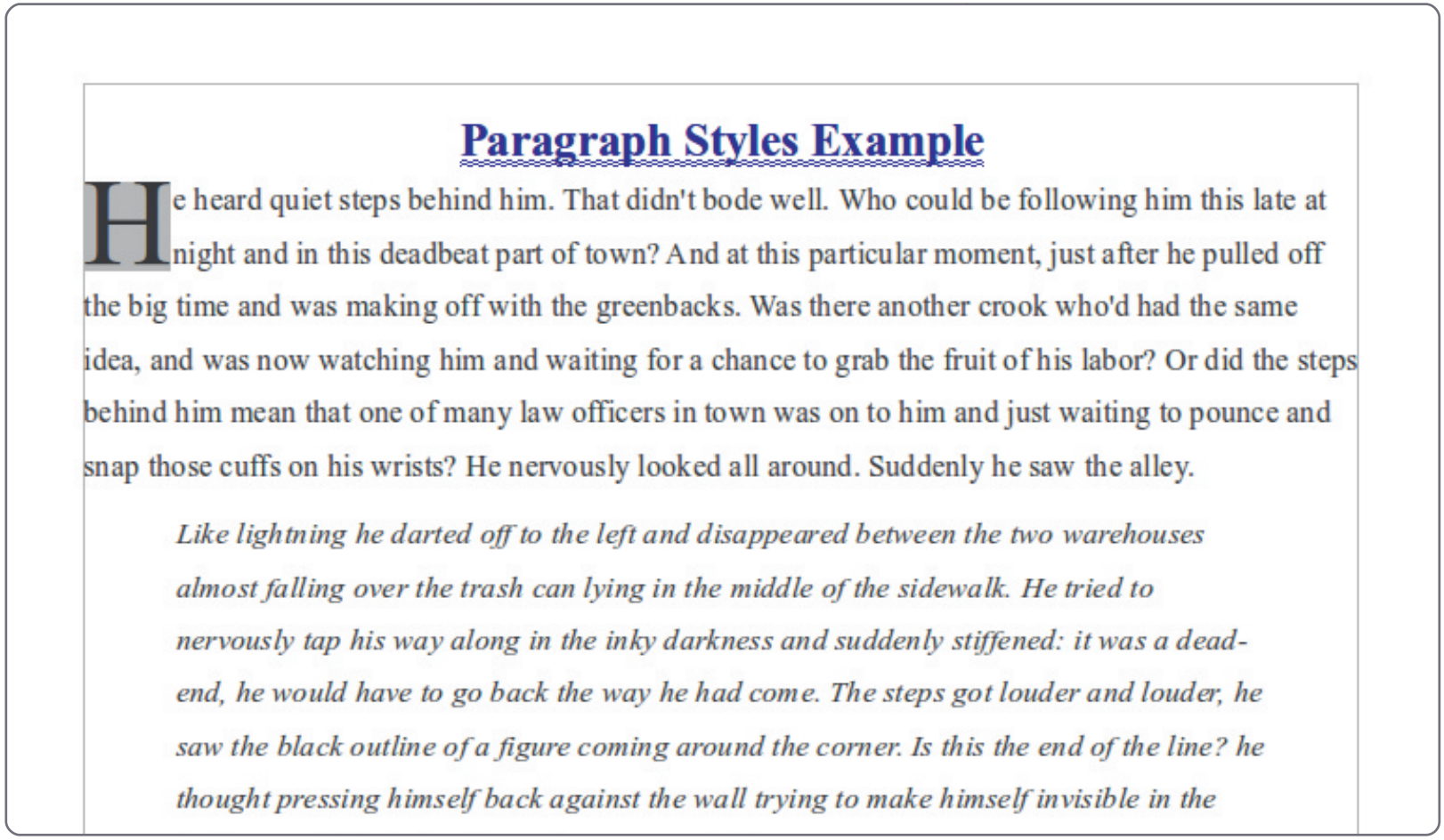


title. Modify the "title" style so the next style is "First Paragraph."

Character styles affect only selected text rather than entire paragraphs. In the third paragraph, select some of the text. Click on the character style icon in the styles window, and double-click "Emphasis." This will italicize the text you have selected. You can modify the character styles much in the same way you do the paragraph styles.

The key advantage to styles is making the formatting of like text the same throughout a document. In the next article, we will talk about adding frames to your document.

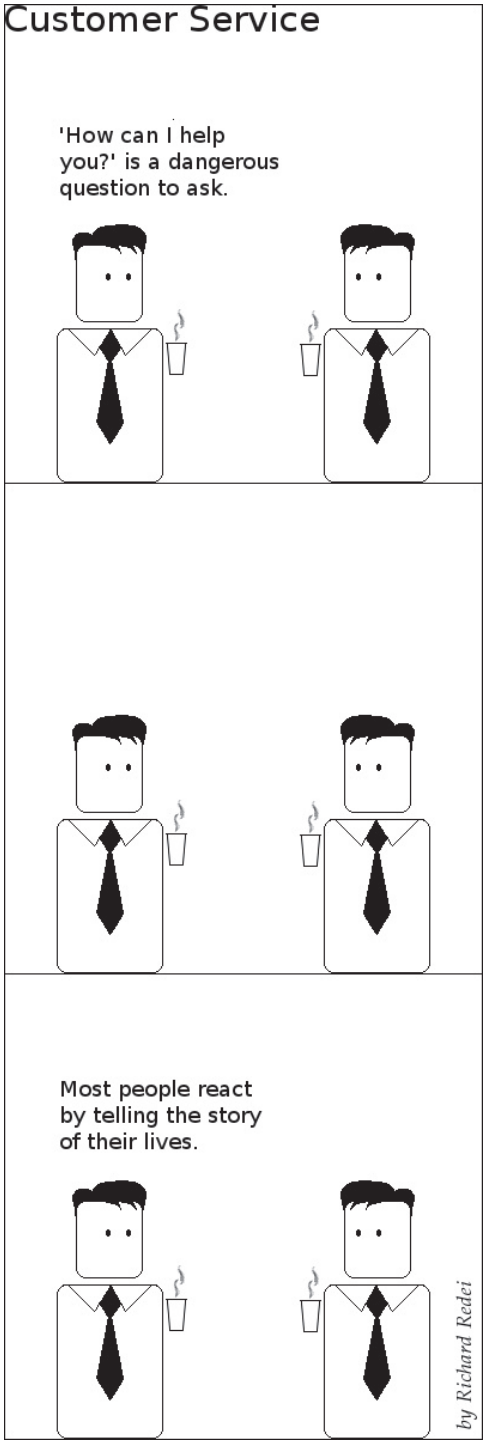
**Elmer Perry** is a children's minister in Asheville, North Carolina whose hobbies include web design, programming, and writing.



Paragraph Styles Example

He heard quiet steps behind him. That didn't bode well. Who could be following him this late at night and in this deadbeat part of town? And at this particular moment, just after he pulled off the big time and was making off with the greenbacks. Was there another crook who'd had the same idea, and was now watching him and waiting for a chance to grab the fruit of his labor? Or did the steps behind him mean that one of many law officers in town was on to him and just waiting to pounce and snap those cuffs on his wrists? He nervously looked all around. Suddenly he saw the alley.

*Like lightning he darted off to the left and disappeared between the two warehouses almost falling over the trash can lying in the middle of the sidewalk. He tried to nervously tap his way along in the inky darkness and suddenly stiffened: it was a dead-end, he would have to go back the way he had come. The steps got louder and louder, he saw the black outline of a figure coming around the corner. Is this the end of the line? he thought pressing himself back against the wall trying to make himself invisible in the*






Return to Contents

# LibreOffice - Part 4

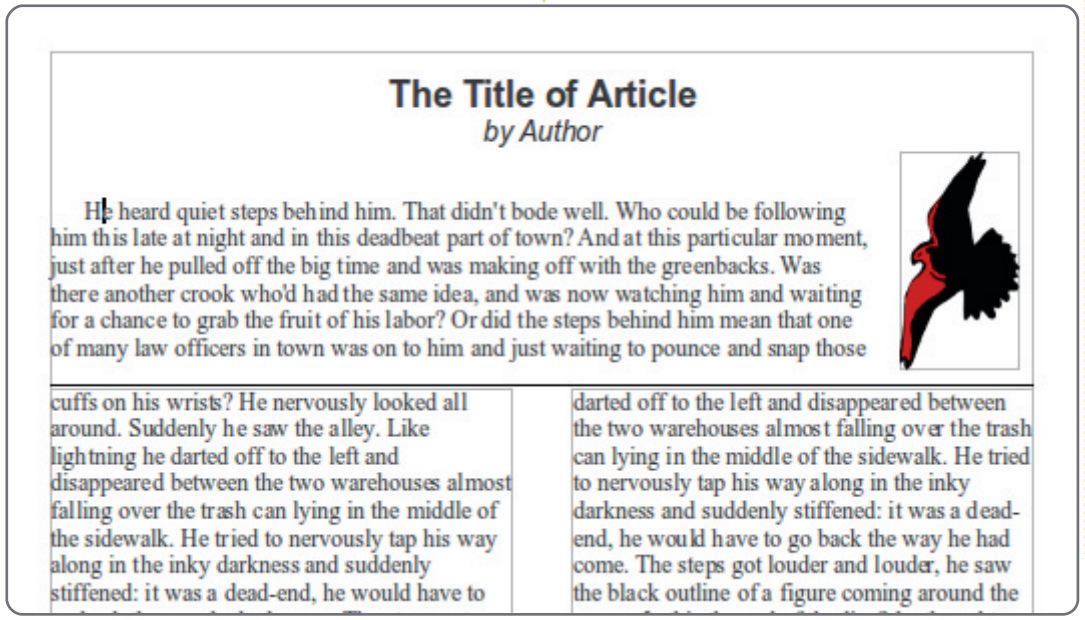
In the last article we used paragraph styles to format our document by creating reusable styles for consistency in our document. In this article we will create a more advanced layout using frames. While there are programs, like Scribus, which are designed more specifically toward more advanced layouts, LibreOffice gives us several tools which allow us to produce documents with more than just a simple, letter-style layout. One of the most useful of these tools is the frame.

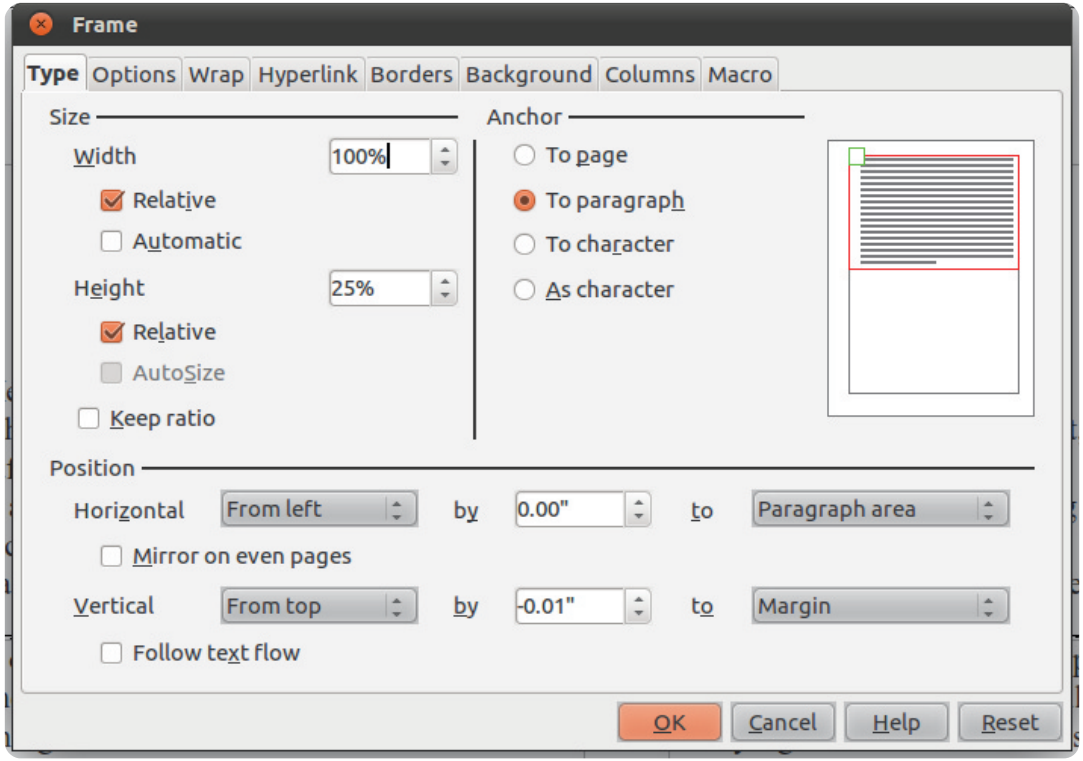
You can think of frames as boxes used to control the flow of text, graphics, and other elements in your document. One of the key features of frames is their ability to link together. When two frames are linked, the text from one frame automatically flows into the other, even if the two frames are on different pages. This feature makes frames ideal for newsletters and other article-based documents.

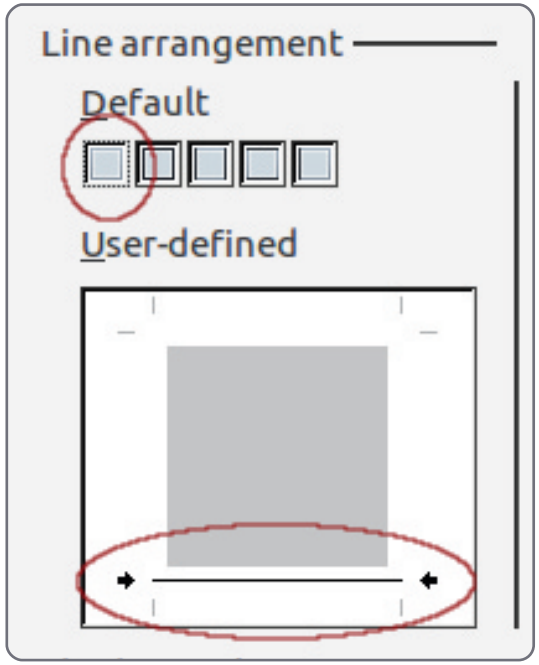
We will create the beginning article layout, shown in figure 1, using frames to control the flow of the article text. Start by creating a new document. Now, in the menus, go to Insert > Frame. The frame dialog will pop up. On the type tab, check Relative for both Width and Height. Set the Width to 100% and the Height to 25%. In the position section, set the Horizontal to From Left by 0.00" to Paragraph area. Set the Vertical position to From Top by 0.00" to Margin.

On the Options tab, name the frame "Article Header." The frames are automatically named using the format "Frame#" where # is the number of frames in the document. It is a good practice to give your frames meaningful names to help you remember their purpose.

By default, frames have a border on all four sides, but we want a border only at the bottom of our frame. On the Borders tab, select the first box under the Line Arrangement defaults. This will



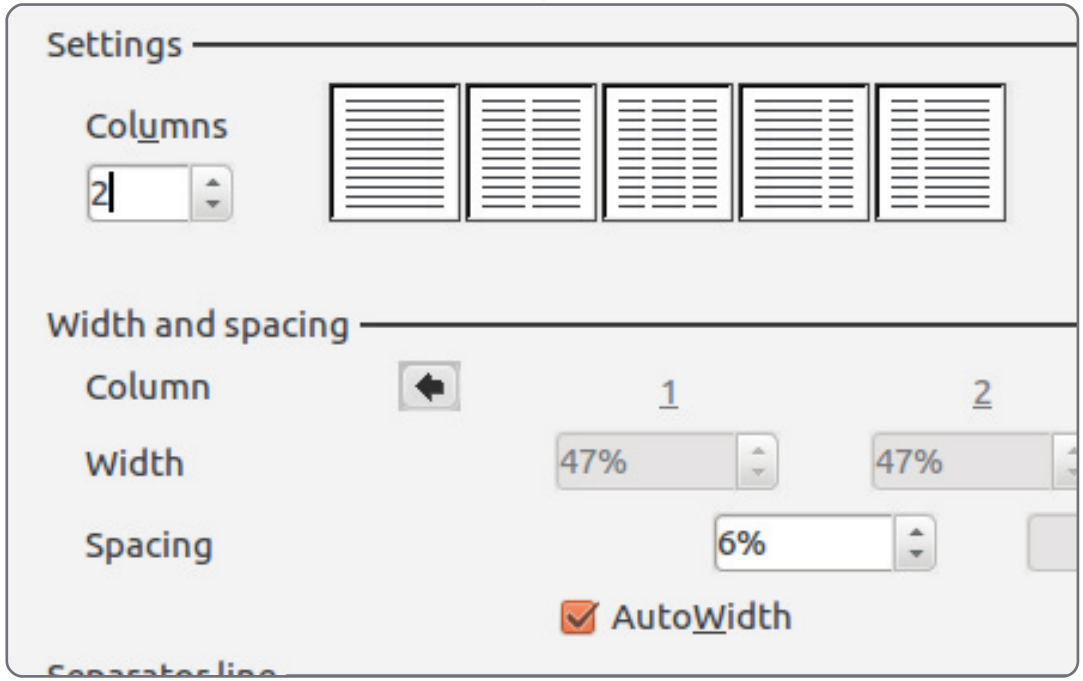



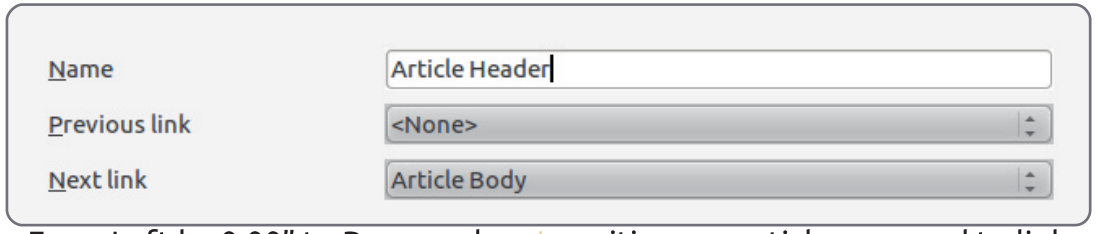



clear all the borders. Check at the bottom of the the User-defined box to create a bottom border.

We are now done with the setup of this frame. We will come back to it when we are ready to link our frames together. For now, click on OK. You will see your new frame in your document.

Now, let's create a frame for the bottom half of the article. Click below the header frame. Once again in the menus, choose Insert > Frame. Again, we want a relative width and height. Set the width to 100% and the height to 75%. Set the horizontal position to From Left by 0.00" to Paragraph area. On the Options tab, name the frame "Article Body." On the Borders tab, clear all the borders.




Now, we need the body of our article to have two columns. This is done on the Columns tab. Change the number of columns to 2, and set the spacing to 6%. Click on OK, and your new frame appears. You may need to manually adjust the position of your frames to get them to line up correctly. You adjust the frames position by clicking on the border of the frames. You will see green handles appear on the border. The green handles are used to adjust the size of the frame. We shouldn't need to change the size - just tweak the position. Click and drag on the border where there are no handles to adjust the position of the frames. To make fine adjustments to the position of your frame use the Alt+Arrow keys.

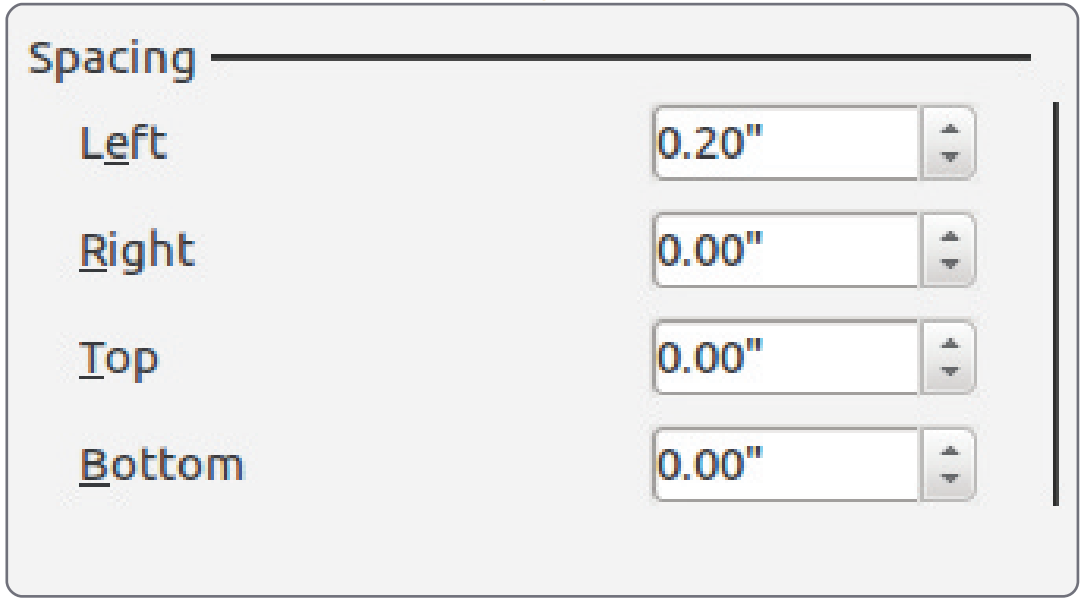
We now have our frames where we want them. Before we start writing our article, we need to link the two frames together. Double-click on the border of the header frame (the first frame we created). This displays the frame dialog. On the Options tab, click the drop-down box for next link and select the "Article Body" frame. This links our two frames together. Click OK to accept this change and return to the document.

In the document, click inside the header frame. Format a title and byline using any of the methods discussed in previous articles. Now, begin to type the paragraphs for your document. You will notice that when you get to the bottom of the first frame, Writer will automatically move you to the lower frame, and when you reach the bottom of the first column, writer will take you the top of the second. If your article is more than one page long, you could link "Article Body" frame to a frame on another page. This linking is a powerful way to control the layout and flow of an article to create a

very professional looking document.

Let's add a graphic to our header frame: Insert > Picture > From File. Select the graphic you want to insert, and click Open. If the image is too big for your document, you will want to resize it. To keep from distorting the image, hold the Shift key while dragging the handles. To put the image into the frame drag it to the lower right corner of the frame, right-click, and Anchor > To Frame. Double-click the image to bring up its properties dialog. On the Wrap tab, increase the left spacing to give the image some white space.

Graphics in LibreOffice are actually frames. When you double-click on a graphic in a document, you get a frame dialog with two new tabs: Picture and Crop. On the Picture tab, you can flip the image vertically or horizontally. You can specify whether the flip happens on just certain pages or on all pages. On the Crop tab, you can adjust the left, right, top, and bottom to crop out certain parts of the image. This is handy when you need only a part of the image, or need to force the image to a certain size without distorting the image's aspect ratio. Also, you can scale the image to a certain size based on a percentage of the original image size. You can see or change the image size by measurement units as well.




On the right-click menu of an image, you can add a description or caption to the image. Adding a caption creates a text frame around the image with the text at the bottom. This feature is useful for marking illustrations or diagrams in your document. Once you have created the caption, you can highlight it and format it just like you would any other text in a document.

Hopefully, you have gotten some idea of the power of using frames. While our example was fairly simple, you could easily create a more complex document layout using frames. With the ability to link frames, you can create a newsletter layout where articles start on one page, jump to another, and end on yet another.

Next time, we will look at another powerful layout feature available in LibreOffice Writer: Sections.


**Elmer Perry** is a children's minister in Asheville, North Carolina whose hobbies include web design, programming, and writing.

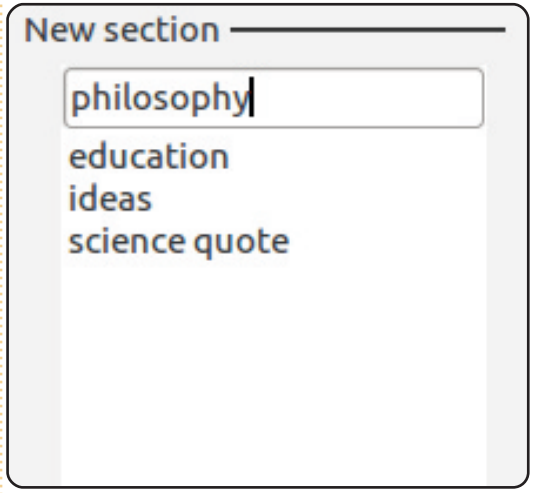
# LibreOffice - Part 5

In the previous part of this series, we discussed using frames for document layout. In this part, we will turn to another useful layout tool in LibreOffice Writer: Sections. Sections differ from frames in several respects, but, in some ways, they can achieve the same results. While both will allow you to divide a portion of your document into columns, when you use sections, you have no control over the width. Sections will take the entire width from the left margin to the right margin. Sections also cannot break in the middle of a paragraph. You cannot link sections together the way you link frames. While you cannot link sections together, sections give you the ability to link to other documents, or to a section in another document.

Perhaps the best way to think about sections is as a way to divide your document into different pieces like introduction, argument 1, argument 2, etc. Sections can also allow you to separate a portion of a document for use in another document. Sections can become a powerful tool for allowing you to pull content from other documents.

## Using Sections

For our example, we will import quotations from a document of quotes. Start a new document, and add a list of different quotes. Do the following for each of the quotes:



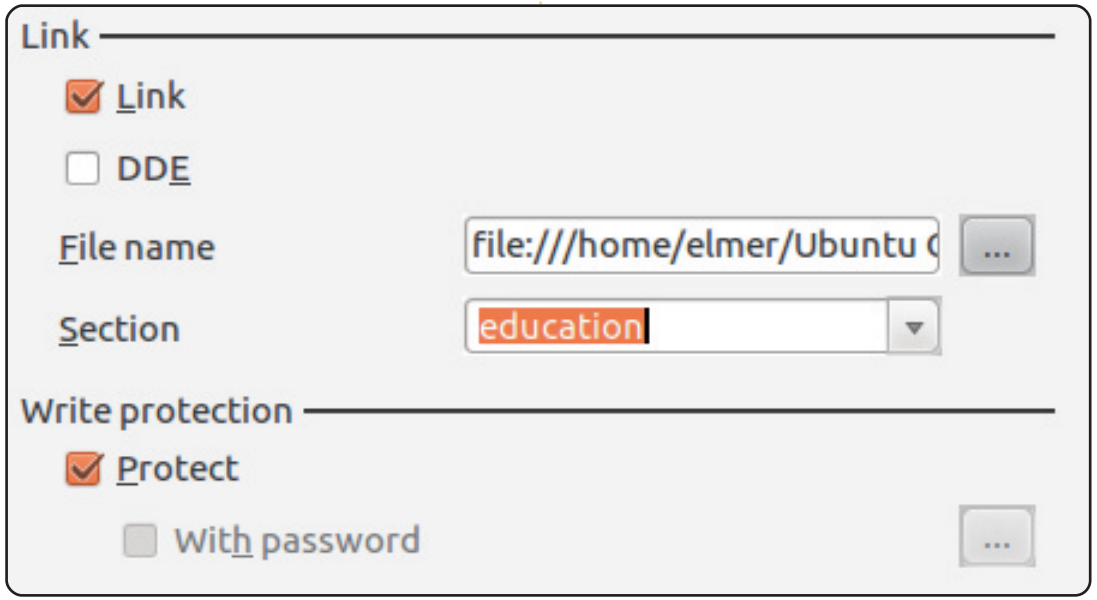

Select the entire quote.

On the menus, got to Insert > Section.

Give the quote a name that will remind you what the quotation is about. (For example, one of my quotes is from Albert Einstein on science. I named it quote_science.)

Once you have made each of the quotes its own section, save the file as quotes.odt.

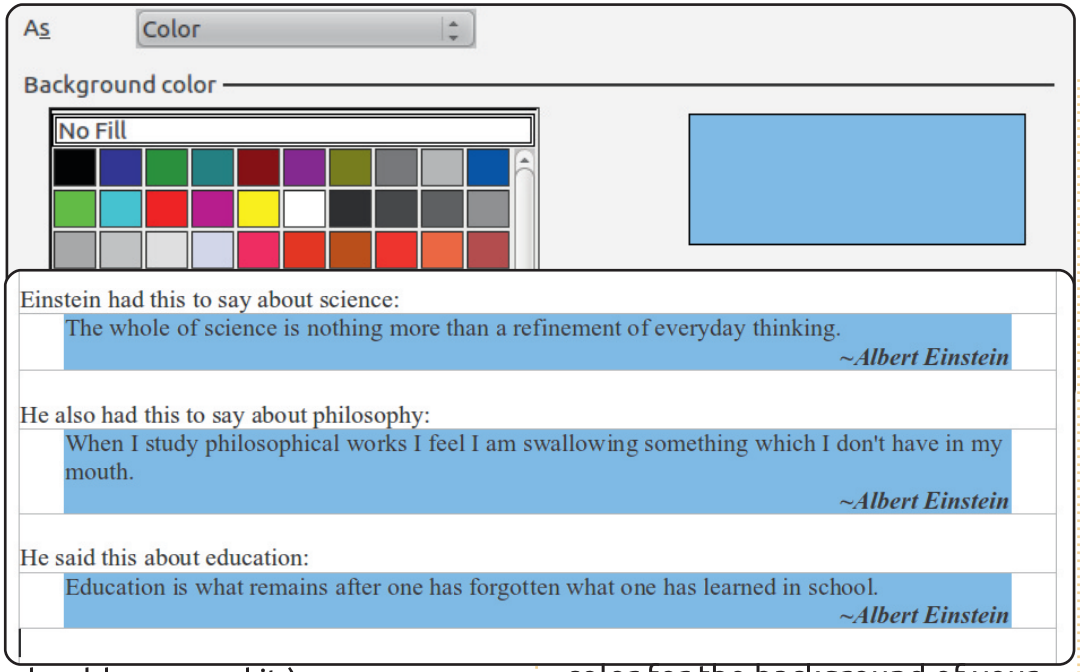
Next, let's create a new document, and add some paragraph body text. (Hint: You can add dummy text to your document by typing "dt" and pressing the F3 key.) Write a lead-in to your quote, and press enter. To get our quote from our quotes document, Insert > Section. As always, give the section a name that helps you remember what it is. Select the Link checkbox. Click on the file browser button (…) next to File name. Select the document containing your quotes, and Open. Use the Section dropdown box to select the quote you want to insert into your document. If you want to write-protect your quote from editing, check Protected under Write-protection. You can also protect the section from editing with a password. (NOTE: Write protection, even with a password, does not guarantee someone



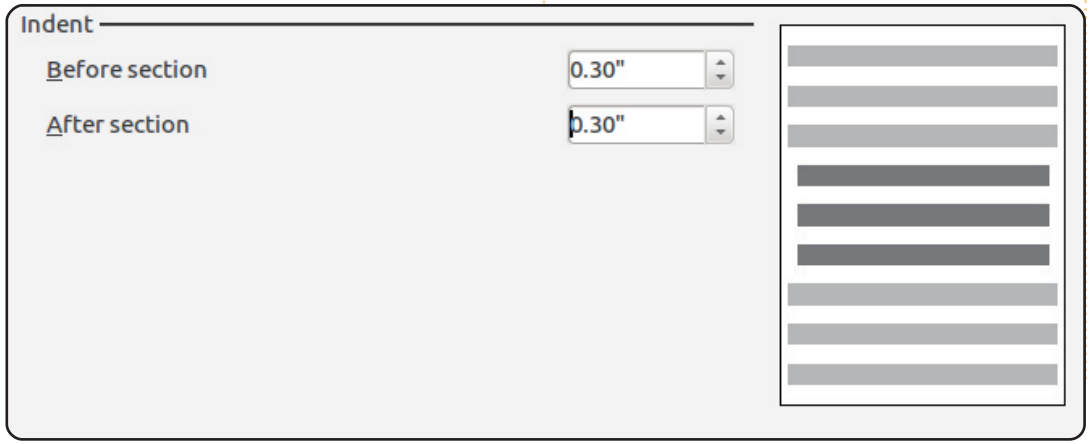
cannot hack your document and change its content.) You can add the other quotes from your quote document using the same method.

## Editing Sections

Now that we have added our quotes, let's make them stand out by indenting them and giving them a background color. Format > Sections. The edit Sections dialog presents you with a list of sections in your document. Select the section you want to edit. In the main window of the dialog, we can change the link document, or the section in the document the section is linked to. Here we can also change the write-protection and visibility of the section. (I can't think of any practical reason why you would hide a portion of the document, but the option is there should you need it.)

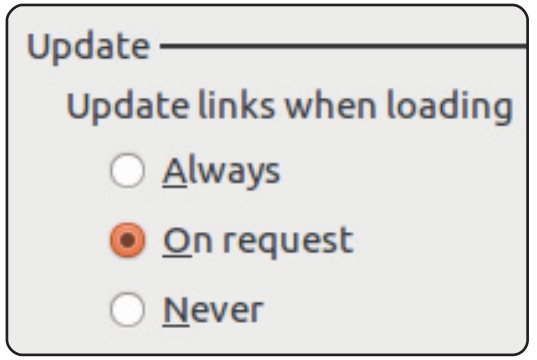



Click the Options... button to bring up the options dialog. On the Indents tab, change the Before section and After section to 0.30". On the Background tab, select a color for the background of your quote. Click OK. Change the other quotation sections, and then click OK on the Edit Sections dialog. Your quotes now have an indentation and a background color.




## Changes Made in Linked Document

If you need to change the information in a section linked to another document, you might ask whether it is better to change the original document or within the new document. Both are possible. The choice is really yours. The one thing to remember is changing a linked section in a document will not be reflected in the original document, but changes in the original document may be reflected in the linking document.




You can control how updates are done in the LibreOffice Writer options: Tools > Options > LibreOffice Writer > General. Under Update, you can choose to have links updated automatically, manually, or never. Automatically will update the links when a document with links is opened. Manually will ask you whether you want to update links. Never will not update links when a document with links is opened.

## Manually Updating Links

If you make changes in the original document, and you want to update the linked document to reflect those changes, you have two ways to update the linked document. Edit > Links... will display the Edit Links dialog. Here you can select individual links and update them. To update all the links at once, use Tools > Update > Links.

## Frames or Sections?

In some cases, whether you use frames or sections matters little. There are situations where either can accomplish the tasks. However, taking the time to consider the functionality of each can help you make the best choice. For example, if you are doing a research paper, and you have compiled your quotes and data into a Writer document, sections would probably be your best choice for inserting pieces of the data into your paper. However, if you need to start an article on a page, skip a page, and finish it on another page, linked frames is a better choice. Taking some time to think about the purpose, layout, and content sources of your document, and the functionality of frames and sections, will help you decide the best tool for your document.

While frames and sections are similar in many ways, they have different functionality that makes them suitable for different purposes. The powerful ability to link to portions of another document makes sections unique. Remember to plan your layout and decide ahead which tools you will use to accomplish the task.

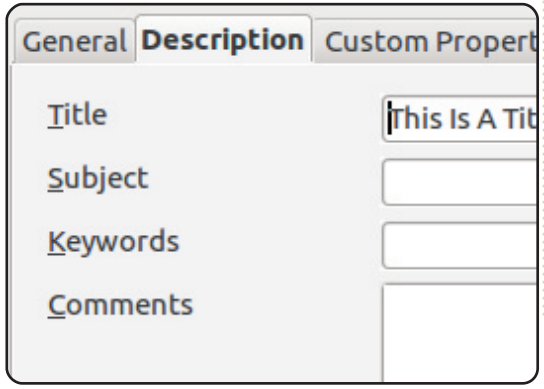
**In the next article, we will look at page styles, headers, and footers in Writer documents.**

**Elmer Perry** is a children's minister in Asheville, North Carolina whose hobbies include web design, programming, and writing. His website is eeperry.wordpress.com

# LibreOffice - Part 6

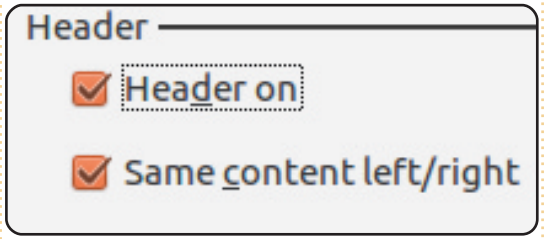
In this month's article, we will discover a few new ways to format our documents using page styles, headers and footers. In past articles, I have discussed the use of paragraph and character styles. Page styles are similar, but deal with the overall geometry and formatting of the entire page. Headers and footers are the area at the top and bottom of the page, and are usually the same on every page of the same style.

We will start by setting up our document and styles. Start a new writer document, File > New. In order to have access to the document's title, we will change some of the document's properties, File > Properties. On the description tab, put "This Is The Title" as the title of the document. We will use this later when we start creating our headers and footers. Click OK to save your changes.

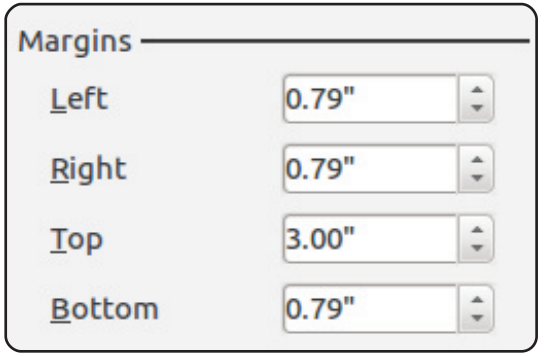



Now, we need to set up our page styles. We will use three page styles, First Page, Normal Page, and Landscape. First Page and Landscape already exist, but we will modify them. We will create our Normal Page style first. For our normal page style, we want a header area at the top with a light gray background. Open the Styles and Formatting dialog, Tools > Styles and Formatting, or click on the Style and formatting button (right). Click on the page styles button (right), right-click in the window, and select new. The Page Style dialog appears. On the Organizer tab, name the style "Normal Page." Change the next style to Normal Page. This tells Writer that when we get to the end of the page, it will create a new page with the same style. On the Header tab, check Header On. This inserts a header area on the page. Still on the Header tab, click the More button. A new dialog comes up. This dialog allows us to add borders and background colors to our header. On the Background tab, pick the light gray color for the background. Click OK on both dialogs, and we are finished with our Normal Page style.

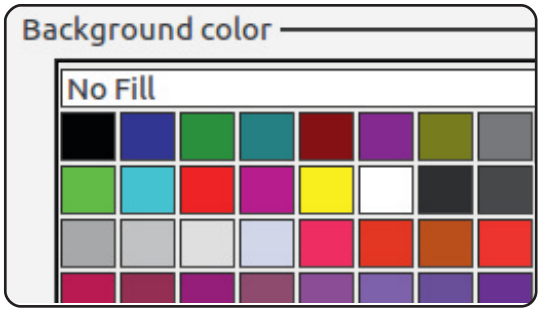
For our First Page, we will




modify the one that already exists. We want a 3" (7.5cm) margin at the top (for first page graphics added at another time), and a light gray footer area at the bottom. Right-click the First Page style in the Styles and Formatting dialog, and select modify. On the organizer tab, make our Normal Page the next style. The Page tab allows us to change the margins for the page. Make the top margin 3" (7.5cm). This time we will go to the footer tab, check Footer On, click on the More button, and choose our light gray background.




For our Landscape page style, we will modify the existing Landscape style. For our Landscape style, we will add both a header and footer. Right-click on the Landscape style and modify. Take a few moments to look at the page tab and notice the orientation for the page is landscape, which is exactly what we wanted. Turn on the header and footer on their respective tabs, and select the light gray background for both.



Now, we are ready to create our document. Double-click the First Page style, and the page in your document will change to the formatting we added. You will notice the light gray footer area at the bottom. Click inside the box to edit the footer. We will first add our title, Insert > Fields > Title. This inserts the title we added in the document properties. You can use this method to insert the title of the document anywhere you need it. If you change your title later in the document properties, you can update all instances of the inserted field with Tools > Update > Fields or by pressing F9 on your keyboard. Type " Page ", remembering to put spaces on either side of the word Page, and insert the page number, Insert > Fields > Page Number. Move your cursor to the beginning of "Page" and press the tab key on your keyboard until the page number is flush against the right side of the footer area. Click out of the footer area into the main body of the page.

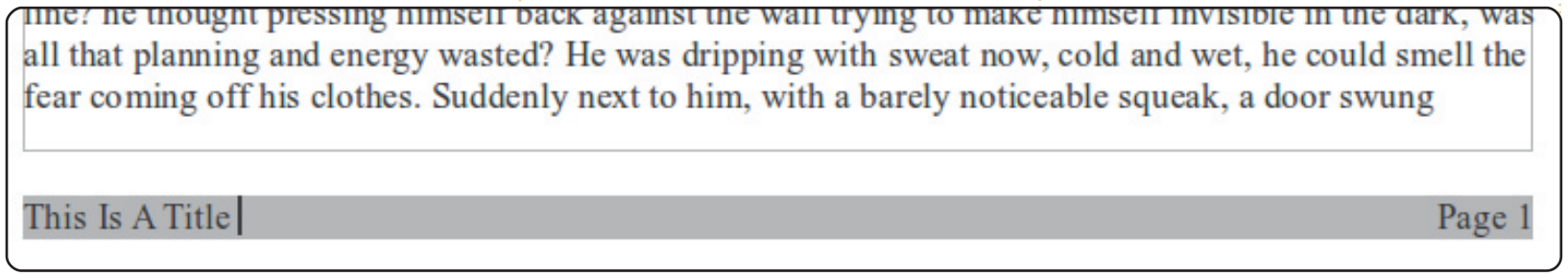
Once this is done, you can begin to type in your text. Once you reach the end of the page and a new page is inserted, you will notice it is formatted with the Normal Page style with a header area at the top. Fill in the header information just like we did for the footer of the first page. Make sure you use the fields, especially on the page number. The page number field comes in handy when we get to the third page. You will then notice the header information has been copied for you and the page number updated to reflect the current page.

Next, we will insert a Landscape page. Before you get to a new page, Insert > Manual Break. Select Page Break, and under the style, select Landscape. This will take you to a new page with a Landscape layout. Because this is a different style from our Normal Page style, we will need to fill in our header and footer information. This is handy should you need different header or footer information on some pages, just insert a page with a different page style. Once you have completed your landscaped page, create another page break (Insert > Manual Break) with a style of Normal Page. You will notice your page numbering continues, including the inserted landscaped page(s). If you do not want the inserted landscape pages included in the page count, you can manually adjust the page number in the Manual Break dialog.

**Writer makes it easy to add pages with different styles and orientation, as well as automatic headers and footers.**

Writer makes it easy to add pages with different styles and orientation, as well as automatic headers and footers. You can make the headers and footers as big as you want, and they can contain whatever information you want to put in them. Fields help keep certain information consistent in your document, and let you write without worrying about page numbers.

In my next article, I will move away from Writer and show you how to make a poor man's database using a Calc spreadsheet. After that, we will use our spreadsheet to create a form letter.


fine? he thought pressing himself back against the wall trying to make himself invisible in the dark, was all that planning and energy wasted? He was dripping with sweat now, cold and wet, he could smell the fear coming off his clothes. Suddenly next to him, with a barely noticeable squeak, a door swung

This Is A Title Page 1

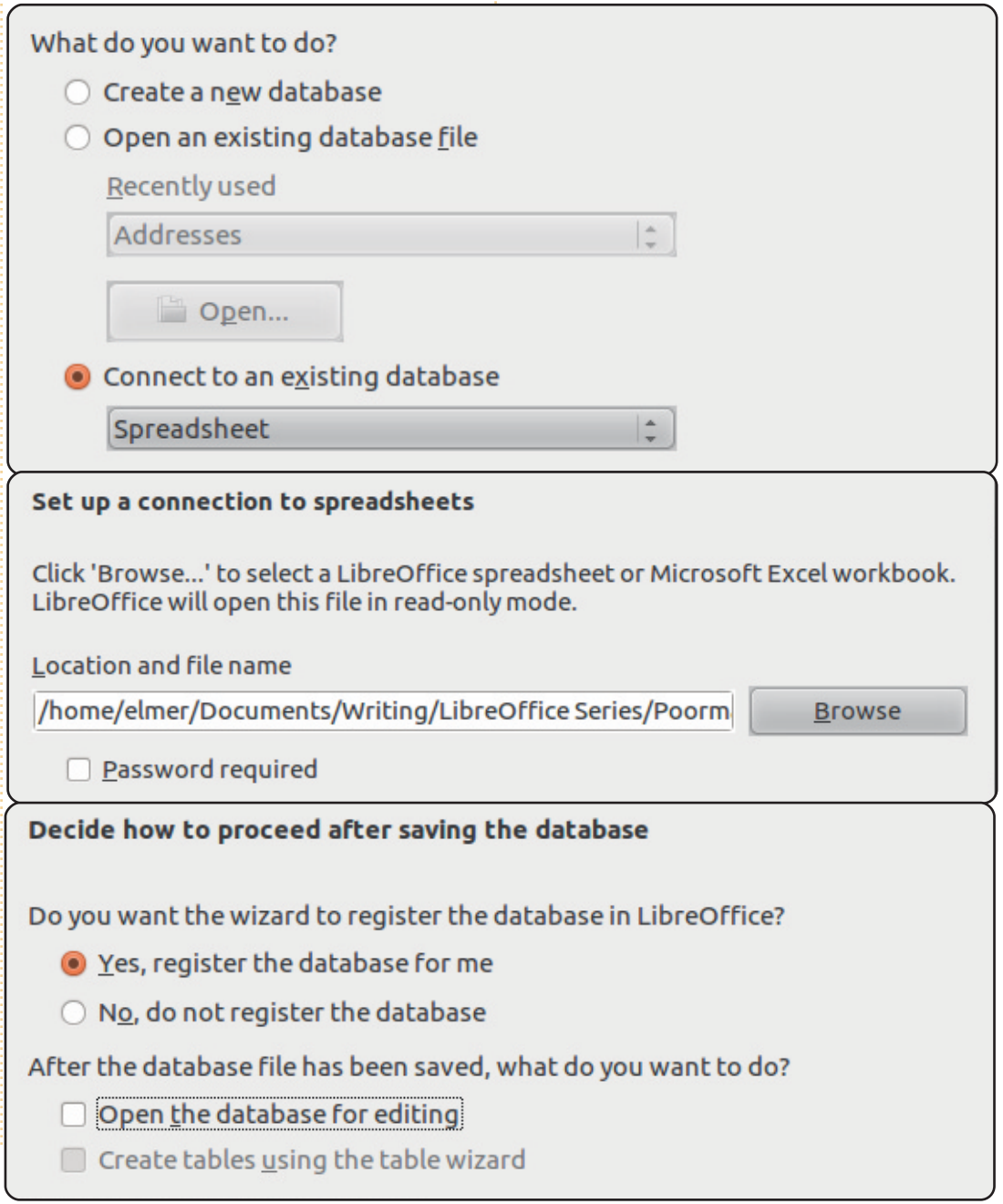
**Elmer Perry** is a children's minister in Asheville, North Carolina whose hobbies include web design, programming, and writing. His website is eeperry.wordpress.com

# LibreOffice - Part 7

Up until now we have been working in LibreOffice Writer, but today we will step away for just a second to do something a little different. We're going to create a poor man's database in Calc and then return to Writer and create a mail merge. This will give you some ideas about how you can use a spreadsheet as a database. In order to do a mail merge, we need to work with some sort of database. We could create our own in Base, but for a simple address book, Calc is an easier solution.

We will start by opening LibreOffice and clicking on Spreadsheet. This will open Calc with a blank spreadsheet. We won't go into a lot of details about the layout of Calc; we'll save that for another day. What you do need to know is that a spreadsheet is laid out as a series of columns and rows. The columns are labeled above with letters (A,B,C,...) and the rows are down the left side labeled with numbers (1,2,3,...). When we use Calc as a database, the first row must contain the field titles for the database. These are the database field headers. We will put the following field headers in the first row: Title, First Name, Last Name, Street Address, City, State, Postal Code, and Country. Each field must be in a separate column starting at column A, so put the cursor in column A of the first row and type in Title. You can use the right arrow key on the keyboard to move to the next column, and fill in the rest of the fields.

| | A | B | C | D | E | |
|---|---|---|---|---|---|---|
| 1 | Title | First Name | Last Name | Street Address | City | S |
| 2 | Mr. | Tom | Jones | 123 Some St. | Someplace | NC |
| 3 | Dr. | Harry | McMahon | 321 No Road | Noplace | NY |
| 4 | Rev. | Mike | Mickey | 547 Trinity Way | Gospel | CT |
| 5 | Ms. | Amber | Sams | 54 This Way | Thatplace | CA |
| 6 | Mr. | Charlie | Hacker | 101 Binary Way | Lunix | NJ |
| 7 | Ms. | Molly | Holly | 22 Harvard Rd | Wally | SD |
| 8 | | | | | | |
| 9 | | | | | | |

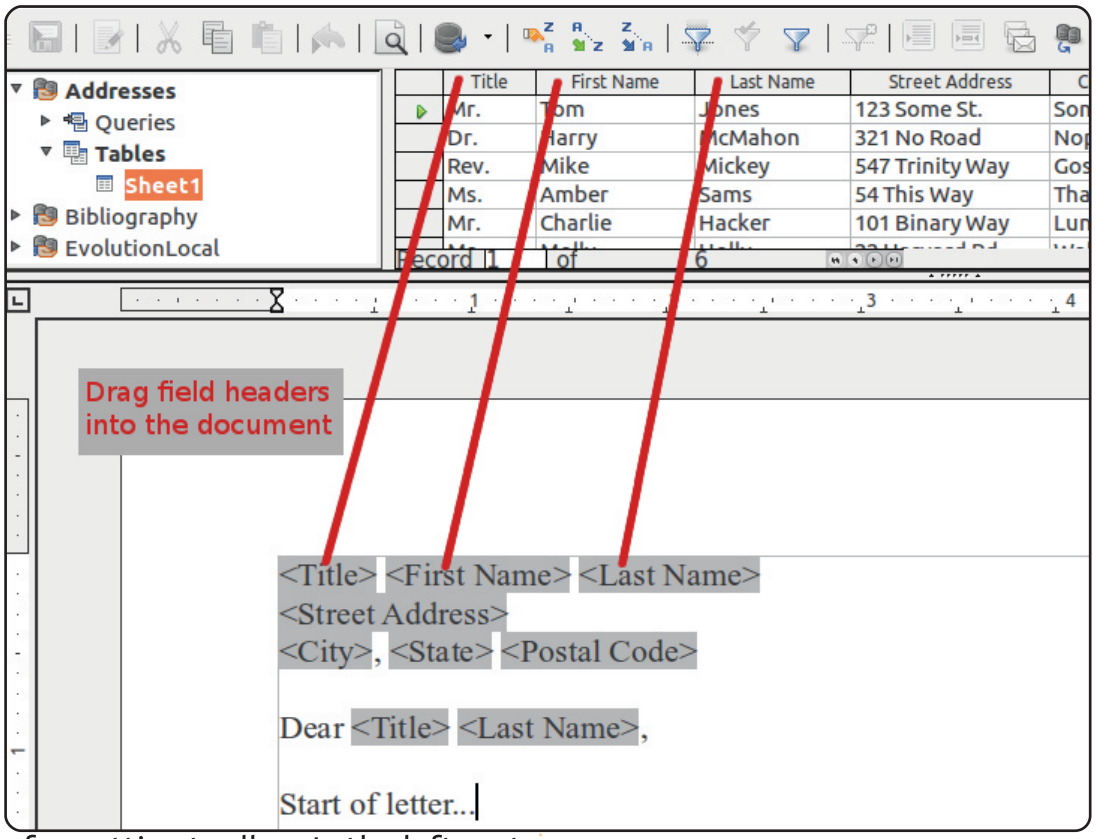


Starting with the second row, we begin to fill in our data. Each row is a record. Think of a record as all the information on one person. For our purposes today, you don't need to worry too much if the data is wider than the columns. If you want to adjust the width of the columns while you input your information, just place your mouse over the line separating the two columns. The cursor will become a double arrow, and you can click and drag to increase or decrease the width of the column. Once we have entered all our data, we need to save the spreadsheet. I saved mine as Poorman_db.ods. Once it is saved, close it.

Before we can use our poor man's database, we need to register it in LibreOffice. File > New > Database will bring up the database wizard. Select “connect to an existing database”, and in the drop-down box, select spreadsheet. Click the Next button. Use the Browse button to find your spreadsheet. Click Next. Make sure “Yes, register the database for me” is selected, and uncheck “Open database for editing.” Click Finish, and give the database a name (I named mine Addresses). The database you just created is linked to the spreadsheet. Any updates you make to the spreadsheet will show in the database. The only catch is you cannot edit the spreadsheet when you have Writer opened. Basically, your spreadsheet database can be the only LibreOffice document open. Otherwise, LibreOffice will open the spreadsheet in read-only mode.

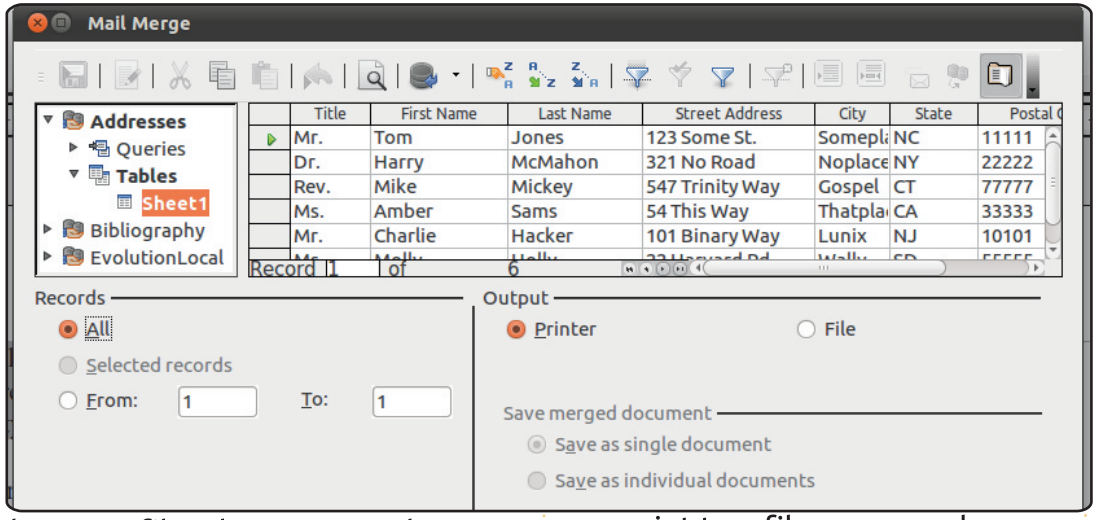
Now that we have created our database, and registered it in LibreOffice, we can use it to create a mail-merge. Mail-merge is great for sending form letters to customers or prospects. The cool thing is you can put any kind of data you want in your database and then use it in the letter. For example, if you have a rewards program for your customers, you could have a field for points, and include the points each customer has earned in the letter, but you would have to type the letter only once.

Click on the Data Sources icon (shown left), View > Data sources, or press F4. This will display the registered databases below the formatting toolbar. In the left part of the data sources, Addresses (or whatever you named your database) > Tables > Sheet1. On the right side, you will see your data laid out much like you entered it in the spreadsheet. We insert the fields into the document by clicking on the field header and dragging it into the document. This will create a field placeholder for every field you drag into the document. Make sure you drag the field header and not a data block in a record.




Now, you can type the body of your letter. When you need a field from the database in your letter, you can drag it into the document. The database fields can be used any place in the document. As I said before, your database can contain whatever information you need it to contain. A teacher could even use it to report students' grades in a letter to parents.

Once you have finished typing your letter, you can print or send to a file. You might want to send a



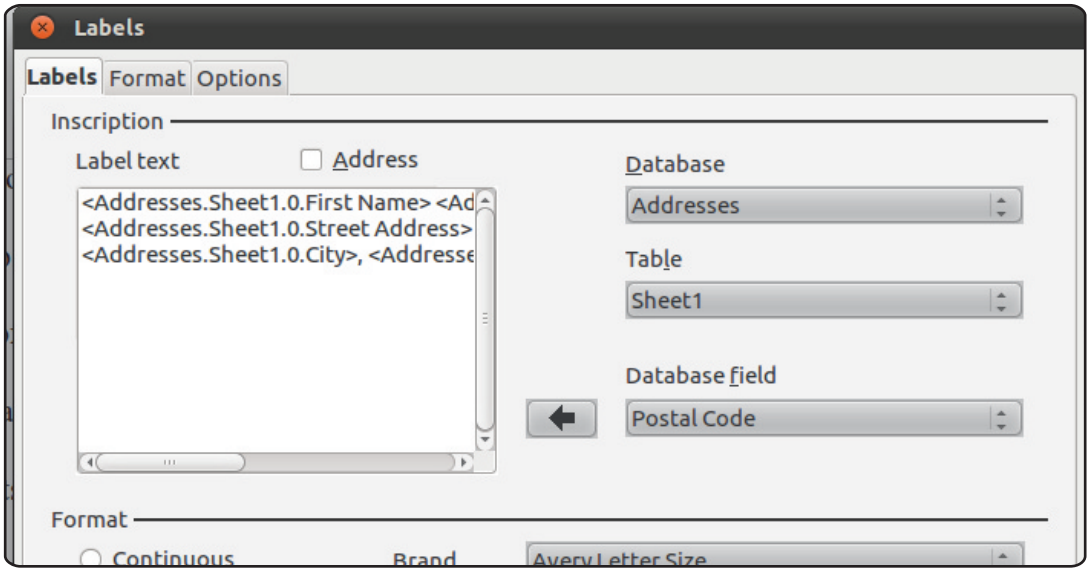

letter to file when you need to go back and add personal information for certain individuals. Like a teacher might want to request a parent-teacher conference for a student failing the class. File > Print, just like you would for a normal document. However, LibreOffice will tell you that your document contains address database fields and asks you if you want to print a form letter. Answer yes. The Mail Merge dialog will appear. In the dialog, you can choose to print to the printer or to a file. Also, you can choose to print a letter only for selected records or a range of records. You select records by clicking on the gray box at the beginning of the record, or use CTRL-click to select only certain records, or SHIFT-click to select a series of records. When you print to a file, you can choose to print to one file, in which case each letter will begin on a new page, or save as individual files, in which case each letter should have its own file. You can select which database field to use for the file name. On my version of LibreOffice (3.3.3), I got one document whichever I chose. Apparently, they are still working on this feature.

You can also use your database to generate labels. File > New > Labels opens the labels dialog. Select your database and table. Move the fields over into the label information box. Select your label type and click New Document. As with the form letters, when you get ready to print, you will have an opportunity to select the records you want to print, and you can print to a printer or a document. You can also create envelopes much in the same manner.

There is another way to create a form letter, using the Mail Merge Wizard: Tools > Mail Merge Wizard. The wizard has some restrictions, and when I tried to use the wizard, I found it more difficult to get good results. I found the manual method I have described here to give better results, giving the creator more control over the output.

Mail merge is a great time saver. Bang out your letter, drop in some database fields, and print. Sure beats typing 100s of letters or manually editing each one to change the information. In my next article, we will start to learn more about Calc by creating a simple budget spreadsheet.

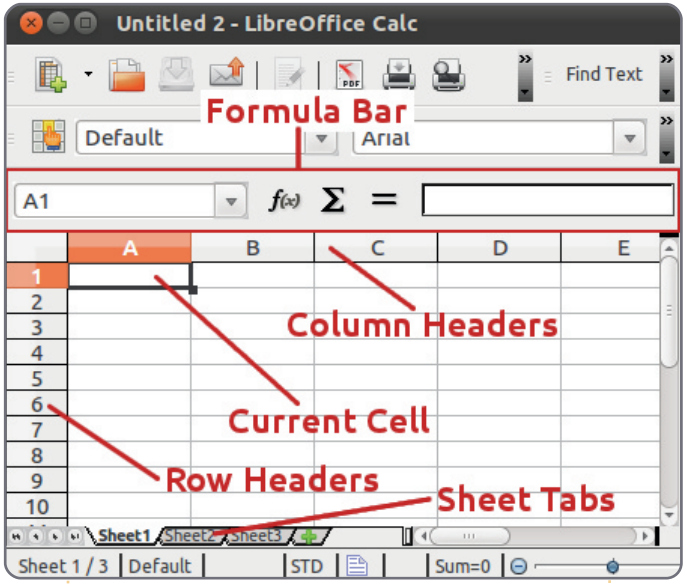
**Elmer Perry** is a children's minister in Asheville, North Carolina whose hobbies include web design, programming, and writing. His website is eeperry.wordpress.com



# LibreOffice - Part 8

Calc is the spreadsheet module of LibreOffice, which is compatible with Microsoft's Excel. We already saw one use for Calc when we created our poor man's database in my last article, but Calc is capable of more than just data collection. As the name implies, Calc can do calculations using a rich number of functions built into the program. This means we don't have to manually calculate the total of some column; we can insert a formula to add it up for us. Calc also allows you to do a "what if.." scenario to play with the numbers in your spreadsheet.

Before we get into building our budget spreadsheet, you need to know a few things about how a file, sometimes referred to as a workbook in Calc, works. Each file can contain several different spreadsheets. In a new workbook, you get three spreadsheets by default named sheet1, sheet2, and sheet3. They are listed on tabs at the bottom of the window. Each spreadsheet consists of individual cells. You identify the cells by their column letter and row number. For example, the first cell in the upper left hand corner is A1, the first column, first row. Each spreadsheet is capable of having 1,024 columns and 1,048,576 rows.




The layout of the Calc window is a little different than the Writer window. You still have a menu bar and formatting bar, but below the formatting bar, you have the formula bar. The formula bar is your friend when you work in Calc. The leftmost box is the current cell name box. It tells you the currently selected cell or range of cells. The three buttons are the function wizard, the sum button, and function button. The text box is the input line. Use it to edit the contents of a cell.

At the top of your spreadsheet, you have the column headers (A, B, C...), and along the left hand side, you have the row headers (1, 2, 3...). The columns and rows are marked on the sheet by light gray lines. You will find this grid handy when you are laying out your spreadsheet.

You have several choices in the way you enter data into the cells. You can click on the cell and just start typing. When you have finished, press enter and you will move to the cell below. You can also click on a cell and enter your data in the input line of the formula bar. This method has a drawback, which I will explain in a minute, but sometimes, it is the best method for editing the content of a cell. You can edit directly in the cell by double-clicking the cell. This puts you in cell edit mode. This mode is similar to editing in the formula bar.

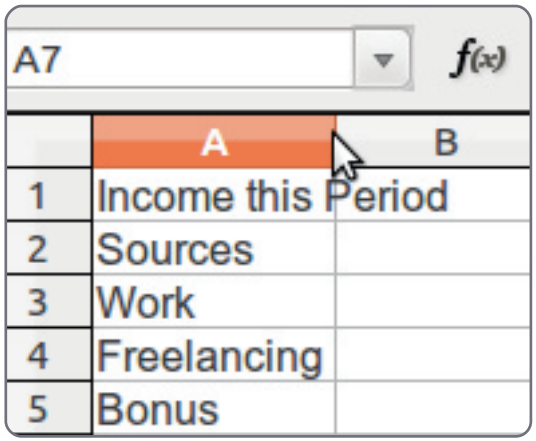
To navigate within your spreadsheet, you can always grab the mouse and click on the cell you want. However, since often your hands are already at the keyboard, keyboard shortcuts work better. Tab moves you one cell to the right. Shift-Tab moves you one cell to the left. Enter moves you one cell down, and Shift-Enter moves you one cell up. While not in edit mode or not using the input line, the arrow keys move you in the direction of the arrow. The arrow keys are disabled for navigation while in the input line and in edit mode to allow you to move within your content.

Now, with these tools on your belt, let's build the first section of our budget spreadsheet. Open a new Calc file. Click on the blank gray spot to the left of the column header and above the first row header. This will select the entire

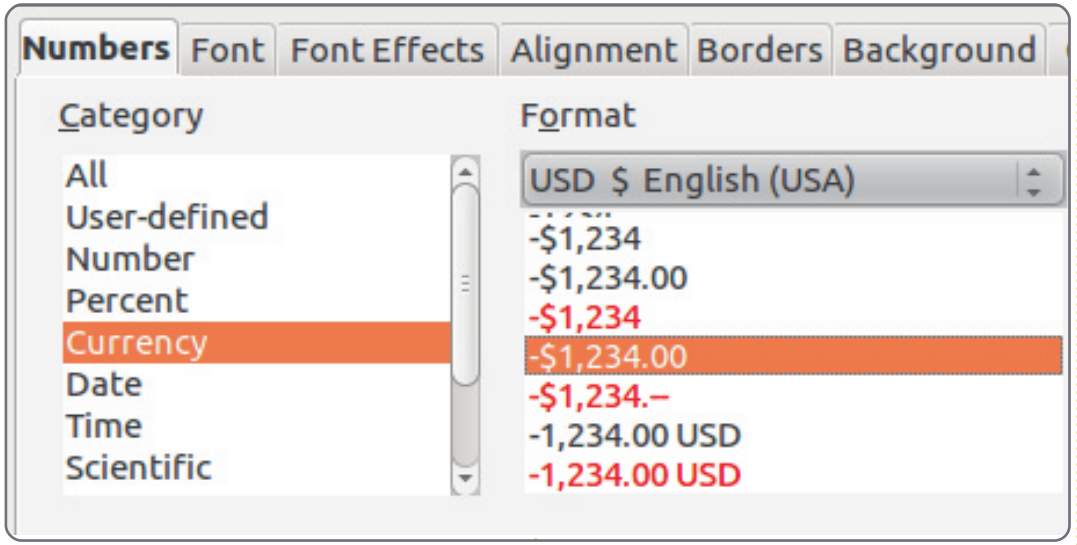
sheet. In the formatting bar, set the font to a nice sans-serif font like Arial, and set the font size to 12pt. By doing this, we have set the default font and size for our entire sheet.

In cell A1, enter the text "Income for This Period," and press Enter. For now, don't worry if the text overruns the cell. We will fix that in a minute. On the second row of column A, type in "Sources". Down column A starting with row 3, type in the different types of income you have, e.g. Work, Freelancing, Bonus. I usually add a "Misc" for those things that don't fit into other categories, like winning the lottery and quiting your day job.

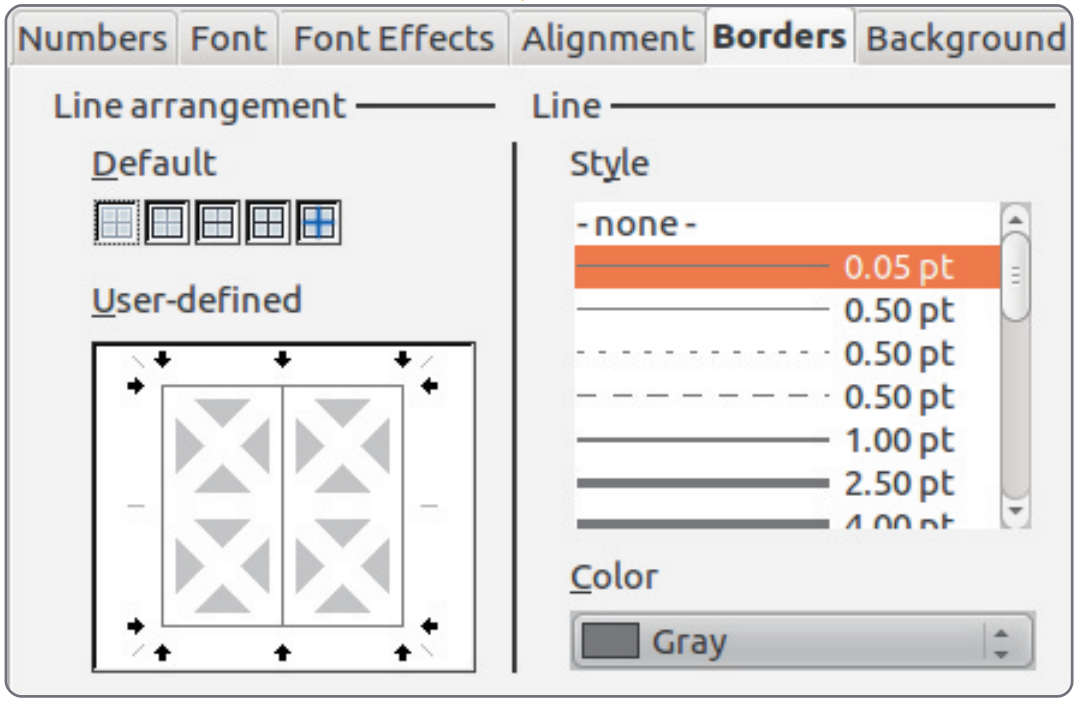
At this point, some of your income sources may overflow their cells. We can adjust the width of the column by clicking between the cell headers for A and B and dragging. We are still not concerned with the cell A1. At this point, A1's overflow is okay, just make sure all your income sources fit in the column.




Move to cell B2. Type in "Amount". Press Enter. Down column B, enter an amount for each of the income sources. You will notice the default for numbers is just some unformatted numbers. Let's make them look like currency amounts. We will change them all at once. You can select all the numbered cells by click with the left mouse button and dragging until you have all the numbers highlighted. You can also click on the first cell, hold down the Shift ke,y and click on the last one. With the keyboard, use Shift in combination with the arrow keys. Format > Cells > Numbers. Select the Currency category. Above the format box, select the correct currency type for your country. Select a currency format from the format box. This is entirely up to you. Since you should never have a negative figure in your income cells, you don't need to worry too much about formats that deal with negative numbers.




Now, we will take care of A1 overflowing into B1. Since this text is a heading for the section, we want it to span across the width of the section. Cell Merge is the answer. Highlight cells A1 and B1, and Format > Merge Cells > Merge and Center Cells. We will use



merge cells a lot, and it should become one of your favorite formatting features. Unfortunately, there is no keyboard shortcut. You can create one in Tools > Customize > Keyboard, but take care that you don't assign the keyboard shortcut to a common or predefined functionality.

Now, let's make it look like a header. Let's make the font bold, Format > Cells > Font tab. Select bold under Typeface. Let's put a border around it to make it stand out just a little more. Click on the Borders tab. Under Default, click the second box, Set All Four Borders. Leave the style at the default, but change the color to gray. Click OK.

With our Source and Amount headings, we want them to stand out as well, but they need to look a little different to distinguish them from the section header. Select the two cells with Source and Amount in them. Format > Cells > Font tab. Select bold again. Click on the Borders tab. This time we just want a border between the two cells. Click in the User-defined box between the two gray boxes with a white X in them. You will see a line between the two. Change the color to gray. On the Alignment tab, change the alignment for horizontal to center and vertical to middle. On the Background tab, select a light blue (Blue 8) for the background color. Click OK.

For our income items, we could put a border around them, but that can be hard to read sometimes. Instead, let's highlight the even numbered rows. Start with the second item, highlight both the name and its amount. Format > Cells > Background tab. Select a light gray for the background. I used Gray 10%. Click OK. Repeat for all the even rows.

It would be nice to have a divider between the name and the amount and a border around the whole list. Click on the first name, hold the Shift key, and click on the last amount. This should highlight all the items and their amounts. Format > Cells > Border tab. Under Default select the second box, Set Outer Border Only. You will notice the User-defined box is different this time. There are four gray boxes with white X's in them. Click between the top two boxes. This will give you a vertical line between the cells. If you click in the middle, it will create a vertical and horizontal line, which is not what we want. Change the color to gray and click OK.

| | A | B |
|---|---|---|
| 1 | **Income this Period** | |
| 2 | **Sources** | **Amount** |
| 3 | Work | $1,079.00 |
| 4 | Freelancing | $200.00 |
| 5 | Bonus | $50.00 |
| 6 | Misc | $5,000.00 |
| 7 | | |

This completes the Income section of our spreadsheet. In the next article, we will continue with our budget spreadsheet by adding the Assets section. And we will begin looking at making our spreadsheet do some math for us using the Sum function.

**Elmer Perry** is a children's minister in Asheville, North Carolina whose hobbies include web design, programming, and writing. His website is eeperry.wordpress.com

# LibreOffice - Part 9

In Part 8, we looked into formatting our spreadsheet cells to look a certain way, but the true power of Calc comes from its ability to calculate formulas using basic math and its built-in functions. Calc formulas are just what you think, mathematical expressions that use data to create a result. Calc functions give us predefined calculations and decision making. With just a little knowledge of formulas and functions, Calc becomes a powerful data analysis tool. When entering a formula or function into a cell, your formula or function must begin with the = (equals), - (minus), or + (positive) signs.

## Arithmetic Operators

Calc has five basic arithmetic operators:
+ (Plus) – add two numbers together, or as a sign for a number. Ex. =2+5 or +5
- (Minus) – subtract one number from another, or negate a number. Ex. =5-2 or -5
* (Asterisk) – multiplication. Ex. =2*3
/ (Slash) – division. Ex. =21/7
^ (Caret) – exponentiation. Ex. =5^2

Just like in real math, you can use parentheses to group expressions together to create more complicated formulas. For example, if you enter the equation =5-2*3 in a cell, when you press the Enter key, you get -1 for the result. However, if you enter the equation =(5-2)*3 in a cell, you get 9 for the result when you press the Enter key. This happens because Calc obeys the rules of precedence. In the first equation, the multiplication is done first, as per the rules, which gives us 5-6, which equals -1. In the second equation, we change the order of operation by using parentheses. In this case, 5-2 is calculated first because of the parentheses, giving us 3, and 3 x 3 is 9.

## Cell References

Hard coding our numbers doesn't make much sense. We could just use a calculator for that. To unleash the power of Calc's calculating abilities, a reference to the data in our spreadsheet is needed. Cell references allows us to use the data within our spreadsheet in our calculations. Cells are referenced by the column letter and row number. The first cell of the first column is A1, the second cell of the first column is A2, the first cell of the second column is B1, the second cell of the second column is B2, etc. If we enter 5 in cell A1 and 6 in cell B1, we can enter the equation =A1+B1 in any other cell in the spreadsheet, and the result will show as 11.

In some functions, you will need to reference a range of cells rather than just individual cells. To reference a range of cells, start with the first cell in the range, followed by a colon (:), and the last cell in the range. To access the first 9 items in the B column, use B1:B9. To access the first 5 items in row 1 use A1:E1.

What if you need to reference multiple rows and columns? You just start with the first cell in the block and end with the last cell in the block. For example, to reference all the cells in the first 5 columns and rows, you would use A1:E5.

## Mathematical Functions

If you need to sum a column of numbers, using basic mathematical operators could become laborious very quickly. Calc provides many functions for mathematic calculations, from finding the sum of given cells to trigonometry functions. These functions speed up your entry of formulas.

SUM() is the bread and butter of mathematical functions. This function is used so often, it has its own button on the function toolbar. SUM() can take up to 30 numbers or cell references between parentheses. You can also use range references with SUM(), which allows you to quickly total a column, row, or range of rows and columns. Multiple numbers, cell references, or range of cells are separated by a semicolon (;).

## SUM() Examples

=SUM(A1;C2;D5) – sum of the three cells

=SUM(2;A1;C5) – sum the number 2 with A1 and C5

=SUM(A1:A5) – sum the first five cells in column A

=SUM(A1:B5) – sum the first five cells in columns A and B

=SUM(A1:A5;C1:C5) – sum the first five cells in columns A and C

Calc provides many other mathematical functions. See the LibreOffice Calc documentation for a complete list, including the trigonometry functions.

## Conditional Calculations

Sometimes, you only want to perform a calculation when certain conditions are met. A good example of this is avoiding division by zero. If you try to divide-by-zero, you get an error. The conditional function IF() helps us accomplish this. The basic syntax of the IF() function is:

IF( Test; ThenValue; ElseValue)

So, if we want to divide A1 by B2, but we want to avoid the operation if B2 is zero, we could use the IF() function:

=IF(B2>0;A1/B2;"Can't div by zero")

This translates as "If B2 is greater than 0, divide A1 by B2; else, output the text 'Can't div by zero'."

Conditional calculations can help you avoid errors in your spreadsheets. Use them any time you think problems might pop up, like division-by-zero, or a number not being entered.

## Comparative Operators

Calc provides six comparative operators we can use in our test.

= (equal to)
> (greater than)
< (less than)
>= (greater than or equal to)
<= (less than or equal to)
< > (not equal to)

In addition to the comparative operators, we can use the NOT() and AND() functions in our test. The AND() function allows us to test more than one condition and NOT negates the condition. This time, let's make sure neither of the numbers equal 0:

```
=IF(AND(NOT(A1=0);NOT(B2=0)) ; A1/B2; "Can't div by zero")
```

In this formula, we make sure than A1 is NOT zero AND B2 is NOT zero before we do our calculation. While this formula shows both the AND() and NOT() functions being used, a more practical formula would be:

```
=IF(AND(A1>0;B2>0);A1/B2;"Can't div by zero.")
```

We have only begun to scratch the surface of the possibilities using Calc's formulas and functions. Next time, we will take a look at some practical uses for some of these functions.

**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

ubuntu uk podcast

The Ubuntu Podcast covers all the latest news and issues facing Ubuntu Linux users and Free Software fans in general. The show appeals to the newest user and the oldest coder. Our discussions cover the development of Ubuntu but aren't overly technical. We are lucky enough to have some great guests on the show, telling us first hand about the latest exciting developments they are working on, in a way that we can all understand! We also talk about the Ubuntu community and what it gets up to.

The show is presented by members of the UK's Ubuntu Linux community. Because it is covered by the Ubuntu Code of Conduct it is suitable for all.

The show is broadcast live every fortnight on a Tuesday evening (British time) and is available for download the following day.

podcast.ubuntu-uk.org

# LibreOffice - Part 10

In part 8 of this series, we began our work in Calc, and created and formatted an income section for a budget worksheet. Last month we began our discussion of functions and formulas. In this part, we will continue working on our budget worksheet, and use formulas and functions to do calculations in it.

## Setting Up the Assets Section

| | D | E | F | G |
|---|---|---|---|---|
| | | Assets | | |
| | Type | | Beginning | Ending |
| | Period Income Total | | | |
| | Checking Balance | | | |
| | Savings Transfer | | | |
| | Total Expendable | | | |
| | Savings Balance | | | |
| | Retirement Balance | | | |
| | Gross Assets | | | |

If you recall, we had set up a section that contained all of our income items in columns A and B. We will begin our Assets section in cell D1. Move to that cell and enter "Assets" in it. Select cells D1-G1, and merge and center the cells (Format > Merge Cells > Merge and Center Cells). In cell D2, enter "Type". Merge and center this cell with E2. Enter "Beginning" and "Ending" in cells F2 and G2 respectively. In cell D3, enter "Period Income Total," and merge it with cell E3 (Format > Merge Cells > Merge Cells). In rows D4-D9, enter the following text in order: Checking Balance, Savings Transfer, Total Expendable, Savings Balance, Retirement Balance, Gross Assets. After entering the text in the cells, go back and merge these cells with their adjacent cell in column E (i.e. merge D4 with E4, D5 with E5...).

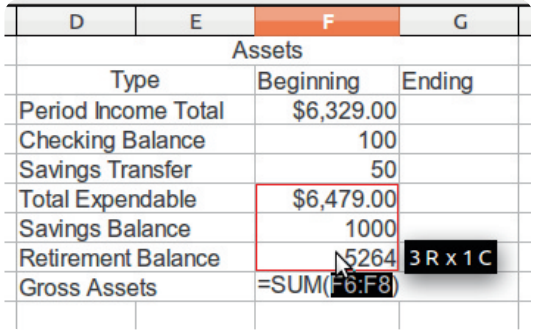
## Initial Calculations for Asset Section

In cell F1, we will place our first calculation using the SUM() function. For this cell we need to total the numbers of column B in our Income section. Enter this formula in cell F3:

```
=SUM(B3:B6)
```

This formula uses the SUM() function to total the numbers entered in cells B3, B4, B5, and B6. If your Income section contains more or less income items, adjust the cell reference given to the SUM() function. If you pull out a calculator and add up the numbers, you will find you get the same number as the total calculated by LibreOffice Calc.

In cells F4 and F5, enter amounts for the Checking Balance and Savings Transfer. In cell F6, we will need to sum the three amounts above for the Total Expendable item, but this time, we will use a different method. Select cell F6 and click on the sum button (shown left) in the formula toolbar. You will notice that LibreOffice automatically finds the three amounts above and creates a SUM() function formula with the range inside. Press Enter




to accept the range.

Enter amounts for the Savings Balance and Retirement Balance in cells F7 and F8. Select cell F9, and click the sum button in the formula toolbar. Notice that, once again, Calc has selected the two numbers above it, but for an accurate total of the Gross Assets, we need to include the Total Expendable amount. Left click and drag to select the three cells. You should

| D | E | F | G |
|---|---|---|---|
| | Assets | | |
| Type | | Beginning | Ending |
| Period Income Total | | $6,329.00 | |
| Checking Balance | | 100 | |
| Savings Transfer | | 50 | |
| Total Expendable | | $6,479.00 | |
| Savings Balance | | 1000 | |
| Retirement Balance | | 5264 | |
| Gross Assets | | $12,743.00 | |

now see the corrected range in the SUM() function. Press Enter to accept.

## Setting Up the Expenses Section

We will come back to the Assets section to do some more

calculations once we get the Expenses section set up. In cell A11, enter "Expenses". Merge and center the cells A11-G11. In cell A12-E12, enter the following text in the cells: Type, Due, Amt Due, Amt Pay, and Notes. Merge and center the cells E12-G12. This becomes our header row for this section.

In cell A13, enter "Savings", and in cell A14 enter "Retirement". These two expenses will represent deposits into these two accounts, and we will use them in our final calculations in the Assets section. Beginning with cell A15, and going down the A column, enter other expenses like Food, Fuel, Mortgage, Phone, etc. In columns B and C, enter due dates and due amounts for all the items you entered in the Expenses section. Select a few of the items and put payment amounts in the D column. Merge the E, F, and G rows for each of the items.

## Formulas in the Expenses Section

In the cell below the last item (column A), enter "Total Expenses:", and merge it with column B on that row. Select the cell in column C for that row. Click the sum button in the formula toolbar. Calc should select all the amounts in the Amt Due column. Press Enter. In the D column of the same row, type "Total Payments" and merge it with column E on the same row. Select column F of the same row and click the sum button on the formula toolbar. This time Calc jumps all the way up to the last amount in our Assets section, but this is not what we want. This happens because this is the first number Calc found in the column. Select the numbers in the Amt Pay column of the section to change the range. Press Enter.

## Final Calculations for the Asset Section

Going back to the Assets section, we will use some of the numbers in the Expenses section to do a few more calculations. Select cell G6. This is the total for our expendable income after all payments have been made. Enter the formula:

```
=F6-F##
```

where ## is the row number where the total payments is calculated.

For the ending balance on our savings account, we need to take the beginning total, add the deposit, and subtract the transfer. If you put the Savings as your first item in the Expenses section, the formula will look like this:

```
=F7+D13-F5
```

For the Retirement ending balance, we just need to add the deposit. If you added Retirement as the second item in the Expenses section, the formula will be:

```
=F8+D14
```

Finally, we will make the final adjustment to the Gross Assets by summing the three numbers in the G column. Select G9, and click the sum button in the formula toolbar. Calc should select the three numbers we need. Press Enter.

Our budget spreadsheet is now complete, but it doesn't look very pretty. Next time, we will format our spreadsheet using styles.

**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

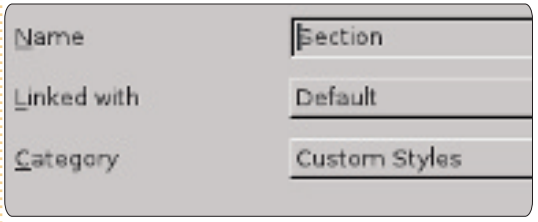
| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | **Income this Period** | | | Assets | | | |
| 2 | **Sources** | **Amount** | | Type | | Beginning | Ending |
| 3 | Work | $1,079.00 | | Period Income Total | | $6,329.00 | |
| 4 | Freelancing | $200.00 | | Checking Balance | | 100 | |
| 5 | Bonus | $50.00 | | Savings Transfer | | 50 | |
| 6 | Misc | $5,000.00 | | Total Expendable | | $6,479.00 | $6,069.00 |
| 7 | | | | Savings Balance | | 1000 | 965 |
| 8 | | | | Retirement Balance | | 5264 | 5279 |
| 9 | | | | Gross Assets | | $12,743.00 | $12,313.00 |
| 10 | | | | | | | |
| 11 | Expenses | | | | | | |
| 12 | Type | Due | Amt Due | Amt Pay | Notes | | |
| 13 | Savings | 01/05/12 | 15 | 15 | | | |
| 14 | Retirement | 01/05/12 | 15 | 15 | | | |
| 15 | Fuel | 01/05/12 | 50 | 50 | | | |
| 16 | Food | 01/10/12 | 130 | 130 | | | |
| 17 | Mortgage | 01/15/12 | 500 | | | | |
| 18 | Phone | 01/20/12 | 100 | | | | |
| 19 | Utilities | 01/25/12 | 350 | | | | |
| 20 | Credit Card | 01/01/12 | 75 | 75 | | | |
| 21 | Insurance | 01/15/12 | 350 | | | | |
| 22 | Cable | 01/15/12 | 125 | 125 | | | |
| 23 | Total Expenses: | | 1710 | Total Payments: | | 410 | |
| 24 | | | | | | | |

In the last part of this series, we added the data and formulas for our budget worksheet. The end result, while functional, is not very pretty or easy to read. Now, we will add some styles to our spreadsheet to help make the worksheet not only more pleasant to look at, but easier to read and find specific data. We will accomplish this using cell styles.

Back in part 3 of this series, we used paragraph styles to format the paragraphs in our documents. Cell styles are Calc's equivalent to paragraph styles. Cell styles allow us to specify the border, font, background color, font effects, number format, alignment and cell protection. Styles help to create consistency throughout the spreadsheet.

## Section and Column Title Styles

We'll start by creating styles for our section titles and column titles. Click on the styles icon (above).





Now, we will create a style for our column titles based on the Section style. Basing one style on another style makes it quick and easy to just add and change the differences between the styles. In the Styles and Formatting windows, right-click on the Section style and select New. Give the style the name "Column Title." You will notice that the style is linked to the Section style. If you browse through the tabs, you will see all the settings we made for the Section style are already set. To distinguish column titles from sections, we will give them a different background color. On the Background tab, select a suitable light color for the background, such as Blue 8.

## Applying the Section and Column Title Styles

Now, we can apply our two new styles to cells in our spreadsheet. The sections are "Income This Period", "Assets", and "Expenses". Select the cells for these items and double-click on the Section style in the Styles and Formatting window. You can select more than one cell and apply the style all at once. For example, highlight all the column titles under Income (Source and Amount) and double-click on the Column Title style. Do the same for the column titles under the other two sections.

## Editable, Total, and Date Styles

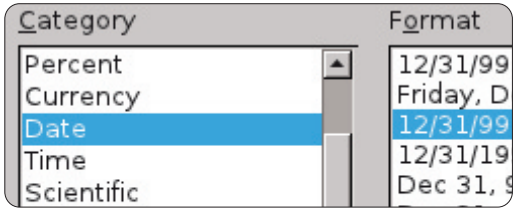
Editable items are the items in our budget spreadsheet that we will need to change from use to use. These are most of the cells under the column titles, except those that contain formulas - which are our total cells. We will first create the Editable style and use it as the link for our Total and Date styles.

In the Styles and Formatting window, right-click on the default style and select New. Give the new style the name "Editable". On the Number tab, select currency and


your currency type. Set your font and font size on the font tab. I suggest a font size of at least 12 points. Make sure the font style is regular (not bold or italic). On the border tab, create light gray borders on the left and right. You can accomplish this by clicking on the third box under defaults. Make sure that the Protected box is unchecked on the Cell Protection tab.

Now, we will create the Total styles by linking it with the Editable style. Right-click on the Editable style in the Style and Formatting

window, and select New. Once again, we are starting with an exact copy of the style we right-clicked. Name the style “Total”. We will make changes to distinguish our totals from ordinary items. On the Font tab, change the style to bold. On the background tab, select a darker gray color than the light gray we used for the borders - like gray or gray 40%. Finally, check Protected on the Cell Protection tab.




Apply the styles much in the same manner as we did previously. You will notice that if you apply the Editable style to the date column under expenses, you get a strange result for your dates (probably ####). That's because it was converted into currency. Right-click the Editable style and create a new style named “Dates”. All we need to do here is change the number type to Date and select a simple numeric date style on the Numbers tab.

## Conditional Formatting

We need a way to break up the big block of data under the Expenses section. We could just put borders around them, but large groups of bordered boxes look dull. Instead, we will highlight all the even rows with light gray. We also want to do this quickly. For this we will use conditional formatting.

```
ISEVEN(ROW())
```

With this formula, whatever style we choose will only apply to the even rows. For the cell style, click on the New Style button. Give the style the name “Editable Highlight” and link it to the Editable style. On the Borders tab, change the border color from light gray to gray. Move to the Background tab and change the background color to light gray. Click OK to save the changes. You will notice the Cell style is now Editable Highlight. Click OK and you will see the even number rows are highlighted in light gray.

Unfortunately, this has the side effect of changing our dates again, but that is easily fixed by doing the same thing with the Date style. Select all the dates in the Expenses section. Format > Conditional Formatting. Once again use the formula ISEVEN(ROW()). Click on the New Style button and name the new style “Dates Highlight”. Link the style with Dates style. Change the border color to gray and the background to light gray. OK to save the style, and OK to apply the conditional formatting.


## Finishing Touches

Just a few simple things to make all things even. If you have more than two items in the Income section, you can add the highlights to it as well using conditional formatting and the Highlight Editable style. Also, you can right justify the “Total Expenses” and “Total Payments” labels at the bottom.

Now, to test run your spreadsheet. Remember, we protected the cells we didn't want to change. Tools > Protect Document > Sheet. You can enter a password to password-protect the document, or just click OK to protect it without a password. If you try to edit one of the protected cells you will get a message window saying the cell is protected. However, the unprotected cells are easily edited as before. Using cell protection is a good way to keep your formulas from getting changed once you have the spreadsheet set up and working the way you want it.

In the next part of this series, we will prepare our spreadsheet for printing by adding a header and footer to the page, and looking into our printing options.

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Income this Period | | | | |
| 2 | Sources | Amount | | Type | |
| 3 | Work | $2,150.00 | | Period Income Tote | |
| 4 | Freelancing | $300.00 | | Checking Balance | |
| 5 | Bonus | $50.00 | | Savings Transfer | |
| 6 | Misc | $5,000.00 | | Total Expendable | |
| 7 | | | | Savings Balance | |
| 8 | | | | Retirement Balance | |
| 9 | | | | Gross Assets | |
| 10 | | | | | |
| 11 | | | | Expenses | |
| 12 | Type | Due | Amt Due | Amt Pay | |
| 13 | Savings | 01/05/12 | $15.00 | $15.00 | |

**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

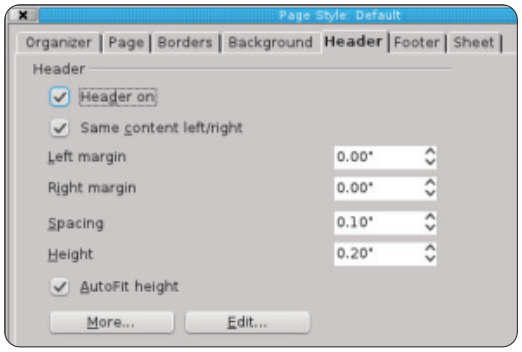
In my last article, I discussed setting up styles in LibreOffice Calc. This month, I will show you how to prepare, examine, and print your spreadsheet. We will add headers and footers to our sheet, use the Page Preview to examine how our sheet will look when we print it, and review the print dialog and how it affects the final printed pages.

## Renaming Sheets

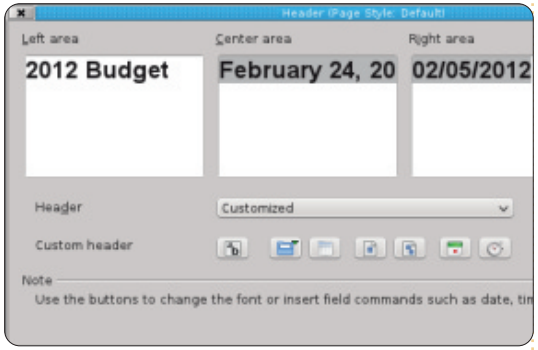
When you first create a new spreadsheet file, the default workbook starts with three sheets named Sheet1, Sheet2, and Sheet3. You can use these names in other places in your sheet, and we will use them when we create the header and footer for our budget spreadsheet. However, the default names are not very informative, so we will rename them. The names are located on tabs at the bottom program window. To rename a sheet, right-click on the tab and select Rename Sheet from the pop-up menu. The Rename Sheet dialog will display. Type in a meaningful name for the sheet, i.e. "February 24, 2012" and click OK.

## Headers and Footers

Headers and footers allow us to create consistency between pages. Doing this on the sheet would mean shuffling cells as the sheet changes and grows. Using the page settings, we can create the same look for multiple pages.




Open the page settings dialog, Format > Page. Click on the Header tab. Here you can adjust the margins, width, and height of the header area. I would recommend checking the Autofit Height checkbox, otherwise your header may get cut off. Click on the Edit button to bring up the header area format dialog. You will notice the




header is divided into three areas, left, center, and right. Along the bottom, you will notice a toolbar. The toolbar lets you insert placeholders into the header and format the text. For our budget spreadsheet, we will place something in each of the areas. In the left area type "2012 Budget". For the center area, we will place our sheet name. To get the sheet name, click in the center area and delete any content that already exists, then click on the third button on the toolbar. This inserts the name you gave the sheet. For the right area, we will insert the current date. Click in the right area and delete any content that already exists. The next-to-last button on the toolbar inserts the current date. To change the font, size, color, etc, of the text, highlight the text in any of the areas and click on the first button on the toolbar. This brings up a font dialog, where you can change the attributes of the text. Click the OK button when you are finished editing your header.

We also might want to separate our header from the rest of the sheet with a border or background color. We can do this by clicking on the More button on the Header tab in the Page dialog. For mine, I just put a 0.50pt line at the bottom.

The Footer tab is the same as the Header tab, but let's put some different information in the three areas. On the Footer tab, click the Edit button. In the left area, place the sheet name using the third button on the toolbar like we did with the header's center area. In the center area, delete the content that is already there and type the word Page and a space. Click on the fourth button in the toolbar. This creates a placeholder for the page number. This placeholder will increment for each page of the sheet. In the right area, click on the

last button on the toolbar to insert a current time placeholder. This will print the time when you print the sheet. Having the current date and time on the sheet can come in handy when you have to do revisions and need to know which one is the most current. As with the header, we can edit the attributes of the text by highlighting the text we want to change and clicking on the first button in the toolbar. Click OK when you are done editing.

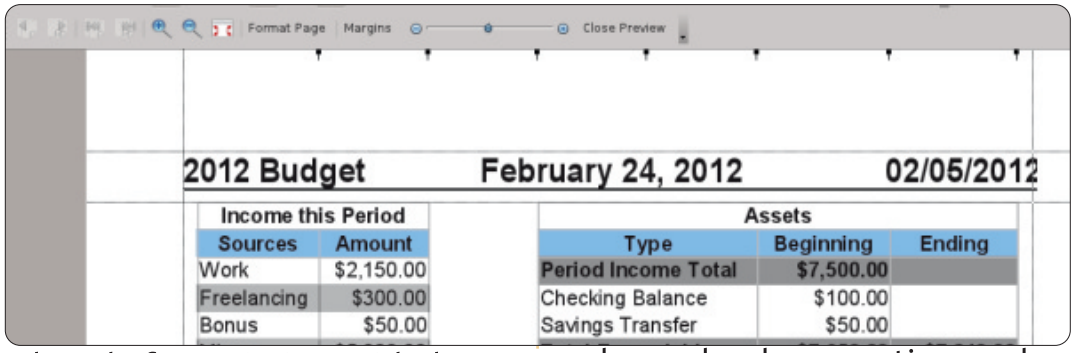
To separate the footer from the rest of the document, we can use the More button to create a border or background color. I used a 0.50pt border on the top.

In our setup, we used all the buttons in the header/footer edit dialog except for two. The second button inserts the filename of the workbook, and the fifth inserts the total number of pages.

We are finished editing the page setup. Click OK to close the page-setup dialog.

## Page Preview

The page preview allows us to make final adjustments to our



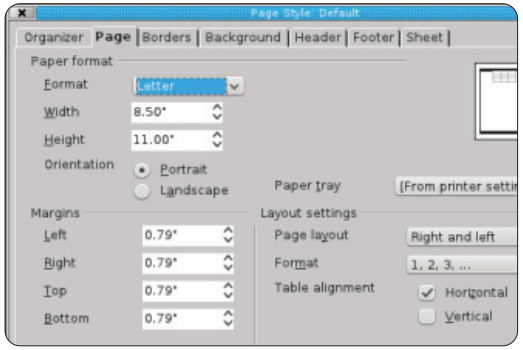

sheet before printing. With the preview, we can make sure everything fits on the page the way we want it, and the data shows as we intended.

To open the page preview, go to File > Page Preview. The current window is replaced by the page preview window. You can make several adjustments while in page preview mode.

The slider in the toolbar is the scaling factor. This allows you to make the cells bigger or smaller so they fit on the page the way you want. You can increase the size by clicking on the plus (+) or reduce it by clicking on the minus (-). You can also click and drag the adjustment handle.

The Format Page button displays the Page Style dialog. Here you can change your overall page margins and background color, and make corrections and adjustments to your header and footer. Two things we haven't mentioned yet are the table alignment and the print order. Table alignment is found on the Page tab. It allows you to center the table horizontally, vertically, or both. On the Sheet tab, the page order controls how the cells are printed on the page. This allows you to make your data layout in the order and way you intended. If you have more columns than can fit on a page, you can change it from the default to left-to-right, then down. You can also set the beginning page number should you need something other than 1. You can also specify what prints and what does not. Finally, you can manually adjust the scaling here as well.

The page preview gives you buttons to page forward and backward, and jump to the first page or the last page. There are also zoom in/out buttons for closer examination of the page.



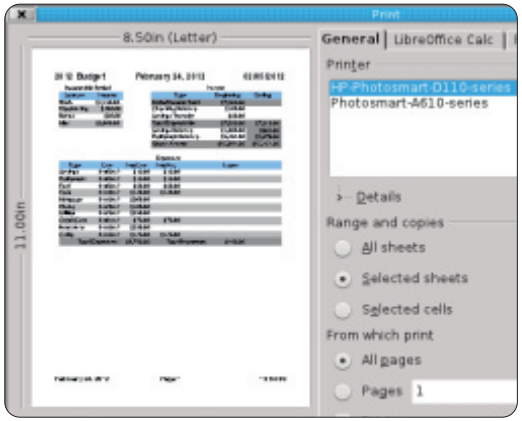

The Margins button gives you the ability to adjust the page, header, footer, and column margins. Click the Margins button to activate margins mode. The dotted lines let you manually adjust the page, header, and footer margins. The black markers at the top allow you to adjust the widths of the columns. Click the Margins button again to exit margins mode.

Close Preview exits the preview mode.

## Printing

Finally, we have completed all our preparation and it is time to print our sheet. File > Print brings

up the print dialog. On the General tab, you can select your printer. Click on the Properties button for settings specific to your printer. You can choose to print just the selected sheets, all sheets, or just selected cells. You can also specify whether to print all the pages or just selected pages. If you don't feel like ordering your pages after you print, you can also choose to print them in reverse order. You have an option to print multiple copies, and whether or not to




collate them.

On the LibreOffice Calc tab, you can choose to print or not print blank pages. The Page Layout tab gives you options for printing more than one page on a sheet of paper, what order to print them, and whether to put a border around the page. On the Options tab, you can choose to print to a postscript file, and, if you are printing multiple copies, whether to do it as one print job or multiple.

Once you have everything set, click Print.

This may seem overkill for a single document, but you need to always consider how often you will use and change the document. If you use the sheet often, as in a budget, once the header and footer is set, you will never have to change them again. By considering the reusability, you decrease the setup time the next time you use it.

**Next month, we will look at some quick tips and tricks for working with spreadsheets in Calc.**

**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

## Quick Opinion

### Tune out, Drop Out, Get things Done

by Allan J Smithie

I turned off the Internet today. I don't mean the whole thing. I mean my access to it. I unplugged the router from the wall.

I also killed my music player and left the mobile phone in another room.

Something mystical then happened. *Concentration.*

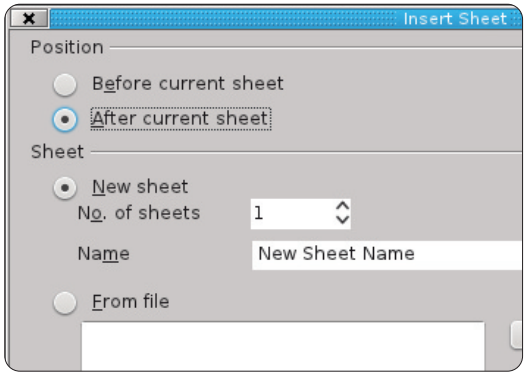
I love the Internet. I'm probably addicted. It's a huge resource for information and an unparalleled research, educational and entertainment resource, but every so often I have to shut it all out just to Get Things Done.

Turn off the TV, radio, iPod, Xbox, PSP and Wii. Close the browsers (both of them), kill the chatroom, the IRC, AIM, Facepunch, Twiddle and anything else that's running. The fact checking can wait. Contrary to contemporary systems of belief, your status doesn't have to be updated in real time. It will all still be there. After you get something **DONE**.

# LibreOffice - Part 13

So far, we have covered many topics for using LibreOffice's Calc, but Calc has many minor operations that are worth knowing. In this article, I will give you my top-10 quick tips for using Calc. Most of them have to do with manipulating the current sheet. You can use these tips in most any sheet you are working with.

## 1. Naming Sheets




The default name for sheets is SheetX, where X is a number. You have 3 ways to name a sheet. The first is when you create a new sheet, using Insert > Sheet. In the dialog, you have a choice of how you want to name the sheet. You can also choose to insert multiple sheets. When inserting multiple sheets, you have no control over the sheets' names. They will get the default SheetX naming convention.

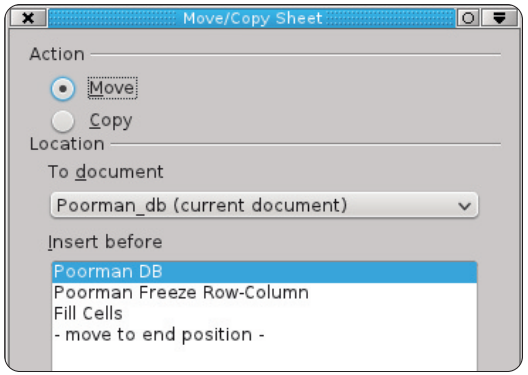
However, you may need to rename a sheet after it has been created. This is where the second and third methods apply. The second way to name a sheet is by right-clicking the sheet's tab and selecting Rename Sheet from the menu. The Rename Sheet dialog will come up, and you can change the name of the sheet. The third method is simply to double-click the sheets tab. This brings up the rename Sheet dialog, where you can change the sheet's name.

**NOTE**: The sheet name must start with a letter or digit. Then, sheet names can include spaces, letters, digits, underscore, and some special characters, i.e. -, &. When saving in the Microsoft Excel format, sheet names cannot contain the :, \, /, ?, *, [, and ] characters. If you have an invalid character in the name, Calc will give you an error message.

## 2. Deleting Sheets

Sometimes, you will want to delete a sheet, or multiple sheets, from the workbook. To delete a sheet, right-click on the sheet's tab and select Delete from the menu, or select Edit > Sheet > Delete from the menu bar. Calc will verify that you do want to delete the sheet. To delete multiple sheets hold down the Ctrl key while clicking on the tabs for the sheets you want to delete. Use either the right-click or the menu method to delete the sheets. Once again, Calc will verify that you want to delete the sheets.

## 3. Move/Copy Sheets



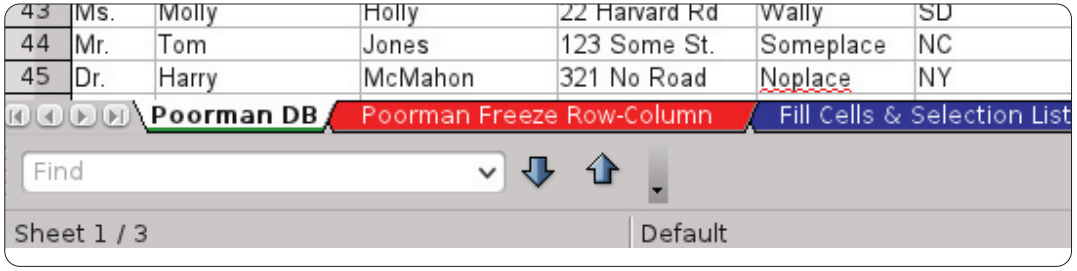

Sometimes, you need to rearrange or copy sheets. For example, you might want to order a multiple sheet workbook in order of predominate use, or by date. Copying a sheet comes in handy when you need to create an exact duplicate of the current sheet, thereby creating a history. When you copy a sheet, you get an exact duplicate of the sheet you copied; however when you make changes to the new sheet, those changes are not translated to the old sheet. For example, you can create a copy of a budget spreadsheet for each pay period of the year and keep them all in one workbook.

Moving sheets is accomplished in one of two ways. The first method is to drag the tab of the sheet to the position you want it. Double arrows will show the location the sheet will occupy when you release it. The other method is through the Move/Copy Sheet dialog. You can access the Move/Copy dialog by right-clicking the tab you want to copy or move and selecting Move/Copy Sheet, or through the menu bar, Edit > Sheet

> Move/Copy Sheet. Under the Action section, you can select to copy or move the current sheet. NOTE: If you have only one sheet in the workbook, move and copy are grayed out, and copy is selected. In the Location section, you can select to move/copy the sheet to the current document, to another open document, or to a new document. The Insert Before section controls the placement of the move/copy. The sheet will move/copy to a position before the selected sheet. A special choice here is the "- move to end position -". Selecting this last choice will move/copy the sheet to the end of the sheet list. The Name section allows you to give the sheet a new name. Renaming your sheet is a good idea when copying. If you do not give it a new name, it will keep the existing name and append an underscore and a number, i.e. MySheet_2.

## 4. Color Tabs

Visual aids can often help get things done quickly while working with a large workbook with multiple sheets. Color is an easy to deploy visual aid. Giving each sheet tab a different color can help you find it and go to it quickly. The tab of the current sheet is always white, but you can still give it a color for when it is not selected. To set the tab color of a sheet, right-click the tab and select Tab Color from the menu. A color dialog will pop up. Simple select the color you want for the tab and click OK.




## 5. Freeze Row(s)/Column(s)

Long and wide sheets often require scrolling to view some of the content in the sheet. However, in many cases the first columns or rows contain information you need in order to make sense of the information. Luckily, Calc provides you with a way to freeze rows and columns in place.

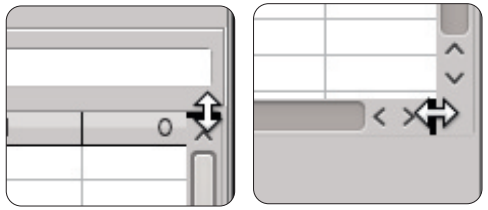
| | A | B | E | F |
|---|---|---|---|---|
| 1 | Title | First Name | City | State |
| 56 | Mr. | Tom | Someplace | NC |
| 57 | Dr. | Harry | Noplace | NY |
| 58 | Rev. | Mike | Gospel | CT |
| 59 | Ms. | Amber | Thatplace | CA |
| 60 | Mr. | Charlie | Lunix | NJ |
| 61 | Ms. | Molly | Wally | SD |
| 62 | Mr. | Tom | Someplace | NC |
| 63 | Dr. | Harry | Noplace | NY |
| 64 | Rev. | Mike | Gospel | CT |
| 65 | Ms. | Amber | Thatplace | CA |
| 66 | Mr. | Charlie | Lunix | NJ |

To freeze a row or rows, select the row below the row(s) you want frozen by clicking on the row number, then Window > Freeze. To unfreeze the rows, select Window > Freeze again. The same is done with the columns by selecting the column letter to the right of the columns you want frozen, then Window > Freeze.

To freeze both rows and columns, select the cell below the rows you want frozen and to the right of the columns you want frozen, then select Window > Freeze.

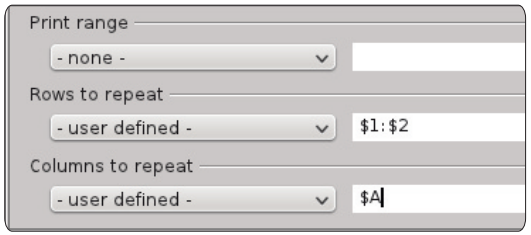
## 6. Split Screen

Another way to view large sheets is using the split screen. To split the screen horizontally, grab the thick bar just above the vertical scrollbar. The mouse cursor will become a double arrow. Drag the thick bar down to the position where you want it. To split the screen vertically, do the same with the thick bar to the right of the horizontal scrollbar. To get a quick horizontal and vertical split, just select Window > Split. The spits are shown by a thick heavy line. Each area of the split screen is manipulated by the various new scrollbars that appear.




To undo a split screen, grab the thick heavy line and drag it up to the top for a horizontal split or to the right for a vertical split. To

cancel all spits, use Window > Split.



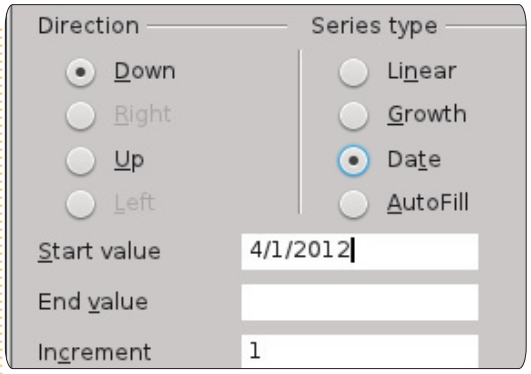

## 7. Print Rows or Columns on Every Page

Printing a sheet which will span multiple pages may require key information in certain rows or columns in order to help make sense of the data. To control how the pages print, you can define whether certain rows or columns repeat on each page.

Open format > Print Ranges > Edit. Under Rows to repeat, you can define the rows that need to repeat on each page, i.e. to repeat the first two rows enter $1:$2. Under Columns to repeat, you can do the same for the columns, i.e. to repeat the first column type $A.

## 8. Fill Selected Cells

At its most basic use, the fill tool is a way to repeat information in a cell. To repeat the information

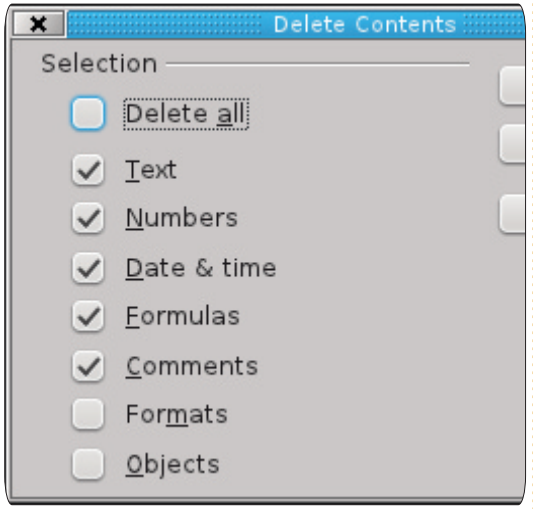



in a cell, select the cells you want to repeat, then Edit > Fill > (the direction you want to fill: left, right, up, or down).

However, the real power of the fill tool come through using the Fill Series. Edit > Fill > Series. The Fill Series tool allows you to create many different types of serial information, from numbers to dates. There is also AutoFill, which uses a series of text predefined in the program. Examples of the AutoFill are Days of the week and months. You can define your own AutoFill ranges in Tools > Options > LibreOffice Calc > Short Lists.


## 9. Selection List

The selection list is a text function. The selection list works only for text, and will contain only text from the current column your selected cell is in. To activate the list, select an empty cell and press Alt + Down Arrow on your keyboard.




## 10. Remove Data from Cells

Sometime, you need to not just change the data in a cell but completely remove it. Removing data can be done in one fell swoop, and you can select the type of information that is removed. For example, you can select a group of cells and choose to remove only the formating, or only the text.

There is also a remove all to remove all the information from the cell(s). You activate the Remove Content dialog by selecting a cell or cells and pressing the Backspace key on the keyboard. You can also do this through the menus: Edit > Delete Content.

So, there you have it; my top-10 quick tips for LibreOffice Calc.

**In my next article, we will continue our journey in Calc by learning how to create charts and graphs.**

**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

# LibreOffice - Part 14

While data collection is useful and helpful in determining results, or whether goals were met, charts and graphs simplify data so others can quickly digest and interpret results. The art of charts and graphs is well beyond the scope of this article, but I will show you how to create a chart in Calc, which you could use in Writer or Impress. There are many predefined charts and graphs available in Calc.

We will use a simple collection of data to create our chart. The data represents the boat rentals for a six month period. We will use a bar chart to show the relationship between the different types of boat rentals for each month.

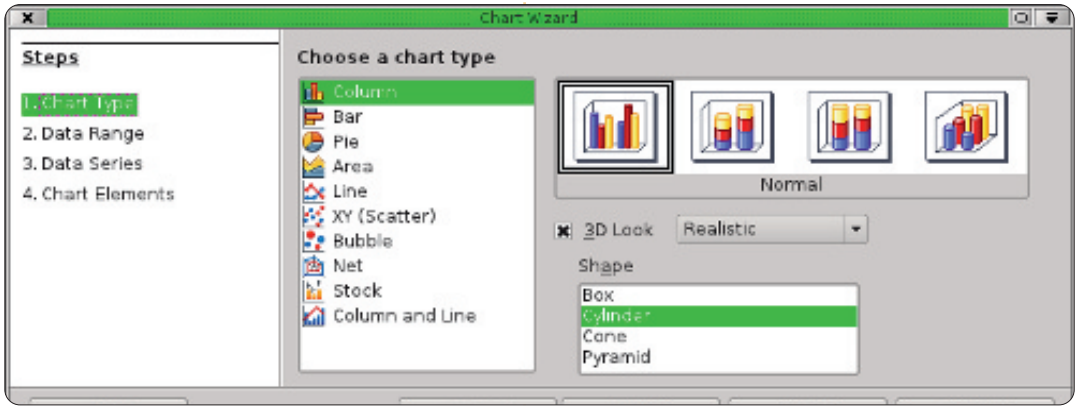
## The Chart Wizard

The chart wizard allows us to get the basics of our chart completed quickly and easily. In fact, sometimes the chart wizard is all you will need to complete your chart. The wizard is your jumping off point for all chart creation.

Before starting the wizard, you need to highlight the data used for the chart. You will want to make sure you just highlight the data and their labels. Although you can modify the ranges for the data series later, getting it as close as possible helps Calc to better render the final results.

| | A | B | C |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | Equipment Re |
| 4 | | Boats | Canoes |
| 5 | Jan | 12 | |
| 6 | Feb | 14 | |
| 7 | Mar | 13 | |
| 8 | Apr | 20 | |
| 9 | May | 18 | |
| 10 | Jun | 15 | |
| 11 | | | |

You have two ways to start the chart wizard. You can click on the chart wizard icon (shown right) on the main toolbar, or through the menu with Insert > Chart. The chart wizard consist of four steps. We will walk through each of the steps, but it is possible to click the Finish button at any time to end the wizard process.



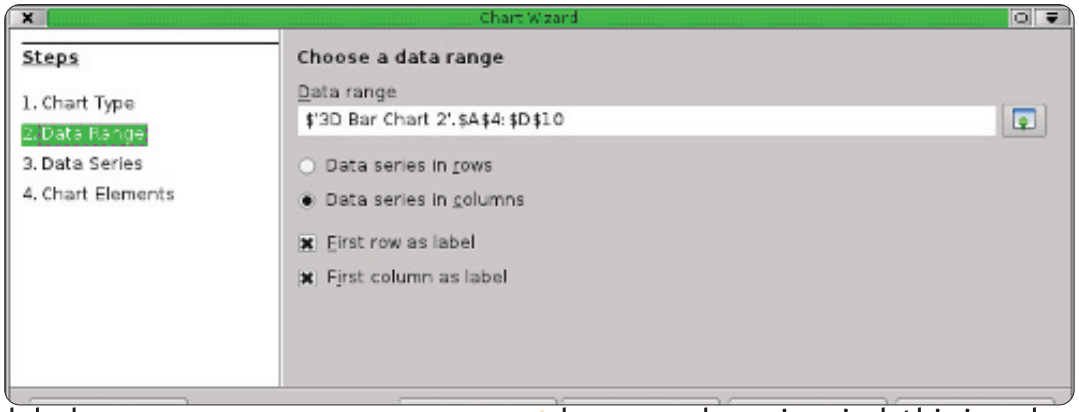

## 1. Chart Type

The chart type (above) is where you select the type of chart you want to create. For some chart types, you have the option of 3D effects, and for others you do not. For our chart, we will select the basic bar chart. Since we have the option of 3D effects for a bar chart, we will also check the 3D Look checkbox. In the 3D Look dropdown box, you have the options of Realistic or Simple. This helps determine the look and shading of the 3D effect. We will use Realistic. Finally, you can select different shapes for your data series. We will use cylinder. Click the Next button to move to the next step.

## 2. Data Range

In step two we define the data range and how Calc will use the data range to create the chart. If we need to change the range from what we selected, we can type in the range or select the range from the spreadsheet. The small button at the end of the data range textbox will shrink the wizard dialog so more of your spreadsheet is visible.

We need to tell Calc whether our data series are defined by row or column. For our example, we used columns. Also, since we selected the labels as well as the data, we need to check both First row as label and First column as



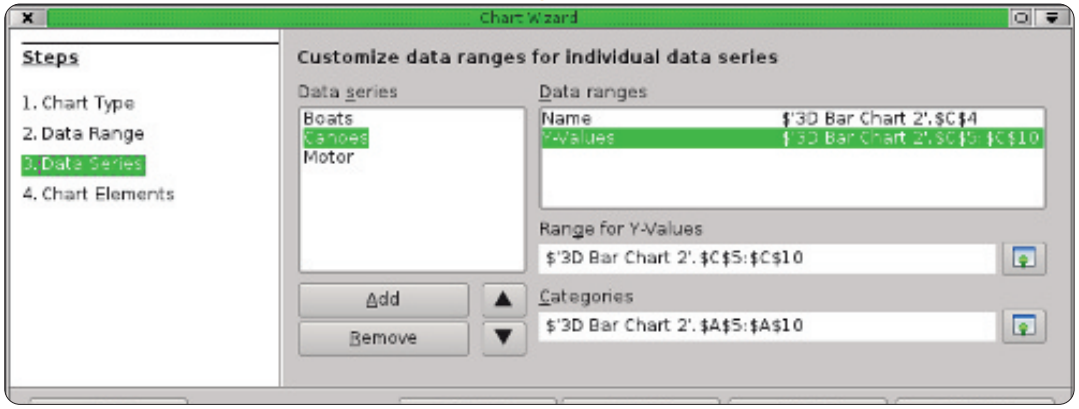

label.

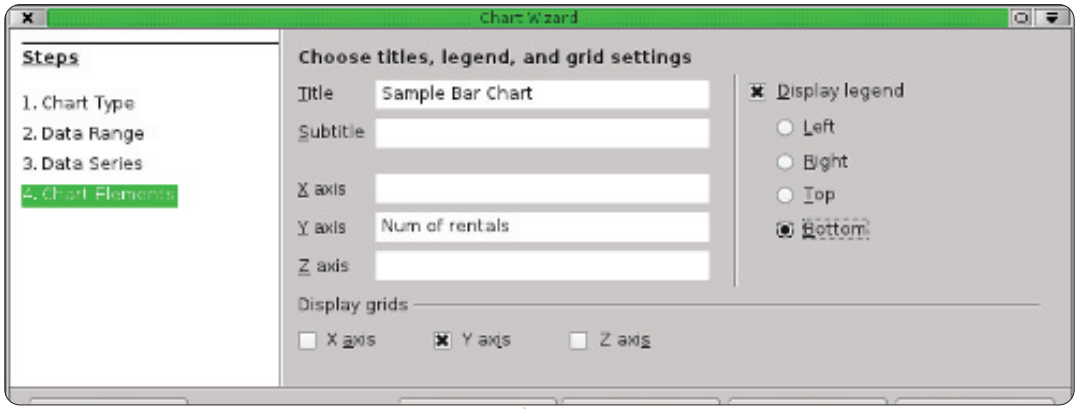
Click the Next button to move to the next step.

## 3. Data Series

The third step (below) lets us redefine, add, change the order, and remove data from our data series. You will see the data series for the chart defined by their label in a listbox. You can change the range of the series much as you could in the data range step; however, keep in mind, this is only for one set of data and not the entire chart. You can add another series by clicking on the Add button. You can remove a series by selecting it and clicking the Remove button. Change the order of the series by selecting the series you want to move and use the up and down arrow buttons.

We don't need to change anything here, so click the Next button to move to the last step of the wizard.




## 4. Chart Elements

The fourth step (above right) of the wizard allows us to define names for the different parts of our chart, including title, subtitle, and x and y axis. We can also set the location of our legend and the grid for the chart area. For our chart sample, give it the title "Sample Bar Chart". We also want to label our Y-Axis as "Num of Rentals". Since our X-Axis is the months of the year, we don't really need a label for the X-Axis. It is self-explanatory. Set the legend to appear at the bottom, giving our data more room to spread out.

We are now finished with the Chart Wizard. If you ever need to revisit any of the steps, you can use the Back button or select the step from the list on the left. Click the Finish button to complete the wizard and display the chart in your spreadsheet.

## Formatting Chart Elements

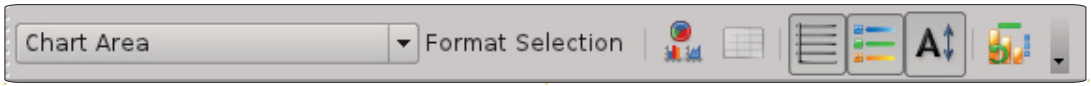
After creating the chart with the Chart Wizard, it is possible to change the elements of the chart. After clicking on finish, you will notice that the newly created chart is selected and your toolbar has changed. You have the chart formatting toolbar instead of the standard edit toolbar. The new toolbar has a dropdown box which allows you to select the different elements you can change. After selecting an element from the dropdown, click on the Format Selection button to display the dialog for that element.

There are also buttons for changing the chart type, and

displaying the chart grid and legend. The button with the double arrow beside the capitol A is used to scale the text with the chart when you resize it. I highly recommend this, as it keeps things proportional. In addition to the changes in the toolbar, you will find changes in the Insert and Format menus as well. These changes allow you to insert and format elements of your chart.

You can move the chart by clicking and dragging the borders. Resize the chart by clicking and dragging one of the eight handles. If you selected the text scale button, the size of the text will scale with the chart as you change it.

Now, let's make some changes to our chart. In the dropdown list in the toolbar, select Chart Title and click on the Format Selection button. On the Font tab, change the size to 18 and the style to bold. Click OK. Next, select Chart Area and click Format Selection. The chart area is the entire background of the chart. On the Area tab, select a background color of light gray. You will notice this changes the color of our data area as well, but

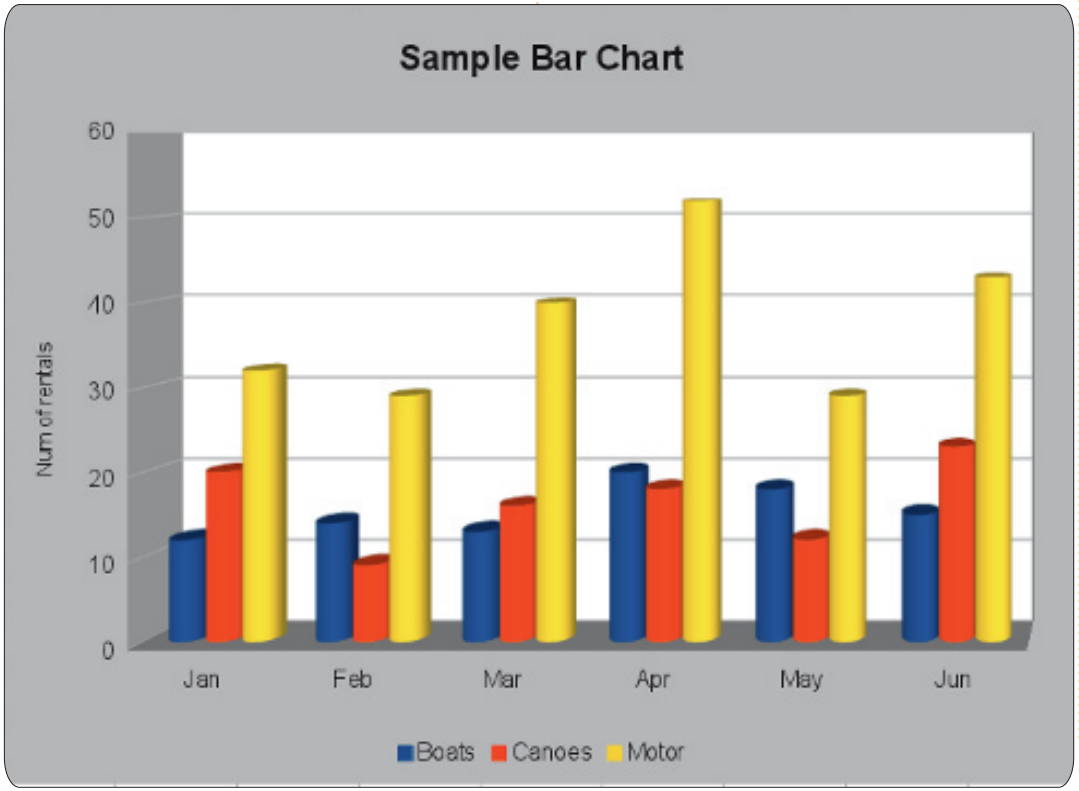



we want the data area to stand out. Select Chart from the dropdown list and click Format Selection. On the Area tab, select to fill with color and pick white. Since we are using a 3D chart, let's change the perspective a little: Format > 3D, check the Perspective checkbox and change the percentage to 50%. You will see this changes the perspective of the chart.

There are other things to do on your own. Try changing the color of one of the data series or adjusting the placement of some of the elements. All can be done through the dropdown list, and the Format and Insert menus. When you deselect the chart, you are taken back to normal toolbars and menus. To edit the chart later, just double-click the chart, and you get the specialized toolbar and menus back.

We have only touched the surface of the chart and graphs in Calc, but I encourage you to play around with the different types and elements. The type of chart you use is dependant upon the type of data you have and the information you want to convey.

**Next time, we will begin our work in Impress, LibreOffice's presentation program.**




**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

# LibreOffice Pt15: Impress

Impress is LibreOffice's presentation program and is equivalent to Microsoft Office's Powerpoint. With Impress, you can create professional visual presentations that include graphics, pictures, videos, audio, spreadsheets, and charts. Impress has a presentation wizard that is very useful for setting up a new presentation and getting you started on the right track, and a main window that helps break the process down into tasks.

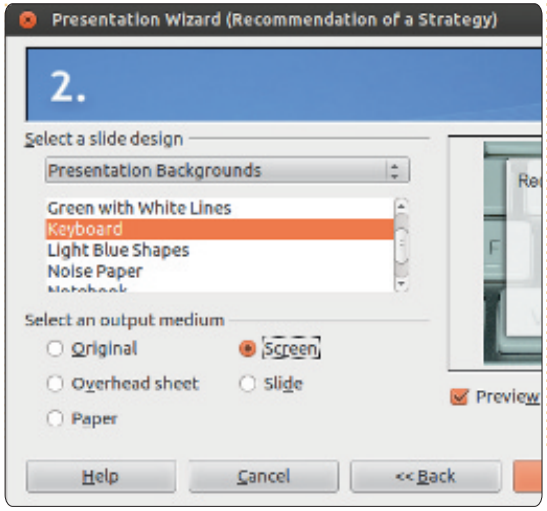
## The Presentation Wizard

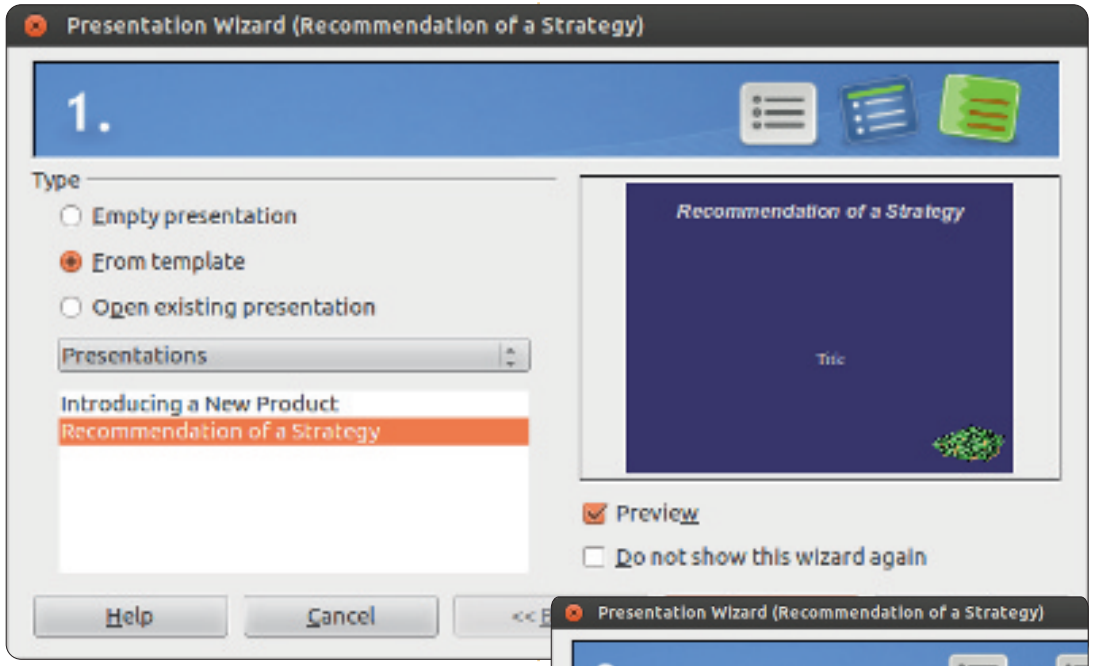
You can create a new blank presentation by going to File > New > Presentation. However, to start the presentation wizard, click on File > Wizards > Presentation. If you want to start with the wizard every time you create a new presentation, you can turn it on in the settings. While in Impress, click on Tools > Options > LibreOffice Impress > General, and check "Start with wizard" under New document.

The first screen of the wizard (right) lets you pick from an empty presentation, a template, or open an existing presentation. If you select "From template", there are two default templates in Impress. Both come with predefined slides. I recommend you have Preview checked as it allows you to see a visual of your presentation as you create it in the wizard.

**TIP**: At any point in the wizard, you can click the Create button to create a new presentation. This allows you to use only the parts of the wizard you need.

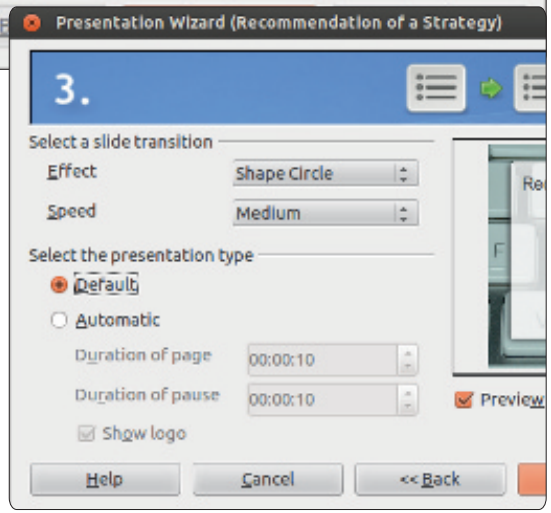
Click Next >> to move to the




second screen of the wizard. On this screen you can pick from many different backgrounds for your presentation. You can change the background for individual slides later, but this will become the basic background for your presentation. You will also want to select the output medium for the presentation - normally screen - but other options are available should you need them.

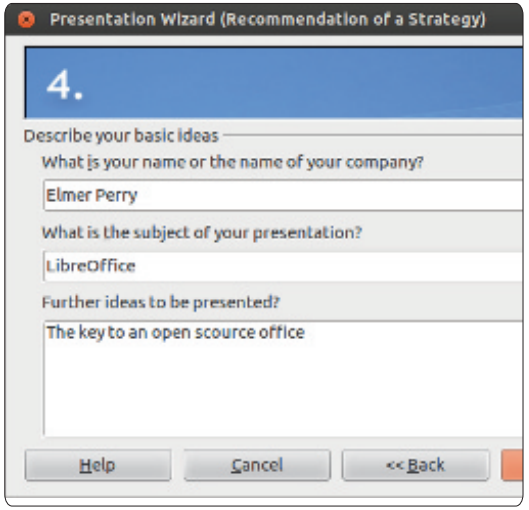
Click Next >> to move to the third wizard screen. You can pick a



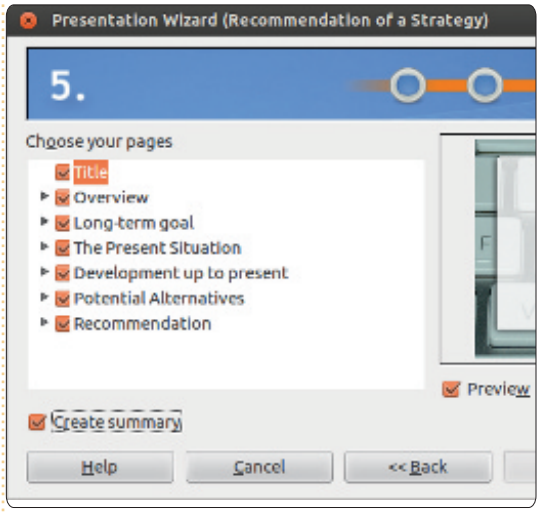

slide transition for changing from one slide to the next. There are many different transitions to choose from. When you select a transition, you get a preview on the

effect in the preview window. You can also adjust the speed of the transition. You can change the transition for individual slides later, but the transition, along with the background, is one of the things that create consistency in your presentation. On this screen you can also pick the presentation type. "Default" advances the elements and slides through mouse clicks or the keyboard. "Automatic" allows you to set each slide to advance after a certain amount of time. The choice will depend on the presentation and is beyond the scope of this article.

Click Next >> to move to the




fourth wizard screen. Here you can give a topic, company name (or your name if your presentation is not for a company), and the ideas behind your presentation. The information you use here will plug into your opening slide.




Click Next >> to move to the fifth wizard screen. If you selected a template on the first screen of the wizard, you can use this screen to preview each of the slides after your changes. You can select whether a slide will be included in the presentation or not. Check "Create summary" to create a summary of your slide.

SIDEBAR: You can always use the << Back button to move back and change elements of your presentation.

Click on the Create button, and Impress will create the slides for your new presentation.


## The Main Window

The main window for Impress (above) is divided into three sections, the Slide pane, the Workspace pane, and the Tasks pane. You can hide the Slide and Tasks panes by clicking the X in the upper corner of each pane. To show the panes again use View > Slide Pane or View > Tasks Pane. Alternatively, you can use the Hide/Show markers (circled in red in the image) to hide and show the panes.

## The Slide Pane

The Slide pane shows thumbnails of all the slides in your presentation in the order in which they will appear in the presentation. In the Slide pane, you can add, delete, copy, paste, move, duplicate, rename, or hide slides. Clicking on a slide in the Slide pane places it in the Workspace pane where you can change and modify it.

## The Workspace Pane

The Workspace pane is the main work area for editing slides. You have five tabs in the Workspace pane.

### Normal View

Normal View is where you make changes to individual slides. Here you can add images, modify and add text, animation effects, and more.

## Outline View

The outline view displays an outline of all the text in the default text boxes on each slide. Each slide is numbered. You can use the outline view to proof and change the text on your slides, as well as add text to the slides. The slide names are not included in the outline.

## Notes View

You can use the Notes View to add notes to individual slides. You can change the size of the note box under the slide by clicking on the border and dragging the handles. The notes will not show in the presentation, but you can print them and use them during your presentation or as handouts.

## Handout View

In Handout View, you can setup how your handout of the presentation will print. If you select Layout in the Tasks pane, you can set the number of slides that show on each page of the handout (up to 9 slides per page). You can also use this view to determine what information will print on the handouts.

Slide Sorter View

The Slide Sorter view works much like the Slide pane but gives you more space to work. You can add, delete, move, copy, paste, duplicate, rename, and hide slides. You can also work with groups of slides by selecting more than one slide.

# The Tasks Pane

The Tasks pane has five sections. You expand a section by clicking on the section name. You can only expand one section at a time.

## Master Pages

Here you define the page style for your presentation. Impress contains many predefined master pages you can use. You can modify the look of a master page using styles. A single presentation can contain more than one master page, allowing you to use more than one visual style in the presentation.

## Layouts

The prepackaged layouts are shown here. You can select a layout - and use it as it is or modify it. Unfortunately, you cannot save custom layouts to the layout lists.

## Table Design

Standard table layouts are shown here. You always have the option of changing the layout, and the table will behave much like a table in Calc.

## Custom Animation

With custom animations, you can control when and how elements appear on the slides. You have many different options that help create the visual effects you need as you give your presentation. Don't go overboard here unless you have a good reason. While animations can make your presentation visually pleasing and interesting, they can also make your presentation look unprofessional and overwhelming. On the other hand, if you need to make an emphasis on a certain point, custom animations can help you accomplish such emphasis.

## Slide Transition

The Slide Transition section gives you access to changing how one slide replaces the next. You have the choice of many different transitions as well as the speed of the transition. If you use automatic transition, you can also control how long the slide will display.

This has been a quick overview to get you started working in Impress. I encourage you to begin to play with the different views, sections, and layouts to get a feel for how they work and what you can do with them. Next time we will begin work on editing slides, adding text, and adding graphics to our slides.

**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

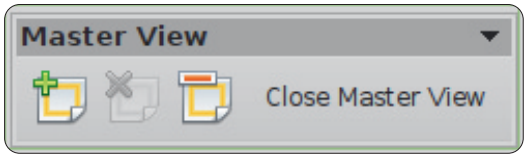
# LibreOffice Pt16: Impress

A great presentation begins with a pleasing and well thought out slide design. You also need consistency between your slides, elements that fit them together. In LibreOffice, you can use the Master Pages to create the base design for your presentation. Master Pages become the framework for the entire presentation, binding the elements of our presentation together. Much of this is accomplished through styles, and Master Pages are the main style. You can think of Master Pages being equivalent to Page Styles in Writer.

## Editing Master Pages

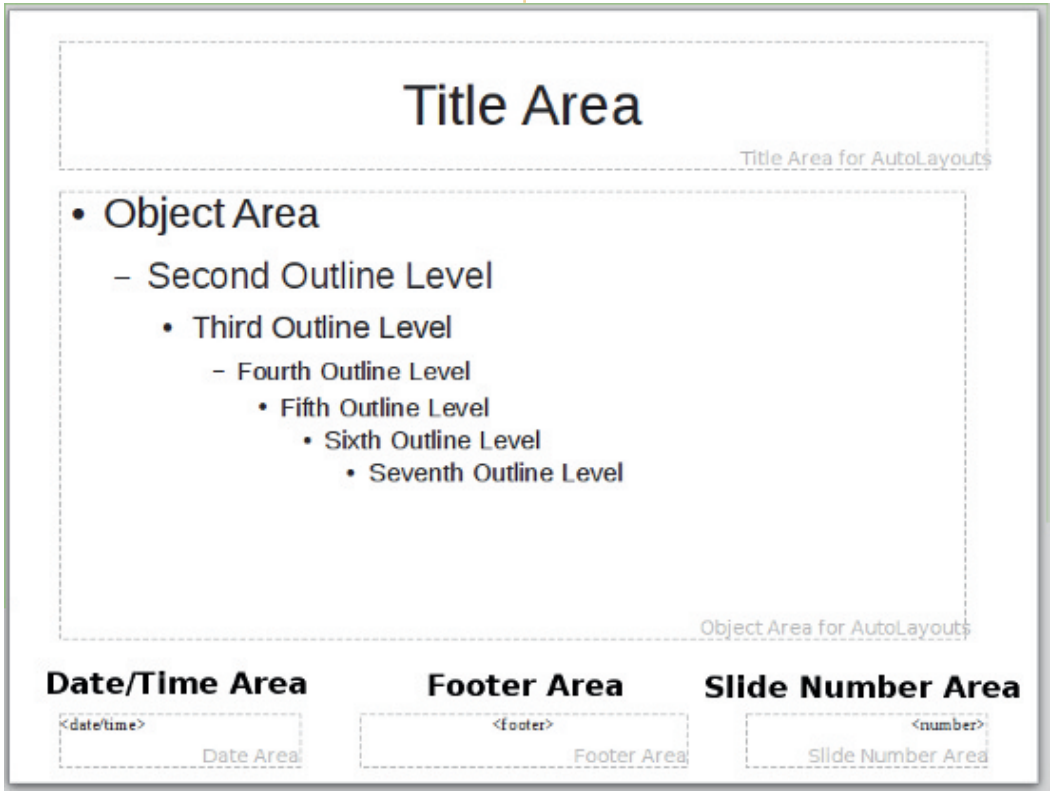
To edit master pages, you must switch to the Master View. Start Master View through View > Masters > Slide Master. Alternatively, you can right-click the master page you want to edit in the Master Page section of the Tasks pane, and select Edit Master.

When you enter Master View, the master toolbar appears. The




master toolbar gives you options specific to editing master pages. Use add to add a new master page. Delete allows you to delete the selected master page. Delete is grayed out when you have only one master page, because you must have at least one. Rename lets you r
ename the currently selected master page, and Close Master View exits master page editing.

You have five predefined editable areas in a master page:




Title Area – The title area contains the title of the slide. Think of it as the subject of the slide.

Object Area – The object area contains the data of the slide, whether it is text, an image, a chart, or a table. As you will learn, the data of the slide is not confined to the object area. You can add elements outside the object area, but it's a good idea to keep data generally in this area for consistency in your presentation.

Date, Footer, and Slide Number Area – By default, these areas do not show up on the actual slide. To change, go to View > Header and Footer, and you can change whether or not these objects will appear on the slides.

## Modifying the Master Page

We will start with the default

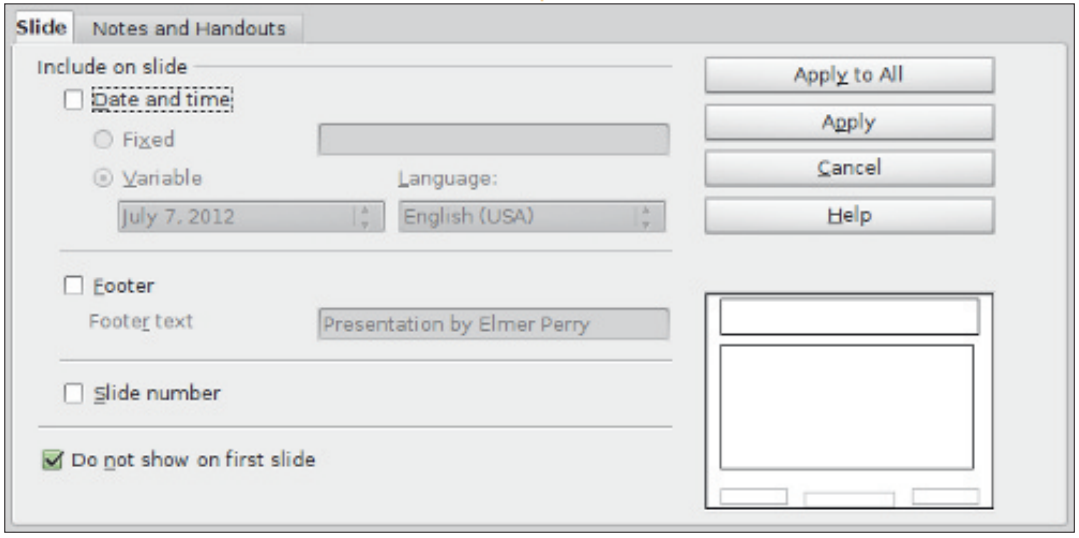
style for your master page. First, let's change the background. Format > Page. On the background tab, use the dropdown box and select gradient. In the gradient list, select Radial red/yellow. Click OK. This gives you a bright, sunny background to work on.

**NOTE**: You can download the icon graphic used in this tutorial at http://eeperry.co.cc/resources/modules.png.

Next, we will add a graphic to your master page. The graphic will show up on all slides that use this master page. I created a ribbon graphic containing the icons for all the LibreOffice applications. We want it to sit just below the object area. Insert > Picture > From file. Select your picture and Open. Move the image to the position you want it, just below the object area. You want the image centered at the bottom. Rick-click the image and select Alignment > Centered. You also want the image to appear behind any objects which might go over it. Right-click the image again, and select Arrange > Send to back.

Now, let's add a line under the title. Select the line tool from the drawing toolbar at the bottom of the window, and draw a line under the title area. You can change the line style using the line toolbar. Change the style of the line, the thickness, color, and the start and end arrow styles.

Finally, let's edit the date, footer, and slide number areas (below). While in Master View, you can change the size and placement of these objects, but actually filling them with content can be done at any time. View > Header and Footer. On the slide tab, there is a checkbox for each of the three areas: date, footer, and slide number.




Under date and time, you can choose a fixed date or a variable date. You can use fixed date when you have a presentation that is presented one time, or you want the date to appear in a non-standard way. Place your date text in the textbox beside the variable selection. What you place in the textbox is what will show in the date textbox on the slide. Use variable date when a presentation date is unknown, or you will give the presentation more than once. Variable will place the current date in the date textbox. With variable, you need to select a format in the dropdown. You can also change the language.

For the footer area, you type the text you want in the footer area in the textbox. Whatever you type in the textbox appears in the footer area.

There's not much to the slide number. You either check it to show or not show. When checked, the slide number will show up in the slide number area.

NOTE: The date, footer, and slide number areas are disabled on the first slide, the title page.

Click the Apply to All button to apply the settings to all the slides except the title page. Click the Apply button to apply it to only the current slide.

## Impress Styles

Just like in Writer and Calc, Impress can use styles to keep everything uniform. Styles are also a time saver. However, styles are a little different in Impress. Impress only has two different style types, Presentation and Graphic.

An easy way to think about presentation styles is as the styles related to the master pages. You have styles for backgrounds, background objects, outline text, notes, titles, and subtitles. You can modify these styles any way you want. However, you cannot create new presentation styles.

Graphics styles are styles for objects and text not directly related to the master pages. You can modify these styles in any way you want, and you can create new ones.

Editing of styles is done from the Styles and Formatting dialog. You can open the Styles and Formatting dialog by clicking on the button in the line and filling toolbar, pressing the F11 key on the keyboard, or by going to Format > Styles and Formatting.

Let's do a couple of modifications to the presentation styles to show how they work. First, enter master view mode, View > Master > Slide Master, and open the Styles and Formatting dialog, Format > Styles and Formatting. Right-click Title in the dialog and select Modify. On the font tab, select a suitable serif or slab font. Maybe make it bold. Switch to the area tab and change the fill to gradient. Select the first gradient in the list (black to white). On the transparency tab, switch the mode to transparency and the percentage to 50%. Click OK, and you will see the font for the title has changed and it has a semitransparent gradient background.


Now, select Outline 1 in the Styles and formatting dialog. Right-click and modify. All we want to do here is change the font. Click OK. Switch to Master View and you will notice that the font is changed for all the outline levels. This is because each of the outline levels links to the previous one. You can't change the linking, but you can change each of the levels to be different. This cascade effect can be useful, especially with the font in helping to create uniformity.

In this how-to, we learned about creating and modifying master pages in Impress. Master pages are key to helping create consistency in your presentation. We also looked at presentation styles and how they help create the style for your slides. I encourage you to play around with the master page settings and presentation styles. The presentation styles have 14 different tabs, making them very flexible. You can create a very professional and visually appealing presentation with these tools.

Next time, we will begin work with individual slides.

**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

# LibreOffice Pt17: Macros

I recently got a request for a tutorial on LibreOffice macros, so we will take a short break from our work in Impress to briefly cover macros. Macros allow you to automate repetitious actions like typing a letterhead. This frees you from having to type or do the same task over and over again. In this how-to, we will cover how to record macros and use them. LibreOffice has a Basic scripting language which is beyond the scope of this particular how-to. Perhaps we will revisit macros at a later time to discuss the Basic scripting language.

**NOTE**: You can find information on LibreOffice Basic in the help, or download the documentation at http://wiki.documentfoundation.org/images/d/dd/BasicGuide_OOo3.2.0.odt.

## Enabling Macro Recording

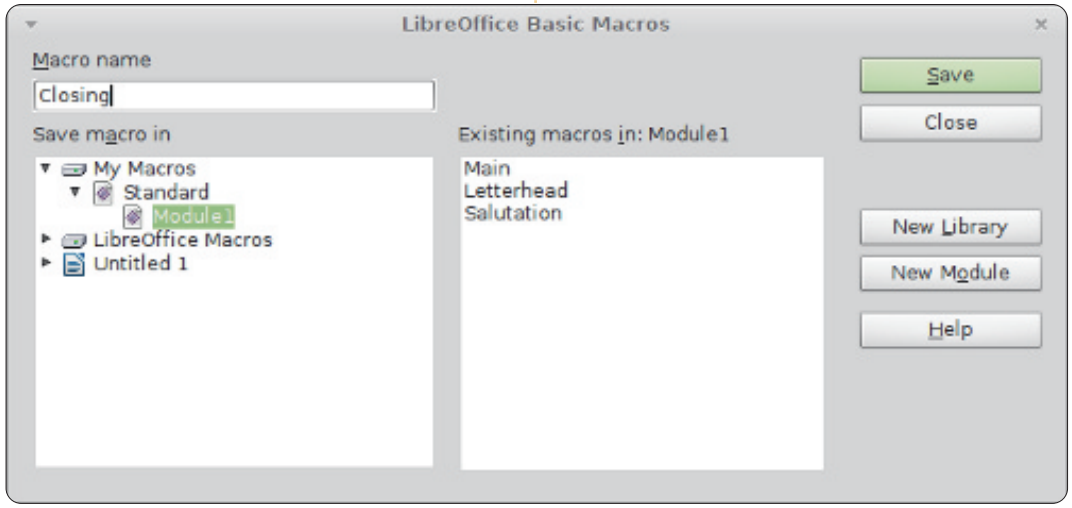
By default, macro recording is disabled. Apparently, macros are considered an "experimental (unstable) feature". To enable macro recording, Tools > Options. Select the General options under LibreOffice, and check "Enable experimental (unstable) features". This enables the "Record Macro" option under Tools > Macros.

## Recording a Macro

When in macro record mode, the macro recorder tracks every action you make and all the text you type, and records it in the macro. Remember how we had to enable experimental features to get the Record Macro option? Well, that's because sometimes the macro recorder does fail. I haven't experienced this myself, but I thought I should point that out.

As a demonstration of recording a macro, we will create a macro called Closing. Every time you write a letter, you have to end with a closing, so why not make it into a macro.

Start with a new text document. Tools > Macros > Record Macro to start the macro recorder. The macro recorder toolbar will show. There is only one choice on this toolbar, Stop Recording. Press the Tab key on your keyboard three or four times (this should place the cursor close to the center of the page). Type Best wishes, love, or your favorite closing. Press Enter twice to leave room for a signature. Press Tab the same number of times you did before. Change the text to bold by clicking the Bold button on the formatting toolbar, and type in your name. Lastly, let's add a title under the name. Press Enter, Tab the same number of times as before, click the Bold button to turn off bold, and click the Italic button to change to italics. Type in your title. Press Enter. Click on Stop Recording.




The Basic Macros dialog box will show. Select the library where you want to save your macro, usually My Macros. Enter a name in the Macro name textbox, and click the Save button.

## Testing Your Macro

You will want to test your macro to insure everything recorded correctly, Tools > Macros > Run Macro. The macro dialog box will show. Select the library where you saved your macro, select your macro, and click on the Run button.

The macro will run, repeating all the text you typed and the formatting you did.

If something didn't turn out just right, you can delete the macro and create a new one. To delete a macro, Tool > Macros > Organize Macros > LibreOffice Basic. Find your macro in the library, select it, and click the Delete button.

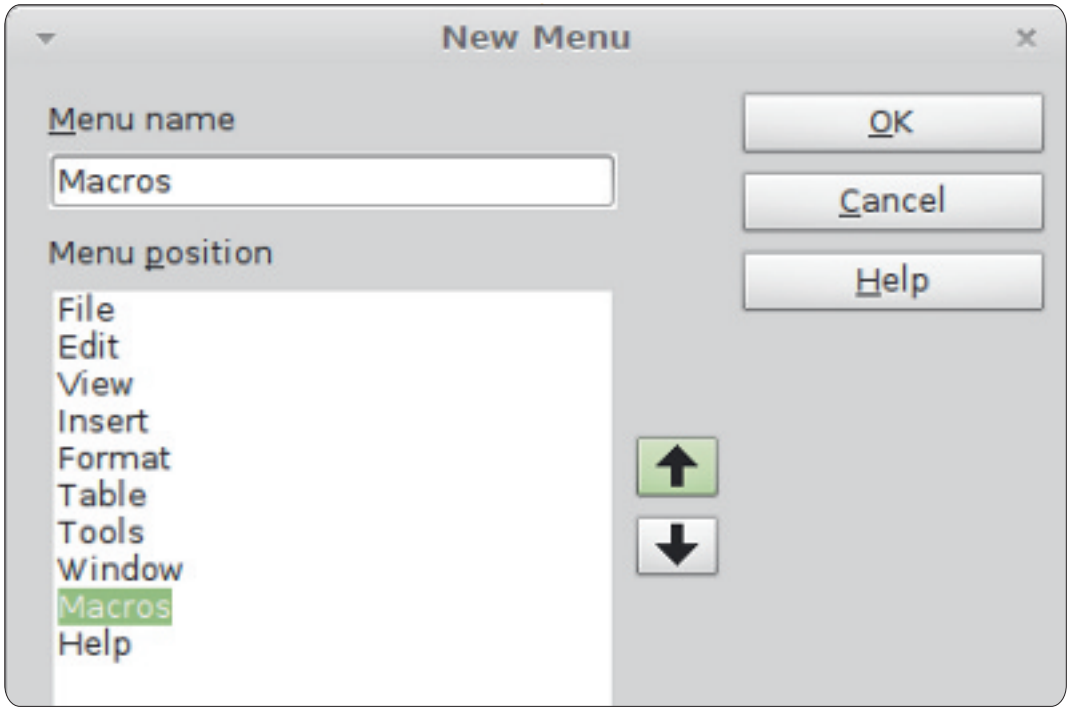
## Create a Shortcut to your Macro

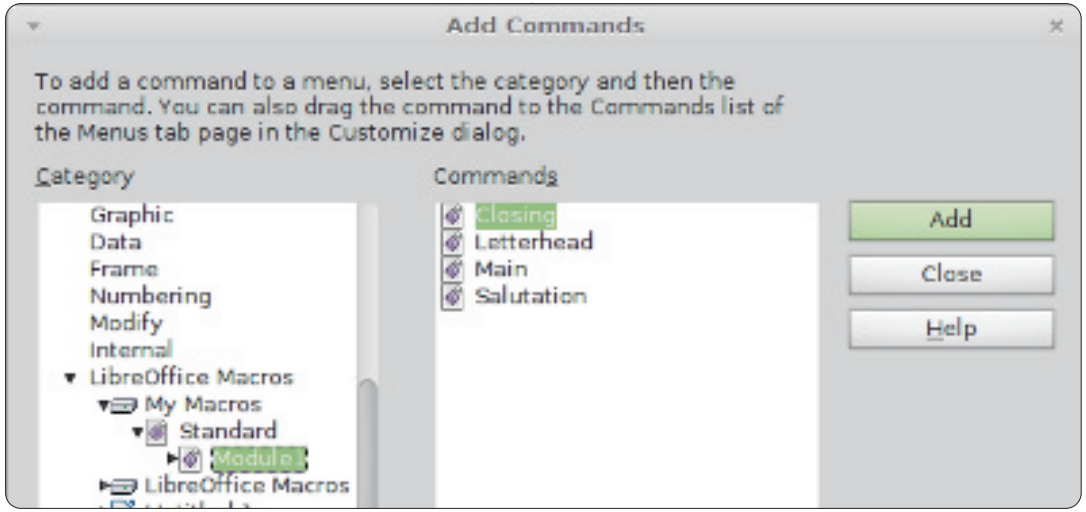
If you use a macro a lot, you don't want to go to Tools > Macros > Run Macro every time you need to use the macro. LibreOffice allows you to add your macros to menus, toolbars, keyboard shortcuts, and application events. You can add your macros through Tools > Customize.

As an example, let's add a menu named Macros in Writer and add our Closing macro to it. Tools > Customize. Select the Menus tab. Click the New button. Name the new menu Macros. Use the arrow buttons to move it from the bottom to the position before Help. Click OK. Your new menu is empty right now. Click on the Add button. Under category, find LibreOffice Macros and navigate through the tree to find your macro. Select the Closing macro and click the add button. The macro is added to the menu. Click on the Close button. Click OK on the Customize dialog box. You will now have a menu item named Macros, and, under it, the Closing macro. Now, you can select it from the menu when you need it, which is faster than having to navigate to Run Macro.

This has been a very short introduction to macros. Before deciding to use a macro, make sure there isn't a better way to accomplish what you are trying to do, but for often repeated action, macros might just be the solution you are looking for. There is a LibreOffice Basic scripting language, and perhaps we will cover it in the future. You can also download macros from the web that you can import and use in LibreOffice.

Next time, we are back to Impress and working with slides.




**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

When building a presentation, it is important to present the information in a pleasing and informative way. Using slide transitions provides a visual move from one topic to the next, and using animations helps to inform viewers or provide emphasis on the current point. Overuse of transitions and animations can cause your presentation to look less than professional. However, the appropriate use of these features will give your presentation a polished and professional appearance.

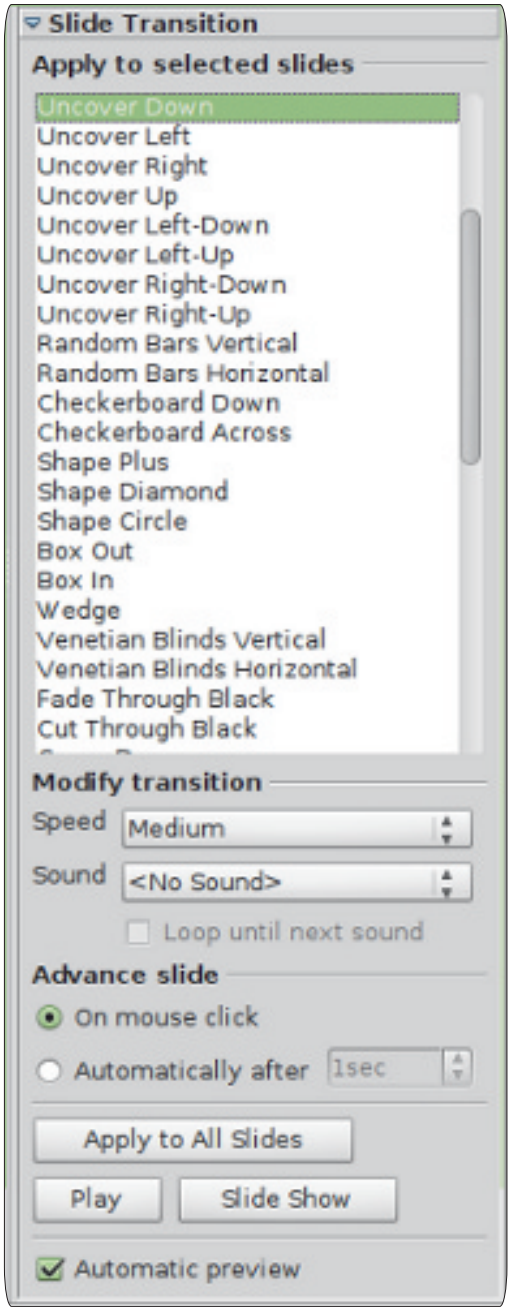
## Slide Transitions

Transitions are the visual changes made when moving from one slide to the next. Transitions provide a visual clue to the audience that you are moving to a new topic. In general, you will use the same transition for all the slides, but, in some cases, you will want to use a different transition to show the viewers a change of topic.

With the slide you want to change displayed in the main view, select Slide Transition from the Tasks pane. The selection list provides you with a collection of different slide transitions. If you have Automatic preview checked at the bottom of the Slide Transition pane, you will see a preview of the transition when you select it or change its settings.

You can further modify the transition in the Modify transition section of the pane. Speed will change the rate at which the slide is displayed. Sound lets you play a sound with the transition. You can select a sound from the defaults provided, or select your own. Once you select a sound, you can select Loop until next sound. You will rarely have a use for this, but it is there should you need it.

In the Advance slide section, you set how and when you want the slide to advance. On click means the slide will display until you click the mouse or press the space-bar. Automatic after allows you to automatically advance the slide after a set number of seconds. When selected, you can adjust the number of seconds in the spinner box.




At the bottom of the pane, you have three buttons. Apply to All Slides does what it says; it applies the transition to all the slides in the presentation. Play causes the transition to run in the main view. Slide Show starts the presentation beginning with the current slide.

## Animations

Animations are similar to transitions, but instead of acting on the slide, it acts on individual objects in the slide. Animations help create emphasis, flow, and visual interest as you present the objects on a slide. They keep the audience aware of the current subject, and act as a visual clue to the presenter.

To create animations, first select the slide which you want to create animations for. Select the object(s) you want to animate, and open the Custom Animations pane

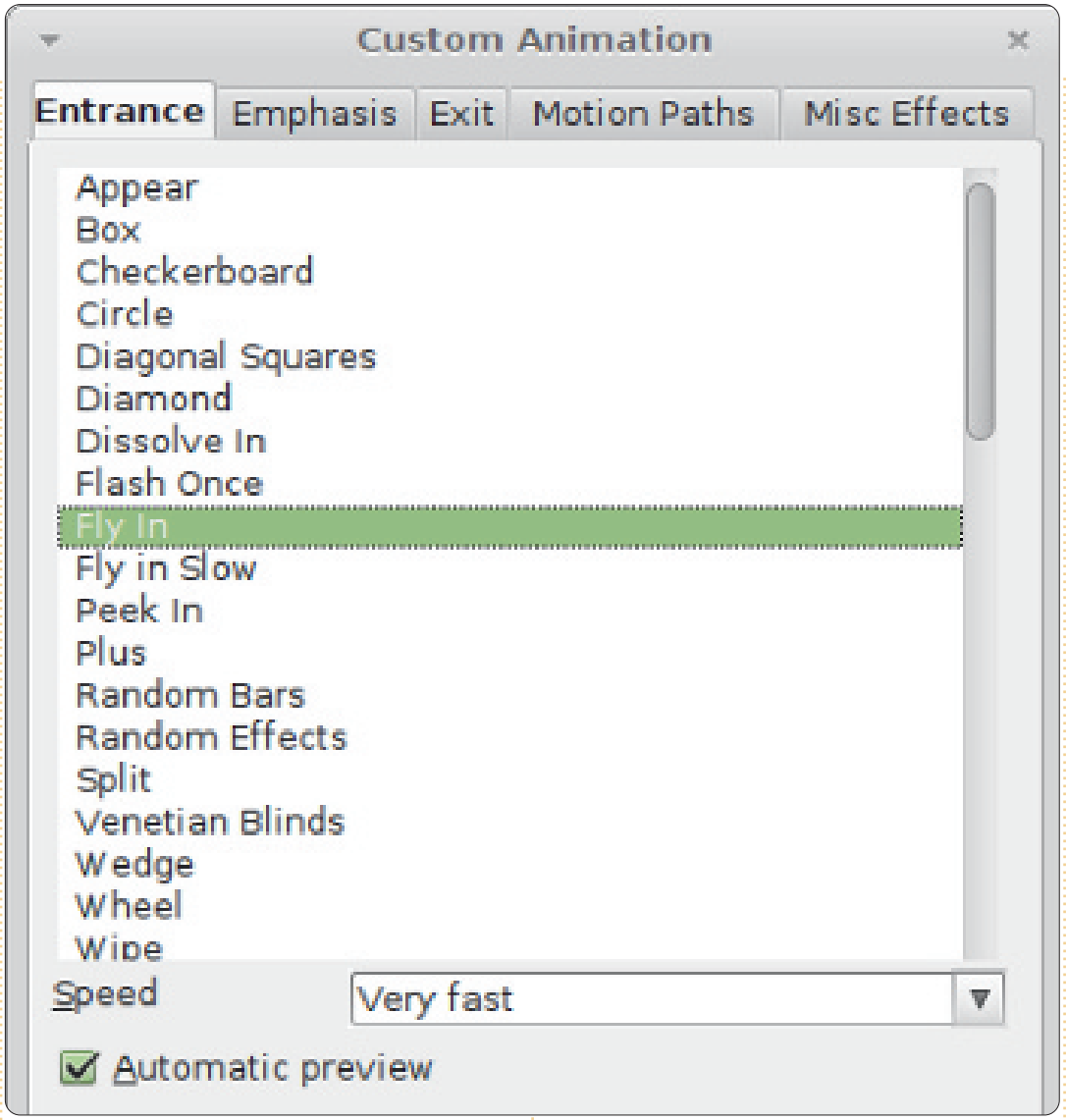
in the Tasks pane. Click on Add, which opens the animations dialog. Here you can select the animation you want for the object(s) selected.

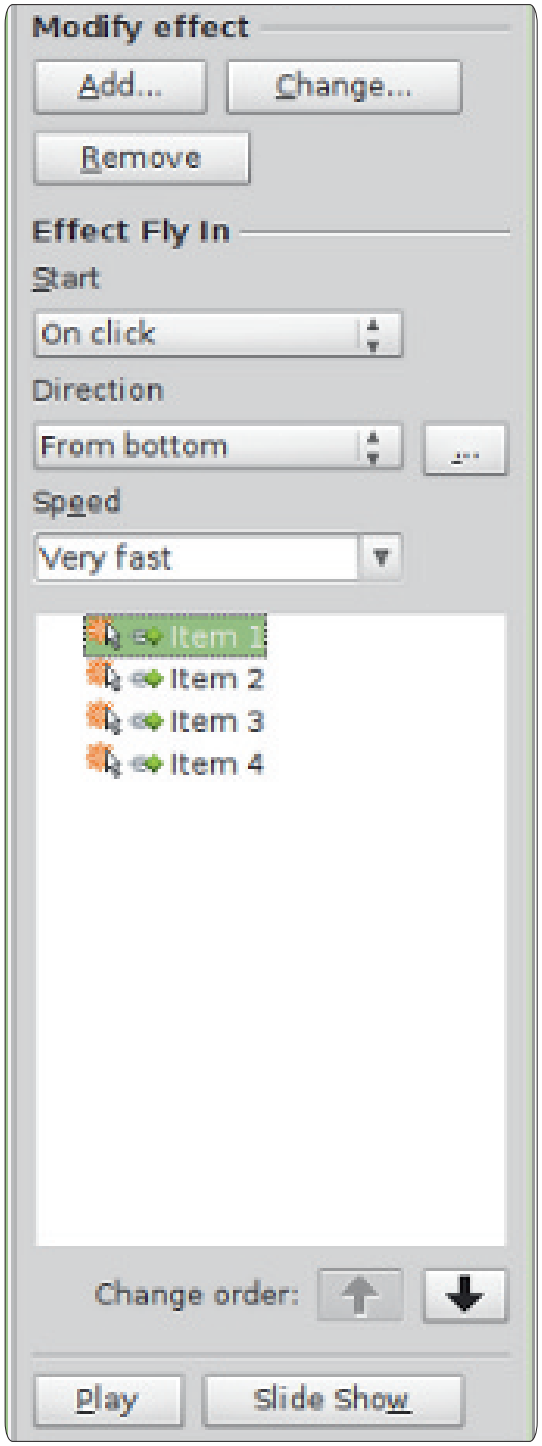
Impress provides four different animation types:
**Entrance**: These animations play as the object appears on the page.
**Emphasis**: These animations are used to create emphasis such as changing colors, blinking, etc.
**Exit**: These animations play as the object leaves the page.
**Motion Path**: These animations cause the object to follow a defined path.

There is a fifth tab in the animations dialog related to media objects. They allow you to start, stop, and pause media objects.

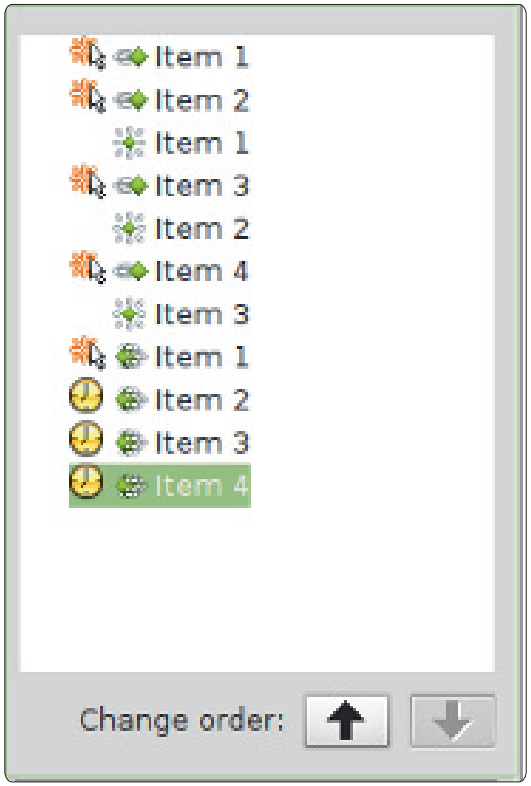
Once you have selected your animation, click OK.

The Effect section of the animation pane give you the ability to fine-tune your animation. Start controls what event will trigger your animation. On Click will trigger the animation when the mouse button is clicked or you press the space-bar. With Previous triggers the animation when the animation before it plays. After Previous plays the animation after the previous animation. The second control relates directly to the type of animation you select. If it is a motion animation, it asks you for a direction. If the animation changes colors, it will asks you for a color. Finally, the Speed controls the speed at which the animation plays.



## Animation Example




The real power of animations comes when you combine them to create interesting effects for your objects. In our example, the effect we will create will display items in a list one at a time. As the next items displays, the previous one will gray out. Finally, all the list items will fade out before the slide transition.

Create a new slide, and, in the text area, add four list items. Select all four list items, and click Add in the Custom Animation pane. On the Entrance tab, select Fly In and click OK. Select each of the animations in the animations pane and set the start to on click, direction to from bottom, and the speed to a speed that looks good on your machine.

For the color change effect, select the first three items in the text area of the slide, and click the Add button. On the Emphasis tab, select Change Font Color, and click OK. For each of these three new animations, change the start to with previous, the color to gray, and the speed to a speed that looks good on your machine. Move the color change animation for the first item up using the Change order arrows. Move it up under the entrance animation for the second item. Move the second change color animation up under the third entrance animation, and leave the third color change under the fourth entrance animation.

Finally, we will create the fade for all the items. Select all four list items in the slide's text area. Click on Add in the animation pane. On the Exit tab, select Dissolve and click OK. Set the first exit to start on click and the other three to after previous. Select a speed for the dissolve that works for your machine.

Test your animations by clicking on Slide Show in the animation pane. If you set everything correctly, each item should fly in from the bottom and gray out when you click the mouse. At the end, all four items should dissolve.

Transitions and animation are key to creating a professional looking presentation. If you are careful to not get carried away, you can create a polished and memorable presentation for your audience. Remember that the idea behind a presentation is to present your ideas to your audience, not to impress them with fancy, overdone transitions and animations.

**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

ubuntu uk podcast

The Ubuntu Podcast covers all the latest news and issues facing Ubuntu Linux users and Free Software fans in general. The show appeals to the newest user and the oldest coder. Our discussions cover the development of Ubuntu but aren't overly technical. We are lucky enough to have some great guests on the show, telling us first hand about the latest exciting developments they are working on, in a way that we can all understand! We also talk about the Ubuntu community and what it gets up to.

The show is presented by members of the UK's Ubuntu Linux community. Because it is covered by the Ubuntu Code of Conduct it is suitable for all.

The show is broadcast live every fortnight on a Tuesday evening (British time) and is available for download the following day.

podcast.ubuntu-uk.org

# LibreOffice Pt19: Base

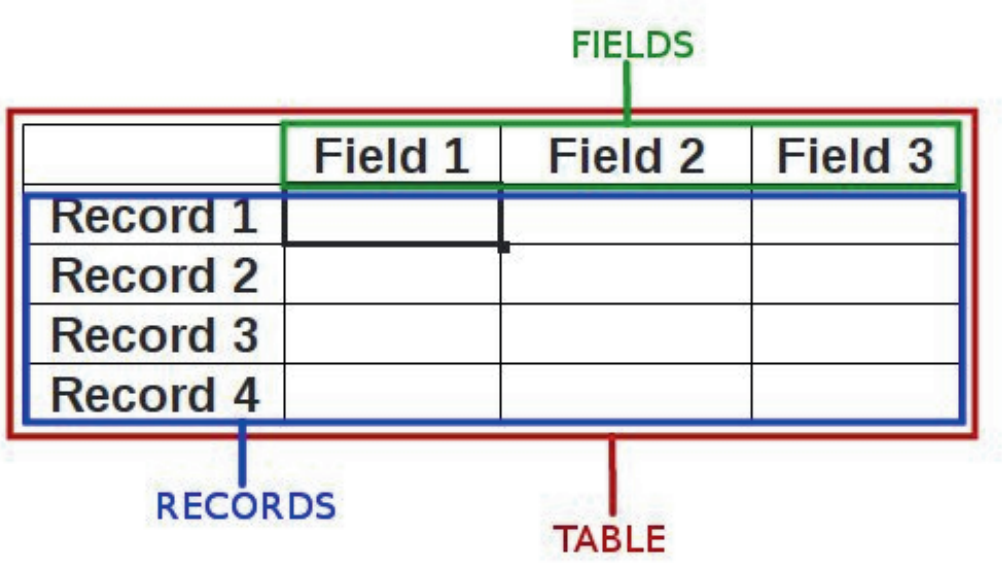
Many people collect things like sports cards, books, comic books, or butterflies. Sometimes, it is helpful to catalog these collections, so you create a catalog. You decide which characteristic about the items you want to track, you determine that some items share some of these characteristics in common, and you create a system for identifying each item uniquely. Finally, you begin to build your catalog. You can think of a database as a catalog of similar items. You have something you want to track, and what better way to track it than through your computer.

Base is the database module for LibreOffice. Base is not a database engine, but a front end for interacting with databases. By default, Base uses the HSQL database engine, which is an open source engine, but you can connect to other engines like MySQL or Oracle. You can even use a spreadsheet as the basis for a database, as we did in part 7 of this series (see Full Circle issue 52).

When creating a database, you get better results by sitting down and taking some time to plan out how your database will look and behave. You map out the characteristics you want to track, determine the common relationships, and create a unique way to identify each of the items in the collection. Taking the time to plan will save you time and effort later in the process when you begin to build reports and searches for your database.

## What Makes a Database

Before we get into the actual planning of a database, let's talk about the parts making up a database. The smallest element of a database is the field. Think of a field as a single characteristic of the object we are defining in the database. A collection of fields is a record. A record defines all the characteristics of a single object we are collecting. We create tables to hold records. Tables define the fields for each record and contains the datum for each field in the records.




Think of a database table as a spreadsheet in Calc. Across the top, you have columns. The columns are the fields. Down the side, you have rows. The rows are records. The entire spreadsheet, containing all the data, is the table.

## Planning Our Example Database

Through this series of articles on Base, we will use a database I created for tracking my book collection. I kept the database fairly simple, but including many elements to show the nature and aspects of relational databases, mostly the relational part. In this part, we will track the steps I took for planning the creation of the database. We will use the steps I have mentioned.

## What Characteristics to Include

When I began planning my Books database, I knew I didn't

want a big complicated thing with information I would never use. I knew I needed the basics, title and author. However, I decided on including the year of publication, too. With all the different ways to "read" books today, I decided I needed to track the different types of media as well. So, in the end, I decided on these characteristics:

- Title
- Author
- Publication year
- Media type
- Relationships

Relationships put the "relational" in relational databases. When we first look at our characteristics list, we might think we just need a table with four fields. However, we would run into trouble when we have a book that has more than one author, or we own a book in more than one format. We could just stuff multiple authors in one field, but that would make searching for books by a single author difficult. We could create multiple fields for multiple authors, but how many do you create? If it is an anthology, the book could have many authors. The same is true for the media types.

The answer is relationships. Relationships help us link data in different tables to each other. There are three different relationships defined for relational databases.

One to One – For every one characteristic, you have one matching characteristic. As an example, for every one person, you can have one spouse.

One to Many – For every one characteristic, you have many matching characteristics. In our case, for every book, you can have multiple authors.

Many to Many – For many characteristics, you have many matching characteristics. As an example, in a school, you have many students who have many different teachers.

For our database, we have two one-to-many relationships. For every one book, we can have multiple authors, and for every one book, we can have multiple media types. We will take these relationships into consideration as we begin to map our database.

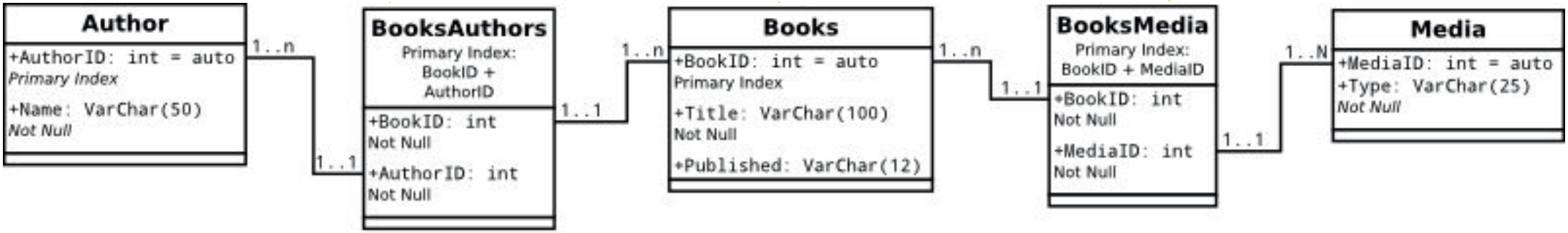
## Mapping the Database

It is a good idea to lay out your database on paper, or using a diagram program, before you begin to work in Base. I used the open source program Dia, because it has a Unified Modeling Language (UML) module designed just for programming diagrams. Dia is available in the Ubuntu repositories. You don't need to know a lot about UML to lay out a database. I will walk you through the process in this section.

The main table for our database is the Books table. We know we need the fields Title and Published, but we also need a unique field to identify each record. Since two books could potentially have the same title, we will create an auto generated field named BookID.

For the Authors table, we need a field for the author's name (Name) and a unique auto generated field (AuthorID). Two fields for the Media table, too: MediaID and Type.

Now that we have our three




**Relational database structure for Books project**

tables, we need to link them together. Linking is done by what is known as foreign keys. A foreign key is a field used to create a relationship with a record in another table. Since both of our relationships are one-to-many, we can't just stick a field in the Books table to reference authors and media types. We will use intermediate tables to link the authors and media types together. These intermediate tables will contain foreign keys for the IDs to create the link.

We will need two intermediate tables. We will name them BooksAuthors and BooksMedia. BooksAuthors will have two fields named the BookID and the AuthorID, which link back the the ID fields in the Books and Authors tables. We do the same with the BooksMedia table. Two fields named BookID and MediaID, linking to the IDs in Books and Media.

I created a UML diagram showing the relationships between our five tables. Each box contains a table. The name of the table appears at the top of the box. Underneath, we list all the fields in the table and their types. We will discuss types in the next part of this tutorial. The lines between the boxes show the relationships from one table to the next. The notation 1..1 shows that field has a one-to-one relationship with the field in the other table. The notation 1..n shows that field has a one-to-many relationship with the field in the other table. For example, BookID in the Books table is connected to the BookID in the BooksAuthors tables. On the Books table BookID, the notation is 1..n, meaning this book can reference more than one record in the BooksAuthors table. On the booksAuthors, BookID has a notation of 1..1, meaning this is a reference to one specific record in Books.

With all this planning, we can easily create our database without having to make many changes. We know what tables we need and how they will relate to each other. While this may seem like a lot of work, it saves us a lot of time in the end, because we have actually put thought into how we will construct our database and how it will work.

**Next time, we will build our tables and create the relationships in LibreOffice Base. Because of our planning, the process is quick and easy.**

**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

ubuntu uk podcast

The Ubuntu Podcast covers all the latest news and issues facing Ubuntu Linux users and Free Software fans in general. The show appeals to the newest user and the oldest coder. Our discussions cover the development of Ubuntu but aren't overly technical. We are lucky enough to have some great guests on the show, telling us first hand about the latest exciting developments they are working on, in a way that we can all understand! We also talk about the Ubuntu community and what it gets up to.

The show is presented by members of the UK's Ubuntu Linux community. Because it is covered by the Ubuntu Code of Conduct it is suitable for all.

The show is broadcast live every fortnight on a Tuesday evening (British time) and is available for download the following day.

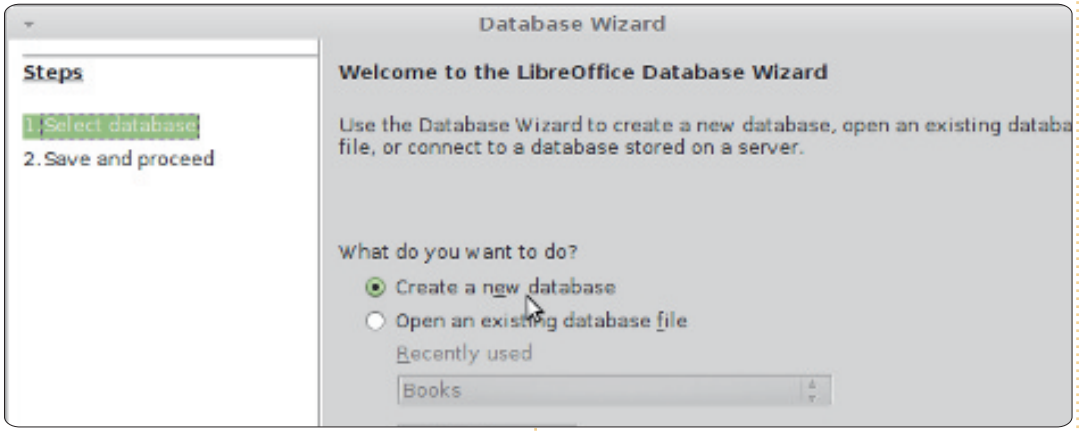
podcast.ubuntu-uk.org

# LibreOffice Pt20: Base

Databases are used to store information about objects or data. In the previous tutorial, we mapped out how our books database would look. We designed tables for our data, and defined relationships between those tables. Now, we will put our planning into action by actually creating the database file, adding the tables, and creating the relationships.

## Creating the Database File

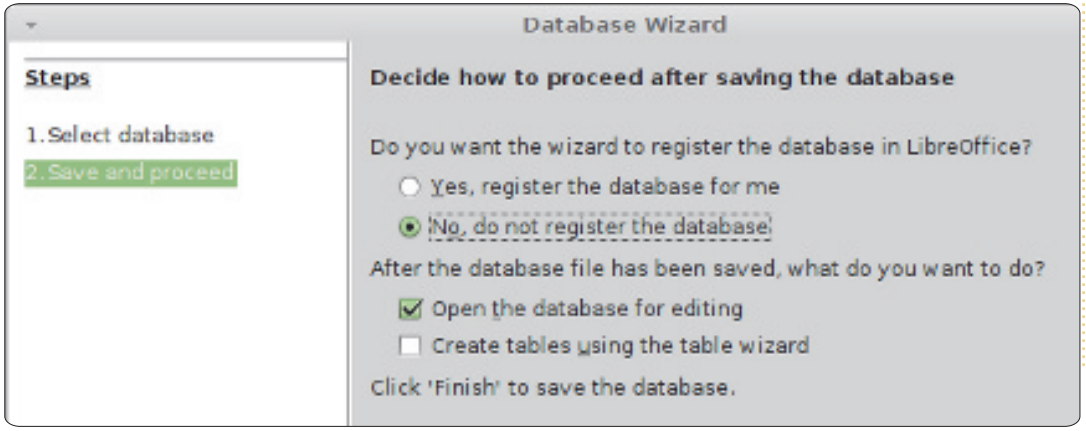
As I mentioned before, Base is not a database file but an interface for accessing and manipulating a database file. Although it is possible to connect to many different database types, we will use the default HSQL database for our books database.

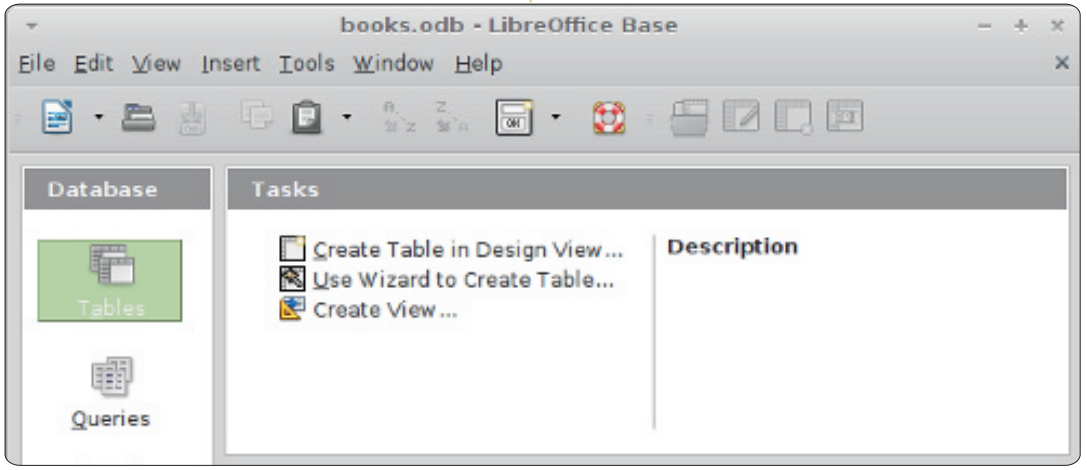



To start the database wizard, select Database from the LibreOffice Home screen or File > New > Database. The first screen of the database wizard lets us choose whether we want to open an existing database or create a new one. Select Create a New Database, and click Next.

The second screen of the wizard asks us whether we want to register the database and what we want to do once the database has been created. Registering a database in LibreOffice makes it available in all our documents. We won't need this for our database, so select No – do not register the database. Check Open the Database for Editing, and click Finish. LibreOffice will open a file dialog to define a location and name for the database. I simply named the file: books

Once you have a name and location for the database file, the main Base screen opens. Down the left side, you have the different pieces which can make up a database file. The top right gives you access to the different actions you can take for each part, and the lower right shows the objects already created.



## Field Types

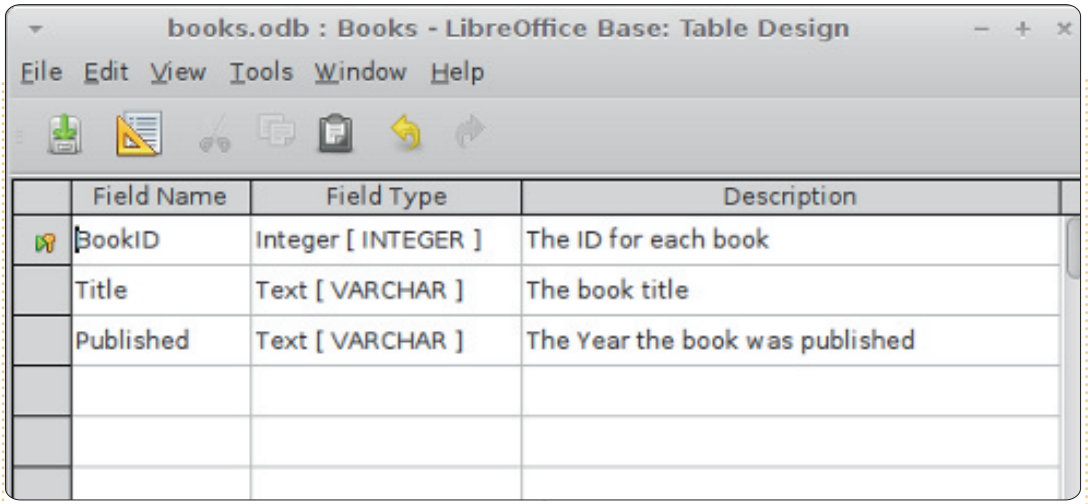
Before we create our first table, we need to discuss some of the common database field types. When you select a type for a field, you are presented with many options for the type. Many of the types are identical, and are there for compatibility reasons. The most common types are:

**Integer** – a whole number, eg. 123
**VarChar** – a variable length string of characters. You will define the maximum length for the VarChar.
**Date** – a date value, of course, eg. 10-15-2012 (the exact format is location specific)
**Time** – a time value, such as 09:15:25
**decimal** – a real number including the whole (integer) number and its fractional part, eg. 123.25 (the part separator is location specific)

For our purposes, we will use Integer and VarChar.

## Creating the Tables

Base has three different ways to create tables: through a table wizard, through design view, and by SQL statements. The table wizard is good only to create specific types of tables by picking from a list of predefined field names. The SQL method requires you to know and understand the SQL language and is beyond the scope of this article. The design view is usually the best choice, and presents you with a list you fill in to create your table. We will use the design view to create our tables for this project.




We will start with the Books table. Select Tables from the Database pane on the left. In the Tasks pane, click on Create Table in Design View... to open the Design View dialog. Across the top you have labels for each of the elements of a field: Field Name, Field Type, and Description. The Description is optional but is useful for making notes about how a field is used. At the bottom, we see the Field Properties. This section will change according to the type of field we select.

In the first field, enter the name BookID. From the dropdown box in Field Type, select Integer. Adding a description is up to you. Under the field properties, change AutoValue to Yes. This will place a key icon in the box beside the field record showing it is the primary (or key) index. In the second row, type Title for the name. Give this one a type VarChar. Again, a description is up to you. In the field properties, leave the length at 100, the default for VarChar. The third field is Published with a type of VarChar. Change the length in the field properties to 12. I chose VarChar rather than date because we just want the year, and if the publishing date of a book is unknown, I can enter just "Unknown". Click on the save icon, and Base prompts you for a table name. Enter Books.

Our tables for Authors and Media are created in much the same way. For Authors, create two fields: AuthorID, integer (AutoValue Yes); and Name, VarChar (length 50). For Media, MediaID, integer (AutoValue Yes); and Type, VarChar (length 25).

Our two foreign key tables need a little different treatment. In BooksAuthors, create two integer fields named BookID and AuthorID. Click on the icon box beside the first record. Holding down the Shift key, click in the icon box for the second. At this point, you should have both records selected. Right-click the icon box and select Primary Key from the context menu. This creates a combination key. The two values together create the primary key, which uniquely identifies each record in the table. For the BooksMedia table, create two integer fields named BookID and MediaID. Select

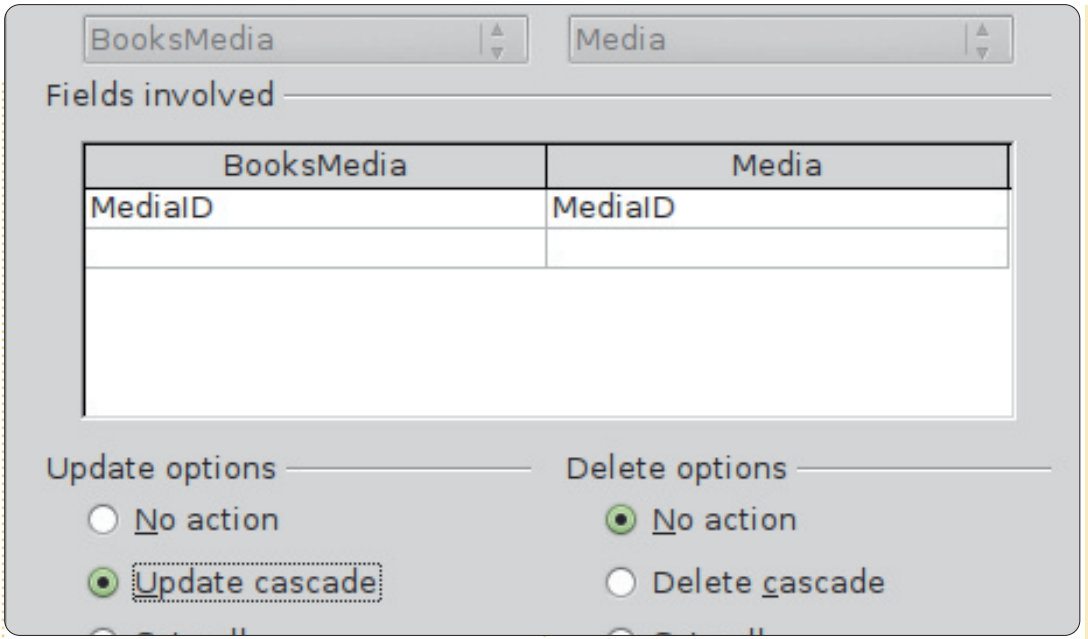
both fields, right-click, and select Primary Key.

## Create Relationships

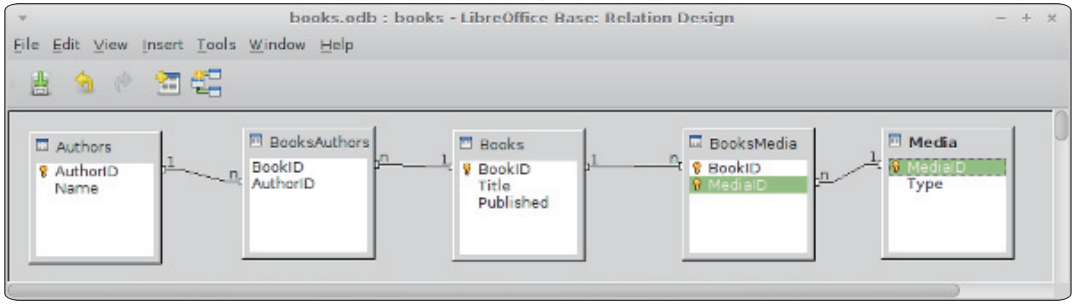
Once we have all our tables defined, we can create the relationships that bind everything together. We will create relationships between our three main tables and our foreign key tables. The direction in which you drag the fields is important, so pay close attention to how you do it.

To start the Relation Design dialog, go to Tools > Relationships. You are presented with a list of tables. Select a table and click Add to add the table to the Relation Design. Add the tables in the following order to make it easy: Authors, BooksAuthors, Books, BooksMedia, Media. Once all the tables are added, select Close.

Drag the BookID field in Books to BookID in BooksAuthors. A Relation dialog pops up. Under




Update option, pick Update cascade and OK. This will cause the field to update when the Books table updates. Drag the AuthorID in Authors to AuthorID in BooksAuthors. Select Update cascade in the Relation dialog. Next, drag the BookID in Books to BookID in BooksMedia. Select Update cascade. Finally, drag MediaID in Media to MediaID in BooksMedia. Select Update cascade. Your relation design should look something like the one pictured below.




With our tables and relationships created, we are ready to begin work on creating forms for data input. In our next How-To, we will create the forms for data entry. Everything will come together to create a usable data entry system.

**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

ubuntu uk podcast

The Ubuntu Podcast covers all the latest news and issues facing Ubuntu Linux users and Free Software fans in general. The show appeals to the newest user and the oldest coder. Our discussions cover the development of Ubuntu but aren't overly technical. We are lucky enough to have some great guests on the show, telling us first hand about the latest exciting developments they are working on, in a way that we can all understand! We also talk about the Ubuntu community and what it gets up to.

The show is presented by members of the UK's Ubuntu Linux community. Because it is covered by the Ubuntu Code of Conduct it is suitable for all.

The show is broadcast live every fortnight on a Tuesday evening (British time) and is available for download the following day.

podcast.ubuntu-uk.org

# LibreOffice Pt21: Base Input

Written by Elmer Perry

So far in our series on LibreOffice Base, we have planned the layout for our database, created the tables, and created the relationships between those tables. Now, we need to think about how we will input the data into our tables and link them all together. You can edit the tables manually in the tables section of the program, but the best way is through input forms. We will create three forms: Authors, Media, and Books. We will handle the forms for authors and media first as they are the easiest. The form for books will bring everything together in one place.

## Create the Authors and Media Forms

Select forms from the Database pane on the left. You can create forms in two ways, through the wizard or through the Design View. We will use the wizard for Authors and Media. Click on Create from wizard... in the tasks pane. This starts the wizard.

On the first step of the wizard, select the Authors table from the dropdown, and move Name to the Fields to use. This is done by selecting the field and using the arrow keys. Click Next.

The second step deals with subforms, which we do not need for the Authors form. Click Next. You will notice that steps three and four are skipped. Those steps deal with setting up a subform. We will not use them in the our implementation of our database.

Step five asks us for a layout for our fields. Since we have only one field, we will choose the table layout. Select the table layout and click Next.

The sixth step is about how the form is used. We want the form to display all data, so select all data and click Next.

Step seven deals with the styles of the form. You can select different background layouts for your form. You can also select whether your controls are displayed with no border, 3D borders, or flat. Click Next.

On the eighth step, we give the form a name, Authors, and choose whether we want to edit it more or use it. After naming the form, click Finish. The new form will pop up on your screen. Close it and save your work.

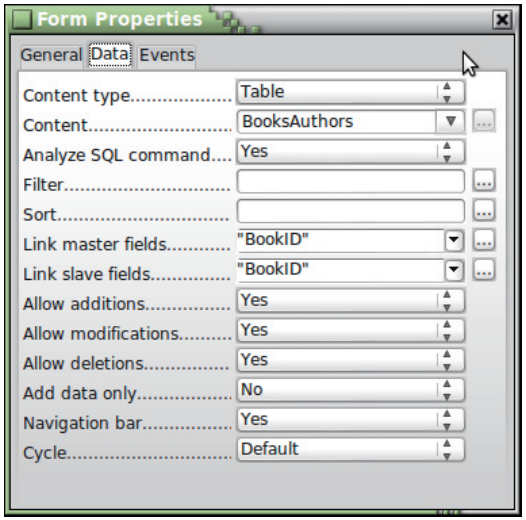
The Media form is created in the same way, only using the Media table instead of the Author table.

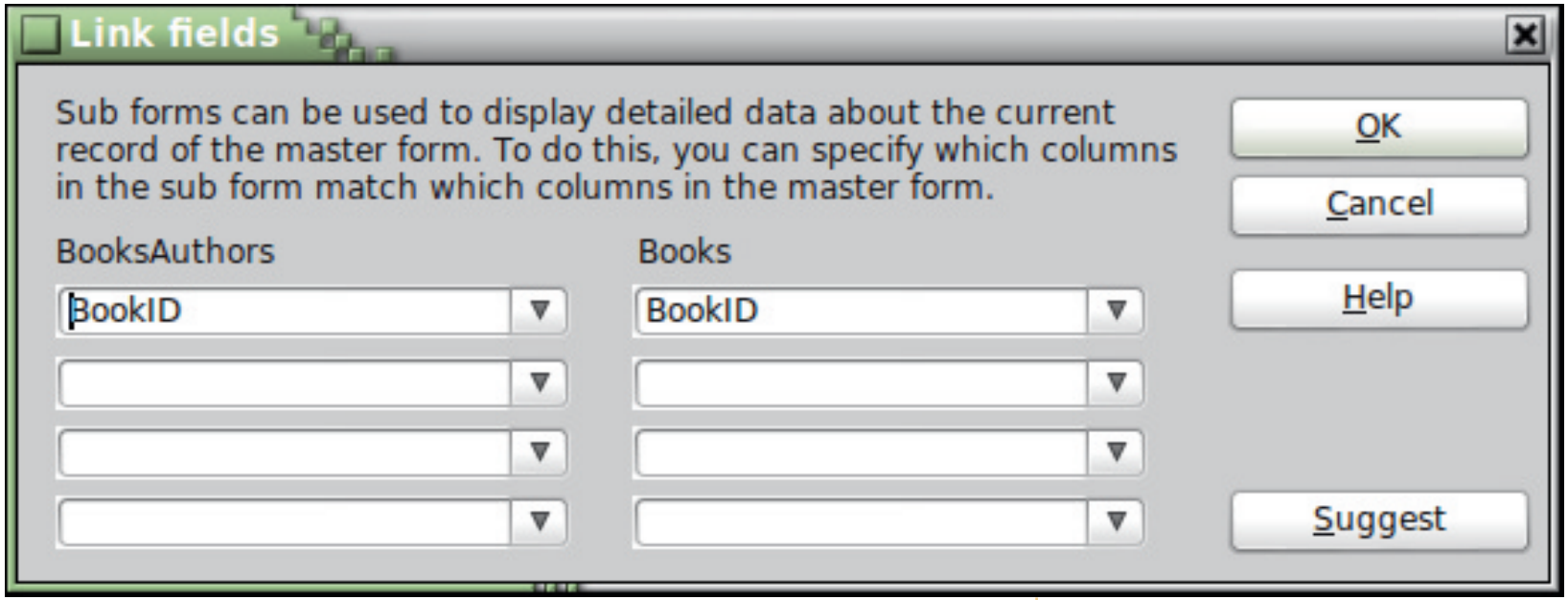
## Create the Books Form

Although we will use the wizard to start our Books form, we will need to edit it afterwards to add the connections to authors and media. Go through the wizard again with the Books table, adding the fields Title and Published. You will skip the subforms again. We will add our subforms manually. For the layout, use either Columnar – Labels on Top, or Columnar – Labels Left. I used Columnar – Labels on top. After naming the form Books in step eight, select Modify the form, and click Finish. This time the form is opened for editing. We will add two subforms to make a connection to the Authors and Media tables.

On the toolbar at the bottom of the form, select the Form Navigator. This opens a small dialog containing the elements of our form. Right-click MainForm, then New > Form. A new form is added to the list. Since it is already selected, just start typing to rename it FormAuthors. We will use this subform to create the link to our Authors table through the BooksAuthors table. Right-click the FormAuthors and select Properties. On the Data tab, select table for the Content type, and BooksAuthors for the Content. Now, click on the ellipse button next to List Master Field. A link-fields dialog pops up. This is where we create our link between the Books table and the Authors table. Under BooksAuthors, select BookID and under Books select BookID. Click OK, and you can close the Form Properties dialog.

Create another subform under



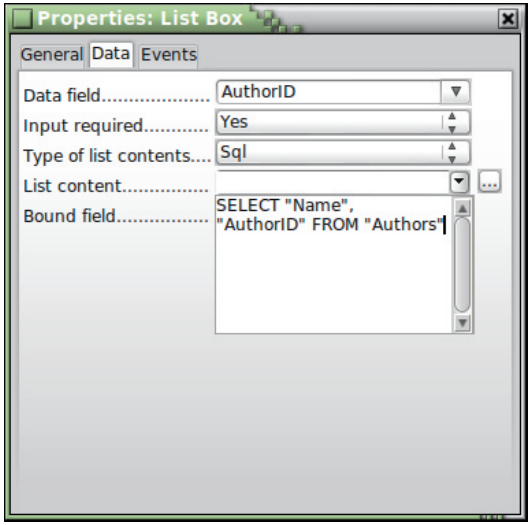

MainForm named FormMedia. Edit the properties, setting the Content Type to table, and the Content to BooksMedia. Click the ellipse next to List Master Field, and select BookID under both BooksMedia and Books. Click OK and close the Form Properties dialog.

Now, we need to create our controls that will contain our authors and media. Remember, we need the ability to select more than one, so a table is our best choice for the control. Click on the More Controls button on the toolbar on the left side. A More Controls toolbar will pop up.

Make sure you have the FormAuthors selected in the Form Navigator. Click on the Table button in the More Controls toolbar. Underneath the two input boxes for title and published, draw the table on the page. Right-click in the header section of the new table and select Insert Column > List Box. Right-click the newly created column and select Column. This displays the List Box properties. On the General tab, change the label to Authors. Switch to the Data tab. For the Data field, select AuhtorID. This tells Base we want to relate this to the AuthorID field in the BooksAuthors table. For Type of list content, select Sql. In List Content, we will write a short SQL statement to fill our list box with the names from the Authors table. You can click on the down-arrow to give yourself a small edit box to work in. The SQL statement is:

SELECT “Name”, “AuthorID” FROM “Authors”

This statement will select all the records from the Authors table. Set the Bound field to 1. The Bound field selects which field will fill the list box. Since we selected the Name field first, the bound field of 1 will fill the list box with the data from the Name fields. Close the list box properties and save your work.




We will create the Media control in the same way we did the Authors. Select the FormMedia in the Form Navigator. Draw the table control to the right of your

title and published controls. Create a column in the control. Open the column properties and change the label to Media. Set the Data field to MediaID, and the Type of list content to Sql. The SQL statement for the List Content is:

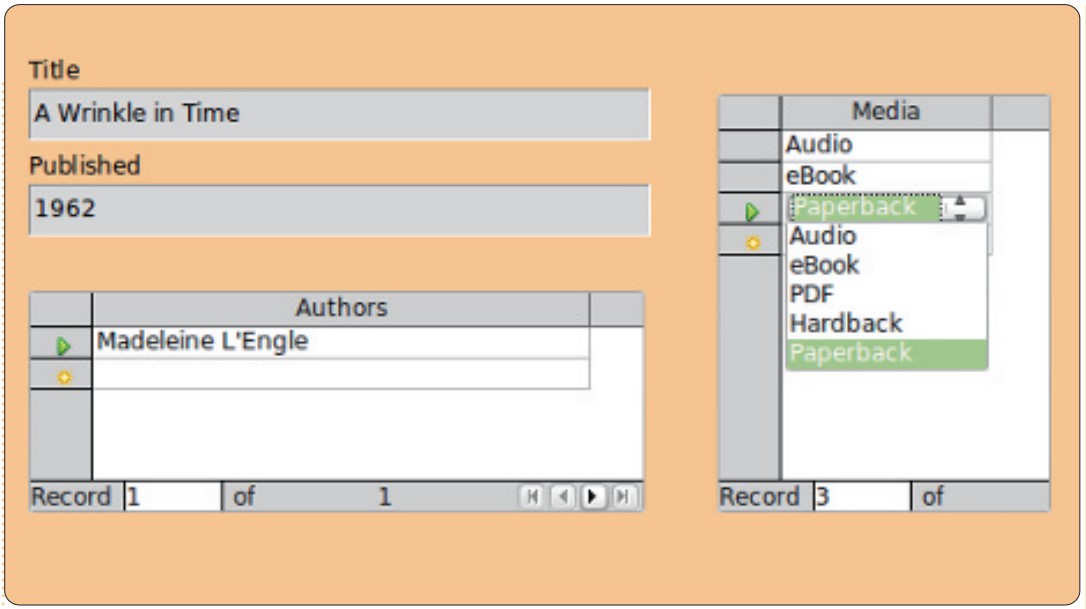
SELECT “Type”, “MediaID” FROM “Media”

Set the Bound field to 1.

We are now finished with the form. Save and close it.

## Using the Forms

The Authors and Media forms are simple to use. Just select an empty row and type in the name or type. You will want to add your authors and types before using the books form. The books form is easy to use as well. Fill in your Title and Published year (or Unknown if you don't know the year). The authors and media tables give you a list box from which you can select your authors and media types. Note that you can select more than one author and media type. To create a new record, click on the new record or next buttons in the form control toolbar.




We now have a working method for entering data into our database. While it works, there is one disadvantage to this setup. If you find that you need an author or media type that is not there, you have to close the books form and open the authors or media forms. In a later How-To, we will attempt to overcome this inconvenience.

In the next HowTo, we will create a query and a report for extracting information from our database.

**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

ubuntu uk podcast

The Ubuntu Podcast covers all the latest news and issues facing Ubuntu Linux users and Free Software fans in general. The show appeals to the newest user and the oldest coder. Our discussions cover the development of Ubuntu but aren’t overly technical. We are lucky enough to have some great guests on the show, telling us first hand about the latest exciting developments they are working on, in a way that we can all understand! We also talk about the Ubuntu community and what it gets up to.

The show is presented by members of the UK’s Ubuntu Linux community. Because it is covered by the Ubuntu Code of Conduct it is suitable for all.

The show is broadcast live every fortnight on a Tuesday evening (British time) and is available for download the following day.

podcast.ubuntu-uk.org

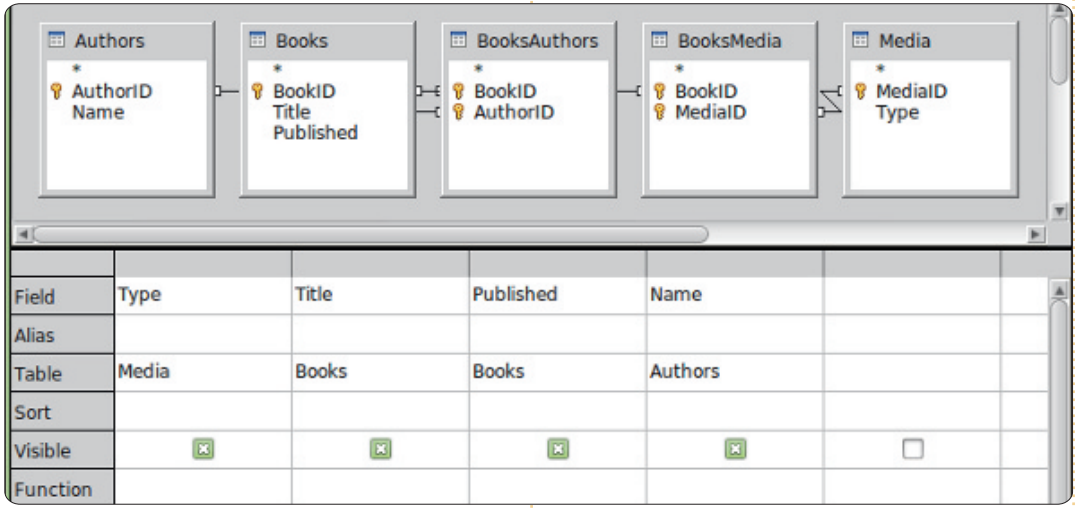
# LibreOffice Pt22: Base Queries & Reports

Written by Elmer Perry

If you have been following along in this series on LibreOffice Base, you now have a database file with tables and relationships. You can enter information into your database through forms, but what about getting information out of the database? Queries and Reports are used for extracting data from your database - the Queries define what data is extracted, and the Reports define the appearance of the extracted data. We will create a query and a report to show how you can generate a report of your data.

## Creating a Query

Queries poll the database for certain information in your database. You have three ways to create a query: a wizard, design view, and SQL. The wizard doesn't work with the type of relational database we have created and SQL is beyond the scope of this How-to, so we will use the design view to create our query. We will create a query that contains all the important fields in our tables: title, published year, author(s), and type(s).

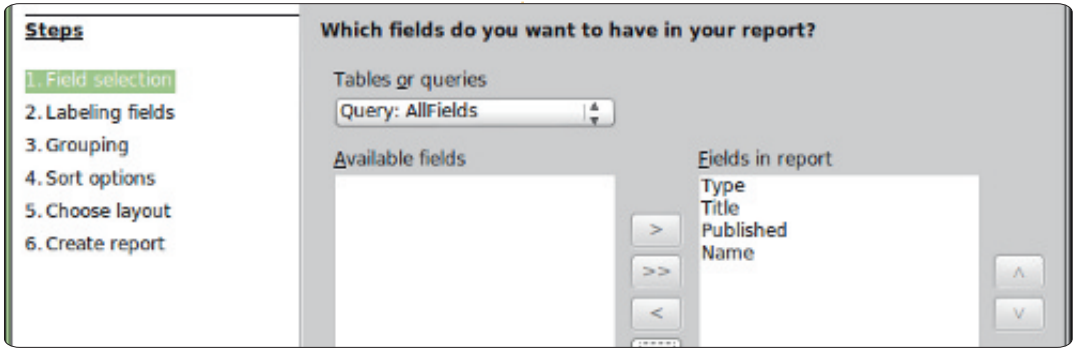



Click on Queries in the Database pane, then click on Create Query in Design View in the Tasks pane. A Query design form will display with a Add Tables or Query pop-up dialog. Add all the tables to the Query Design form, and close the pop-up. You will end up with a form that looks a lot like the relationships design we created previously. Below the tables, you see a form that will contain the fields which we want to include in our query. From the Books table drag Title and Published into the form. Drag Name from Authors, and drag Type from Media. That is all we need for this query. Save it as AllFields. Close the Query Design form.

You now have a query to use in creating multiple reports for your database. If you're curious about the SQL used to create your query, you can right-click on the newly created query and select Edit in SQL View. This brings up the SQL View with the complete SQL statement for the query you just created. I wouldn't recommend changing this unless you are well versed in SQL, but creating multiple queries in Design View, and then viewing them in SQL View, could help you begin to learn SQL.

## Creating A Report

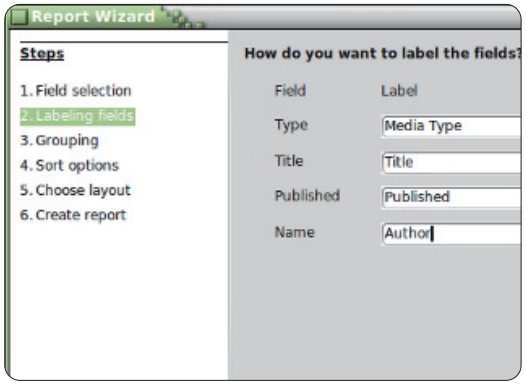
A report runs a query and formats the query results into something you can use. You can create many different reports with the query we created – depending on how you group the data from the query. We will create a report for sorting our books by media type, and I will suggest how you



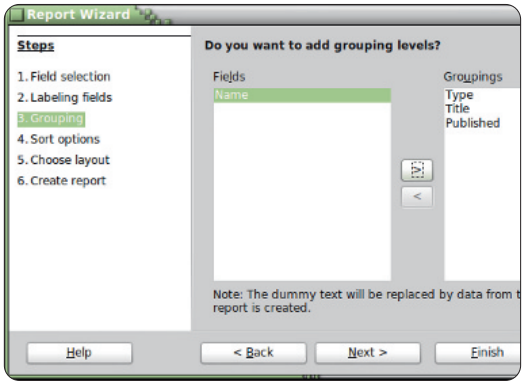
might create other reports using the same query.

There is only one way to create a report – use the wizard. Select Reports in the Database pane and click on Use Wizard to Create Report. A report template window will appear with the report wizard. You can actually watch your template fill in as you go through the steps of the wizard, giving you some ideas about how your final report will look.

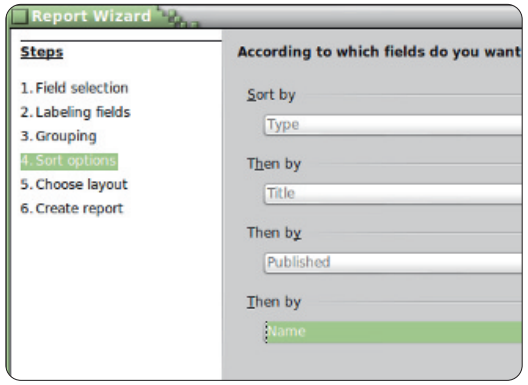
In step 1, you will pick your query and the fields to use in the report. If not selected already, select the AllFields query we just created. Move all the fields into the Fields in report box by clicking on the >> button. If you wanted to create a report that uses just some of the fields, you would just select the required fields. For our report, we will use all the fields. Click Next.



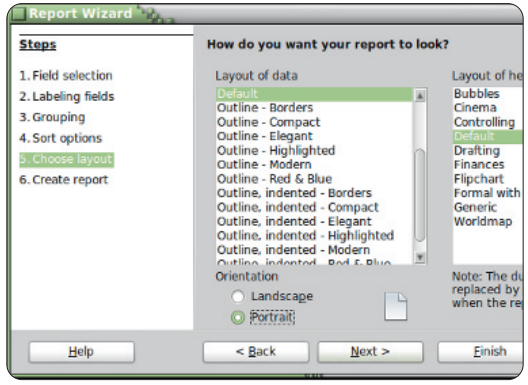

Step 2 is labeling our fields. Here we specify how the fields are labeled in our report. Change the label for Type to Media Type, and Name to Author(s). Click Next.



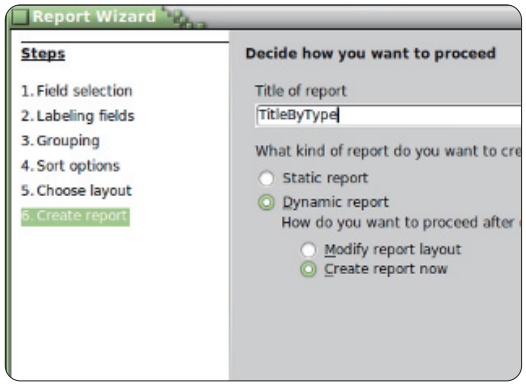

We create our groupings in step 3. Groupings control how the fields are consolidated and arranged in the report. Grouping is important, because we can use it to create a whole different report depending on how we group the fields. For example, if you wanted to create a report of titles by author, you would make Name your first grouping, then Title as a sub-group. For our report, we are creating a report of Titles by Media Type, so our grouping order is Type, Title, Published. We add published because, if there is more than one author, the published date will repeat in the report template, a byproduct we don't want. We exclude the Name field because if there is more than one author, we want them listed together. Click Next.




Sorting is done in step 4, but we don't have much use for it here. You will notice that you can change only whether the sorting is ascending or descending for our groupings. In the fourth box, select Name and leave on Ascending. Click Next.




In step 5, we can choose a layout for the data and the header. There are several for each, and they change the look of the report. I left mine at the defaults, but feel free to play around with these options. Under the Layout of data list box, you can select whether the report is landscape or portrait. For this report, I think portrait will work best. Click Next.




The final step is where we create the report. You can give it a title, indicate how the report is used, and what to do with the report. For this report, give it a title of TitleByType. Now, we need to answer the two questions. What type of report do you want to create? A static report is a one time report. It cannot change. Once it is created, the data is fixed. If, however, you want a report you can re-use, you want a dynamic report. A dynamic report is just a template you can use over again.

For this report, we want a dynamic report we can use again, so select Dynamic. How do you want to proceed after creating report? Modify report layout will allow you to edit the report as a writer document. Create report now is obvious; it will fill in the data and generate the report. We can always edit the layout later, so we will select Create report now. Click Finish.

Base generates our report and displays it in a Writer window. This generated report is read-only. If you want to edit the text or layout of the report, close it. In the Reports pane, right-click your report and edit. This opens the report template in Writer, where you can add text, graphics, etc, just like you would in any Writer document. Just take care when changing anything in the cells where the data is plugged in.

In this How-to, we created a query and a report. Play around with the grouping and sorting settings in the report wizard and see just how many different reports you can create from the one query we created.

Next time, we will use macros to create enhancements to our database and make it act more like an application.

**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

# 16x16 SUDOKU

Numbers 0 to 9 and letters A to F are to be filled into the 16x16 grid so that every row, every column, and every 4x4 box contains 0 to 9 and A - F.

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 7 | 8 | | 6 | | F | | 2 | D | B | 9 | | A | 3 | |
| 6 | F | | | | E | | | | | 3 | A | | | C | 2 |
| 2 | | | 1 | D | | | A | | | 8 | | | | | 5 |
| | | | 9 | 3 | 1 | | | 6 | | | 4 | E | D | | |
| C | 1 | | 3 | | | | | 8 | | | | D | E | | 4 |
| B | A | 4 | | | | E | 3 | 9 | 5 | | | F | | 0 | |
| 9 | | | | | 2 | 4 | | C | 6 | A | | | | | 8 |
| D | | | 6 | A | 8 | 7 | | | | 4 | | | 1 | | |
| | | 9 | | | 5 | | | | 0 | 6 | 3 | B | | | E |
| 5 | | | | | 7 | D | 9 | | B | E | | | | | 1 |
| | D | | B | | | 3 | C | 5 | 9 | | | | 8 | 6 | F |
| 0 | | 3 | 2 | | | | 4 | | | | | A | | 9 | 7 |
| | | A | 7 | B | | | E | | | 9 | 0 | 2 | | | |
| 8 | | | | | F | | | 3 | | | B | 5 | | | D |
| 1 | B | | | 9 | 0 | | | | | F | | | | 8 | 3 |
| | 0 | E | | 2 | 4 | C | 6 | | 8 | | 5 | | F | B | |

**Solutions are on the second last page.**

Puzzles are copyright, and kindly provided by,
**The Puzzle Club** - www.thepuzzleclub.com

# LibreOffice Pt23: Base Forms & Macros

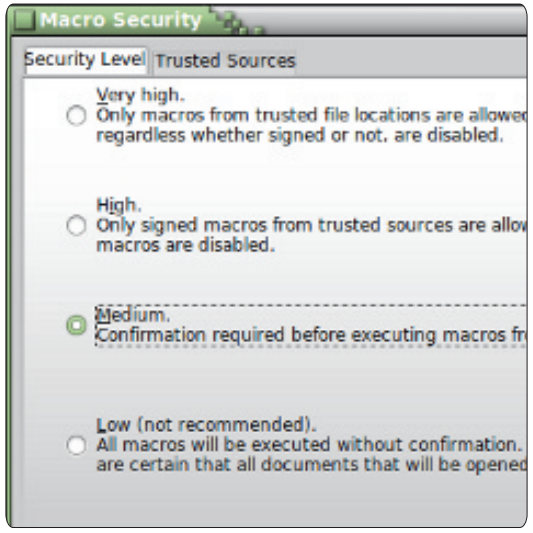
Written by Elmer Perry

For the previous four parts of this series, we have slowly built a database document using LibreOffice's Base module. We have a database with forms to enter our data, and queries and reports for extracting the data. We now have a usable document for recording our book library. However, our current design has one flaw we need to overcome. If we need to enter a new author or media type while we are in the books form, we have to close the book form and open one of the others. If we could enter new authors and media types directly from the books form, it would behave more like an application and make data entry even easier. We can accomplish this through a few short macros.

The LibreOffice Basic language is very similar to other Basic languages, such as Visual Basic for Applications. To manipulate the underlying LibreOffice document, we access the Uno framework controlling the document. The Uno framework is quite complex, but I will explain, as best I can, the properties and objects we will use. The goal is not to teach you how to write LibreOffice macros, but how you can use them.

## Macro Security and Options

While macros allow us to do cool things in our documents, they can also cause problems. Some people use macros to compromise other people's systems, therefore, we need to take a few minutes to talk about macro security. Whether you are running LibreOffice on Linux, Mac, or Windows, malicious code in a macro can compromise your data and possibly your entire system.




Macro security in LibreOffice is simple. Tools > Options opens the Options dialog for LibreOffice. Under LibreOffice, select Security. Click on the Macro Security button to pop up the macro security options. You have four options. Never use the Low security option – it will run macros without asking you. I recommend the Medium security level. With this level, you are prompted whether to run the macros when you open a document containing macros. The High and Very High options require a certificate or folder you designate as trusted. While this is great, I believe nothing trumps the instincts of the user. You usually know whether you were expecting a document to contain macros. When in doubt, click No. Click OK to save your choice and OK to close the options dialog.

Now, on to the fun stuff.

## The Macros

We will write four macros for our database document. Three will deal with opening forms, and the last will update the list boxes for authors and media types. The general idea behind macros is to accomplish tasks that are not built into the program, or to simplify complex tasks. Our macros really accomplish both, as we will simplify the tasks of adding authors and media types and provide functionality not built into the program.

Before we can begin to write our macros, we need a container to hold them. Macros are contained in a module. Modules can live in the program itself or within a document. Since our macros are specific to our database file, we will embed them in the document. Macros embedded in a document are available only when the document is loaded. Macros contained in the program are available as long as the program is running.

Tools > Macros > Organize Macros > LibreOffice Basic. The LibreOffice Basic Macros dialog pops up. Select book.odb from the Macro from-list. Click the New button. A dialog pops up asking you for a name for the module. Name it FormCalls. Click OK. This brings up the LibreOffice macro editor. The macro comes with a default main subroutine. We will not use this subroutine. Highlight Sub main and End Sub and press the backspace key to delete them.

Our first macro is a generalized subroutine for opening a form. A generalized subroutine is written for reuse. We will call this routine twice from other routines we write. Type the subroutine shown above into the editor.

The first line of the subroutine is called the signature. The signature determines how the subroutine is called. A signature starts with the keyword Sub, which defines this call as a subroutine. Next, the name of the subroutine. In our case, OpenAForm is the name of the subroutine. Finally in the parenthesis, we have the arguments used when calling this subroutine. In our case, we have a variable named FormName which is a type String. In the second line of the subroutine, Dim is another keyword. Dim initializes a variable as a type, and, optionally, a value. We define a variable named GetForm as a type Object. The third line assigns a value to the variable GetForm through a chain of commands in the Uno framework.

```
Sub OpenAForm (FormName as String)
     Dim GetForm as Object
     GetForm = ThisDatabaseDocument.FormDocuments.GetByName(FormName)
     GetForm.Open
End Sub
```

ThisDatabaseDocument refers to the currently open database document. In our case, book.odb. FormDocuments is a collection of all the forms in the document. Finally, GetByName retrieves a specific form object from the collection. Notice, we pass the variable FormName from the signature to this method. Once the call is complete, the variable GetForm is the object of the form name passed to the subroutine. The fourth line calls the Open method of the form. On the fifth line, we tell Basic this is the end of the subroutine with the command End Sub.

We will call the OpenAform subroutine twice. Once to open the authors form, and once to open the media form. Add the two subroutines shown below to your editor.

The signature on these two subroutines are a little different. Since we will call them from a control within a form, we need to pass the object making the call as an argument, even though we do not use it. The argument oEv is a reference to the object making the call. We will use this to our advantage later, in the last subroutine, but here we do it because it is required. These two subroutines are pretty simple. We just make a call to OpenAForm passing the name of the form we want to open, Authors or Media.

```
Sub OpenAuthorsForm(oEv As Object)
     OpenAForm("Authors")
End Sub


Sub OpenMediaForm(oEv As Object)
     OpenAForm("Media")
```

The final subroutine deals with our problem of refreshing the data in the list boxes for authors and media when we add authors or media using the two subroutines above.

```
Sub ListRefresh(oEv as
Object)

oEv.source.model.Refresh

End Sub
```

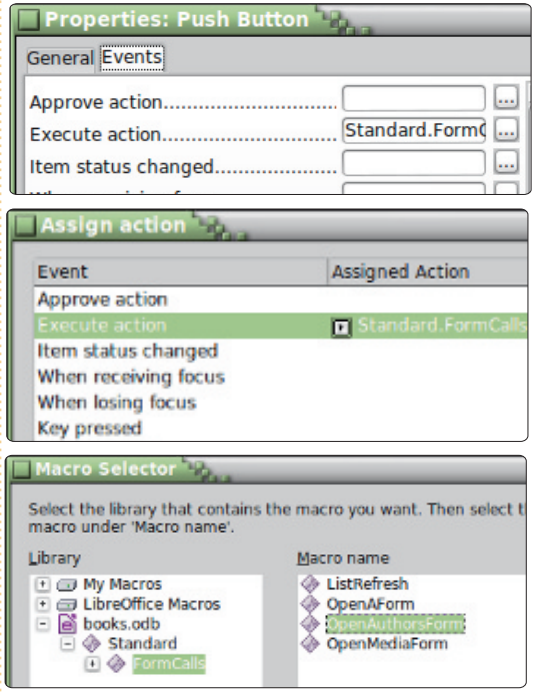
Once again, since we will call this subroutine (shown right) from a control, we need a reference to the control making the call. However, this time we will actually use the object. This subroutine

makes a method call to the underlying model of the list box and refreshes the data in the list, thus updating our list of authors or media types. Save your module and close the Basic editor.

## Making Connections to Macros

At this point, our macros do nothing. We need to connect them to objects in our form to activate them when needed. First, we will connect the open form subroutines to buttons in our form, and then we will connect the ListRefresh to the list boxes.

In the database pane, click on Forms. Right-click the Books form and select edit. Add two push buttons to the form, one under the Authors table and another under the Media table. Right-click the button under the Authors table and select Control to bring up the buttons properties dialog. On the General tab, change the name to AddAuthors and the Label to Add Authors. On the Events tab, click the ellipses (…) button next to Execute Action – which brings up the Assign Action dialog. Click the Macro button to bring up the Macro Selector dialog. In the tree list under Library, select book.odb > Standard > FormCalls. Select OpenAuthorsForm from the Macro Name list and click OK. Click OK to close the Assign Action dialog. Close the buttons properties




dialog.

Do the same with the button under the Media table, only name it AddMedia, make the label Add Media Type, and assign the macro OpenMediaForm to the Execute Action event.

Finally, we need to add the refresh subroutine to our list boxes. Right-click the Authors column in the authors table and select Column. On the Events tab, click the ellipse (…) button beside "When receiving focus". In the Assign Action button, use the Macro button to assign the ListRefresh macro to the action. This will cause the list to update data from the Authors table when you click on a list box in the column. Do the same for the Media column in the media table. Save your changes to the Books form and close it.

## Testing Your Changes

Any time we make changes to our forms, we will want to test them and make sure we got everything right, especially in cases where we have used macros. One simple typo could cause things to not work. Double-click the Books form to open it. Add a new book with an author and media type you have not added already. Click the Add Authors button to make sure it opens the form. Add some authors. Close the Authors form. Click on the authors dropdown list box and verify that the authors you added are there. Do the same test with the Add Media Type button and listbox.

## Final Thoughts and References

Again, I would like to emphasize that writing macros in LibreOffice Basic is complex. Documentation is pretty sparse, but it is out there. If you are interested in taking up the challenge, here are some references to get you started:

**LibreOffice Basic Guide**:
http://wiki.documentfoundation.org/images/d/dd/BasicGuide_OOo3.2.0.odt

**Andrew Pitonyak's OpenOffice Macro Information**:
http://www.pitonyak.org/oo.php

You can find the macros used in this How-To on pastebin.com at http://pastebin.com/MU2Ztizi

Next time, we will move on to another part of the LibreOffice suite and explore the Math module.

**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

# LibreOffice Pt24: Intro To Math

Have you ever been working in a word processor and needed to insert a formula into the text? Perhaps you were writing a math or scientific paper for college, or even answering a question about statistics. If you need to enter anything beyond elementary math, you will quickly run into formatting issues. LibreOffice overcomes this problem by providing us with the Math or Formula module. You can use the module independently to create formulas, or use it directly in the other modules of LibreOffice. Today, we will learn how to enter formulas in the Math editor, and, in later articles, we will learn how to use formulas in Writer.

Open a new Math window by clicking on the Formula button on the LibreOffice Start Center, or through the menus with File > New > Formula.

## The Formula Window

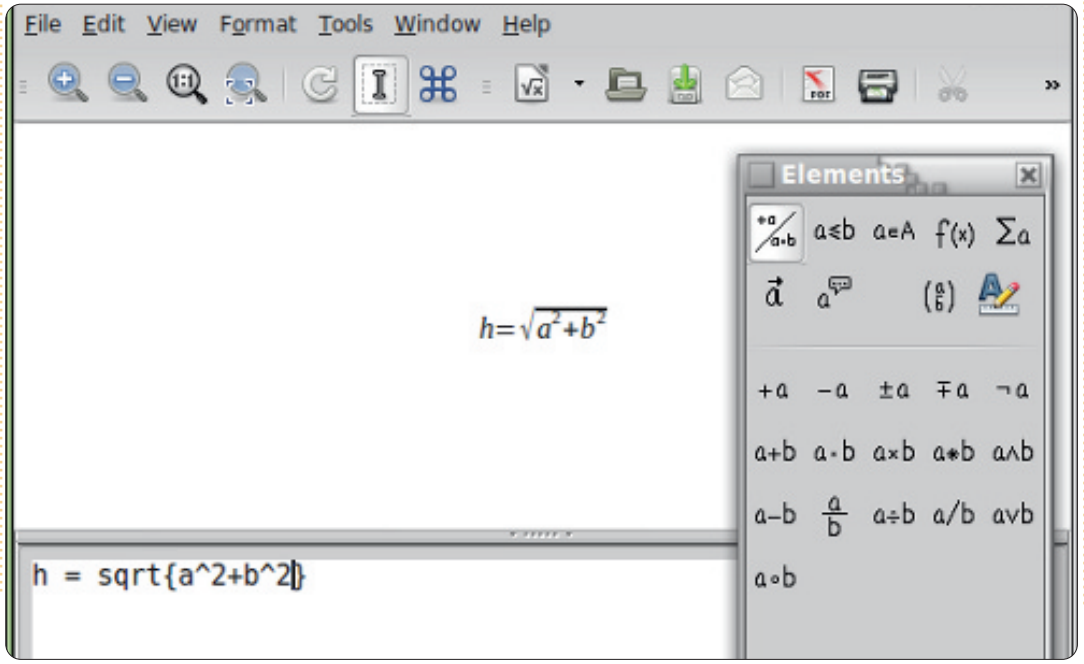
The formula window has three pieces: the preview pane, the formula editor, and the elements window. The preview pane at the top shows you your formula as it is created. The formula editor at the bottom is where you enter your formula. The floating Elements window provides you with shortcuts to different formula elements. Think of the elements as building blocks for creating your formula.

## Three Ways to Enter Formulas

There are three ways to enter formulas into the formula editor: through the Elements window, through a context menu, or by direct entry.

## The Elements Window

The Elements window is divided into two sections. The top section is the category section, and the lower section contains the elements in that category. If you select a category then click on one of the elements in that category, the program will enter the element into the editor with <?> as placeholders for the variables of the element. The first placeholder is highlighted. Use the F4 key to move to the next element. Shift-F4 will move backwards through the placeholders.




To get you familiar with the Elements window, I will walk you through the steps to write a formula using the Elements window. Starting with a new formula window, select the Relations category, then the equals element. <?> = <?> appears in the formula editor. The first <?> is highlighted. Enter the letter “h”. Press F4 to move to the other <?>. Select the Functions category, then the square root element. The <?> is replaced with sqrt{<?>} and the placeholder in the brackets is highlighted. Select the Unary/Binary category, then the addition element. The program inserts <?> + <?> into the square root's brackets. Select the Formats category, then the Superscript Right element. <?>^{<?>} replaces the highlighted placeholder. Enter

the letter “a” and press F4 to move to the next placeholder. Enter the the number “2”. Press F4 to move to the next placeholder. Select the Superscript Right from the Formats category. Enter the letter “b” and press F4 to move to the last placeholder. Enter the number “2”. The final result will look like

$$h=\sqrt{a^2+b^2}$$

this:
and the text in the formula editor is:

```
h = sqrt{a^{2} + b^{2} }
```

## The Context Menu

The context menu (shown below right) is much like the Elements window. Right-click in the formula editor, and you get a menu of all the categories. Each category has a submenu of the elements. Click on the element to insert it into the formula editor. Follow the example above again, but this time use the right-click context menu to create the formula. You should get the same results.

## Direct Entry

As you work with Math and learn the elements, you can enter the formulas directly in the formula editor. By far, this is the quickest way to enter a formula. Now that you have created the formula twice, using the Elements window and context menu, see if you can enter it directly into the editor without using the element tools. If you need help, just reference the editor text shown above.

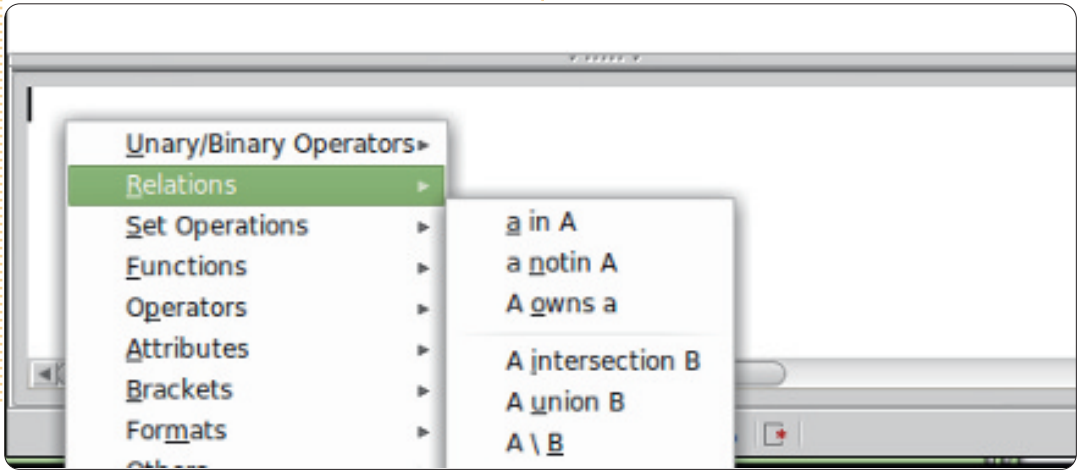
## Special Characters

You won't find everything you need in the Elements window and context menu. Many equations use Greek characters and other symbols. LibreOffice Math allows you to enter special characters into your equation. If you find you need a special character not listed in the special characters, you can even add your own.

## Adding Greek Characters

Through the menus Tools > Catalog, you can access the Greek letters through the character subsets Greek and iGreek. Greek is the letters in plain text and iGreek is the letters in italics. Just select the letter you want and click the Insert button. When finished, click the Close button.

For direct entry, type in % followed by the Greek letter name. For example, to get the Greek letter pi, enter %pi. To get the uppercase letter, make the name uppercase, %PI. To make the character italics, place a lowercase “i” before the letter's name, %ipi.




## Other Special Characters

Other special characters are found in Tools > Catalog under the Special subset. Select the symbol you need and click the Insert button. As you use and learn the names of the symbols, you can enter them directly using the % and then the name of the symbol.

**NOTE**: The lowercase “i” for italics works with only the Greek letters. We will discuss inserting italics for other elements in the next How-To.

## Adding Special Characters

If the catalog does not have the special character you need, you can add it to the catalog. One such character is the prime symbol. Let's add it to our special subset.

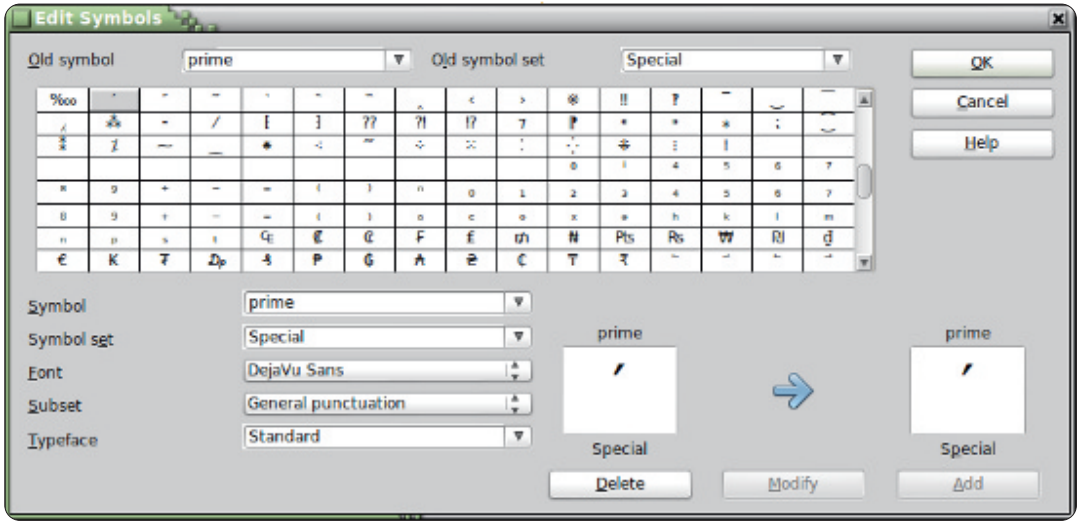
Tools > Catalog and select the Special symbol set. Click on the Edit button. This bring up the Edit Symbol dialog. For the font select DejaVu Sans, and for the subset select General Punctuation. The

symbol you want is Ux2023. For the symbol name type in prime. Click the Add and OK buttons. The prime symbol has now been added to the Special symbols list. You can use it by selecting it from the catalog, or enter it directly by typing %prime.

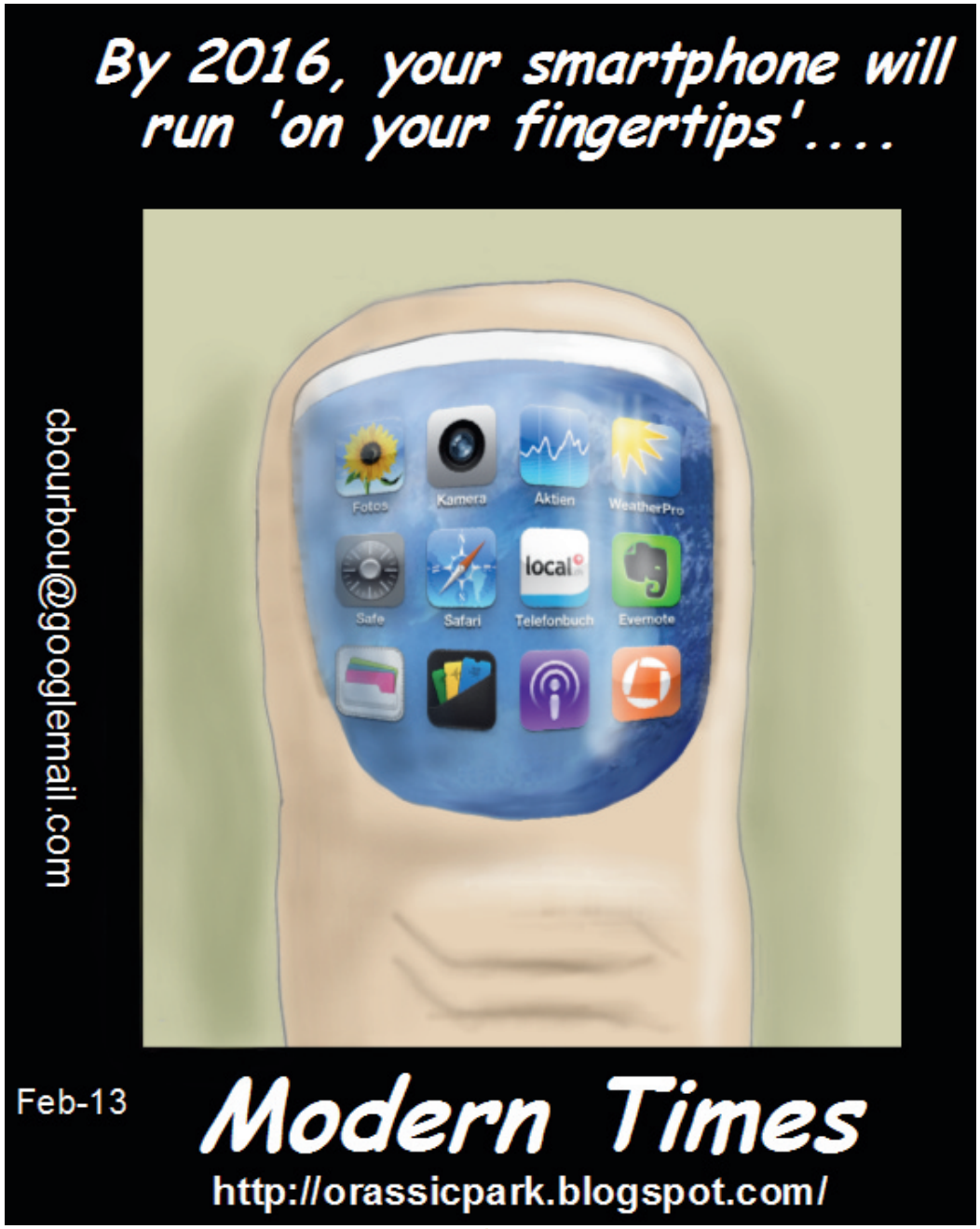
## Conclusions

Math allows you to create formulas you can insert into your documents. You have three methods for entering formulas into the formula editor: through the Elements window, through the context menu, and by direct entry. The Elements window and the context menu help you to learn how to enter the different elements of a formula, but once you know how to enter an element, direct entry is the quickest way to create a formula.

In the next LibreOffice How-To, we will look at ways to format our formulas so they look the way you want them.




**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.



# LibreOffice Pt25: Formula Layout

Written by Elmer Perry

As you create more complex formulas in Math, you will soon discover that things don't always display the way you were expecting. There are a few tricks to making formulas display the way we want them, especially complex formulas. Today, we will look at many of these tricks to make our formulas come out right.

## Group Elements with Brackets

The curly brackets, {}, have a special use in formulas. They help you to group elements together. Without them you can get a different formula than the one you were expecting. Here are a couple of examples to show you what I mean.

Enter the following into the formula editor:

```
2 over x + 1
```

You will get the following result: $\frac{2}{x}+1$

But what if you actually wanted the x + 1 in the denominator of the fraction? You can use curly brackets to group the two elements together.

Enter the same formula in the editor, but with curly brackets grouping the addition:

```
2 over {x + 1}
```

You then get the result you wanted: $\frac{2}{x+1}$

Any time the formula doesn't flow the way you were expecting, you can use curly brackets to group items together to make things come out right. You will see more use of brackets as we work through other examples in this How-To.

## Equations Spanning More Than One Line

Some equations make more sense if they are broken into multiple lines, or you need to show the progression of a formula through each step to its conclusion. Doing this all on one line would make the formula difficult to read. However, just pressing the Enter key in the editor does not result in a new line. In order to get a new line in the formula, you use the newline element.

Editor example:

```
x over 250 = 5 over 100
newline
 100x = 250(5) newline
 100x = 1250 newline
 100x over 100 = 1250 over
100 newline
 x = 12.5
```

Result:

$$\frac{x}{250}=\frac{5}{100}$$
$$100x=250(5)$$
$$100x=1250$$
$$\frac{100x}{100}=\frac{1250}{100}$$
$$x=12.5$$

## Sum / Integral Limits

The sum and int commands can take optional parameters to signify the range of the sum or integral. The keywords 'from' and 'to' generate the lower and upper range of these commands. The following markup demonstrates:

```
 sum from x=0 to x=n f(n) "
or "
 int from x to n f(n+1)
```

Result: $\sum_{x=0}^{x=n} f(n)$ or $\int_{x}^{n} f(n+1)$

## Scaled Brackets

Sometimes, you need a bracket to span more than one line. A good example of this is with a matrix. If you just use the bracket characters, you get an ugly looking matrix.

The markup:

```
(matrix {x#x+1##y#y+1})
```

The result: $\begin{pmatrix} x & x+1 \\ y & y+1 \end{pmatrix}$

To get brackets that scale to the size of our matrix we use the markup "left (" and "right )". This results in a much nicer looking matrix.

The markup:

```
left(matrix {x#x+1##y#y+1}
right)
```

The result: $\begin{pmatrix} x & x+1 \\ y & y+1 \end{pmatrix}$

To get scalable square brackets use “left [“ and “right ]”. To get scalable curly brackets use “left lbrace” and “right rbrace”. You can find a full list of all the brackets in the LibreOffice help documentation.

## Unpaired Brackets

Sometimes, you only need a bracket on one side, but not the other. If you don't put a closing bracket, you get an inverted question mark and the equation will look messy. To fix this problem, use the mark up “left none” or “right none”, depending on your needs, to indicate you have no opening or closing bracket.

A good example of this is the mathematical definition of the Lucas Numbers.

The markup:

```
L_n = left lbrace
matrix{2 # if n = 0; ##
 1 # if n = 1; ##
 L_{n-1} + L_{n-2} # if n >
1.}
 right none
```

The result:

$$L_n = \begin{cases} 2 & \text{if } n=0; \\ 1 & \text{if } n=1; \\ L_{n-1}+L_{n-2} & \text{if } n>1. \end{cases}$$

Notice that I ended the definition with “right none” to get our definition to show correctly.

## Aligning Elements Using Matrix

You will notice (in the Lucas numbers definition) I used a matrix to get everything to line up correctly. The matrix command is useful for this because Math doesn't have a command for aligning on a certain element. With the matrix command, we can use the columns and rows to get elements to align the way we want them. A good example of this is to get equations to align on the equals sign.

For example:

```
matrix {
 3x + 2x # `=` # 45 ##
 alignr 6x # `=` # 45
 }
```

The result:

$$\begin{matrix} 3x+2x & = & 45 \\ 6x & = & 45 \end{matrix}$$

You will notice the back tick or grave ( ` ) marks around the equals signs. This is necessary because the equals sign is a binary operator and requires an expression on both sides. The back tick ( ` ) is the small space mark in Math. You could accomplish the same thing with the Math symbol for a long space (~) or empty brackets ({}). Remember in a matrix that everything between the hashes is an independent expression.

You will also notice, in the second row, I use the command “alignr” to align the 6x to the right in its column. Use “alignl” to align to the left and “alignc” to align to the center. Center alignment is the default, except in a matrix, which defaults to left alignment.

## Text in a Formula

Sometimes, you will need to add notes or text to your formula. You can add text by enclosing the text in quotation marks (“”).

Example:

```
c^2 = a^2 + b^2 newline
"The Pythagorean Theorem."
```

Result:

$$c^2=a^2+b^2$$
The Pythagorean Theorem

## Chemical Formulas

Math was designed for mathematical equations, but you can make chemical formulas, too. Since variables are usually in italics, you will want to turn off the italics for variables (explained later).

Example:

```
matrix {
 "molecules" # H_2 SO_4 ##
 "Isotopes" # U lsub 92 lsup
238 ##
 "Ions" # SO_4^{2-{}}
 }
```

Result:

| | |
|---|---|
| molecules | $H_2SO_4$ |
| Isotopes | $^{238}_{92}U$ |
| Ions | $SO_4^{2-}$ |

Note the “lsub” and “lsup” in

the isotope formula. The "lsub" makes a left subscript, and the "lsup" makes a left superscript. You will also need to add some special double arrows to your catalog for chemical formulas.

## Color, Bold, and Italics

The color, bold, and ital commands allow you to emphasize certain parts of your formula. They affect only the elements which follow them. To affect more elements you need to group them together with brackets.

Example:

```
bold color blue c^2 = color
red {a^2 + b^2} newline
 ital color green "The
Pythagorean Theorem"
```

Result:

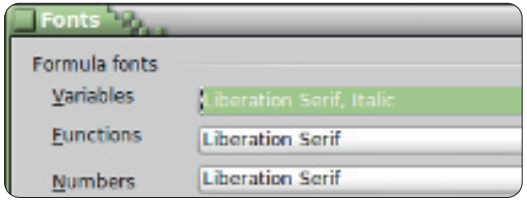
$$c^2=a^2+b^2$$

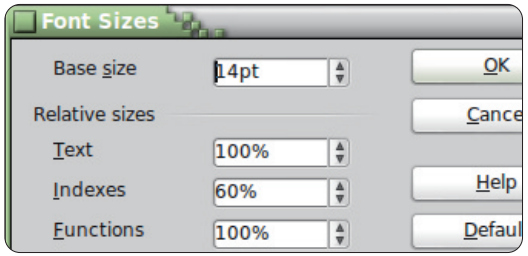
*The Pythagorean Theorem*

Notice that I put brackets around the elements in the square root to make them red. Also, for the c2, I combined color with the bold command. You can choose from eight colors: black, white, cyan, magenta, red, blue, green, and yellow.

## Changing the Font and Font Size

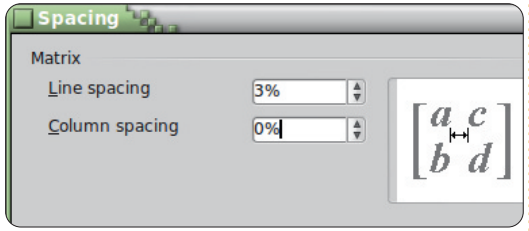
Sometimes, you will want to use a font or font size other than the defaults. Format > Fonts brings up the dialog to change the fonts for variables, functions, numbers, and text. You can also set some custom fonts here as well. Format > Font Size brings up the dialog for font sizes. You set the base font, and then the element sizes are set as percentages of the base.




## Changing Element Spacing and Alignment

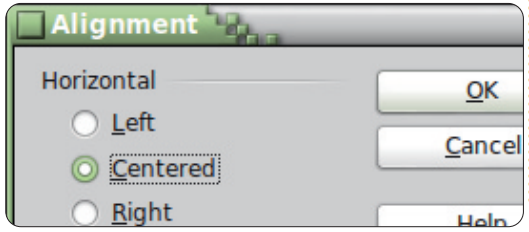
Sometimes, it is necessary to change the spacing and alignment of the overall formula. Format > Spacing bring up the spacing dialog. In the Category dropdown, you select the type of element spacing you want to control. You set the different spacing for the elements as percentages of the elements width or height, depending on the spacing type.




For example, if we wanted to change the spacing for the alignment on the equals signs we did earlier, we would select matrix from the category. If we set the column spacing to 0%, the expressions will butt up against the equals sign.

Result:

$$\begin{aligned} 3x+2x &= 45 \\ 6x &= 45 \end{aligned}$$




Format > Alignment brings up the alignment dialog. Here we can change the default alignment for the formula, left, right, or center.

## Conclusion

All the different options for formatting your formula can seem overwhelming, but you will get the hang of it with practice. The first and most important thing to remember is using curly brackets to group elements in a formula. Look in the Elements dialog or the context menu when in doubt about how to do something, and you might want to keep this article on hand as a reference.

Next month, we will discuss using formulas in LibreOffice Writer.

# LibreOffice Pt26: Formulas In Writer

Written by Elmer Perry

Being able to create formulas in the LibreOffice Math module is great, but what if you need to insert a formula into a text document? The integration between Writer and Math allows you to insert formulas into your text, to number equations, to reference numbered equations, and to insert equations created in the Math module.

## Inserting A Formula into Writer

Insert a formula through the menus with Insert > Object > Formula. A formula editor window will open at the bottom of the Writer window, and the floating Elements window will open. A frame border will appear in the document where the formula will be displayed. You can use the formula editor just as you would in the Math module. When you are finished creating your formula, press the ESC key, or click anywhere in the document outside the formula frame.

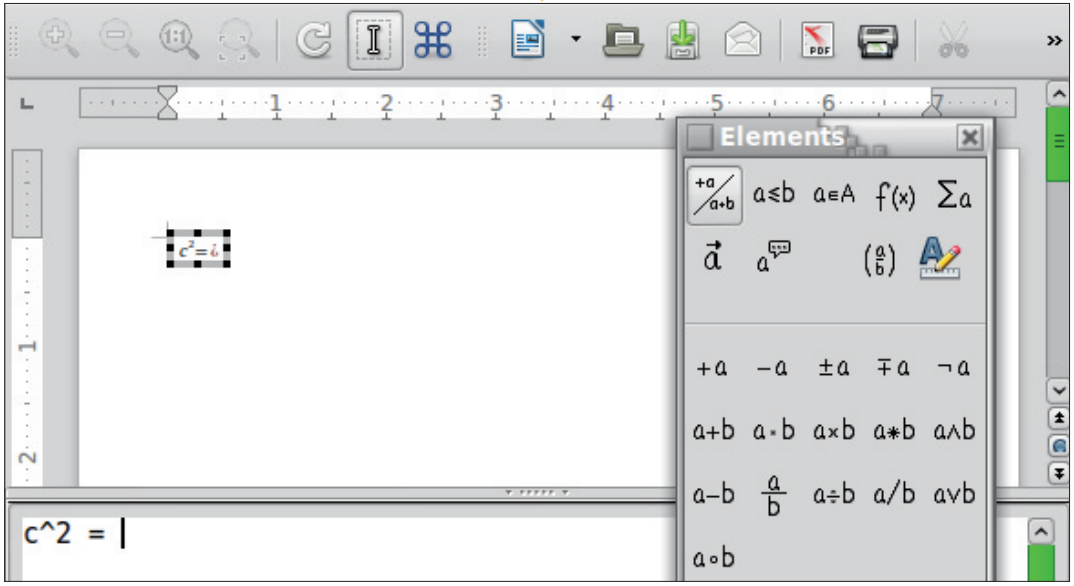
In Writer, formulas are OLE objects, and, by default, are inserted as characters, meaning they stay in line with the text. You can change the way text flows around the formula by changing the anchor point. Right-click on the formula, Anchor > To Page. With the formula anchored to the page, you can move it to wherever you want in the document.

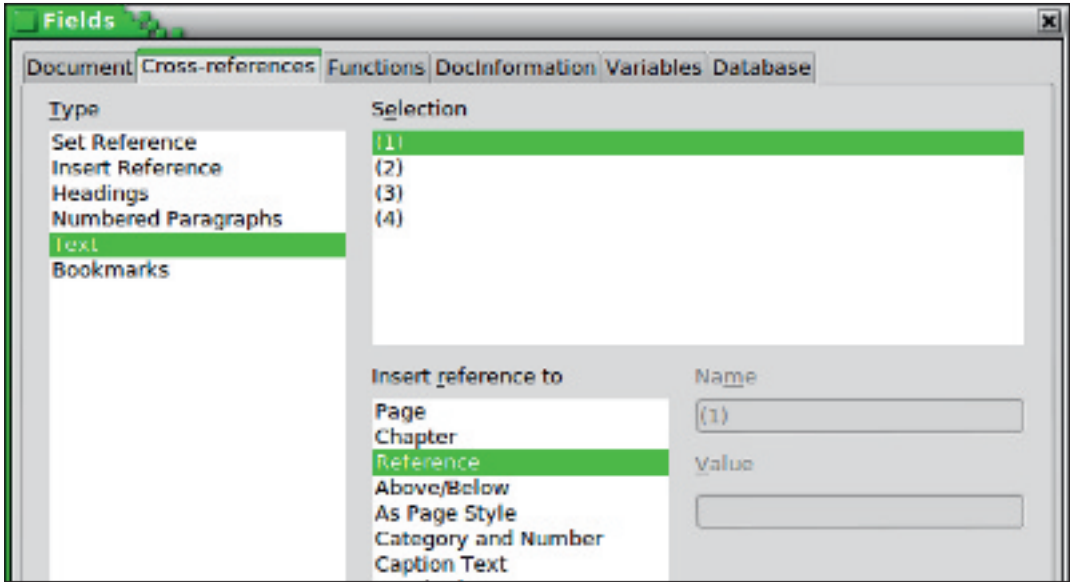
## Formula Editor As A Floating Window

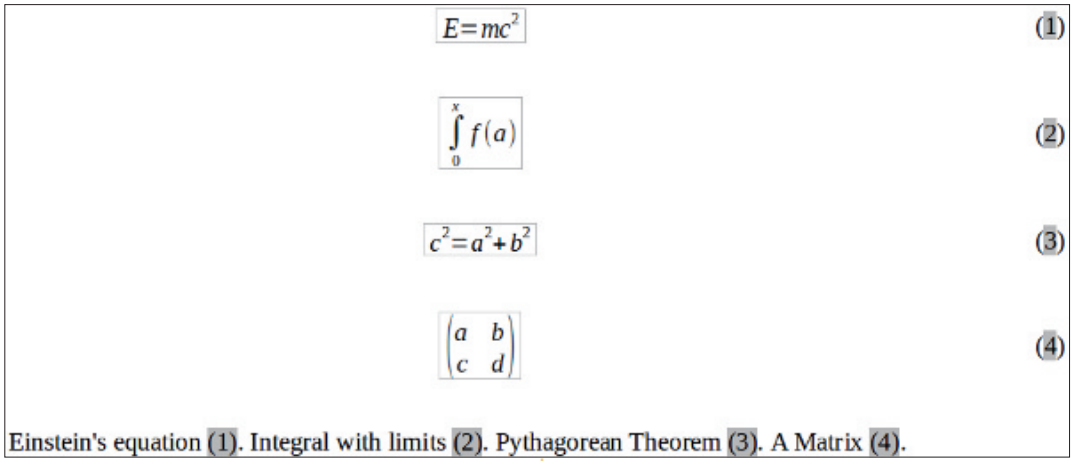
If the formula editor being at the bottom doesn't work for you, you can detach it as a floating window by CTRL double-clicking the border. You can also click and drag the border to detach the formula editor. Once it is detached, you can move it to wherever best suits you. CTRL double-click to reattach the formula editor back to the bottom of the screen.

## Numbering and Referencing Equations

Many times you will need to number equations in order to reference them in your text. Writer makes this easy for you by managing the references for you. Numbering equations is one of Writer's best hidden features.






On a new line in Writer, type "fn" and press F3. The "fn" is replaced by a numbered equation. Double-click the equation to edit it and insert your own equation.

To create a reference to the numbered equation, choose Insert > Cross-reference from the menu bar. Under type, select Text. In the Selection list, select the equation you want to reference. Under the Insert reference to list, select either Reference or Numbering. Reference will include the parenthesis but numbering will use just a number.

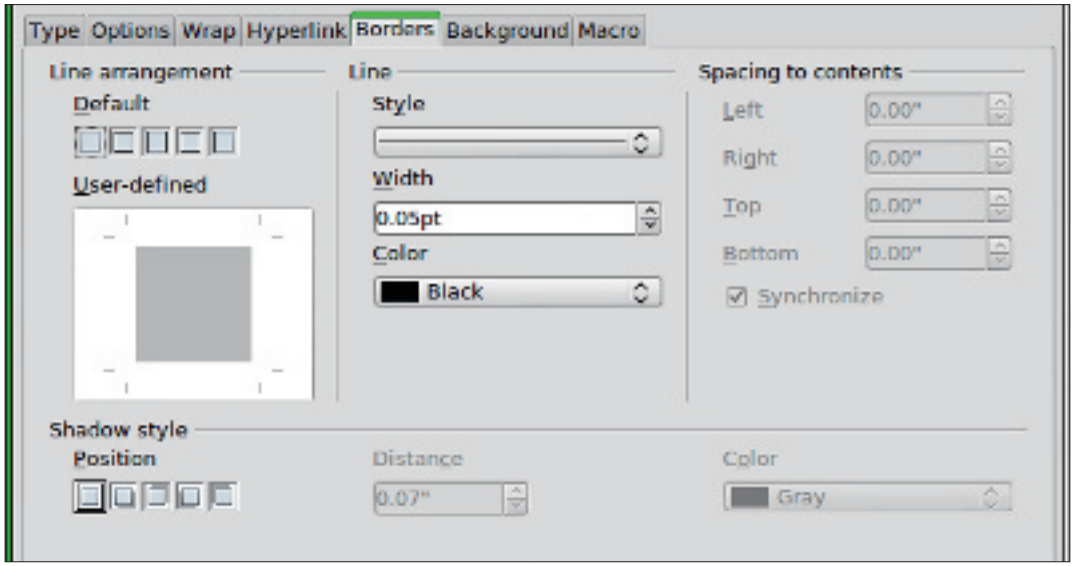
## Text Mode

Samples in text mode $\sum_{i=2}^{5} i^2$ and $\frac{x+2-y}{z^2+y}$

In most cases, you will number and reference your large formulas. Sometimes, you will need to use a larger formula in running text. When you do, use Format > Text Mode while editing the formula. Text Mode will attempt to make the formula fit the height of the text. Numerators and denominators are shrunk, and limits for sums and integrals are pushed to the right rather than top and bottom.

## Editing the Formula OLE Object

As I mentioned earlier, formulas are displayed in OLE object frames in Writer. This means you can add

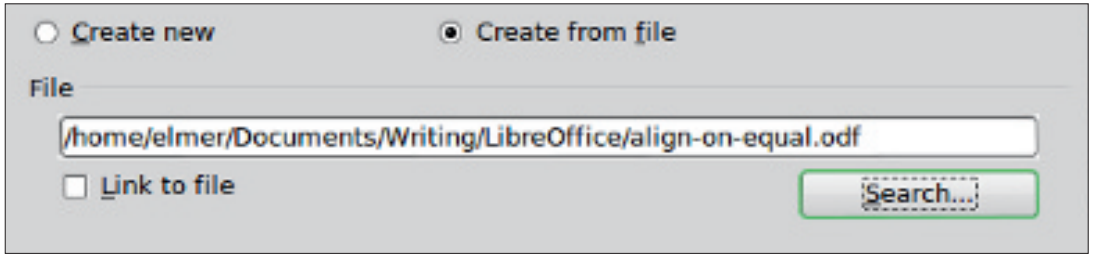



backgrounds, borders, word wrap, and margins to your formula. To change a formula object frame, select the formula by clicking it once, and Format > Object/Frame from the menus. The object dialog will open. You can also open the object dialog by right-clicking the formula, then click Object.

If you need to set defaults that apply to all formula objects, you can edit the formula frame style in the styles window. You will find the formula style under the frames category of the Styles and formatting window.

## Create a Formula Library

If you use formulas often in your documents, you might want to create a formula library. When you save formulas created in the Math module, they save as ODF files. You can save formulas from your documents by right-clicking them and selecting "Save Copy



as".

To insert a formula from your library, select Insert > Object > OLE Object from the menu bar. Select "Insert from file" and browse or type in the path for the file ODF file to insert.

## Conclusions

Using formulas in Writer is actually very easy, making the creation of documents with advanced mathematics a fairly simple task. You can number formulas and reference them in your text. Using text mode, you can create formulas in your paragraph text which aligns as well as possible with the flow of the text. Change the appearance of your formula by editing the frame of the inserted OLE object. Import formulas you create in the Math module into your document by inserting an OLE object.

**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

## QUICK REVIEW: Ubuntu 4.10

by Anas Alsaidy

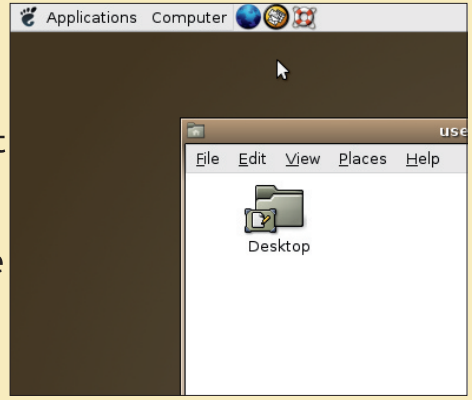
I was reading that the magazine needs us to help, so I decided to write about my experience with this old distro. Usually the reviews are about new and modern stuff, but I wanted to make this a little more quirky than the others.

After downloading the ISO file I burned it to a CD, rebooted my computer, and started the CD. I did have a problem with the CD not booting. It would hang on loading. So, I had to try it VirtualBox. In VirtualBox I had no problems with booting it at all and it worked exactly as expected.

The first thing I noticed was the good old GNOME desktop environment that I really liked. The second thing was the old versions of modern apps such as GIMP, OpenOffice, Gedit, etc.

**CONS**:
- I really didn't like the horrible wallpaper even for an OS released in 2004.
- I also didn't like the ugly brown theme. Luckily though, there were lots of theme that I could change between.
- I had a problem that it wouldn't allow me to save anything, but I think that was my computer at fault.

**PROS**:
- It's fast. Really fast.
- I didn't have any problems with multi-tasking
- I really liked the old GNOME panels the settings manager. Although, not the theme!




I said before that it was fast, because it really is I ran lots of applications and nothing went wrong, except for GIMP. It made the whole system lag and I had to restart the machine, but no problem as I'm using VirualBox. But everything else was very fast.

Ubuntu 4.10 was definitely a great OS but apparently it can't replace the newer versions of Ubuntu. But honestly I did like this OS and it really looked like the the newer versions would be good, and that really is what happened.

# LibreOffice Pt27: Intro To Draw

Written by Elmer Perry

The LibreOffice Draw module is a vector graphics application included in the LibreOffice suite. Draw lets you create graphics you can use in your documents. While there are more advanced vector graphics programs – such as Inkscape – Draw provides you with more tools than most drawing packages included in other office suites.

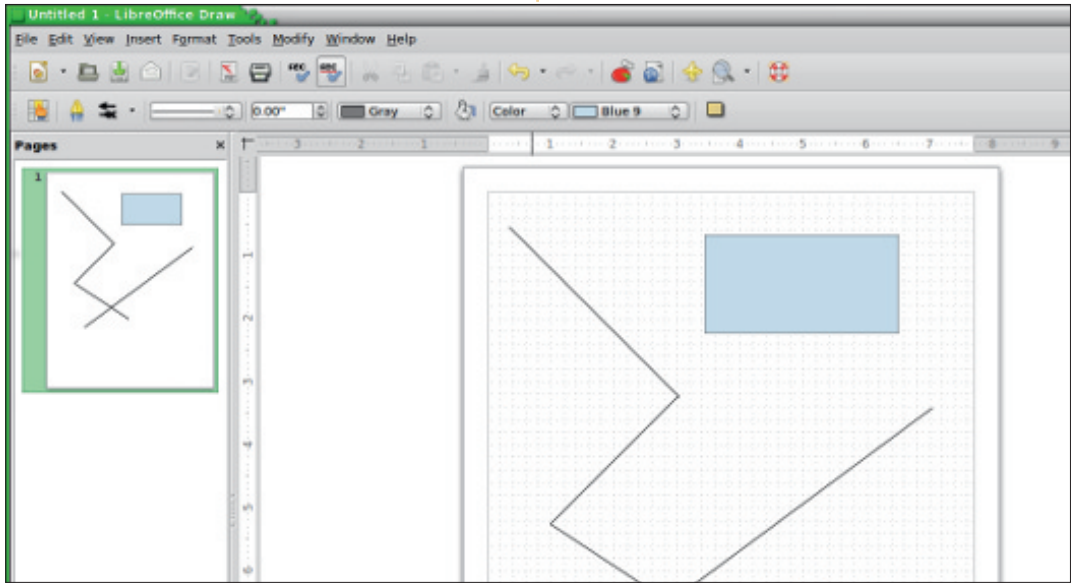
Vector graphics create images by defining geometric shapes such as circles, rectangles and polygons, rather than by pixel points on the screen. Because of this, vector graphics scale without distortion.

As with the other modules in LibreOffice, Draw integrates well with the others, making it the tool of choice when creating graphics for your documents.

## The Default Layout

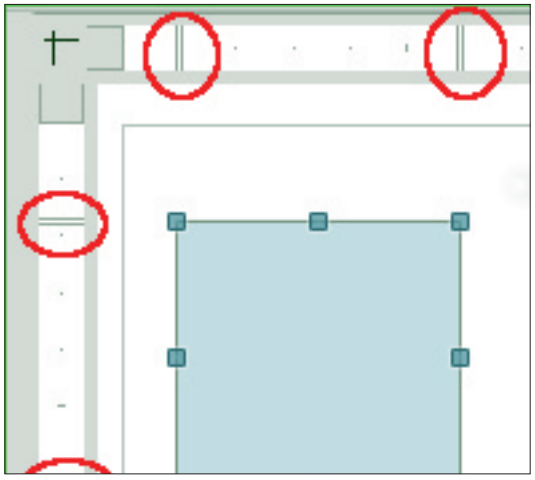
The default layout for Draw is rather sparse. You will probably want to modify it to include the toolbars you use most often. The layout includes the basic elements you need to create a graphic image. The center of the screen is the area where you will create your graphic. To the right, you have the page pane, showing the different pages of the graphic. Multi-page graphics are used mostly for presentations, and I will cover them at a later time.

By default, you have three toolbars. The standard toolbar is the topmost toolbar. This is the toolbar you see in most of the LibreOffice modules. It controls the new, open, save, copy, cut, paste, and other functions that pertain to most modules. The line and fill toolbar sits below it. This toolbar controls how the lines and fill of an object will look. At the bottom of the window sits the drawing toolbar. From this toolbar, you can create most of the objects for your graphic. You can move the toolbars by grabbing the handle at the beginning of the toolbar and dragging it to the location where you want it.




The status bar at the bottom of the window gives you a lot of useful information about the object you are editing. An object's type, dimensions, angle, and other useful information will show up here. I will refer to the status bar often during the How-tos on Draw.

At the top and along the left edge sit the rulers. The rulers are guides to where you are in the image. If you want to change the unit of measure in the rulers, you can right-click the ruler and select a different unit of measure. When you have an object selected, the ruler shows double lines to indicate the object's position on the drawing.



## The Color Bar

The color bar displays the

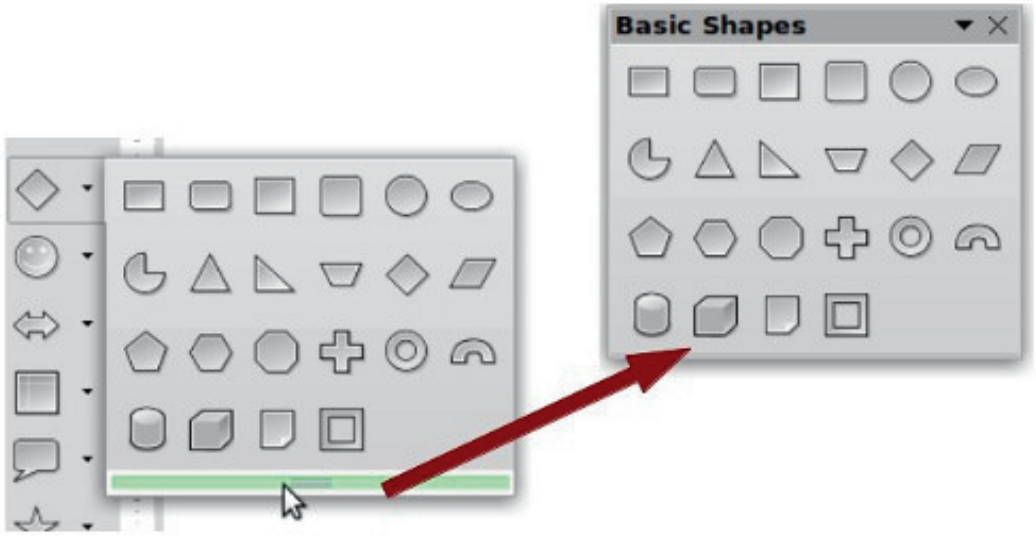


Return to Contents

current color palette under the drawing area. You can use it to select colors for your objects rather than having to use the dropdown list in the line and fill toolbar. The first box – the white box with an X in it – is the no color (or invisible) selection. To display the color bar, go to View > Toolbars > Color Bar. To use the color bar, left-click the color you want for the fill color of the object, and right-click to select the line color.

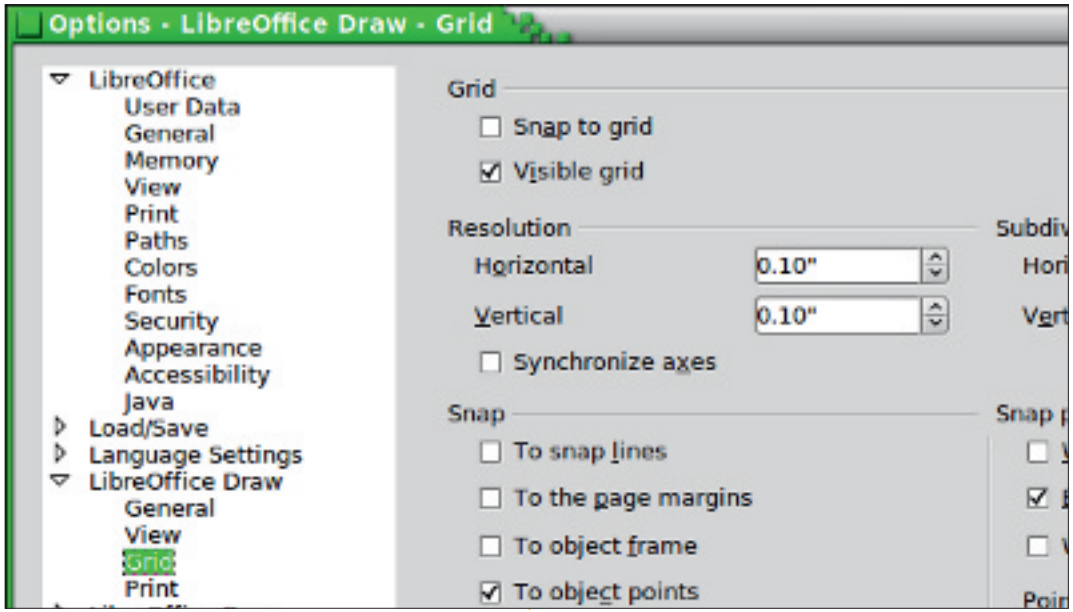
## Tear-Off Toolbars

Many of the icons on the toolbars have a triangle or arrow to the right. This indicates the item is expandable. Clicking on the arrow gives you more choices. You can detach these items from the toolbar, creating a floating toolbar. When you expand the item, you will see a grab bar at the bottom. Click and drag the grab bar to create a floating toolbar of the items. This is helpful when you need to use the items repeatedly, and is quicker than having to expand the items each time. When you are finished, just close the floating toolbar by clicking on the close button in the title bar.

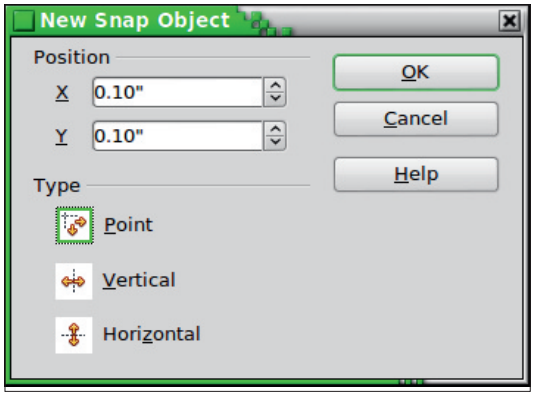



## Grid, Snap Lines, and Snap Points

When creating an image, I find it useful to have guides to work from. The grid, snap lines, and snap points are useful for such guides. You can set the program to snap to these guides, which help you precisely place your objects in the drawing.




To set up the grid, go to Tools > Options > LibreOffice Draw > Grid. If you want objects to snap to the grid by default, check the Snap-to-grid checkbox under grid. You also have the option to make the grid visible by default. Resolution sets the vertical and horizontal settings for the grid. Subdivision sets the number of markers between the horizontal and vertical grid points. The more subdivisions the more precise the changes when snap-to-grid is on. But like most things, a happy medium is usually better than too much. You can set certain snap options on by default under the snap section, but I recommend leaving these all off by default, and using the options toolbar when you need to turn them on. Use the snap range to control how close to a snap point you are before your object snaps to the



point.

Unlike the grid, snap points and snap lines are inserted when you need a more exact location. Snap lines are great for aligning objects vertically or horizontally. To create a snap line or point, Insert > Insert Snap Point/Line from the menu bar. The X position controls the distance from the left of the image. The Y position controls the distance from the top. The type controls whether you are inserting a snap point, vertical snap line, or horizontal snap line. You can also create snap lines by clicking and dragging from either the horizontal or vertical rulers. To delete a snap line, click and drag it back to the ruler. To delete a snap point, right-click the snap point and select Delete Snap Point.

## Options Toolbar

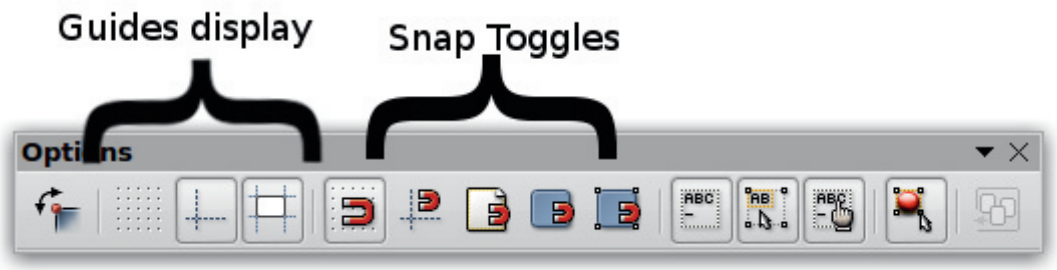
The options toolbar contains all your snap options. If it is not showing, select View > Toolbars > Options. On the toolbar, you can toggle whether your guides are displayed, and toggle on and off the snap options. You might want to dock this toolbar to the bottom or side of your window as I suspect you will use it often to toggle these options.

There is one more guide on the toolbar we have not discussed yet. It is the helplines. When you select the helplines on the options toolbar, then, when you move an object, dashed lines appear from the corners of your object to the rulers. The helplines are just one more tool to help you accurately place your objects.

## Conclusion

LibreOffice Draw is the graphics application of the LibreOffice suite. Draw saves graphics in a vector graphic format for use in your documents created with other applications in the suite. Draw provides you with the tools to combine text and geometric objects to create your graphics. Guides, and the ability to snap to the guides, help you to precisely place your objects.

In the next LibreOffice How-To, we will look at creating basic objects in Draw.




**Elmer Perry**'s history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.


The Ubuntu Podcast covers all the latest news and issues facing Ubuntu Linux users and Free Software fans in general. The show appeals to the newest user and the oldest coder. Our discussions cover the development of Ubuntu but aren't overly technical. We are lucky enough to have some great guests on the show, telling us first hand about the latest exciting developments they are working on, in a way that we can all understand! We also talk about the Ubuntu community and what it gets up to.

The show is presented by members of the UK's Ubuntu Linux community. Because it is covered by the Ubuntu Code of Conduct it is suitable for all.

The show is broadcast live every fortnight on a Tuesday evening (British time) and is available for download the following day.

podcast.ubuntu-uk.org

# LibreOffice Pt28: Draw Basic Objects

Written by Elmer Perry

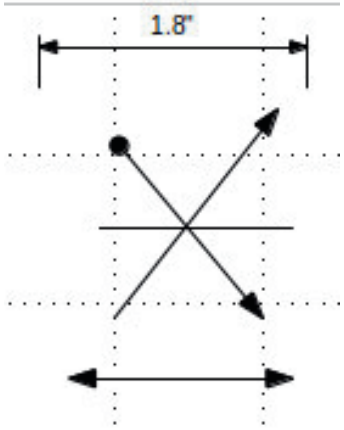
When I was a child, I enjoyed playing with building blocks. I didn't have the finely finished and polished blocks like you can buy for children these days. Instead, I had wood scraps from my father's woodworking. I ended up with a collection of various geometric shapes and sizes. These blocks became forts for my toy soldiers, roadways for my cars, and even a cityscape complete with airport. The only limit was my imagination.

While my artistic skills never advanced much beyond 9th grade art class, I still enjoy putting things together and have always enjoyed geometry. My blocks taught me that most things can break down to basic geometric shapes like circles, rectangles, and other 2D geometric shapes. With these objects you can create, even if only rudimentary, anything.

At the heart of LibreOffice Draw are these basic geometric shapes. They allow you to draw almost anything, and the only limitation is your imagination. You will find all the basic objects on the Drawing toolbar. Starting with the most basic of all drawing elements, the line, let's take a look at how to use the basic objects available to us in LibreOffice Draw.

## Lines and Arrows

The line is the second tool on the default Drawing toolbar, the first being the selection tool. To draw a line, click in the drawing area where you want to start your line and drag to the end point. If you look at the status bar while you draw your line, you will notice it tells you the size and angle of your line. To restrict the angle of your line to increments of 45 degrees (0, 45, 90, 135, 180, -135, -90, -45), hold down the Shift key while drawing your line.



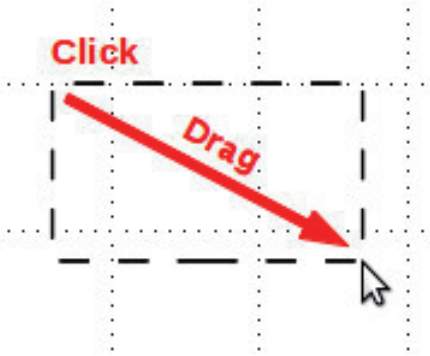

Sometimes, you need to draw your line from a center point rather than an end point. Hold down the Alt key while drawing your line, and the line will grow outward from the center point. You can hold down Alt and Shift together to draw a line from the center point and restrict the angle to increments of 45 degrees.

There is also an extended toolbar for lines on the Drawing toolbar. It allows you to draw lines with different arrows and start points. There is also a line for showing dimensions. You can use all the same methods for drawing a line with arrows that you use to draw an ordinary line.

Use the line and filling toolbar to change the line style and thickness, and to color your line. Make sure your line is selected when you make these changes. You can also select different arrow styles for your line using the arrows tool on the Line and Filling toolbar.

## Rectangles and Squares

If you wanted, you could use the snap to grid function and the Shift key to draw four lines to create a rectangle or square, but Draw does provide you with an easier way to create them. The rectangle is the fourth tool on the default Drawing toolbar. With it you can create




rectangles and squares.

To draw a rectangle, select the rectangle tool from the toolbar. Click where you want to place one corner, and drag to the location of the opposite corner. You make a square by holding down the Shift key while dragging. The shift key ensures the width and height are

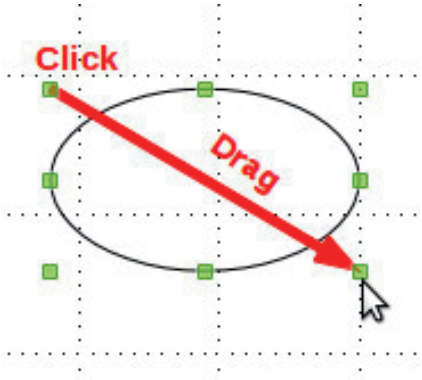
always the same.

Just like the line, you will sometimes need to create a rectangle or square starting from the center point rather than a corner. Again, the Alt key causes the rectangle to expand from the center. Use the Shift-Alt combination to draw a square from the center out.

Rectangles and squares by default are drawn with the currently selected line and fill colors. You can change these using the Line and Fill toolbar. You can also use the color bar. Right-click for line color and left-click for the fill color. You can also control the thickness and style of the border line using the Line and Fill toolbar.

## Ellipses and Circles

The ellipse tool is the fifth tool on the default Drawing toolbar. Ellipses are drawn much in the same manner as for rectangles and squares. Basically, you are drawing a rectangle which will contain your ellipse or circle. Just like with the square, the Shift key lets you draw a circle. The Alt key is used to draw your ellipse from the center, and

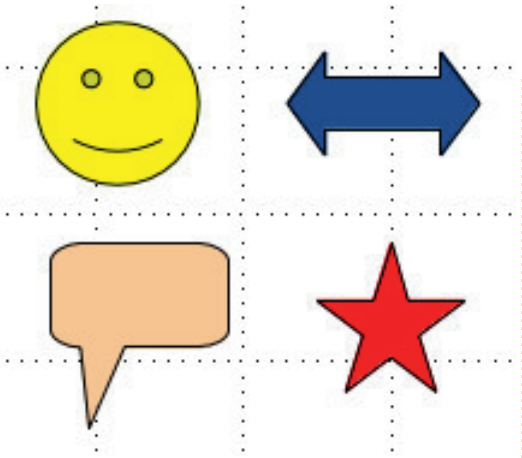



the Shift-Alt combination lets you draw a circle from the center.

As with the rectangle and square, ellipses and circles are drawn with the currently selected line and fill colors. You can change them with the Line and Fill toolbar or the color bar. The Line and Fill toolbar also lets you change the border line style and thickness.

## Shapes and Symbols Extended Toolbars

Besides the lines extended toolbar, you have several other extended toolbars to choose from, including basic shapes (2D geometric objects), symbols (smiley face, moon, heart, etc), block arrows, flowchart symbols, callouts, and stars. These extended toolbars give you a broader set of

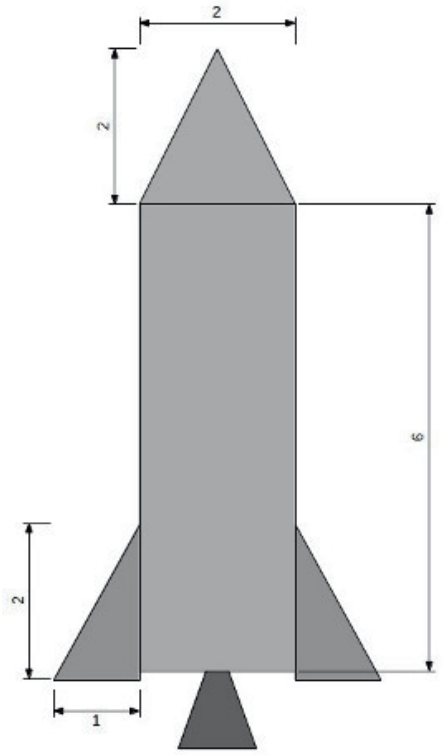


objects for building your graphic.

They are drawn in much the same manner as rectangles, squares, ellipses, and circles. You draw a containing rectangle for the object. The Shift and Alt keys also work on most objects in the same way as with rectangles. You can use the Line and Fill toolbar to change the line thickness, line style, line color, and fill color of the object.

## Sample Drawing – A Simple Rocket

As I said in the beginning, I'm not much of an artist, but I do have a sense for putting shapes together to create an object, so let's walk through creating a very




simple rocket image. Along the way I will introduce a few new tools and concepts for working with basic shapes.

First, we will set up a grid for our drawing, Tools > Options > LibreOffice Draw > Grid. Set the vertical and horizontal resolution to 1 inch. Set both subdivisions to 10. This will create a nice 1-inch box grid on our drawing surface. Check the snap-to-grid. This will help us get our objects to the right size.

Let's start with the nose cone. Select the isosceles triangle tool from the basic shapes extended toolbar. Draw the triangle, 2 grid squares by 2 grid squares, at the top of the image. Make the line color black and the fill color gray 30%. For the body of the rocket, use a rectangle, 2 grid squares wide and 6 grid squares tall, line color black, and fill color gray 30%.

Let's add some stabilizing fins to our rocket. Select the right triangle from the basic shapes extended toolbar. Draw the right triangle at the bottom right of the rocket body, 2 grid squares tall and 1 grid square wide. Set the line color to black and the fill color to gray 40%. With the newly created fin selected, Edit > Copy, then Edit > Paste. The copy will appear over the top of the first fin. Drag and drop the copy to the left side of the rocket body. Right-click the copy and Flip > Horizontally. Move it to the lower left of the rocket body. With the copy still selected, down-arrow three times to move it just below the rocket body. Do the same with the right fin.

We will finish off our drawing with the engine nozzle. Create an isosceles triangle at the bottom center of the rocket body. Use your best judgment on the size. The top point of the triangle should overlap the bottom part of the rocket body. Make the line color black and the fill color gray 60%. Make sure the nozzle is centered at the bottom of the body. Right-click the triangle and Arrange > Send to Back. This pushes the triangle behind the other objects so we can see only the bottom part.

There! You have a very simple drawing.

## Conclusion

The basic shapes are the building blocks for images in Draw. From them, you can create as simple or as complicated a drawing as you need for your documents. You can arrange your objects on the image to overlap each other and flip to change the horizontal or vertical orientation.

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

# ANNOUNCEMENT FROM CANONICAL

## Ubuntu Touch SDK Beta

Today we [Canonical] are announcing the **Ubuntu SDK Beta**. The SDK provides a set of APIs that includes the UI toolkit, enabling developers to create responsive and interactive applications with a native Ubuntu mobile UI. Qt Creator is an IDE with a visual interface for writing, testing and deploy applications; its API documentation and a developer site full of resources and tutorials make it easy to produce quality applications.

Together with a vibrant and ever-growing community of app developers, Ubuntu and the SDK provide the best ecosystem for your apps to thrive.

## Get started - guide to installing the SDK

To get started with the Ubuntu SDK, including easy installation instructions, tutorials and detailed API documentation, visit developer.ubuntu.com/get-started

To help you design and build beautiful apps, the App Design Guides include everything you need to know about UX and visual design best practices. Find them at design.ubuntu.com/apps

You can keep your development phone up-to-date with the latest build by following the instructions at wiki.ubuntu.com/TouchInstallProcess

# LibreOffice Pt29: Polygons, Arcs & Curves

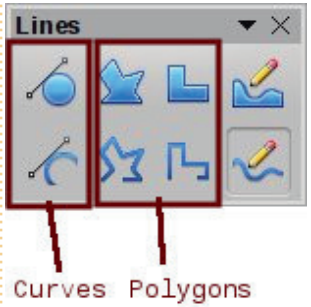
Written by Elmer Perry

As I mentioned last time, the building blocks I owned as a child were the result of my father's woodworking. Not every block was perfectly proportioned into neat geometric shapes. Sometimes, they were oddly shaped, or, as wood often is, shaped by splitting along the grain line rather than being cut by the saw. Some had curved patterns where their opposites were used to trim a chair or cabinet. I didn't discard these irregular shapes but embraced them. Not everything in our world is created from straight lines, ellipses, and circles.

With this in mind, we continue our look into LibreOffice Draw by learning how to create polygons, arcs, and curves. A polygon is a plane object with at least three straight lines and angles. In geometric terms squares, rectangles, and triangles are types of polygons. For our purposes, we will discuss polygons with more than four sides. An arc, in Draw, is a partial circle or oval. You can make them filled or empty. A curve is a bent line. We will look at two methods for creating curves, the curve tool itself and the Bezier method.

## Drawing Polygons

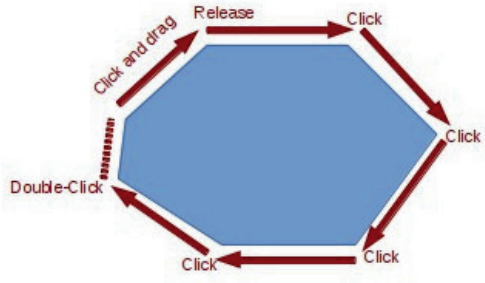
As I said, a polygon is an object with multiple sides. In Draw, you have four polygon tools. Two enclosed and filled polygon tools, and two open and unfilled polygon tools. The unfilled polygon tools are good for making a series of lines. For both types, you have a free-form version and a version restricted to angles that are




multiples of 45 degrees.

To create a polygon, select one of the polygon tools from the Lines extended toolbar. Click and drag to create the start point of the first line. When you release the mouse button, the end point of the first line is created. Move the mouse to the position where you want the end point for the next line and click. Continue until you have created all the lines for your polygon. Double-click on the last point to end the polygon. If you are using one of the filled polygon tools, the end point of the last line will automatically connect to the start point of the first line, enclosing the polygon.

If you use one of the filled

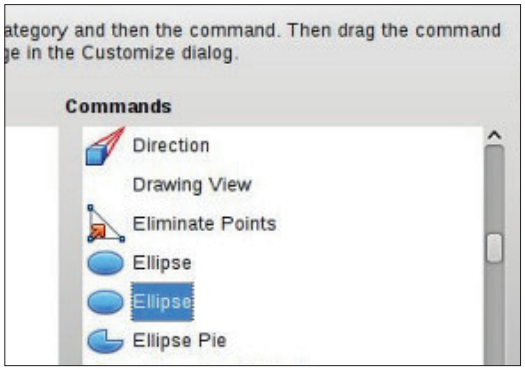


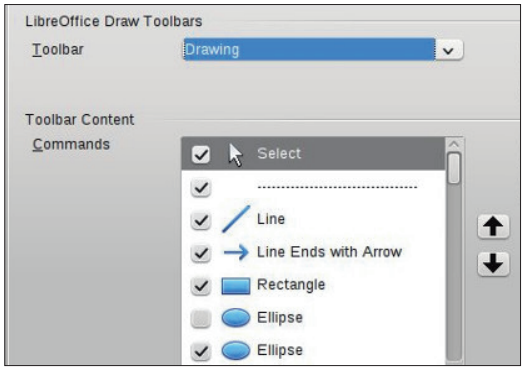

polygon tools, Draw fills the polygon with the currently selected fill color and sets the lines to the currently selected line color. You can change these using the Line and Fill toolbar or the color bar.

## Add Circles and Ovals Toolbar

For quick access to the arcs and segments tools, we need to add the Circles and Ovals toolbar to the Drawing toolbar. Right-click the Drawing toolbar and select Customize Toolbar. This opens the Customize dialog. Click the Add button. Select Drawing under the Category list. In the Commands list, find the Ellipse tools – there are two. You want the one with the description “Using Customize toolbar, you can add the Ellipse icon which opens the Circles and Ovals toolbar.” Click the Add button. Click Close to close the selection dialog.

Using the up and down arrows, move the new icon to where you want it on the toolbar. I placed mine below the Ellipse tool. We don't really need the Ellipse tool any longer as it is included in the Circles and Ovals toolbar. Uncheck the Ellipse tool. Click the OK button, and you should see the toolbar is now on your Drawing toolbar.



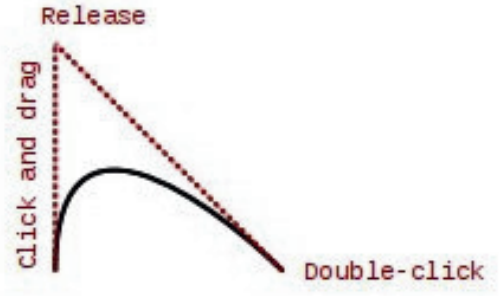




## Drawing Arcs or Segments

To draw an arc or segment, select one of the tools from the Circles and Ovals toolbar you just added. Click and drag to create a containing circle or oval. Release the mouse button. Click in the circle or oval where you want the arc or segment to begin. Move the mouse around the circle or oval to create the arc or segment. Click a second time to create the end point for the arc or segment. The status bar will show you the angle from center of the points as you move around the circle or oval. This can help you create accurate and precise arcs and segments.

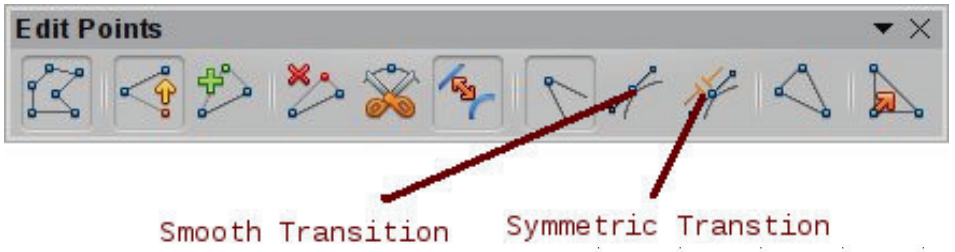
## Drawing Curves

A curve is a bent line rather than a segment of a circle or oval. To draw a curve, select the curve tool from the line toolbar. Click on the start point and drag to draw a line. Release the mouse button at the peak point for your curve. Move the mouse to bend the line to the point where you want the curve to end. Double-click to complete the curve.




## Bezier Curves

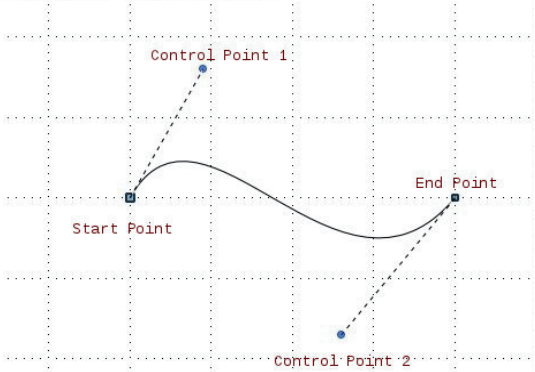
A Bezier curve is a smooth curve with a start point, an end point, and two control points. The mathematics behind the Bezier curve is beyond the scope of this article, but you don't need to understand the math in order to draw one.




To draw a Bezier curve, select the curve tool from the lines toolbar. Click at the start point, drag to the end point and double-click. Click on the Points tool on the Drawing toolbar (F8 on the keyboard), and the Edit Points toolbar is displayed. Select either the start or end point (the start point is the larger square). Select the Smooth or Symmetric Transition tool from the Edit Points toolbar. A dashed line and circle will appear indicating the control point for that point. Move the control point to create the curve for that point. Repeat these steps for the other point.

## Conclusion

Since not all things are created from straight lines, ellipses, and circles, the creators of Draw gave us more tools for creating objects. A polygon can create an object with more than four sides. Arcs and segments gives us parts and segments of a circle or ellipse. Curves give us the ability to bend a line into different shapes. With these extra tools in hand, Draw lets you create more advanced images for your documents.




**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.

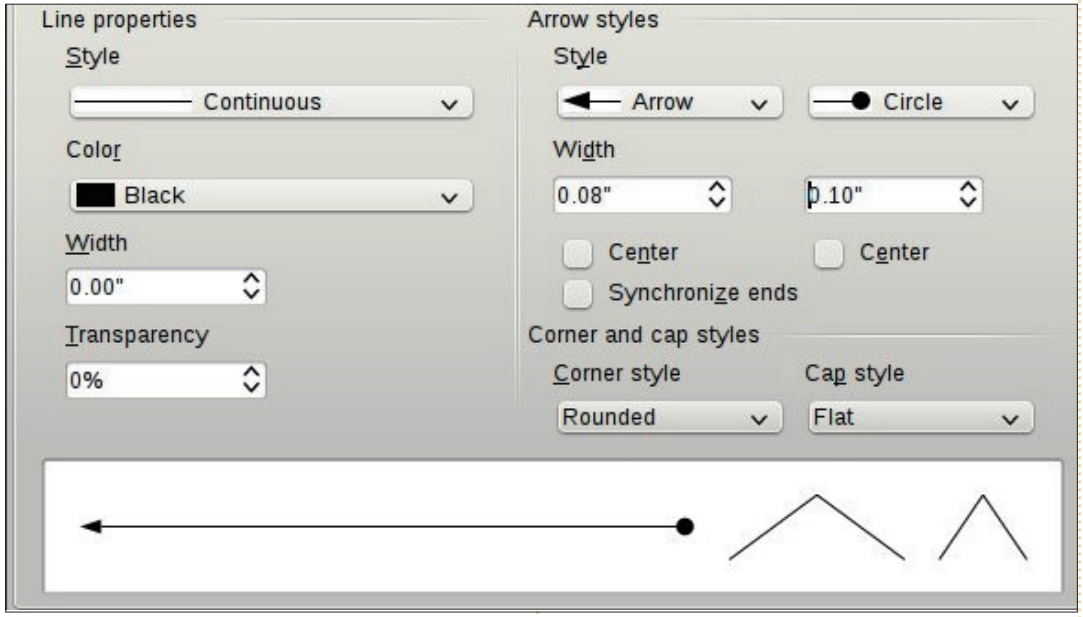
# LibreOffice Pt30: Draw/Edit Objects

When working with physical blocks, you sometimes need to change the shape of a block, customizing it for a special purpose. You may use a plane or sandpaper to make a side slant or to round an edge. You might use a saw to whack off a corner. All to create a special custom block unlike any other block in your collection.

Sometimes, we need to do the same with our digital blocks. The editing tools built into LibreOffice Draw become our digital plane, sandpaper, and saw. In fact, you can do things I never dreamed of doing to my blocks as a child.

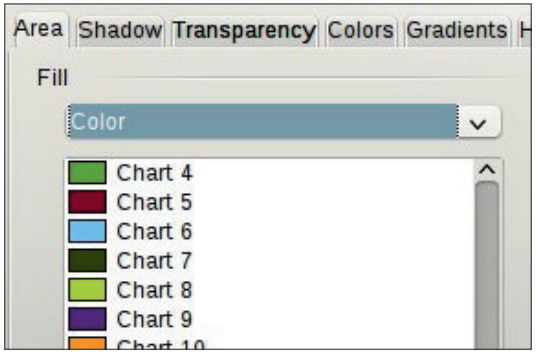
## The Line Dialog

The Line dialog lets you edit the look of the lines in your object. To access the Line dialog, right-click your object and select Line. From here, you can change the style of the line (solid, dashed, dash-dot, etc.), the color, width, and transparency. You can also add arrow styles to the start and end of your line. Keep in mind that for enclosed objects (triangles, squares, circles, etc.), arrows are not drawn on the lines. Underneath the arrow styles, you can adjust the width of the arrow. Center places the center of the arrowhead(s) on the endpoint(s) of the selected line. Synchronize ends automatically updates both arrow heads when you change the style, width, or center of one of the ends. Corner style controls how the corner of your object is drawn. Cap style controls how the endpoints of lines without arrows will look.




If you are working with an open object, you get a shadow tab. This allows you to create a shadow for the line by defining the position, distance, color, and transparency of the shadow.

The Line Styles and Arrow Styles tabs allow you to add, modify, delete, and save different line and arrow styles. You can play around with these, but usually you can find what you need in the predefined styles. If not, feel free to create your own.




## Area Dialog

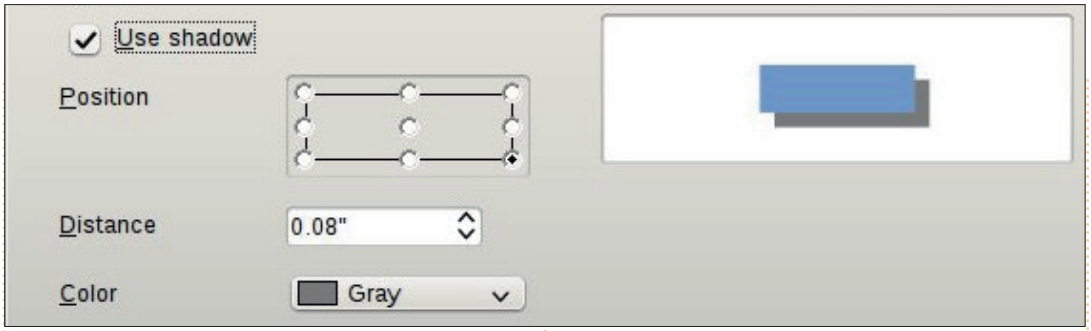
The Area dialog applies to objects that are enclosed, and deals with the space inside the object. You can change the color of the fill as well as the manner in which the object is filled. To access the Area dialog, right-click the object and select Area.

The Area tab controls what fills the object. You can choose from color, gradient, hatching, and bitmap in the Fill drop-down list. Once you have selected the type of fill, you can select a fill from the list. The preview box shows you the result of your selections.

The Shadow tab allows you to add a shadow under your object. Check Use shadow to create a

shadow. The position determines the location of the shadow, and the distance how far from the object. Color determines the color of the shadow, and transparency sets the opacity of the shadow.

On the Transparency tab, we determine the opacity of the fill of the object. We have three options for the transparency of the fill. No transparency means the fill is completely opaque. With transparency, you can set a percentage for the whole area. Gradient is the option with the most settings and the chance to create the most interesting effects. You have six choices for the gradient types, linear, axial, radial, ellipsoid, quadratic, and square. For all except the linear and axial, you can control the XY center of the gradient. The XY center is the point where the object is the clearest, or most transparent. Except for the radial, you can also define an angle for the gradient area. The border setting reduces the size of the transparent area. The bigger the percentage, the smaller the transparent area. Use the start and the end values to change the beginning and ending opacity levels. For example, if you don't want any totally clear places on your object, you can start with a value of 10 or 15%.



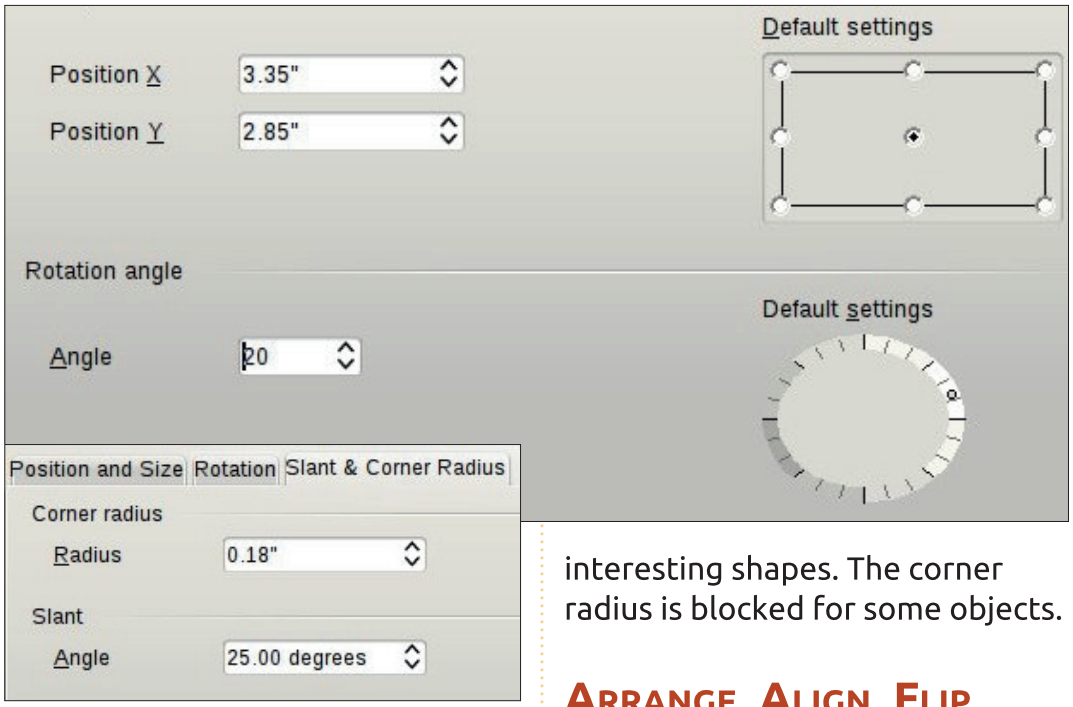

The colors, gradients, hatching, and bitmaps tabs allow you to create new fill styles by defining new colors, gradients, hatchings, and bitmaps.


## Position and Size Dialog

Besides controlling the position and size of an object, the position and size dialog also allows you to control the rotation, slant, and corner radius of an object. To access the Position and Size dialog, right-click your object and select Position and Size.

The Position and Size tab does what you would expect. You can control the XY position on the canvas of the object, and its width and height. The base point for each of the options gives nine points on the object from which position or size is calculated. There is a Keep ratio checkbox under size to help maintain the aspect ratio of the object (any change in height will create a change in width and vice versa). You also have options to protect the position or size to prevent accidentally changing them. The adapt option only relates to text frames and allows you to fit the width and/or height to match the text.

On the Rotation tab, you can control the rotation of the object. This is usually much more accurate than using the rotation tool. You can select the pivot point through the input boxes, or by selecting a pivot point on the Default settings box. Select your angle through the input box or by selecting a point on the angle Default settings




compass.

Finally, the Slant & Corner Radius tab allows you to control the roundness of the corners and the slant (think italics text). Think of the corner radius as using sandpaper to round off a corner. The more you sand, the rounder the corner. The bigger the number, the rounder the corner. If you set the corner radius high enough on a rectangle, it will become an oval. The slant, given as an angle, skews the object to the right for a positive angle and to the left for a negative angle. Using the corner radius and slant, you can get some interesting shapes. The corner radius is blocked for some objects.

## Arrange, Align, Flip, Convert

Sometimes, it just becomes necessary to stack objects, make them line up, mirror them, or just convert them into something that you can edit in a different way. All the following commands are found by right-clicking the object. They are also available in the Modify menu.

The arrange options allow you to control the stack position of objects. When you have multiple objects which overlap, you may need to change the order in which they are stacked. By default, they stack in the order in which they were created, the last on top. Using the arrange options, you can push objects forward or backward in the stack until you get the results you want.

Align allows you to align objects in reference to each other or to the page. If you have only one object selected, the object will align to the current page. If more than one object is selected, they will align according to each other. The larger of the objects usually controls the final location, and the other objects are moved to align to the selected position of that object. The alignment options are left, right, horizontal center, vertical center, top, and bottom. Draw has an align toolbar in addition to the right-click menu and Modify menu.

The flip options are straightforward. You can flip an object vertically (top to bottom) or horizontally (left to right).

There are many options under the right-click > Convert option, but one in particular that I want to draw your attention to, Convert > To Curve. By converting any object to a curve, you can edit the points within that object, allowing you to achieve completely original shapes. Once an object is a curve, you can add points, remove points, and use the point transition tools on the points of the object. Turn a rectangle into a curve, then start adding, moving, and manipulating the points, and see what you can create.

## Conclusion

The options in Draw for editing an object are numerous. By applying the right tools to an object, you can create almost any shape you can imagine (maybe a few you never imagined). I encourage you to play with these tools and see what you can come up with. You never know, you might discover that little piece of artist or designer in you.

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at http://eeperry.wordpress.com

# LibreOffice Pt31: Templates

If you work in LibreOffice much, you will find yourself using the same formating over and over. Whether you use it to write letters or to create the next best-seller, you spend a lot of time setting up the same styles over and over again. Templates are the answer to this problem. A template is a document model used to create other documents. All the LibreOffice applications can use templates. In fact, every time you create a new document, LibreOffice is using a default template.

Styles are the key to creating templates. Styles are a preset way of displaying information. I first discussed the importance of using styles all the way back in part 3 of this series, discussing how styles help create a uniform look in your document as well as saving you time. In the spirit of saving you time, we can add one more use for styles, creating templates.

## Setting Up A Template

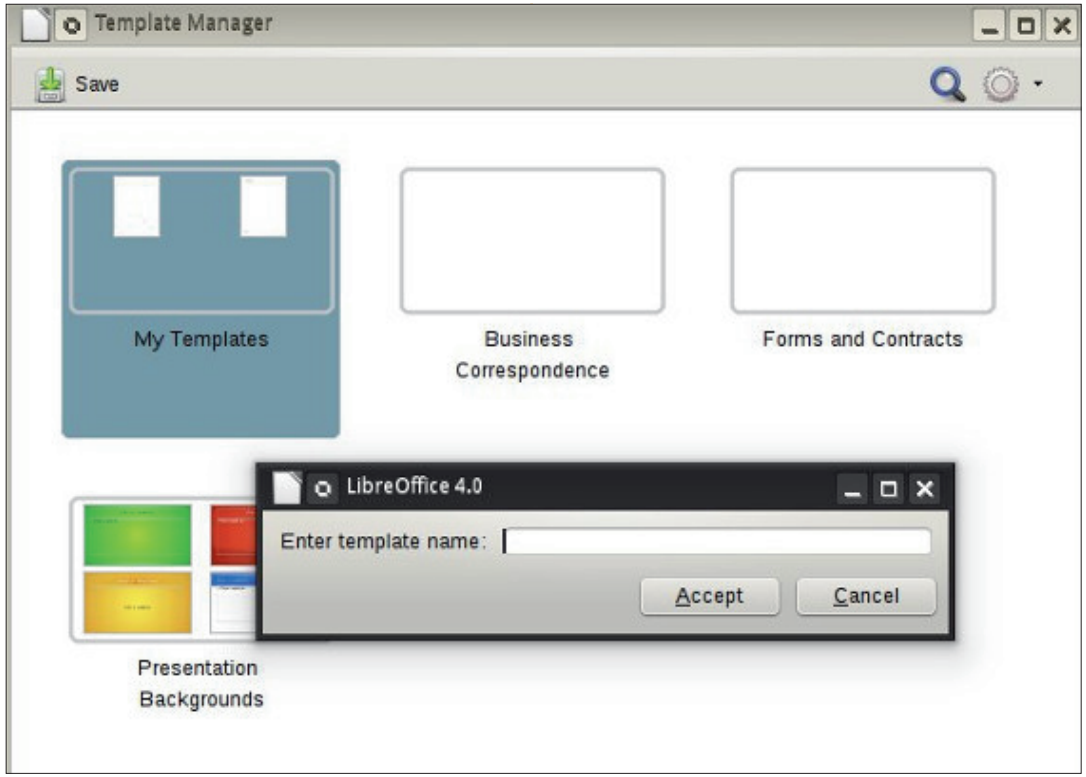
Everything from a business letter to a scientific research paper has a required layout and format. Let us say we are writing a document that requires a numbered outline format with sublevels. Another requirement is that the title and author appear at the top of each page, and the page number at the bottom in the format of "Page # of #".

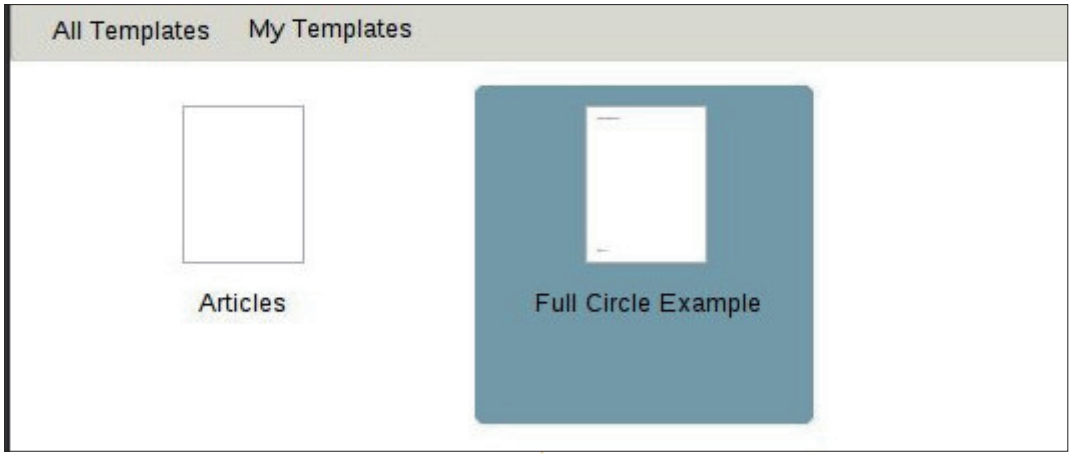
We will tackle the numbering style first. In a new Writer document, open the Styles and Formatting window. Click on the list styles icon (the last one on the Styles toolbar). Select Numbering 1. Right-click Numbering 1 and choose Modify. On the Outline tab, pick the style that is labeled "Numeric with all sublevels" when you hover the mouse over it. Click the Apply and OK buttons.

Now, to take care of the header and footer. Open the Styles and Formatting window and click on the Page styles icon (next to last on the Styles toolbar). Right-click the Default Style page style and select Modify. On the Header tab, check Header On, then switch to the Footer tab and check Footer On. Click OK to save the changes. Click into the header area of the first page, Insert > Fields > Title. Type a space and "by", then Insert > Fields > Author. Move your cursor down to the footer at the bottom of the page. Type "Page", a space, then Insert > Field > Page Number. Type space "of" space, then Insert > Fields > Page Count.

## Saving the Template

We are now ready to save our template. File > Save as Template will open the Template Manager. Select the template folder where you want to store your template. Click Save. A dialog will prompt you to name the template. Enter the name you want to show for the template and click Accept. Close the Template Manager.

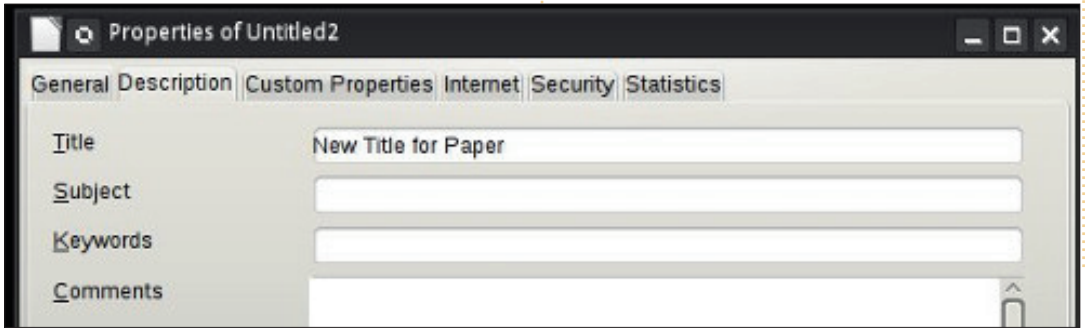


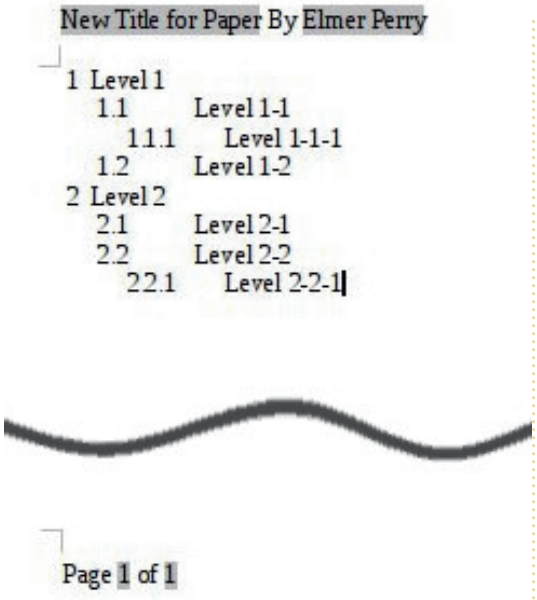



## Using the Template

Let's use our newly created template. File > New > Templates. Open the folder where you saved your template and double-click your template. The title shows as the title you gave the template. Let's change it. File > Properties. Select the Description tab and change the title to something else. Click OK. The title in the header will change to whatever you typed in.

Let's try out that outline numbering system. Open the Styles and Formatting, click on the List styles icon, and double-click Numbering 1. Your input will change to the list style we defined for the Numbering 1 when creating the template. Add some text and be sure to add several levels to make sure it is all working. Now, you can save your document like you normally would. This does not save it as the template, but as a new file on your computer.



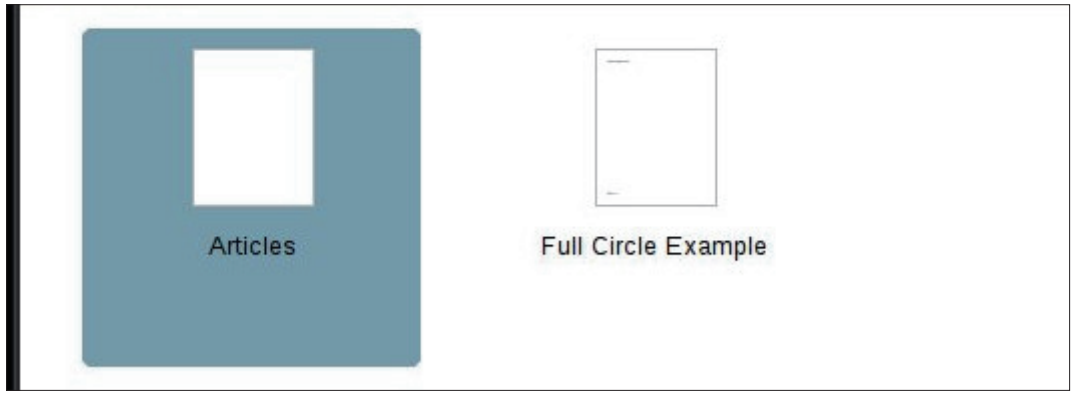

## Setting a New Default Template

If you need to use your new template most of the time, why not make it your default template? This is easily done in LibreOffice. File > New > Templates. Navigate to the folder where you have your template and select it. Click on the "Set As Default" button. Now, anytime you start a new document of that type, LibreOffice will use your template instead of the default template that comes with LibreOffice.

## Different Sources for Templates

Creating your own templates is great, but you will not always need to put in all that work. The official template repository at http://templates.libreoffice.org has hundreds of templates for you to try and use. To use individual templates, import them into the template manager.

Some templates are collections. They have a extension of .OXT. To import these templates, you use



the Extension Manager, Tools > Extension Manager. Click Add, and browse to your downloaded OXT file. Select the file and click Open. The Extension Manager will process the file and add the collection to your Template Manager.

## Conclusion

Templates are a way to repeat the formatting of a document from one document to the next. Creating and saving templates relies mostly on the use of styles. Though I demonstrated creating a Writer template, you can create templates in the other modules of LibreOffice, too. You can even set your template as the default for that type of document. Templates are just one more time-saving tool within the LibreOffice suite.

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at http://eeperry.wordpress.com

## Python Special Editions:


http://fullcirclemagazine.org/issue-py01/


http://fullcirclemagazine.org/issue-py02/


http://fullcirclemagazine.org/python-special-edition-issue-three/


http://fullcirclemagazine.org/python-special-edition-volume-four/


http://fullcirclemagazine.org/python-special-edition-volume-five/


http://fullcirclemagazine.org/python-special-edition-volume-six/

# LibreOffice Pt32: Impress Remote

Written by Elmer Perry

If you have ever given a presentation, you know that moving back to the computer to advance your slides is a pain, especially if, like me, you move around a lot and actively engage your audience. I recently presented for a training session at work and constantly wished I had a remote. The Document Foundation has provided a solution in the Android application Impress Remote. Impress Remote allows you to control your Impress presentation from your Android phone or tablet.

Impress Remote requires LibreOffice version 4.0.1 or greater, and a phone or tablet running Android 2.3 or greater. If you own a recent phone or tablet and your Linux distribution is up to date, you shouldn't have any problem using the program.

## Setup

We will need to make changes to our LibreOffice Impress setup to run the remote program. Start by opening a new or existing presentation. Then Tools > Options > LibreOffice Impress > General. Check "Enable Remote Control". Click OK. Tools > Options > LibreOffice > Advanced. Check "Enable experimental features". Click OK. Restart LibreOffice and open your presentation.

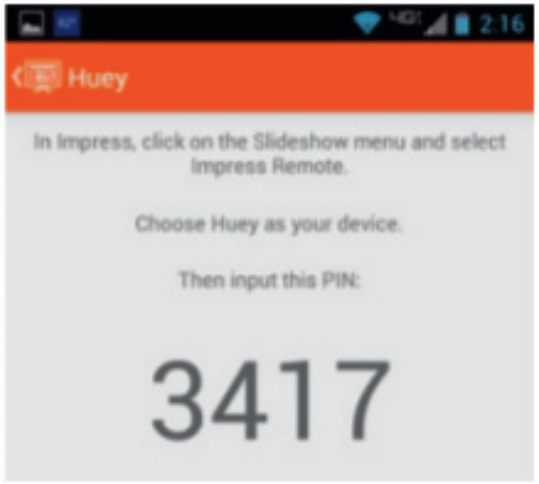
When we set up the remote control app, we will need the IP address of the computer running LibreOffice. From a Linux terminal prompt, the following command should work for most users:

```
ifconfig eth0
```

The information you need is on the line that starts with "inet addr:xxx.xxx.xxx.xxx", where xxx.xxx.xxx.xxx is the IP address for your computer. Write this address down and keep it for later. You will need it when you set up the remote app.

Now, we install the Impress Remote app. From the Google Play store, search for Impress Remote, and install the app on your phone or tablet. The first time you open the app, you see a mostly empty screen. Select "Add WI-FI Computer Manually". Enter a name for the computer and the IP of the computer. Select Add. Select the computer from the list and let it connect. Back in Impress, Slide Show > Impress Remote. Select your remote device. Enter the code given you by the app. Click Select. In the remote app, click "Start Presentation" to start the presentation.


If your computer has Bluetooth, you can also connect by pairing your phone with your computer. Once you open the app, it will scan for your device using Bluetooth, and you can just select your device from the list. You still need to enable the remote and experimental options in LibreOffice.

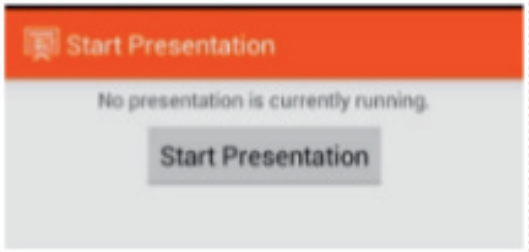


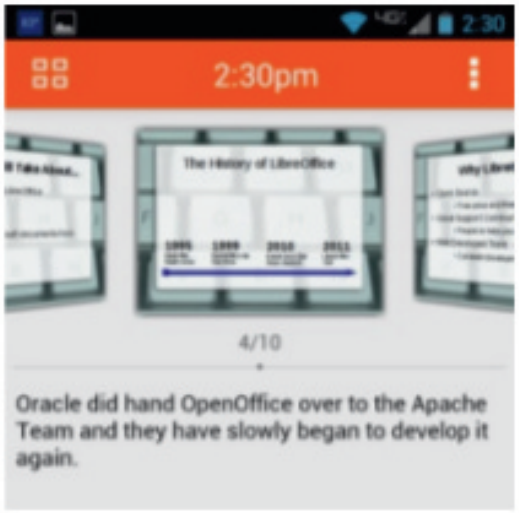

**NOTE**: If you are running a firewall on your computer, you will need to open TCP port 1599 for communications through WiFi.

## Using Impress Remote App

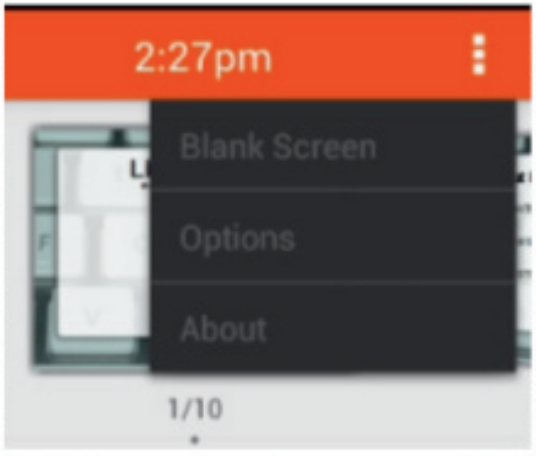
The remote app is pretty basic, but let's face it, the less complicated the better when you're giving a presentation. The tool bar across the top has the current time, which is handy when your presentation needs to start or end at certain times. To the left of

the time is the view switcher, and to the right of the time is the app menu.



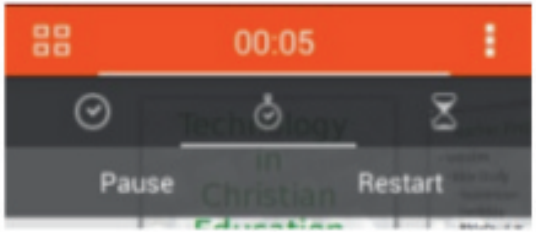

Once you start a presentation, you get the slide scroll view of your presentation. This view is the most useful, because while you are in scroll mode, you can also see any notes you made for the slide. While you can use your finger to move between slides, this is not the best method unless you are just needing to skip forward or move back in your presentation several slides at a time. The best, or designed, way to move through your presentation is with the volume up and down buttons. The up button moves forward in the presentation, and the down button moves backward in the presentation.





Sometimes, you need to pause a presentation and move your audiences' attention from the screen to something else. Impress Remote gives you the ability to blank the screen. In the app menu, select "Blank Screen". Your presentation screen will go blank. When you are ready to return to the presentation, just click "Return to Slide". The presentation will pick up where you left off.


You can display your slides in two different ways. One we have seen already, the scroll mode. The other is the list mode. You can switch between the two mode by selecting the view switcher button. In the scroll mode, you move quickly to a slide by swiping with your finger. To select a slide in list view, you just select the slide. This is practical only for fixed slides. Any slides with animations will require the use of the volume up and down buttons.



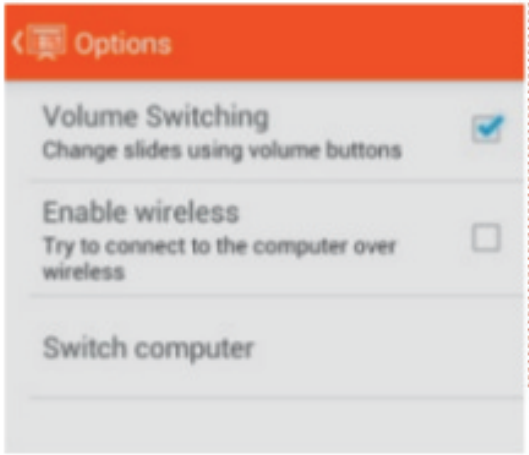

If you select the clock, you have the option of leaving it as the current time or starting a stopwatch. Select the stopwatch to use it. You will get a Start and Reset option. Press Start to start the timer. The timer will begin to count, and the options will change to Pause and Restart. Select Pause to pause the timer, and Restart to start over from 0.00. This is handy for timing an activity or working on your timing for your presentation.

In the app menu, there is an item for Options. The first option is for using the volume up and down buttons to control the presentation. I can't think of a good reason to uncheck this, but I'm guessing it is there because someone had a reason. The second option is for enabling a wireless connection between the phone

and the computer. This allows the app to automatically search for devices on the wireless network that are running LibreOffice Impress with the remote feature turned on. Finally, the switch computer option allows you to switch to a different computer.

## Conclusion

When giving a presentation, it is nice to have mobility. The Android app Impress Remote gives you mobility by allowing you to control your Impress presentation from your Android phone or tablet. The app is easy to set up through Bluetooth or WiFi. The interface is not cluttered, making it easy to use and control. Since the app was developed by the same people who develop LibreOffice, future compatibility is almost assured.




**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu. He blogs at http://eeperry.wordpress.com

## Python Special Editions:


http://fullcirclemagazine.org/issue-py01/


http://fullcirclemagazine.org/issue-py02/


http://fullcirclemagazine.org/python-special-edition-issue-three/


http://fullcirclemagazine.org/python-special-edition-volume-four/


http://fullcirclemagazine.org/python-special-edition-volume-five/


http://fullcirclemagazine.org/python-special-edition-volume-six/

# LibreOffice Pt33: Connect Base to MySQL

Using the default HSQLDB database management system (DMS) in LibreOffice Base is great for creating new databases, but sometimes you need to connect to an existing database on another DMS like MySQL, dBase, JDBC, Oracle, PostgreSQL, and others. I showed you how to connect to a simple spreadsheet database back in Issue 52. Today, I will show you how to connect to a database created in MySQL.

MySQL is a DMS used on many websites. Wordpress and other content management systems use MySQL for their databases. You might have many reasons to access a database created in MySQL. MySQL is open source, and you can install it from your software manager.

## Install MySQL

Installing MySQL from your software manager requires the installation of two packages. The first package is "mysql-client" – the client program for MySQL. It allows you to interact with MySQL.

If you are installing MySQL on your current machine, you will need to install the MySQL server package as well: "mysql-server". When you install the server package, it prompts you for a "root" password and asks for confirmation. This is your master password for MySQL. Jot it down somewhere. You will need it later. If you are connecting to a database on a different machine, you don't need this package.

The last package we need to install is "libreoffice-mysql-connector". This package will allow us to connect to MySQL without using an OBDC or JDBC wrapper.

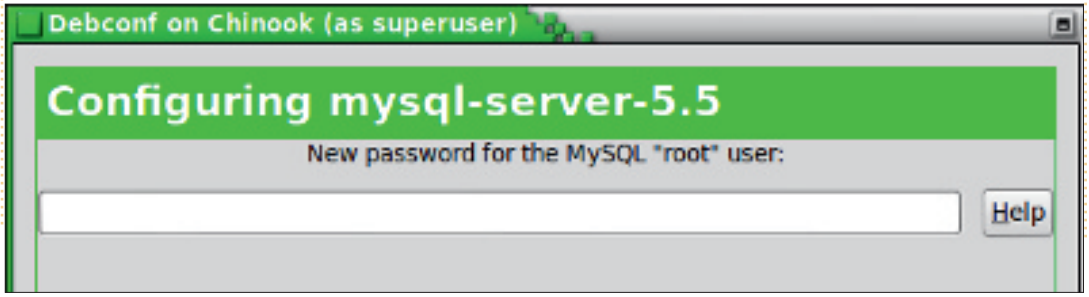
## Create A Test MySQL Database

If this is the first time you are connecting to an external database using LibreOffice Base, I recommend you create a test database in MySQL where you can make mistakes and learn. You can install a program like PHP MyAdmin or EMMA, but I think it is easier just to use the MySQL command-line client.

To connect to MySQL on your local machine, use the command:

```
mysql -h localhost -u root -p
```

MySQL will prompt you for the "root" password. Enter it and you are greeted with a welcome message and the "mysql>" prompt. To connect to a MySQL server on another computer, replace "localhost" with the server name or IP address. Keep in mind that you will need to set up MySQL to accept remote connections. For details on setting up MySQL to accept remote connections, read this tutorial: http://www.cyberciti.biz/tips/how-do-i-enable-remote-access-to-mysql-database-server.html




To create a database use the following command at the MySQL prompt:

```
CREATE DATABASE <dbname>;
```

where <dbname> is the name you want to give the database. To create a databases name "myTestDB" enter:

```
CREATE DATABASE myTestDB;
```

MySQL responds with a message that the query was executed. Enter

```
SHOW DATABASES;
```

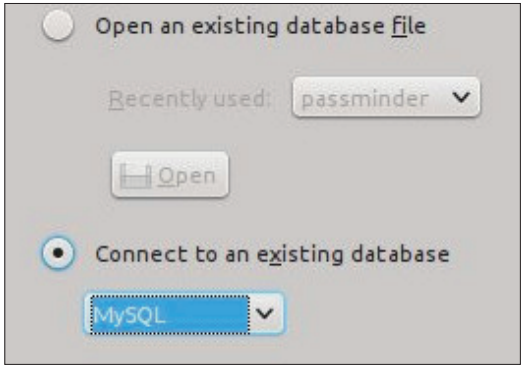
to generate a list of all the databases. You should see your new database among those listed. An empty database is all we need to connect to MySQL from Base, but you can also connect to a fully

functional database as well; but, like I said, it is better to practice on a test database first. Type "quit" and press Enter to exit your MySQL session.

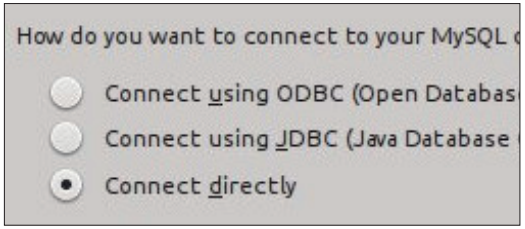
## Connect Base to MySQL Database

Now for the part we have been working for – actually connecting Base to the MySQL database. Start by creating a new database document in LibreOffice, File > New > Database. We will use this document to connect to the database we created before. Using the database wizard (recommended), it is a five step process.

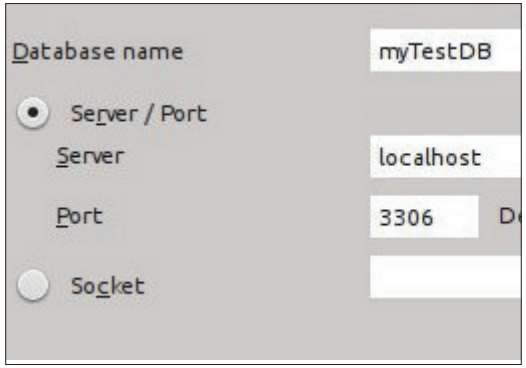
**Step 1**: We want to connect to an existing database. Don't confuse this with connecting to an existing database file. You want the last selection. From the drop down list select MySQL. Click Next.




**Step 2:** Since we installed the "libreoffice-mysql-connector", we have no use for the ODBC or JDBC connections. Select "Connect directly". Click Next.

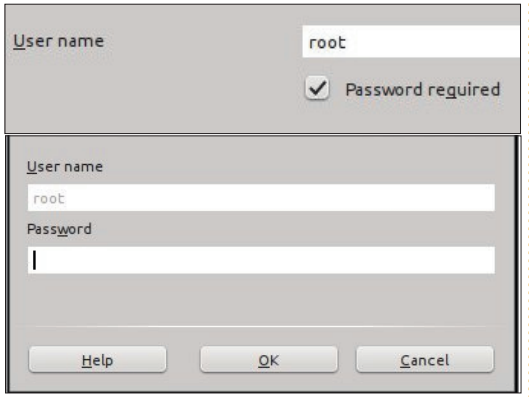



**Step 3:** The database is the name of the database we just created in MySQL. Our example database was "myTestDB". The server is "localhost" for the local computer, or the server name or IP address of another computer. Leave the Port as the default unless you changed it in your MySQL settings or have been told to do so by your IT department.

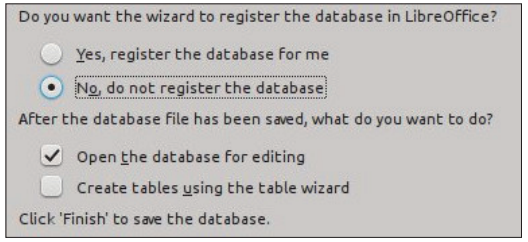



Click Next.

**Step 4:** The user name you need to connect to MySQL from your computer. Use "root" if you are connecting to MySQL on your local computer. Check "Password required". Click "Test Connection". You are prompted for your password. Enter your password and click OK. If you set everything correctly, you will get a message back saying Base successfully connected to the database. OK on the message and click Next.




**Step 5:** Select Register or Don't Register according to your needs for the database. A registered database is available in other LibreOffice modules. Check "Open database for editing". Click Finish. Base will prompt you for a file name. Enter a name and click Save.




You can now interact with the MySQL database in the same way you would an HSQLDB database. You can create tables, queries, reports, and forms just like you would with the default DMS. You will need to pay attention to the data types as they are slightly different in MySQL. For an overview of the HSQLDB data types see my article at http://wp.me/pvwht-8Q. For a list of MySQL data types see http://dev.mysql.com/doc/refman/5.0/en/data-type-overview.html.

While using the default DMS for Base is good for new databases, sometimes it becomes necessary to connect to existing databases. In this article, we showed how this is done by connecting to an external database we created in MySQL. We installed MySQL and created a blank database. Using the database wizard in Base, we connected to that database where we can create tables, forms, queries, and reports to interact with the database. Base can also connect to other database types like dBase, JDBC, Oracle, PostgreSQL, and others.

# LibreOffice Pt34: Experimental Sidebar

With the release of LibreOfffice 4 came some new features and improvements. Among the most interesting is the Experimental Sidebar. The new sidebar puts a lot of the operations and tools in one easy location. The sidebar eliminates the need for the formatting toolbar for many objects.

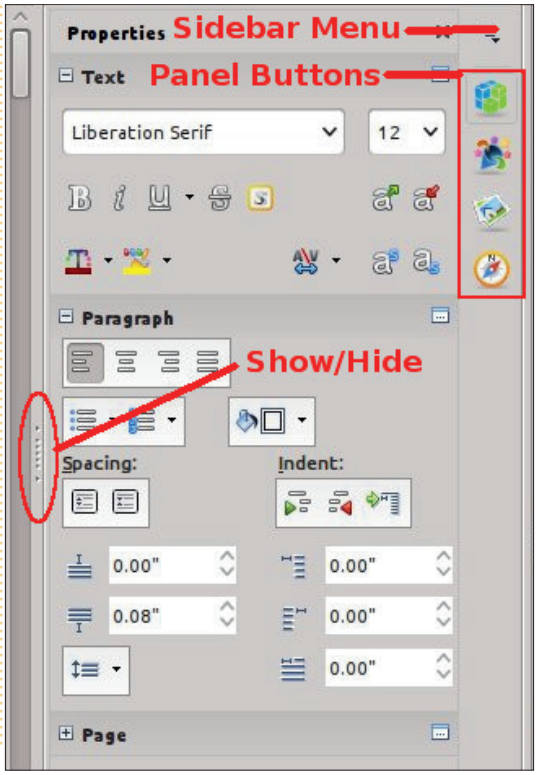
Today, we will look at the sidebar and how it adapts in accordance with the document you are currently working with. Just remember that the sidebar is an experimental feature, which means it can crash the program without warning. So, when using the sidebar, I recommend saving often.

## Setup

Since the sidebar is experimental, we need to activate it. From any LibreOffice screen, Tools > Options > LibreOffice > Advanced. Check "Enable experimental sidebar (on restart)" and click OK. You will need to restart LibreOffice in order for this change to take affect.

## Overview

The sidebar for LibreOffice is similar to the sidebar in Calligra or the ribbon in Microsoft Office. While it can't replace everything, you will find yourself using it instead of the formatting toolbars and dialogs. The sidebar actually has more features than the formatting toolbar by default.

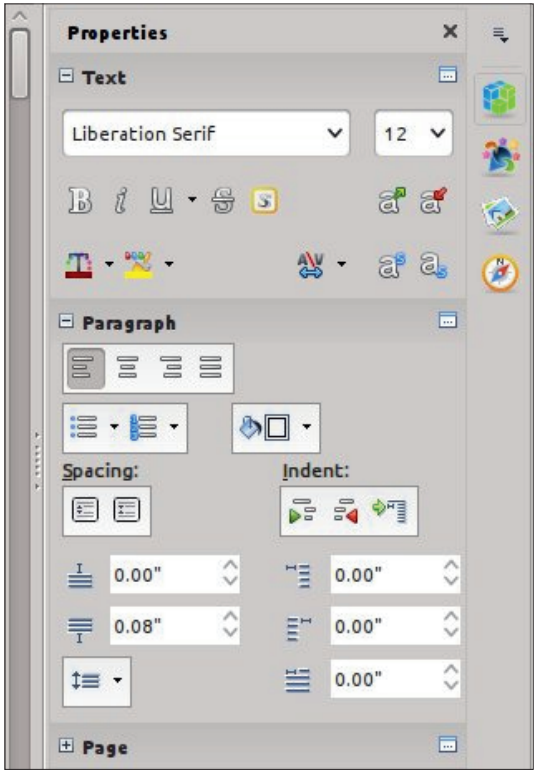



By default the sidebar is docked to the right side of the main window. You can show or hide the sidebar using the show/hide button on the inside border, or through the menus View > Sidebar. From the sidebar menu you can undock/dock the sidebar. You can also customize the sidebar by removing the panels you will not use.

The sidebar is a collection of panels. The available panels depend on the program you are using. You can access each of the panels by selecting their icon from the right side of the sidebar or from the sidebar menu. Each of the panels serves as a shortcut to different tools in the program. Of these, I personally use Properties, and Styles and Formatting most often. Let's take a closer look at each one.

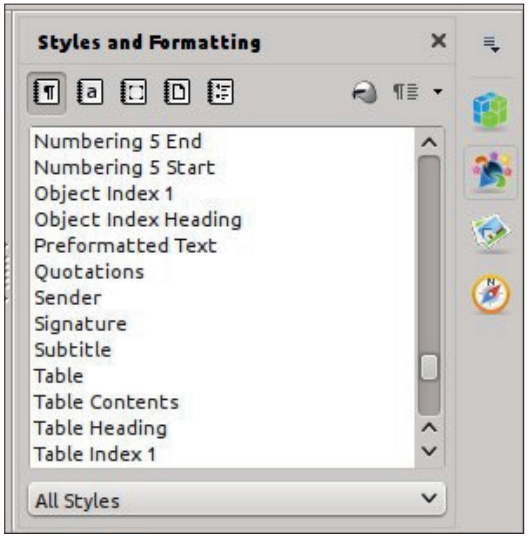
## Properties

The Properties panel shows you the properties for the current item in the document. You can adjust the different properties using the icons in the panel. Changing properties using these icons is the same as making manual changes through the dialogs and formatting toolbar, meaning it has no effect on the underlying style assigned to the item – only the current item. If you cannot find a property, you can click on the "More Options" button in the corner of each property type to get a complete properties dialog



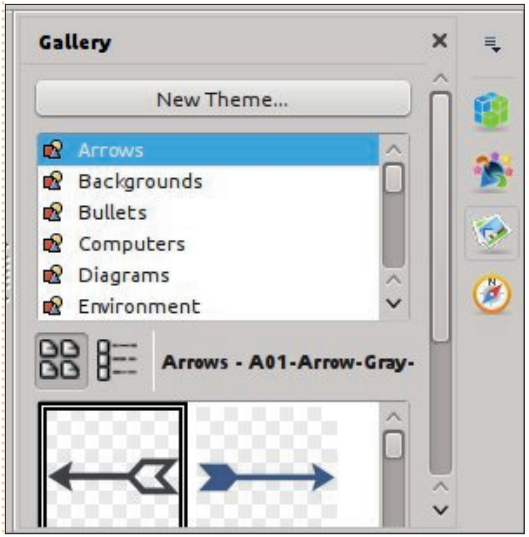
with tabs. You can collapse and expand any of the blocks using the expand / collapse button next to the block title.

As an example, when typing in a Writer document, you will see three property blocks in the Properties panel: Text, Paragraph, and Page. The Text block allows you to control different settings related to text – font, bold, italics, color, etc. The Paragraph block allows you to control the paragraph's alignment, spacing, margins, etc. The Page block lets you change the page's size, orientation, margins, and columns.



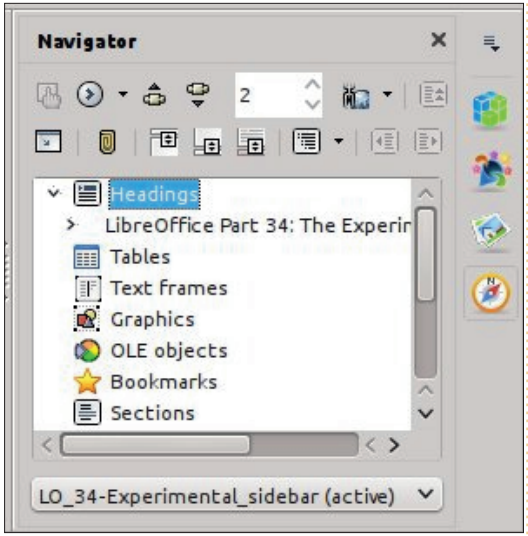

## Styles and Formatting

The sidebar takes the Styles and Formatting window and docks it in the sidebar. This allows you quick access to your different styles. Though you could still just use the button on the Formatting toolbar, the new sidebar does provide a central location for this tool and others like it. The window still provides styles broken down by type (characters, paragraphs, frames, pages, and lists), as well as the subcategory drop-down list. You still create and modify styles in the same manner as with the Styles and Formatting window.




## Gallery

The Gallery is a collection of images for use in your documents. The Gallery panel presents a list of categories, called themes, at the top, and a list of images underneath. You can use this library of images to insert clip-art and backgrounds into your documents, as well as sounds into your presentations. You can add to and create new themes in your Gallery. A complete how-to on the Gallery library is for a future article.




## Navigator

The Navigator is a catalog of your document headings, tables, sections, images, etc. The Navigator allows you to quickly move from one point in your document to another by reference to an object. This becomes quite handy in large documents, and is a good argument for giving meaningful names to your OLE objects and images.

## Master Pages (Impress Only)

The Master Pages panel is used for selecting and creating master pages in Impress. I discussed Master Pages in part 16 of this series, FCM#63: http://fullcirclemagazine.org/issue-63/. This panel is just a translation of the old Master Pages section of the Impress Tasks pane.

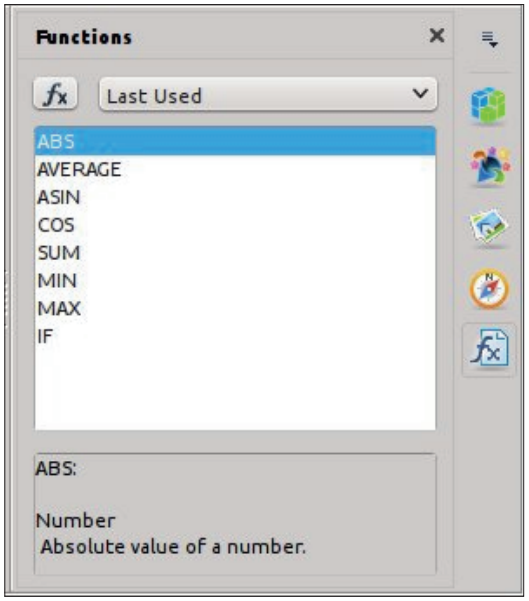
## Custom Animations (Impress Only)

The Custom Animations panel is used to animate objects on an Impress slide. I discussed animations in part 18 of this series, FCM#65: http://fullcirclemagazine.org/issue-65/. This is also a translation from the old Impress Tasks pane into the new format.

## Slide Transitions

## (Impress Only)

Slide Transitions control how a presentation moves from one slide to another. For more details see part 18 of this series, FCM#65: http://fullcirclemagazine.org/issue-65/. This panel is another copy from the old Impress Tasks pane.




## Functions (Calc Only)

The Function panel gives you access to all the Calc functions. A drop-down list divides the functions into categories, including "Recent Used" and "All" categories. Below is a list of all the functions in the selected category. You can insert the function into the current cell by double-clicking the function name or selecting the fx button next to the drop-down list of categories. This gives you quick access to the functions and is much easier (in my opinion) to use than the function wizard.

The experimental sidebar is a tool that makes access to common tools quicker and easier. LibreOffice has accomplished this by making the panel's expansions and combinations of common toolbars, and translating older panels and wizards to the new format. You can compare it to the sidebar in Calligra or the Microsoft Office ribbon bar. I have found it handy to use, but keep in mind that it is experimental and might crash LibreOffice occasionally.

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at http://eeperry.wordpress.com

## Python Special Editions:


http://fullcirclemagazine.org/issue-py01/


http://fullcirclemagazine.org/issue-py02/


http://fullcirclemagazine.org/python-special-edition-issue-three/


http://fullcirclemagazine.org/python-special-edition-volume-four/


http://fullcirclemagazine.org/python-special-edition-volume-five/


http://fullcirclemagazine.org/python-special-edition-volume-six/

# LibreOffice Pt35: The Gallery

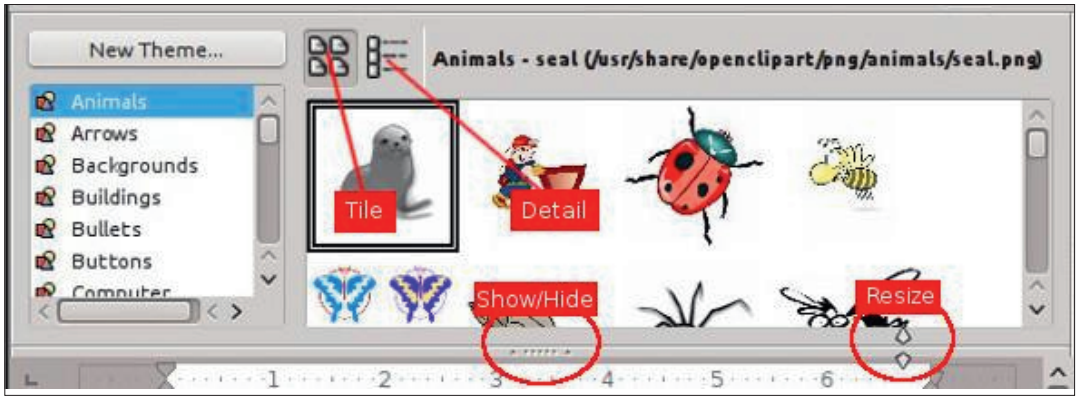
Written by Elmer Perry

Collecting clip art for use in your newsletter, spreadsheet, presentation, or other document can become a timely task. Especially when it comes to organizing – and later finding – the image you want to use. LibreOffice provides a built-in Gallery for collecting and organizing images, sounds, and videos. The Gallery collects files into categories called themes. You can add files from the Gallery directly into your document. Creating new themes allows you to add your own files into the collection.

## The Gallery

You can access the Gallery in three different ways, through the menus (Tools > Gallery); by a button on the standard toolbar; and through a panel on the experimental sidebar. By default, the Gallery is docked under the formatting toolbar. You can undock and dock the Gallery with the combination of CTRL + double-click on the border of the Gallery. Use the hide/show button on the lower border to display and hide the Gallery while it is docked. If you hover over the lower border, your mouse cursor will turn to a double arrow, and you can resize the docked Gallery's height.

On the left side of the Gallery is the themes list. Selecting a theme changes the files which display in the main panel. The main panel shows the files available in the currently selected theme. Above the main area are two buttons for displaying the files – in tile or detail view. Beside the buttons, it shows the theme name, file name, and path for the selected file.




## Using the Gallery

The Gallery allows you to insert a file as a copy, a link, or a background. When you insert the file as a copy, the file is embedded into the current document and is not reliant on another file. If you insert the file as a link, a reference to the file is created in the document. If you opened a document with linked files, the files will show only if they are in the location referenced in the document. If the file needs to travel among multiple computers, insert a copy. If the document will reside on only one computer, you can safely insert a link.

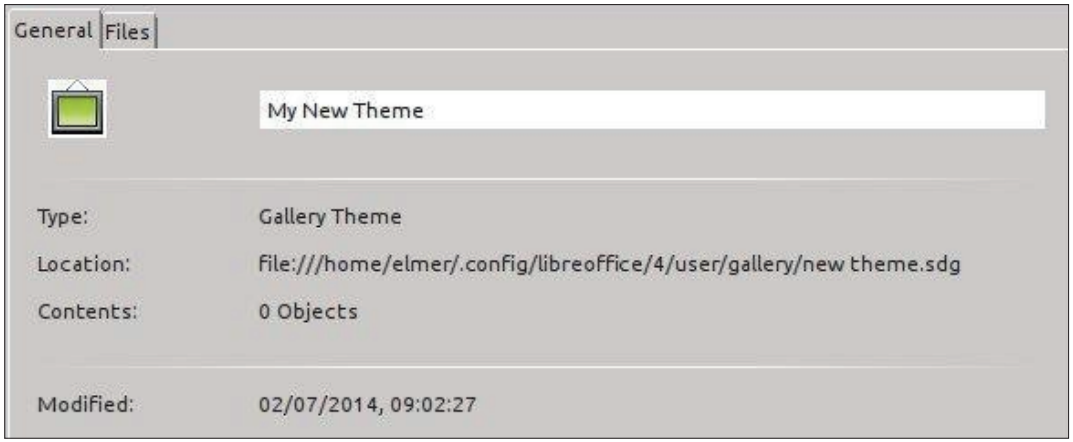
To insert a copy of a file from your Gallery into the document, select the theme containing the file and select the file. You can then drag and drop the file into your document, or right-click the file and Insert > Copy.

To link a file from your Gallery into a document, select the theme and file. Hold down SHIFT + CTRL while dragging and dropping the file into the document, or right-click then Insert > Link.

Sometimes, you will want to use an image as the background for a page or a paragraph. To set an image as the background for a page, select the theme and image. Right-click the image and Insert > Background > page. To set the image as the background for the current paragraph, right-click the image and Insert > Background > Paragraph.

## Managing the Gallery

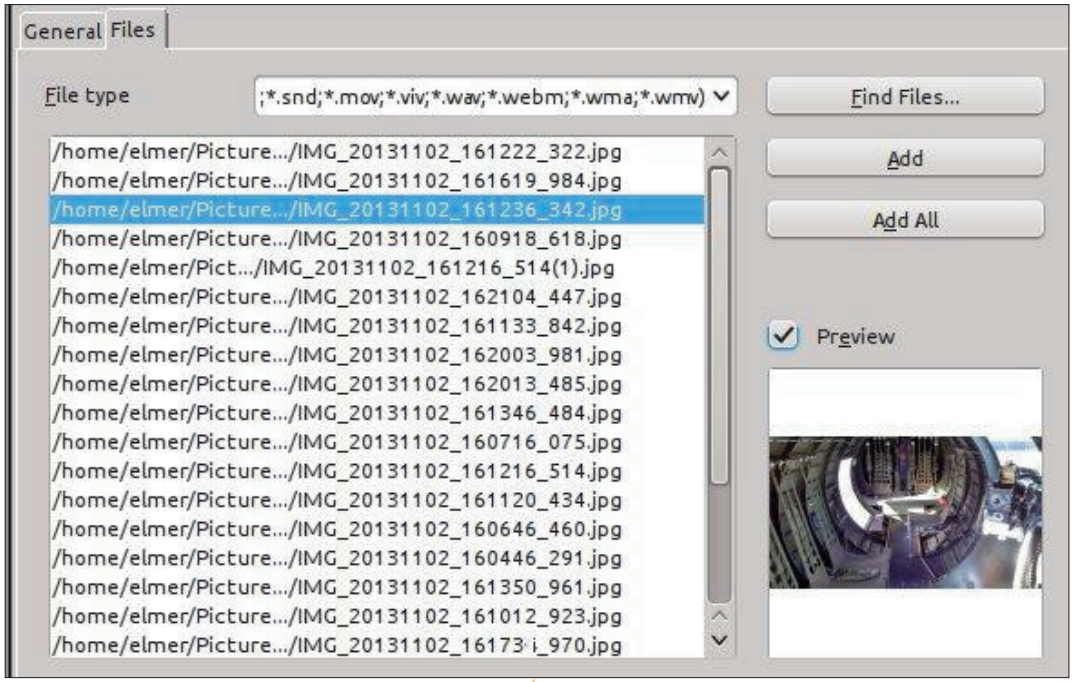
A nice feature of the Gallery is the ability to add your own files to the collection. You cannot, however, add to, remove from, or delete the default themes. In order to add your own files to the Gallery, you will have to create your own themes. You add your




own theme by clicking on the "New Theme" button, which opens the "New Theme" dialog. In the "General" tab, enter the name for your new theme. You can now add files to your theme in the "Files" tab or just click "OK" to save the theme.

Adding files to the theme you just created is easy. You can add files one at a time by dragging and dropping them into the main panel with your theme selected. To selectively add files or to add an entire folder, right-click on the theme title and click "Properties." A theme "Properties" dialog will display. This is the same dialog you get when adding a theme, so you can use this method to add files when you create a new theme. Select the "Files" tab, then click "Find Files." Use the file dialog to navigate to the folder containing the file(s) you want, and click "Select." A list of files in the folder will display in the list box. Use the drop-down box above the list to filter the files if needed. Take time to scroll through the filter list to get an idea of the many file formats the Gallery accepts. For image files, you can get a preview by checking the "Preview" check box. Once you find the file you want, you can select it and click "Add" to add it to the theme, or click "Add All" to add all the files in the list box.

You won't always add files to the Gallery with the intention of keeping them there indefinitely. You may want to just add them while working on a certain project. Once the project is done and you no longer need them, you will




want to delete the files and themes created for the project. To delete a file from a theme, right-click the file and select "Delete." You can also delete a theme with all its files by right-clicking the theme title and selecting "Delete." Keep in mind that there is no undo for these actions, and that deleting a file from the Gallery does not delete it from the computer, just from the Gallery's theme list.

LibreOffice provides a media library called the Gallery. The Gallery is divided in collections called themes. You can add your own themes and files to the Gallery. If a file or theme is added only for a certain project, you can delete them when the project is finished. The Gallery is available in all modules of the suite, and helps you to maintain consistency for newsletters, spreadsheets,

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at http://eeperry.wordpress.com

# LibreOffice Pt36: Base Views

If you work with Base long enough, you will run into a situation where you need a table structured a little differently, or you'll need the results of a query as a table you can use. The answer to these problems is 'Views'. A view is a query which acts like a table you can use in other queries, forms, or controls. Today, I will show you an example of how this is useful when creating forms.

## Our Tables

We are going to create a simple database with two tables. The database will track projects for a company and allow us to assign a team member to each project. Below is the structure of the tables we will create.

```
Project Table
Field|Type|Properties
ID|Integer|Primary Key, Auto Increment
Title|varchar(50)|Not Null
Description|varchar(250)
Due|Date
MemberID|Integer|foreign key

TeamMember Table
Field|Type|Properties
ID|Integer|Primary Key, Auto Increment
FirstName|Varchar(25)|Not Null
LastName|Varchar(25)|Not Null
```

Shown right is the SQL to create the tables. Create a new database document, then go to Tools > SQL, and type the commands in by hand or copy and paste.

You can also get the above SQL commands on pastebin.com at http://pastebin.com/Wyb3R5Fz.

The key to our task is the foreign key "MemberID" in the "Project" table, which connects to the "TeamMember" table's "ID" field. When we create our form we will create a drop-down list for selecting the team member who is responsible for the project. Notice that the "TeamMember" table provides first and last name fields. The list control allows us to use only one field in the list. We could display just the last name in the drop-down list, but what if two team members have the same last name. We will solve this problem by creating a view that will combine the first and last name into one field called "Name". We will use our view to populate the drop-down list box.

```
drop table "Project" if exists;
drop table "TeamMember" if exists;

create table "TeamMember" (
   "ID" integer generated by default as identity
      (start with 1) not null primary key,
   "FirstName" varchar(25) not null,
   "LastName" varchar(25) not null
);

create table "Project" (
   "ID" integer generated by default as identity
      (start with 1) not null primary key,
   "Title" varchar(50) not null,
   "Description" varchar(250),
   "Due" date,
   "Member" integer,
   constraint FK_MEM foreign key ("Member")
```

If the tables do not show in your table list after running the commands, Review > Refresh Table will populate the list.

## Create Query / View

To create our view, we will use a two-step process. First, we create a query, then convert the query into a view. In our query, we combine the first and last name fields to create one field. We will also get the "ID" field, as we will need it to connect back to the "Project" table.

To create the query, we select the "Queries" option in the "Database" pane. In the "Actions" pane, select "Create Query in SQL View." The follow SQL command will create our query:

```
SELECT "FirstName" || ' ' ||
"LastName" AS "Name",
```

"ID" FROM "TeamMember";

If you are familiar with SQL, this looks like a standard query except for the double pipe symbols "||". They are used to concatenate strings together. In the command, we select each "FirstName" and join it to a space, then take the result and join it to "LastName." Finally, we name this string "Name." We also get the "ID" as it identifies each record. You can test the query to make sure it works, but at this point your results are blank, but the query should run without error. Save the query as "QueryTeam".

Turning the query into a view is as simple as right-clicking the query name and selecting "Create as View." Name the view "TeamView." If you select "Tables" under the "Database" pane, you will see "TeamView" listed under the tables.

## Create the Forms

We will create a team member form and a project form for data input. The team member form is the easiest, so let's make it first. Click on the "Forms" icon in the "Database" pane and select "Use Wizard to Create Form." The form wizard will display.

On the first screen, select "Table: TeamMember" from the drop-down box. Move the "FirstName" and "LastName" fields into the list box labeled "Fields in the form." Click the "Next >" button. There is no subform so just click "Next >" again. On step 5, use any of the options for arranging the controls except tabular. On step 6, just accept the defaults. With Step 7 pick a style that you like. When you get to step 8, name the form "TeamMemberForm" and leave it on "Work with the form." When you click the "Finish" button, the form will open for input. Add a few names for testing the project form when we finish it.

For the project form, we need about the same thing, except use "Table: Project" from the drop-down in step 1, and select all the fields except for "ID" for inclusion in the form. Name the form "ProjectForm" and select "Modify the form" on step 8. This time, instead of the form opening for input, it opens for editing.

When you create forms using the form wizard, the wizard groups a text box for most data types with a label for each field. In order to change the control for the data field, you have to ungroup the text box from the label. In our case, we want to change the "Member" field, so right-click the "Member" label and text box and select Group > Ungroup. Click on the form background to unselect both. Right-click on the text box and select "Delete." From the forms toolbar, select the list box. If the form toolbar is not showing then View > Toolbars > Form Controls to display it. Once you select the list box, your cursor will become a crosshair, +. Click and drag to create the list drop-down box. When you release the mouse button the list box wizard will pop up.

Select "TeamView" as your table and click "Next >". The field we want to fill the list box is "Name", so select "Name" and click "Next >". Finally, we need to match the fields from the two tables. For the "Value Table" select "Member". "ID" is the field to select for "List Table" as it is the primary key that matches up with the "Member" foreign key field in the "Project" table.

Save your changes and close the design window.

Now, if you entered names in "TeamMemberForm", you can open the "ProjectForm" and those names will appear in the drop-down list box we created. You will want to test creating several projects and assigning members to them to test the workability of your forms.

In this article, we discussed the use of a LibreOffice Base view to create a new table from an existing table. We used this view in the construction of a form that automated the retrieval and selection of records from that view.

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at
http://eeperry.wordpress.com

# LibreOffice Pt.37 - Base Form Improvement

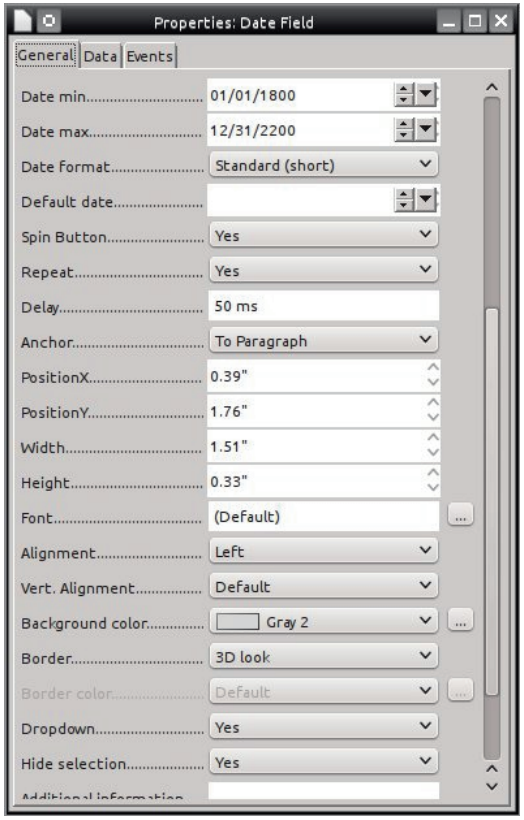
Written by Cork Marino

In my article in issue 83 of Full Circle Magazine, I walked you through creating a form that used a view, but I left things unfinished in the forms: I didn't do anything to format the controls to ensure data integrity. If you haven't already done so, read the article in Full Circle 83, and follow along to create the tables and forms. We will work with the "ProjectForm," and see how we can improve data integrity. I'll wait if you need to work through the How-To in issue 83.

## Date and Time Controls

Now let's get down to work. On the "Forms" pane in the database file you created, right-click the "ProjectForm" and select "Edit". As I have said before, the wizard usually joins a label with an input box, but in the case of date and time fields, it actually pairs them up with date and time controls. Without any formatting, they just look like text input boxes, but trust me, they are date and time controls. We will need to ungroup the control from its label in order to work with the date control. Right-click the "Due" label or date control, then select Group > Ungroup.

Double-click the date control to bring up the control's properties dialog. On the "General" tab, you find all the adjustments you can make to the control. We are interested in the ones that create adjustments for date entry.




**Date Min / Date Max** – These two options allow you to control the minimum and maximum date values allowed in the fields. These fields have default values of 01/01/1800 for minimum and 12/31/2200 for maximum. In general applications, these defaults should work, but if you have different needs, feel free to adjust. An example is an inventory database, where no shipping invoices dated before the inception of the company is necessary. You could set the minimum date to the opening day.

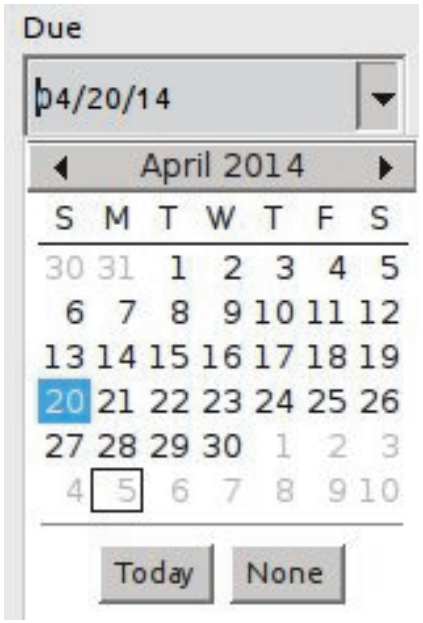
**Date Format** – There are 12 different date formats. This option determines how the control will display the date. Scroll through the options and see which one best suits your application.

**Default Date** – This is a default value for the field. If you have a date that users should use most of the time, then use that date. It will speed up data entry. It can also show the user the format in which to enter dates. Unfortunately, at this time, you cannot easily set the default to the (current) date the record was added.


**Spin Button** – Setting this option to Yes will put an up-and-down spin button on the control. The user can use this button to adjust the month, day, and year. The user clicks into the part of the date they want to adjust and makes changes by clicking on these buttons. Very handy for data entry.

**Repeat** – The Repeat option is related to the spin button option. It controls whether to repeat when you hold down the mouse button on the spin button. Use at your own discretion. Sometimes, it makes sense. Other times, not so much.

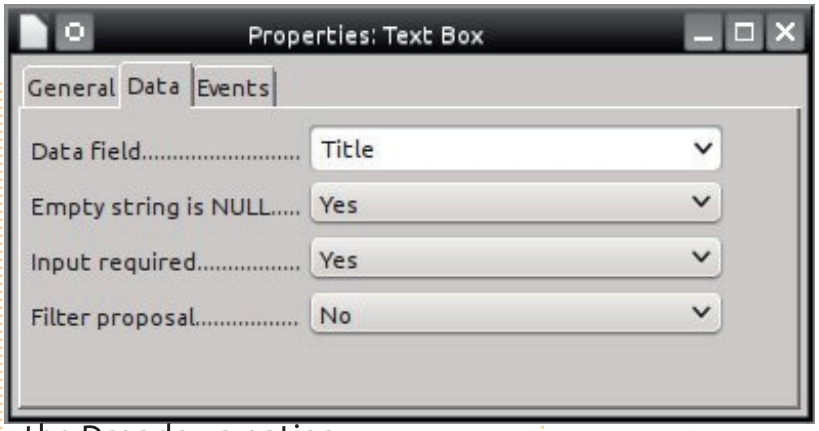
**Delay** – The Delay option controls the speed of the repeat option. A longer delay means you have to hold the button down longer before it will repeat. The default is "50 ms" (milliseconds).

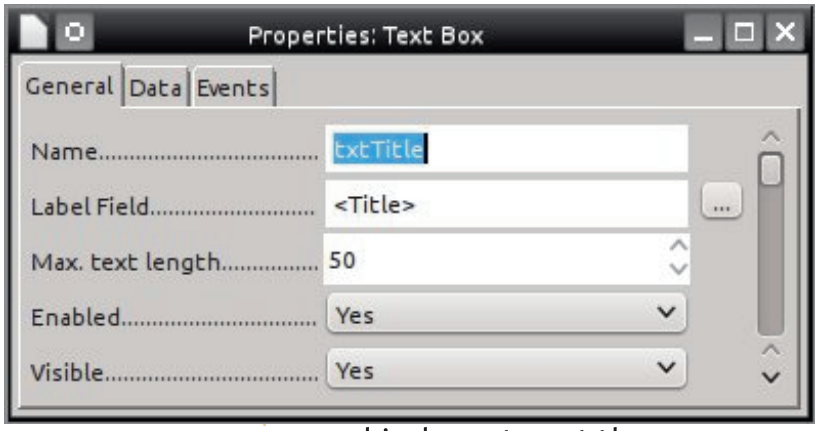



**Dropdown** – Dropdown adds a listbox style arrow to the control. Clicking it displays a calendar where you can select the date you need.

**NOTE**: You can use the Spin Button and Dropdown options together to create a flexible control.

After you make your adjustments to the control, save the form and close it. Open the form and test your newly adjusted date control. Feel free to experiment with the different control options to get a better idea of how they work. The options for a time control are the same as the date control except you don't have the Dropdown option.




## Making the Title Mandatory

Now that we have set up the date control, let's tackle some possible issues with the "Title" field's input box. When we created the field, we set its maximum length at 50. However, as the input box stands now, we can type more than 50 characters into the box. Trying to save the record with more than 50 characters in "Title" results in an SQL insert error. Also, when we created the table, we declared "Title" as "NOT NULL." We want to make the "Title" a mandatory entry for each record. The "NOT NULL" status prevents the input box from being left empty, but it is still possible to type just a space and the form will accept the entry as valid. So, we have a few things to fix in our form.

Open "ProjectForm" for editing. Right-clicking the "Title" label or input box, Group > Ungroup. Now, double-click the "Title" input box to bring up its properties dialog. On the "General" tab, set the value for "Max Length" to 50. This will prevent the user from entering more than 50 characters. On the "Data" tab, make sure that both "Empty String Is NULL" and "Input Required" are set to "Yes." These two settings become a redundancy check for making sure there is a valid value in the input field.

However, we still have an issue with the fact that the user can just create a "Title" with spaces. To fix this issue, we will need to use a little SQL. I have looked for a graphical way to get the same result, but sometimes, when you work with databases, SQL is the best, if not only, choice. We will add a CHECK constraint to the "Project" table. Click on Tools > SQL. To enter the SQL, Tools > SQL... Use the following SQL command to add the constraint to the table:

```
ALTER TABLE "Project"

ADD CONSTRAINT NOSPACES_CK

CHECK(TRIM(BOTH FROM
"Title") <> '');
```

The ALTER TABLE command means we are making changes to the table, in this case the table "Project." To indicate the change we are making, we use the ADD CONSTRAINT command. NOSPACES_CK is the name of the constraint we are adding. It's not

required that you make your constraint names all caps. I just do it as a matter of convention. The last line is the CHECK constraint. Using the built-in function TRIM, it removes all the spaces from both sides of the string and checks to make sure it is not equal to an empty string. Now, if someone tries to use a string of spaces for the "Title", an SQL constraint error is generated.

You can do the same thing for the "FirstName" and "LastName" fields in the "TeamMember" table. The "Max Length" for the name fields is 25. I suggest the following SQL for adding the constraints:

```
ALTER TABLE "TeamMember"

ADD CONSTRAINT
RNAME_NOSPACES_CK

CHECK(TRIM(BOTH FROM
"FirstName") <> '');



ALTER TABLE "TeamMember"

ADD CONSTRAINT
LNAME_NOSPACES_CK

CHECK(TRIM(BOTH FROM
"LastName") <> '');
```

## Improving the View Query

The view we create for putting the names in the drop down list box in the "ProjectForm" is good, legal SQL, but there are a couple of problems. First, although we have prevented a name from being just spaces, the users can still add a legal name with spaces added to the beginning or end. Also, the names are not in any order.

Luckily, we can edit our view and make some additions to address these problems. Select "Tables" from the "Database" pane. Right-click "TeamView" and select "Edit in SQL View..." This brings up the SQL we used to create the view. Change the current SQL so it looks like the following:

```
SELECT TRIM(BOTH FROM
"FirstName") || ' '
|| TRIM(BOTH FROM "LastName")
AS "Name", "ID"
from "TeamMember" ORDER BY
"LastName", "FirstName";
```

We already saw TRIM when we created our CHECK constraints. It removes all spaces from the beginning and end of "FirstName" and "LastName".

At the end, we tag on an ORDER BY command to sort the names by "LastName", then "FirstName." This means the names will first sort by "LastName", then if there is more than one of the same "LastName", it will sort by "FirstName."

With adjustments to the controls and a little SQL, we were able to make many improvements to our forms, making data input not only easier but more reliable. If you are interested in a better understanding of the SQL used in this How-To, I have a couple of resources for you.

My blog "What the Tech Am I Doing?" LibreOffice Base posts
http://eeperry.wordpress.com/category/libreoffice/libreoffice-base/

W3Schools SQL Tutorial
http://www.w3schools.com/sql/default.asp

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at
http://eeperry.wordpress.com


The Ubuntu Podcast covers all the latest news and issues facing Ubuntu Linux users and Free Software fans in general. The show appeals to the newest user and the oldest coder. Our discussions cover the development of Ubuntu but aren't overly technical. We are lucky enough to have some great guests on the show, telling us first hand about the latest exciting developments they are working on, in a way that we can all understand! We also talk about the Ubuntu community and what it gets up to.

The show is presented by members of the UK's Ubuntu Linux community. Because it is covered by the Ubuntu Code of Conduct it is suitable for all.

The show is broadcast live every fortnight on a Tuesday evening (British time) and is available for download the following day.

**podcast.ubuntu-uk.org**

# LibreOffice Pt.38 - Contents and Indexes

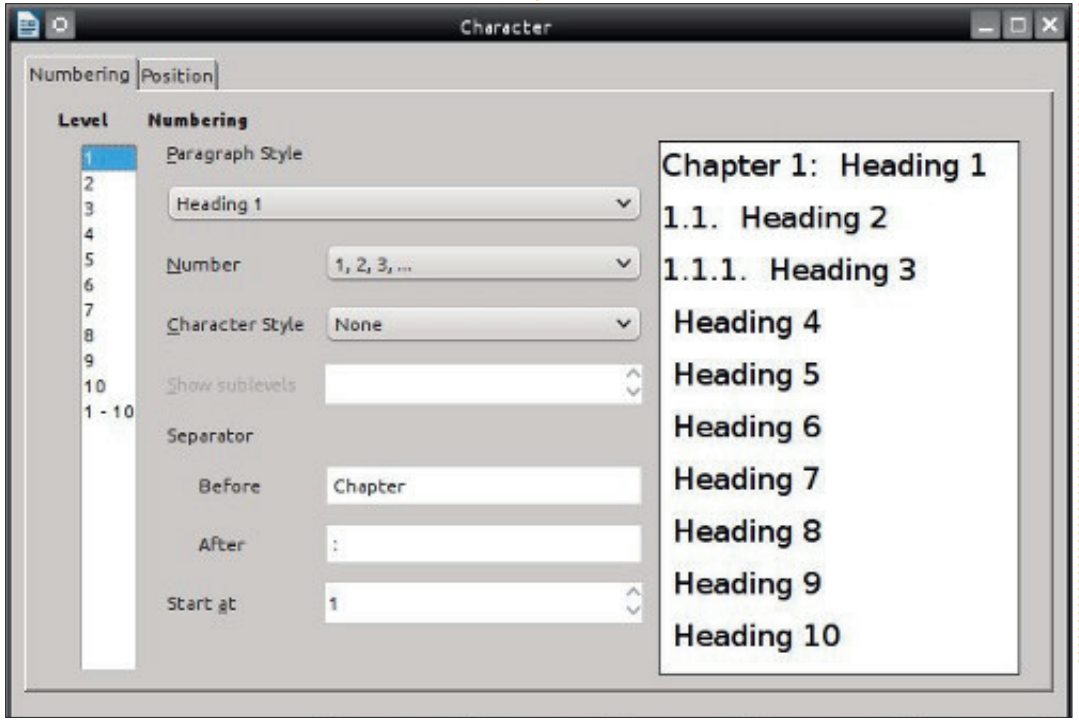
Imagine a scientist, let's call him Doc Brown, who has just written a manuscript for a book describing his new theory on time travel. The manuscript is a few hundred pages long. He has broken it down into chapters and sections, but he needed to add a table of contents and an index that the other scientists, who will praise and adore his work, can use to navigate his book with ease. Luckily, he knew about LibreOffice and how to use Writer's indexes and tables tools to create a table of contents and an index. Let's see how he did it.

## Setting Up the Styles

In many of my articles, I have emphasized the importance of using styles, but just in case you haven't got the message yet, "Using styles is the best way to save time and create uniformity in your documents." Luckily, Doc Brown knew the importance of using styles, and he used styles to help simplify the creation of his table of contents. These are the heading styles "Heading 1[...10]." He could edit the styles in any way he wanted for appearance, but we are interested in how he used them in the overall outline of the document.

To set up the overall outline of his document, Doc Brown opened the "Outline Numbering" dialog, Tools > Outline Numbering. Selecting each of the different levels, he noticed that each one was already assigned to a heading styles in order from 1 to 10.

Working with these defaults he selected level 1 with the paragraph style "Heading 1" assigned as its style. For the "Number" setting, he selected "1, 2, 3,..." For the "Before", he entered "Chapter " (note the space), and for the "After", he entered a colon ":". Using this method, each "Heading 1" inserted into the document would have the format of "Chapter N: Title", where N is the chapter number.




Doc Brown has also decided that the second and third levels needed a numbering scheme of 1.1 for the second level and 1.1.1 for the third level. On the second level, he changed "Number" to "1, 2, 3, ...", set "Show sublevels" to 2, and added a period and space to "After." For the third level, he set "Number" to "1, 2, 3, ...", set "Show sublevels" to 3, and added a period and space to "After."

With all the styles set, Doc Brown went to work on his document. He used "Heading 1" for all the chapter headings, and "Heading 2" and "Heading 3" for the subheadings within the chapters. Because he took the time to set up his styles, he could easily create his table of contents once his document was finished.

## Create the Table of Contents

With the writing all done, Doc Brown was ready to create his

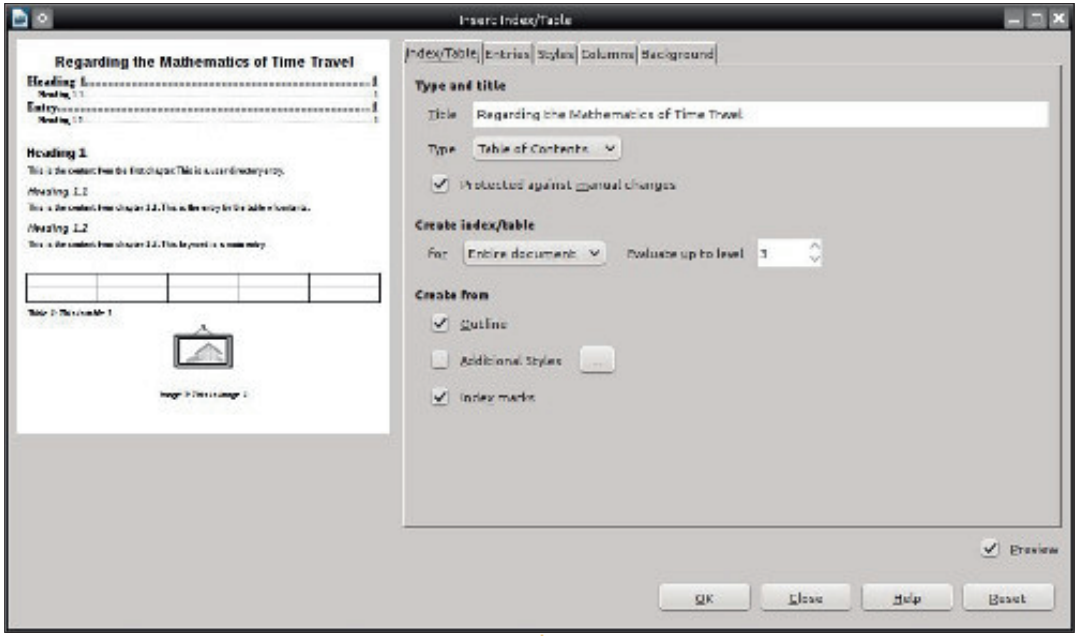



table of contents. Placing the cursor below the last line of the title page, he decided the table of contents should start on a new page. Insert > Manual Break brought up the "Insert Break" dialog. He selected "Page Break" and clicked OK. The cursor moved to the start of a new page.

Now, to create the table of contents. Insert > Indexes and Tables > Indexes and Tables. The "Insert Index/Table" dialog appeared. He changed "Title" to "Regarding the Mathematics of Time Travel." For the "Type", he made sure that "Table of Contents" was selected.

The "Create Table/Index for" gave him two options: "Entire Document" or "Chapter." If he wanted, he could have placed a table of contents at the beginning of each chapter by inserting a table of contents after the chapter headings and selecting "Chapter" for the "Create Table/Index for." However, he was creating the table of contents for the whole book, so he selected "Entire Document."

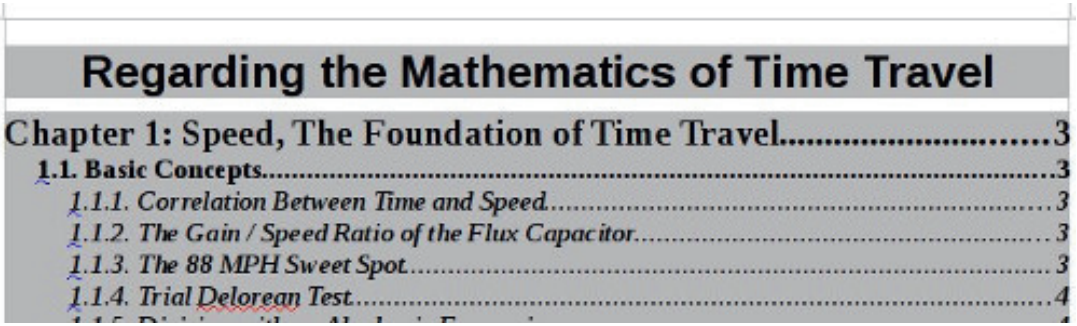
Finally, he had the "Evaluate up to level" option. Here he selected the depth of his table of contents. If he changed this to 1, only the chapter titles would show. He could then create a table of contents for each chapter to show the subheadings. In the end, he decided to show 3 heading levels in the table of contents and set this option to 3.

Doc Brown clicked OK, and the table of contents was created. Without any editing, the page numbers for the first three levels were added to the table of contents. Each new level was indented just a little to show that it was a lower level. Each title in the table of contents was a link to the heading in the document. This became handy when he converted the document to PDF and Ebook. He could have left his table of contents like this and it would have worked great, but he decided it needs just a few more added touches.

## Edit the Table of Contents Styles

To change the appearance of the different levels in the table of contents itself, Doc Brown would need to edit the "Contents 1[...10]" styles. There was also the "Contents Heading" style which was used to style the table of contents title.

Doc Brown wanted the title centered, enlarged, and bold. He opened the "Styles and Formatting" dialog through the new sidebar (no longer experimental in version 4.2). He could also open the "Styles and Formatting" dialog by clicking on its button in the "Formatting" toolbar, or through the menus, Format > Styles and Formatting. He right-clicked the "Content Heading" style and selected "Modify". On the "Font" tab, he selected bold and set the size to 20pt. He switched to the "Align" tab and selected "Center." He clicked OK to save his changes.



Since Doc Brown was only including the first three levels, he only needed to change the paragraph styles "Contents 1", "Contents 2", and "Contents 3." The first level he wanted a little bigger and bold, since these were the chapter titles. He modified the "Contents 1" style by selecting bold and changing the size to 16pt on the "Font" tab. To distinguish the second level from the third, he set the second to bold but left the size at the default. For the third, he changed the font to italic but left the size at the default.

Doc Brown saved his document with its newly formatted table of contents. He was now one step closer to publishing his book and becoming world famous. He smiled as he imagined the raving peer reviews it would receive, but wait... what about the alphabetical index?

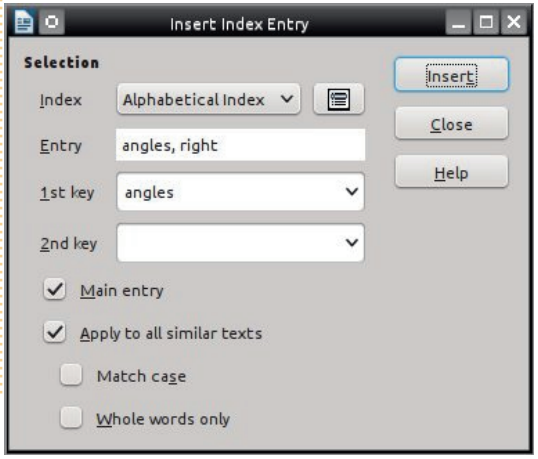
## Create the Index Entries

In a book of such scientific importance, an index at the end would help researchers find a reference to certain scientific knowledge contained in the book. With the final edit completed, Doc Brown began reading through his manuscript to determine which words he would need to include in the index.

Before he created the index itself, he needed to create the index entries for the words he decided to include in the index. To get started, he selected the first word he wanted indexed; then from the menus, he selected Insert > Indexes and Tables > Entry. The "Insert Index Entry" dialog appeared.

He left the "Index" at the default, "Alphabetical Index." If he had planned to create a custom index, he would create one using the button beside the dropdown list.

"Entry" is the word or phrase for the index, and it doesn't necessarily have to appear the same as in the manuscript. For example, he changed the term "supplementary angle" to "angle, supplementary"in the index. Even though the order of the words has changed, it continues to refer to the same place in the manuscript.




Writer allows for two levels of "Keys" or categories for grouping indexes together. For example, Doc Brown decided that all indexes concerning angles should appear together in the index, as well as the different operators used. For the angle entries, he entered "angle" in "Key 1", and for the operator entries, he entered "operators" in "Key 1." Though he only created one key level in each case, he could have created two by entering a second value in "Key 2".

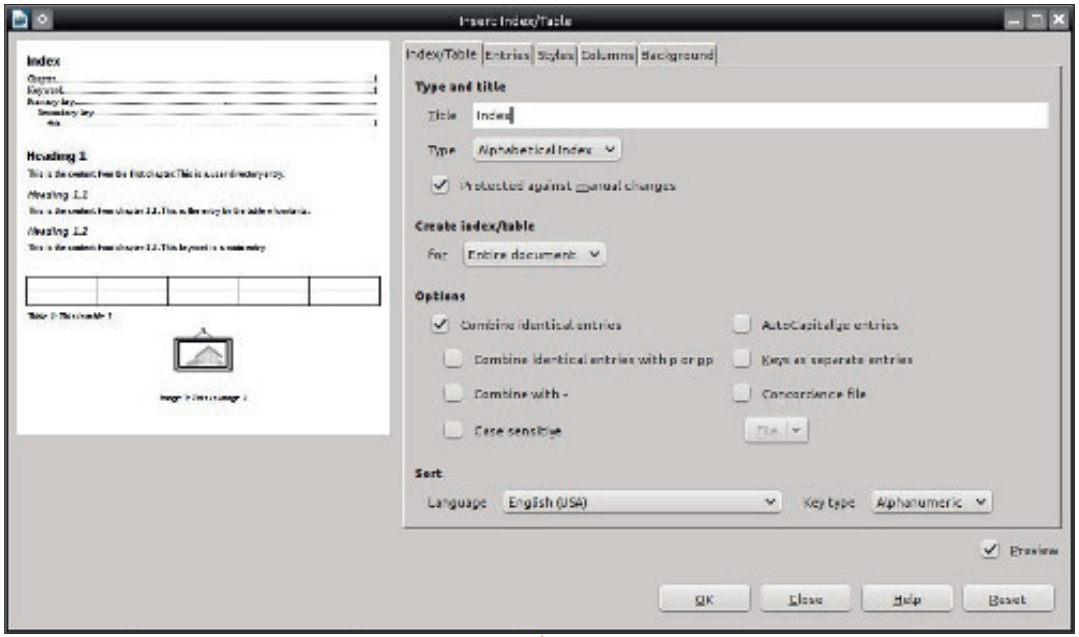
Whenever he was on the page where the main text for a topic appeared, he would check "Main Entry." This makes the page number appear in bold numerals for that entry by default. (You can change the appearance of the main entry page number by editing the character style "Main index entry.")

Doc Brown checked the entry "Apply to all similar text" as this creates an entry for every time the word or phrase appears in the manuscript. He left "match case" unchecked, as sometimes the word or phrase appears in a different case. He checked "Whole words only" as he does not want variations to the word or phrase indexed.

Once finished with a word, Doc Brown clicked "Insert." Leaving the dialog open, he selected the next word or phrase in his document. When he clicked on the dialog, the new word or phrase appeared in the dialog's "Entry" field. He made the changes needed for this entry and clicked "Insert." This ability to switch between the dialog and the manuscript makes creating the index entries quicker than if he had to open the dialog each time.

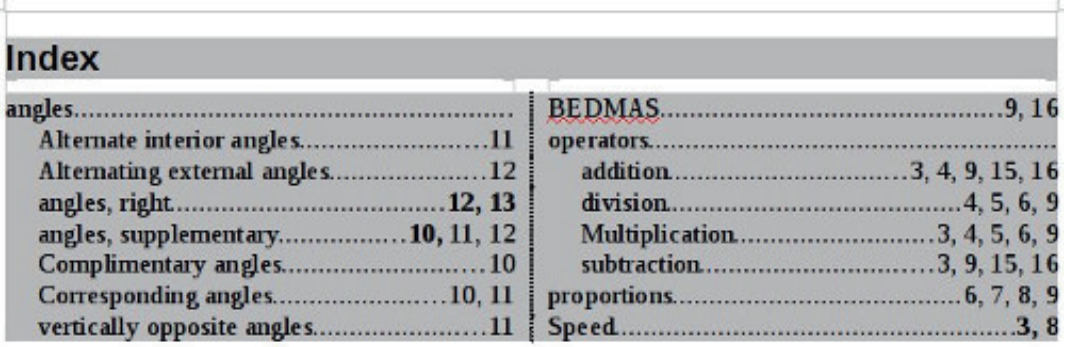
## Creating the Index

Once Doc Brown completed creating his index entries, he was ready to create the actual index. He went to the last page of his manuscript, and deciding the index should start on a new page, inserted a page break (Insert > Manual Break; select "Page Break"; click OK).




Insert > Indexes and Tables > Indexes and Tables, brought up the "Insert Index/Table" dialog. On the "Index/Table" tab, he selected "Alphabetical Index" for the "Type", changed the "Title" to "Index", and unchecked all entries except "Combine identical entries." This prevents the index from creating separate entries because of upper or lower case.

Doc Brown decided that the index should have two columns to conserve some space. On the "Columns" tab, he changed the number of columns to 2. To create some space between the two columns, he changed the spacing to 0.20'' (0.50cm).



Index



Satisfied the index was set up the way he wanted it, he clicked on OK. The index then appeared on the page the way he formatted it.

Now, Doc Brown's manuscript was ready for publication. He began to dream of the raving peer reviews he would receive. Thanks to LibreOffice, he was able to add his table of contents and index rather quickly.

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at
http://eeperry.wordpress.com

# LibreOffice Pt.39 - Master Documents

Written by Elmer Perry

When I was in school, I was very focused on writing, and I didn't see the value in many other subjects, especially mathematics. As I grew older, I began to appreciate and enjoy mathematics. Through the years, I have studied mathematics on my own. While I studied, I created many documents containing my mathematics notes. I decided it was time to put them all into one document with chapters, a table of contents, and an index. But how does one combine a bunch of documents into one?

I guess I could have just copied the text from one document into another big document, but this could get messy, especially since I wasn't sure about the best order for the documents. I wanted a method where I could work on the documents individually then combine them into one, and I wanted the ability to rearrange the order of the documents. In LibreOffice, you can do this with 'master documents'. You can think of a master document as a container that joins together separate Writer documents. Just the kind of thing I needed. So, I decided to use a master document.

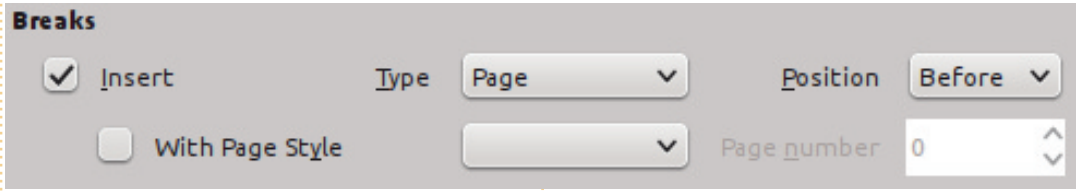
## Preparing the Documents

Since the documents were scattered through several years, they were created with different versions of OpenOffice and LibreOffice. They had no style or template in common. I needed to create a template for consistency throughout all the documents and the master document.

To create my template, I started with a new blank document. While creating my template, there were a few things I took into consideration. I knew I wanted to create a table of contents, so I would need to edit the "Outline Numbering." I also wanted each chapter to start on a new page. Finally, I would need a unique title page style.

To edit the "Outline Numbering", I went to Tools > Outline Numbering. I edited the top level to put "Chapter" and the chapter number before the top level headings, just as I discussed in Part 38 of this series (Full Circle issue 85). I decided to leave the other levels bare, although I would probably include some of them in the table of contents.

To make each chapter start on a new page, I edited the outline top level style, "Heading 1." I opened the "Styles and Formatting" tab in the sidebar, right-clicked on "Heading 1" in the paragraph styles, and selected "Modify." On the "Text Flow" tab under "Breaks", I checked "Insert". For the type I selected "Page," and for the position, I selected "Before." OK saved the changes.

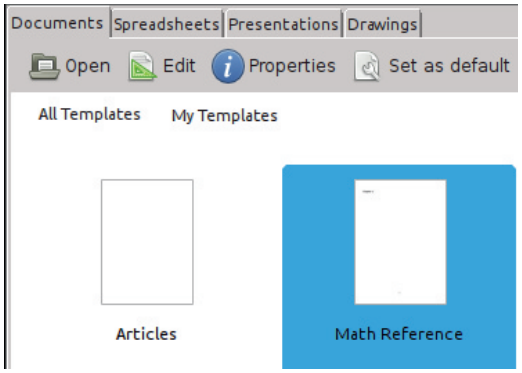



**NOTE**: You can also open the "Styles and Formatting" window from its button on the Formatting toolbar, the menus (Format > Styles and Formatting), or by pressing F11.

I created a page style named "Title Page" based off the "First Page" style. The only real change I made was to set the top to halfway down the page to center the title on the page vertically. I modified the "Title" paragraph style to a font and size of my liking. I also created the paragraph style "Byline" based on the "Subtitle" style. Not many changes here, just selected a font to go with the title font.

To save the template, File > Save as Template opened the Template Manager. I clicked on Save, and the program prompted me for a name for the template. I named it "Math Reference." I clicked OK, and I had a new template.

When you are creating a template, you may have other changes you want to make. These were the ones that I felt were a good starting point for me. You can go as far as you want with a template. In the end it is up to you. If you decide, while working on sub-documents, that you need to




make more changes to styles, make the changes to the template rather than the individual document.

To make changes to my mathematics template, File > New > Templates. I selected the template and clicked the Edit button. This opened the template rather than a new document using the template. I made my changes and then saved it as though it was a normal document (Click the save button on the main toolbar, File > Save, or CTRL-S). When I opened one of the documents that uses the template, LibreOffice notified me that the template had changed and asked me to update the document with the new version of the template. I clicked "Update Styles", and the styles updated in the document.

Now, I needed to apply my new template to my existing documents. I opened each of the documents and Edit > Select All. I then created a new document using my template, File > New > Templates. I selected my template and clicked Open. Edit > Paste and the text and objects from the original file were pasted into the new file. I closed the old document because I wanted to save it with the same filename. I saved the new document and I had the old file contents using the new template. I repeated this procedure for all the existing documents.

## Creating the Master Document

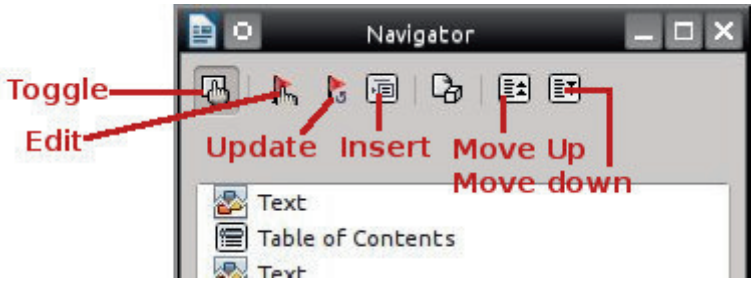
To create my master document, I opened a new document using my "Math Reference" template. Selecting the "Title" style from the paragraph styles, I typed in my title. I then created the subtitle and byline. Once I had something in the document, I saved it as a master document, File > Send > Create Master Document. I gave the document a name and clicked Save. I then went to the page styles in the Styles and Formatting dialog and changed the page style to "Title Page."

## Inserting Documents

Once I had a master document, I could start adding files to it. When I saved the master document, it opened the Navigator in a floating window automatically. I could have worked in this floating window, but I closed it and used the Navigator panel in the sidebar. They are both the same, so it's your choice which one you use. The Navigator window is opened by pressing F5 on the keyboard, or from the menus, View > Navigator.

The Navigator in master documents is different from other documents. By default it is in document list mode. The first button in the toolbar is a toggle button that allowed me to toggle between the document list and a standard Navigator panel. While working in the master document, I did not see any reason for switching to normal mode, but it is there should you have a reason for navigating to an object or subheading in one of the sub-documents.

I noticed that one document was already in the list of files. This was the Text of the master document itself, at this point, my title page. I would add other Text blocks as needed in the master document using the insert button. To add my documents to the master document, I clicked and held on the Insert button <image>. Dragging down to the File selection, I released the mouse button. An insert file dialog appeared for me to find and select my file. I clicked open and the file was added to my master document. When adding a file to the master document, Writer always adds it above the currently selected file. I used the "Move Up" and "Move Down" buttons <image> to get my documents in the order I wanted them. All references and chapter numbers adjusted automatically as I moved the documents up and down in the




list.

## Editing from the Master Document

All documents linked to the master document are read only in the master document. To edit a document from the master document, I selected the document in the Navigator list and clicked the edit button. A new window containing the document I wanted to edit opened. I made my changes to the document, saved, and closed it. In the master document, I clicked and held the Update button. Dragging I released on Links. A message window appeared asking me whether I wanted to update all the links in the document. I clicked Yes, and the document I just edited updated in the master document. I was also able to open the document through normal methods and edit it that way. The changes still appeared when I updated the master document's links.

I inserted a table of contents by inserting a page break after my title page and using the same methods discussed in Part 38 of this series (Full Circle issue 85). I did the same for an index, but I had to insert a Text block at the end of the master document through the insert button. This text block was needed to create an editable block at the end of the master document.

Master documents are a great way to create large documents. In my case, I wanted the flexibility to work on the individual documents and the ability to rearrange the order of the documents. A master document works best with a template shared by all the documents. Just like normal Writer documents, you can add a table of contents and indexes. While a master document is not always the best choice, it is a good choice if you need the ability to move the different parts around or have different people authoring the different parts. This was just one example of using a master document. If you plan things well, you can start from the very beginning before you even write the first document.

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at http://eeperry.wordpress.com

ubuntu uk podcast

The Ubuntu Podcast covers all the latest news and issues facing Ubuntu Linux users and Free Software fans in general. The show appeals to the newest user and the oldest coder. Our discussions cover the development of Ubuntu but aren't overly technical. We are lucky enough to have some great guests on the show, telling us first hand about the latest exciting developments they are working on, in a way that we can all understand! We also talk about the Ubuntu community and what it gets up to.

The show is presented by members of the UK's Ubuntu Linux community. Because it is covered by the Ubuntu Code of Conduct it is suitable for all.

The show is broadcast live every fortnight on a Tuesday evening (British time) and is available for download the following day.

**podcast.ubuntu-uk.org**

# HOW-TO
Written by Elmer Perry

# LibreOffice Pt.40- Writer, Tracking Changes

It probably won't surprise you to learn that I use LibreOffice to write these articles. For the longest time, I would print out each draft of an article, mark it up with a red pen, then transfer my changes to the computer. This old-school method came from my years editing papers as a student and as a professional. As I began to write on a regular basis, I accumulated a growing stack of recycle paper from writing. I tried to use both sides of the paper, and even ripped some in quarters for use as note-paper. Before long I was burning through a lot of paper and ink.

At some point I decided I needed a digital solution. I already knew that Writer provided editing markup, but had never tried to use it for editing my documents. With some hesitation, I began to use it. The whole "old dog, new trick" issue. After using it for a couple of months, I began to wonder why I hadn't used it before. From right inside Writer, I can track my changes, make notes (comments), and accept or reject the changes. In many ways, it is quicker and even more efficient than the hard-copy method.

## Preparing to Record Changes

Once I finish the first draft of my article, I save it as a version and turn on recording changes. (More on version control later.) 'Edit > Changes > Record' sets Writer to begin recording changes. Edit > Changes > Show sets Writer so it shows me the changes that have been made. I have debated with myself the wisdom of showing changes while I am actually editing. On the one hand, I can see the changes as I make them. On the other hand, showing the changes while I edit can make reading the text difficult. I have tried it both ways, and see some logic in not showing changes during the actual edit process, but waiting until the accept and reject process to actually show the changes. In the end, the choice is yours.

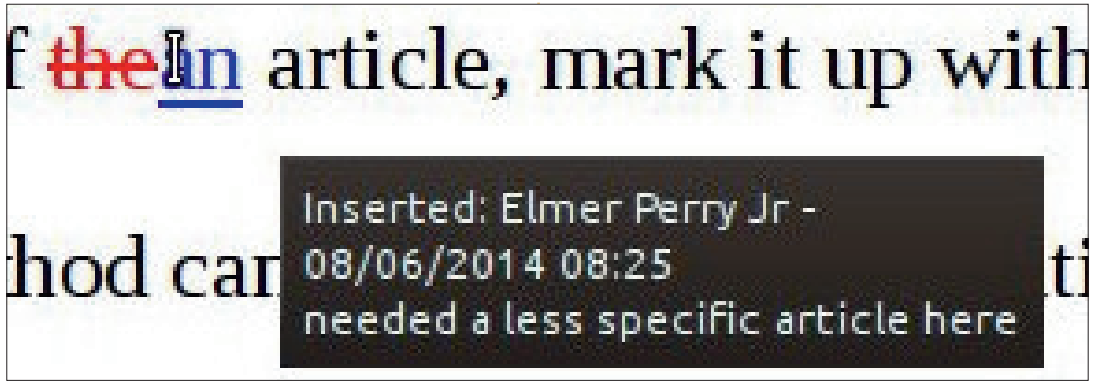
NOTE: If you are passing the document to someone else to edit, you might want to take some precautions. File > Properties; select the Security tab; check "Record Changes", and click on "Protect". Enter and confirm a password. This will prevent the other person from making changes and then accepting or rejecting them. When you get the document back with their changes, File > Properties, click on "Unprotect", and enter your password. You can now accept or reject their changes.

## Recording Changes

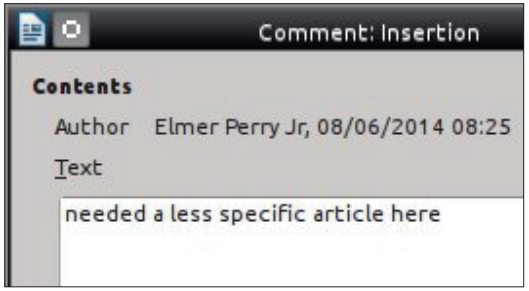
If I set Writer to show changes, and I add text, it is underlined and changed to the color I have set. When I remove text, it is shown as struck-through just as I would when editing a hard copy. The strike-through text is shown in a different color from the added text. The colors used for added and deleted text are controlled by the settings at Tools > Options > LibreOffice Writer > Changes.

If I hover over a change, it will show the author, date, and time of the change in a tool-tip box. If I have "Extended tips" turned on in Tools > Options > LibreOffice > General, the tool-tip will show the author, date, time, and any comments attached to the change. The author's name is controlled by the information in Tools > Options > LibreOffice > User Data.

To add a comment to a change, I place the cursor anywhere within the changed text. Edit > Changes > Comment brings up the comment



dialog. I can then enter my comment for the change. This is sometimes useful to remind myself of why I made a certain change. Once I am finished, I click on OK and the comments are added to the change.




## Accepting / Rejecting Changes

After editing the draft, I am ready to review my changes. If changes are not currently showing, Edit > Changes > Show. Edit > Changes > Accept or Reject brings up the "Accept or Reject Changes" dialog, which displays a list of all my changes. Each listing shows the type of change, author, date, time, and any comments. Selecting any of the items in the list highlights the change in the document. If I want to keep the change, I click the Accept button. If I don't want to keep the change, I click the Reject button. If I know I want to keep all my changes, I can just click the Accept All button. However, if I decide to throw out all my changes, I can click the Reject All button.

On the Filter tab, I can narrow down the kind of changes that are displayed in the list. There are four different filters for me to choose from: Date, Author, Action, and Comment.

The Date filter allows me to see only changes that were created earlier than, since, equal to, and not equal to a certain date. I can also select changes that occur between two dates. The buttons with the clock face at the end of the date entry fields allow me to set the date to the current date and time by clicking them. The last setting for the date filter is to show only the changes made since the last time the document was saved.

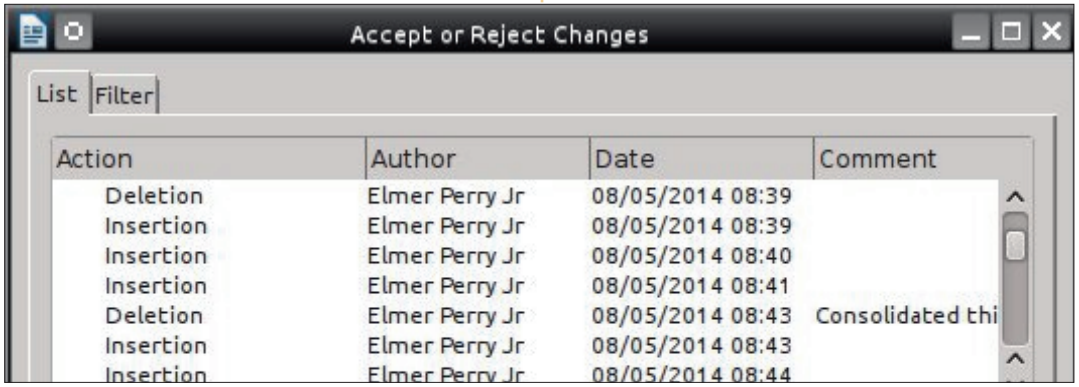
I never have much use for the Author filter, as I am usually the only one who is making changes. However, if I did have someone else editing for me, I could pick between my own changes and the changes made by another editor of the document.

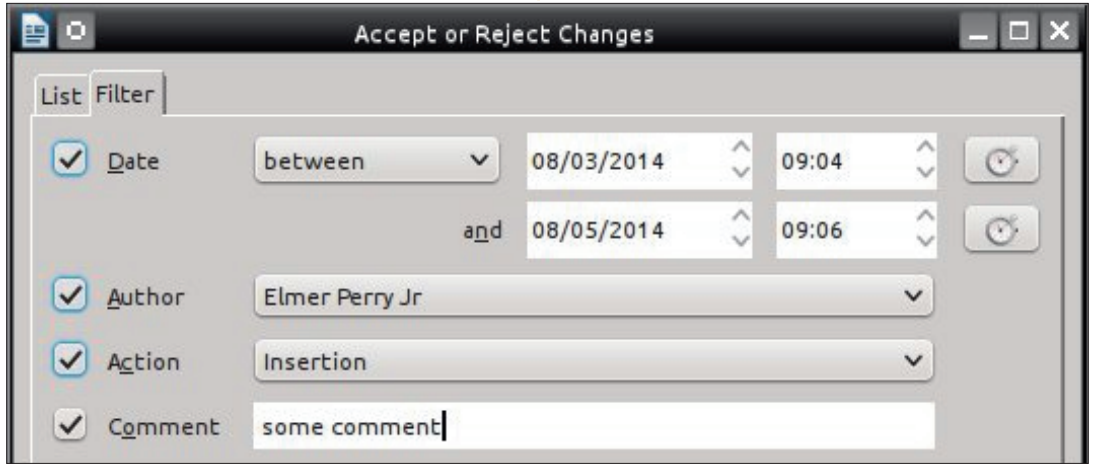
The Action filter allows me to display just a certain type of change. The four change types are insertion, deletion, formats, and table changes.

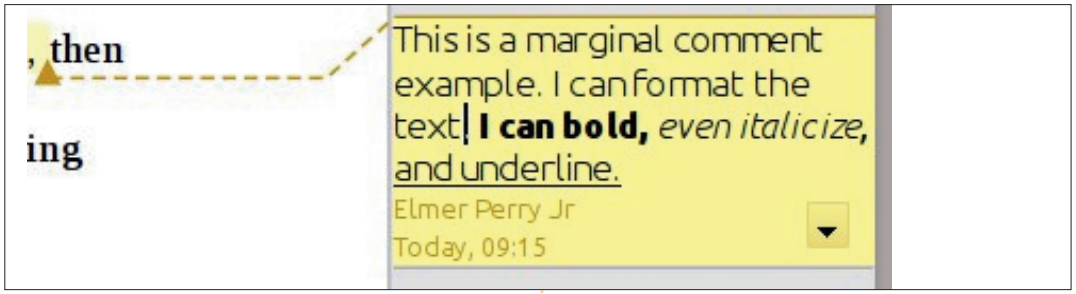
If I feel the need to add a lot of comments to my changes, I can use the Comments filter to filter changes based on the text contained in the comments. I just check the Comment filter and enter the text I want to look for.

## Marginal Notes or Comments

Sometimes, I need to make a note to myself. Using the hard copy method, I would just write a note in the margins. These usually don't represent an actual change, but an idea or action to act on at a later time. For example, needing to expand on an idea, or save an idea



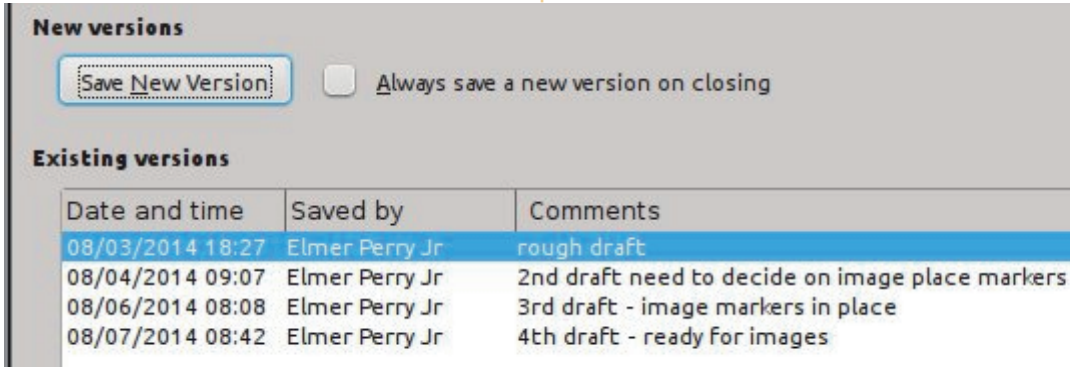



for a later article. Marginal notes are accomplished through Comments. Do not confuse these with change comments.

To create a comment, I highlight the information it applies to. Insert > Comment. A box in the color assigned to the author by LibreOffice appears in the right margin. The name that appears at the bottom of the comment is controlled by the data entered in Tools > Options > LibreOffice > User Data. Placing my cursor inside the box, I type my comment. I can even format the text within the comment box using the format tools in the formatting toolbar or the side-bar. I right-click or click on the down-arrow to get a menu that allows me to delete comments when they are no longer needed.

## Saving Versions

After each cycle of changing and then accepting / rejecting, I like to save a version of the document in its current state. File > Versions opens the Versions dialog. I click on Save New Version and give the version a name like "Rough Draft", then maybe any comments I may need like "image markers in place." I click OK to save the version. If I ever need to go back to a version, I can open the Versions dialog, select the version I need, and click Open. For more information on version control, see my blog post at http://wp.me/pvwht-9k.




**NOTE**: The version control in LibreOffice is okay for small to moderate size documents, but less than ideal for very large documents.

The editing tools built into Writer are useful for single-person editing or multi-person editing. I can have the program track my changes and allow me to later accept or reject the changes. I can add comments to the changes to help me remember why I made the change. I can also add margin notes to the document through the comment tool. After each edit, I can save a version of the document in case I decide to revert back to a previous version.

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at http://eeperry.wordpress.com

ubuntu uk podcast

The Ubuntu Podcast covers all the latest news and issues facing Ubuntu Linux users and Free Software fans in general. The show appeals to the newest user and the oldest coder. Our discussions cover the development of Ubuntu but aren't overly technical. We are lucky enough to have some great guests on the show, telling us first hand about the latest exciting developments they are working on, in a way that we can all understand! We also talk about the Ubuntu community and what it gets up to.

The show is presented by members of the UK's Ubuntu Linux community. Because it is covered by the Ubuntu Code of Conduct it is suitable for all.

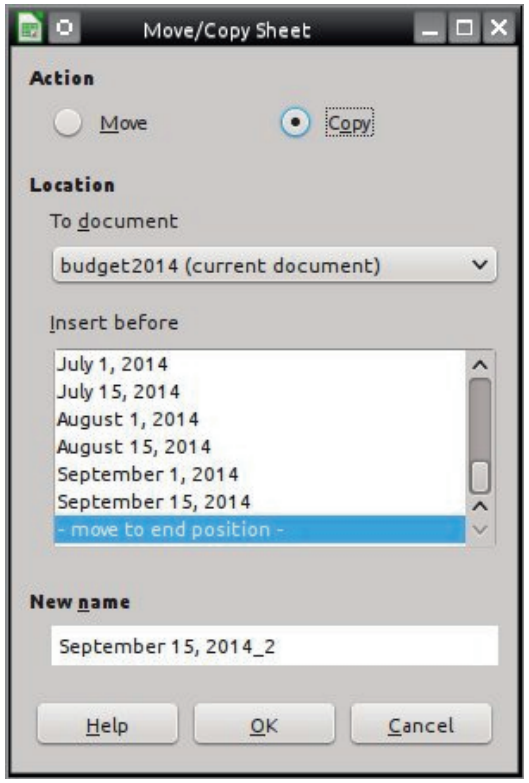
The show is broadcast live every fortnight on a Tuesday evening (British time) and is available for download the following day.

**podcast.ubuntu-uk.org**

# LibreOffice Pt.41 - Copy Sheet Macro

Back in parts 8-12 (FCM issues 53, 55-58), I took you from a blank spreadsheet to a full working budget spreadsheet. Something similar is what I use twice a month to do my home budget. I keep a whole year of budget spreadsheets in one document, which means twice a month I copy the sheet, rename it, and make sure I get all the settings correct to put a copy of the current sheet at the end of the sheet tabs. Believe me, mistakes have been made. Curses have been breathed. Innocent computers have been threatened.

In time, I decided, since I was such a fallible, flawed human being, I needed to reduce the number of steps necessary to complete this task in order to lessen my chances for mistakes. The result was a macro where all I have to do is give the sheet a new name. The macro handles all the rest, making sure it is copied and placed at the end of the tab list. The task fits perfectly into the idea behind macros, a repeatable process that automation can speed up, or prevent mistakes. Today, I share it with you.




## The Manual Method

In order to appreciate a macro, you really have to understand what it's doing for you, and the mistakes you can make. Therefore, I will start with the description of the manual process that the macro makes simpler. There is actually more than one way to copy a sheet in Calc, but I will show you the dialog method with all the options.

Right-click on the tab of the sheet you want to copy and select Move/Copy Sheet. The Move/Copy dialog appears. You then select Copy. One of the mistakes I have made is to forget this. I end up just renaming my sheet. Under "Insert Before" select the option at the end "-move to end position-". If I forget this one, the sheet is placed before the current sheet rather than at the end where I want it. Finally, I have to rename the sheet. There have been times while trying to remember to get the other settings right, that I have forgotten to actually change the name. When I do, the copied sheet gets the name of the current sheet with a "_2" appended to the end. Click OK to execute the settings.

I know, you're thinking that it's not that bad, but after a few times getting it wrong, your inner Hulk comes out and you want to smash things. Okay, maybe that's just me. Trying to balance the home budget is frustrating enough without the bonus of mistakes while copying the spreadsheet.

## The CopySheet Macro

The macro is not very long (next page, top right) and you can easily type it in. You can also copy it from http://pastebin.com/s3iTGjN6.

The micro starts by declaring 3 variables used in the body of the macro. "Sheet1" and "Sheet2" are strings that will contain the names of the current sheet (Sheet1) and the new sheet (Sheet2). The "Doc" variable will hold a reference to the current document. It is declared as a type Object because the reference is to a LibreOffice API object.

```
Doc = ThisComponent
```

ThisComponent is the current active document in LibreOffice. In this case, the macro is looking for a Calc spreadsheet.

```
If NOT
Doc.supportsService("com.sun.
star.sheet.SpreadsheetDocumen
t") then
    MsgBox "This Macro Only
Works with Calc Spreadsheets"
    Exit Sub
End If
```

The "If" statements check to make sure that the current document is a Calc spreadsheet. It checks to see whether the document supports the SpreadsheetDocument service, identifying it as a Calc spreadsheet and not some other document type. If it is not a spreadsheet, the macro pops up a message box telling the user the macro works only with spreadsheets. The macro then executes an "Exit Sub" that exits the macro without running any more of the code.

```
Sheet1 =
Doc.CurrentController.ActiveS
heet.Name
```

The macro uses the Doc object to extract the name of the current sheet. The breadcrumb dot notation goes through a progression of getting more specific. CurrentController is a reference to the service that controls the document. ActiveSheet is a reference to the currently active sheet in the document. Finally, Name gets the name of the current sheet and this is assigned to the variable Sheet1.

```
Sub CopySheet
    dim Sheet1 as String
    dim Sheet2 as String
    dim Doc as Object
    Doc = ThisComponent

    If NOT Doc.supportsService("com.sun.star.sheet.SpreadsheetDocument") then
        MsgBox "This Macro Only Works with Calc Spreadsheets"
        Exit Sub
    End If
    Sheet1 = Doc.CurrentController.ActiveSheet.Name
    Sheet2 = InputBox("Enter Name for Copied Sheet:", "Copy Sheet", Sheet1)
    If Sheet2 = "" Then Exit Sub
    Do While Doc.Sheets.hasByName(Sheet2)
        Sheet2 = InputBox(Sheet2 +
        " already exists, select a different name:", "Copy Sheet", Sheet2 + "2")
        If Sheet2 = "" Then Exit Sub
    Loop
    Doc.Sheets.CopyByName(Sheet1, Sheet2, Doc.Sheets.Count)
```

```
Sheet2 = InputBox("Enter
Name for Copied Sheet:",
"Copy Sheet", Sheet1)
```

To get the name of the new sheet, the macro uses an InputBox function. The InputBox takes 3 arguments:

- The prompt to show the user ("Enter Name for Copied Sheet:").
- The title of the InputBox window ("Copy Sheet").
- The default text (it just uses the name of the current sheet [Sheet1] as the default text).

If the user clicks the OK button, the InputBox will return the string entered in the text box or the default text when no changes are made. If the user clicks the Cancel button, a blank string is returned.

```
If Sheet2 = "" Then Exit Sub
```

```
Do While
Doc.Sheets.hasByName(Sheet2)
    Sheet2 = InputBox(Sheet2
+ _
    " already exists,
select a different name:",
"Copy Sheet", Sheet2 + "2")
    If Sheet2 = "" Then Exit
Sub
Loop
```

Now, the macro must use some logic to determine how to proceed. The "If" checks to see if the returned string is blank. If so, that means that the Cancel button was pressed, therefore the "Exit Sub" is executed. "Exit Sub" exits the macro without running any more of the remaining code.

The Do While...Loop checks to see if another sheet in the Calc document has the same name. The hasByName method checks the supplied name against the names of all the sheets in the collection. If a match is detected, the macro uses an InputBox to prompt the user for a new, unmatched name. The Do While...Loop will loop until

the name in Sheet2 does not match the name of any other sheet. The "If" inside the loop exits the macro if Cancel is pressed. If the name is unmatched from the start, the loop never runs. This prevents two sheets from having the same name.

**NOTE**: The underscore (_) in the InputBox statement is used to break a long line up into shorter lines. LibreOffice Basic requires that the underscore is the last thing on the line. Nothing, not even a space, can follow it. When lines are joined in this way, LibreOffice Basic sees them as one line.

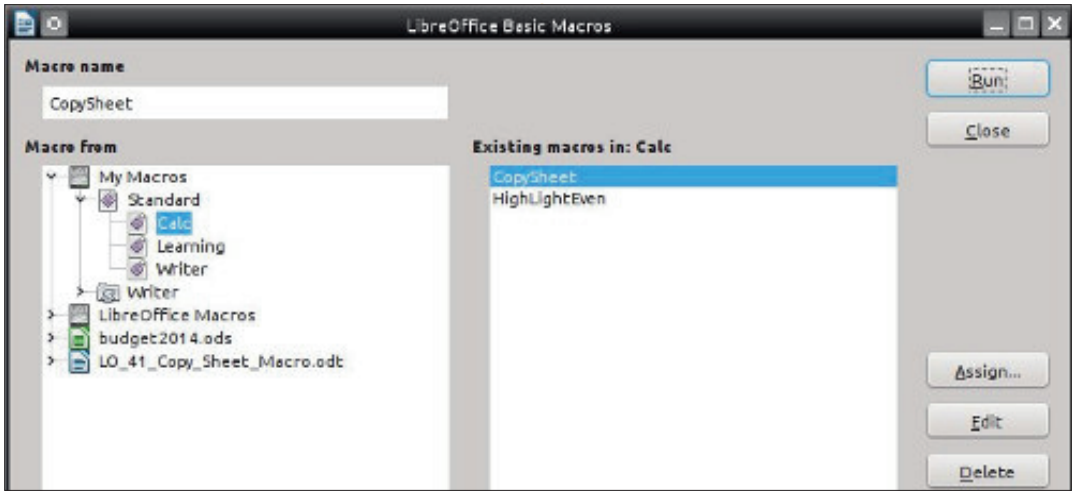
```
Doc.Sheets.CopyByName(Sheet1
, Sheet2, Doc.Sheets.Count)
```

The last line of the macro brings all this preparatory work together to finally execute the copy. Sheets is a reference to the collection of sheets in the document. CopyByName is the method that actually copies the sheet and moves it to the end of the sheet tabs. The CopyByName method has 3 parameters:

- The sheet to copy from (Sheet1).
- The sheet to copy to (Sheet2).
- The position of the new sheet (Doc.Sheets.Count).

Count is the total number of sheets in the collection (Sheets). Since the sheet numbers are referenced starting with 0, the use of Count here puts the new sheet at the end.

## Creating the Calc Macro




## Module

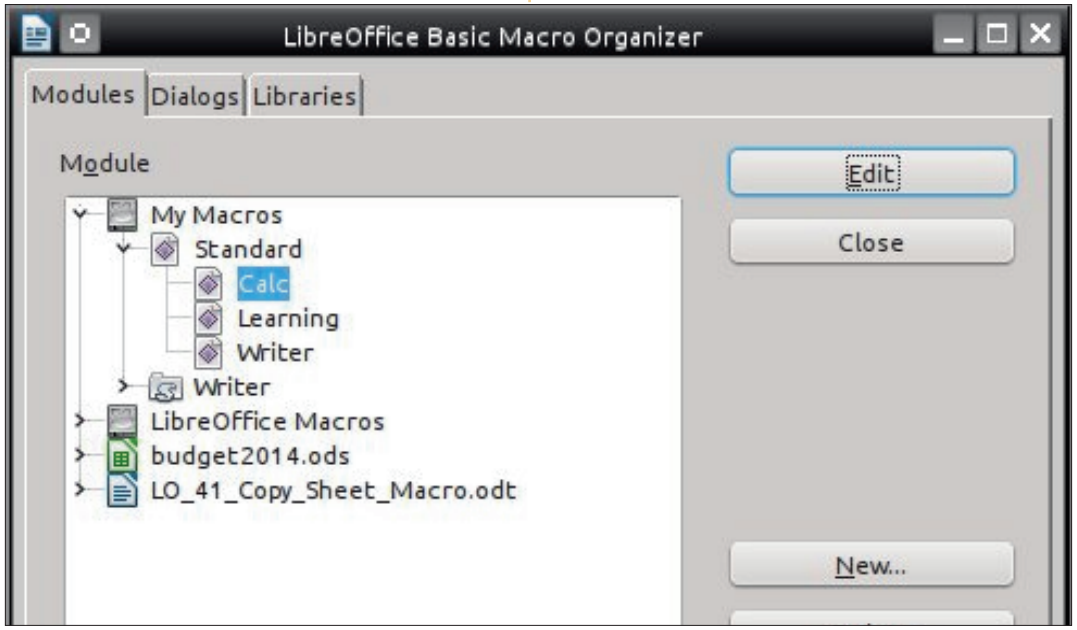
When I developed and wrote the CopySheet macro, I created a macro module for Calc. Here I could store this macro as well as any future macros designed for the Calc program. It's a good idea to group like macros together.

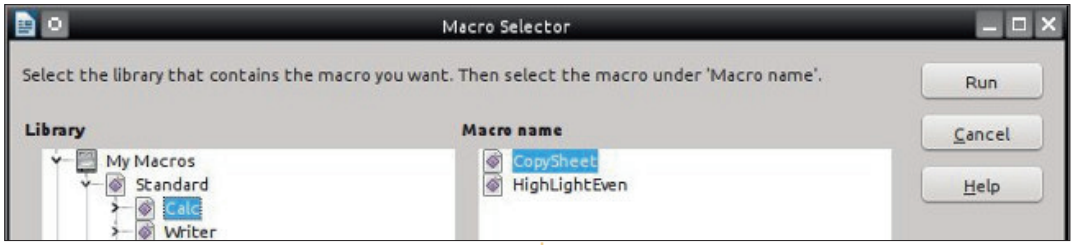
To create the module, Tools > Macros > Organize Macros > LibreOffice Basic. The LibreOffice Basic Macros dialog opens. Click Organizer to get the LibreOffice Basic Macro Organizer dialog. Under My Macros > Standard, there is a default module named Module 1. Select it and click Delete. With Standard selected, click New. Name the new Module "Calc" and click OK. Click Close.

Now back in the LibreOffice Basic Macros dialog, select the new "Calc" module you just created and click Edit, opening the LibreOffice Macro Editor. Delete the automatically created "Sub Main" and "End Sub". Type in or copy and paste the SheetCopy macro into the editor. Save the module and close the editor.

## Test The Macro

After typing in the macro and saving it, you will want to test it to make sure you typed everything






correctly. First, open a Calc document or create a new one. You can then test the macro by going to Tools > Macros > Run. Under Library, select My Macros > Standard > Calc. Under "Macro Name" select CopySheet and click Run. Enter a name for the sheet like "New Sheet." Click OK. If all goes well, a new sheet is created with the name you gave it. You will want to repeat the test and not change the name to see if the macro prompts you to change the name. Also, test to make sure the macro stops when you click on Cancel rather than OK. For the final test, open a text document and run the macro. You should get the message telling you that the macro works only on spreadsheets.

**NOTE**: Back in Full Circle issue 64 (LibreOffice Part 17: Macros), I showed you how to create a menu shortcut to a macro. This is a good candidate for such a shortcut. Create the menu and shortcut in Calc.

Macros like CopySheet can speed up your processes and prevent you from making mistakes, which is the whole idea behind macros. This is just an example of something you can do with macros, but you can write your own macros that can expand the use or capabilities of any of the LibreOffice programs, or just reduce a task you do often. A Google search for "LibreOffice Basic" is a good place to start learning more.

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at http://eeperry.wordpress.com

ubuntu uk podcast

The Ubuntu Podcast covers all the latest news and issues facing Ubuntu Linux users and Free Software fans in general. The show appeals to the newest user and the oldest coder. Our discussions cover the development of Ubuntu but aren't overly technical. We are lucky enough to have some great guests on the show, telling us first hand about the latest exciting developments they are working on, in a way that we can all understand! We also talk about the Ubuntu community and what it gets up to.

The show is presented by members of the UK's Ubuntu Linux community. Because it is covered by the Ubuntu Code of Conduct it is suitable for all.

The show is broadcast live every fortnight on a Tuesday evening (British time) and is available for download the following day.

**podcast.ubuntu-uk.org**


## EXTRA! EXTRA! READ ALL ABOUT IT!

Our glorious news reporters are now posting regular news updates to the main Full Circle site.

Click the NEWS link, in the site menu at the top of the page, and you'll see the news headlines.

Alternatively, look on the right side of any page on the site, and you'll see the five latest news posts.

Feel free to discuss the news items. It's maybe something that can spill back from the site into the magazine. **Enjoy!**

HOW-TO

Written by Elmer Perry

# LibreOffice Pt.42 - References & Ranges

I didn't have to work for very long in Calc before I needed to use cell names to reference values in different cells. This need was followed by those same reference names failing to do what I was expecting from them. While referencing cells is not complicated, it sometimes requires a little thought about what you're trying to accomplish.

At its heart, there are two reference types: relative and absolute. Relative references refer to a set of offsets from the current cell. Absolute references refer to the exact (or fixed) cell, column, or row. With these two types we can show references in four different ways. Cell references can even cross between sheets.

Sometime, you will need to reference more than one cell. This is done with cell ranges. You can make a cell range relative or absolute just like the cell reference. You can even name a cell range.

## Relative References

A relative cell reference is a set of offsets from the current cell. If you put a reference to C4 in cell D6, the reference is to the cell one column to the left and two rows up. If you copy this reference to other cells, say D7, it will refer to the cell C5, which is one column to the left and two rows up from D7.

Let's create an example to clear up any confusion. Create a new Spreadsheet document. In the cells B3 and B4 put the values 15 and 46. In the cells C3 and C4 put in the values 11 and 14. Select cell B5 and enter the following formula (yes, the equal sign [=] is necessary):

```
=B3+B4
```

When you press enter, it will show a total of 61, the sum of the two values in B3 and B4. Now, right-click B5 and copy. Select C5, right-click, and paste. In C5 you get the total 25, the sum of the two values in C3 and C4. See how the reference shifted to the new column? Since we didn't change rows, the row references stayed the same. However, if we did, the relative cell reference would have shifted to accommodate the change.

So, when we make a relative reference, it will move positions, keeping the same offsets, when copied to a new location.

## Absolute References

An absolute cell reference is fixed. If you make an absolute reference to cell C1, then no matter where you copy that reference, it always refers to C1. We create absolute references by adding the dollar sign ($) before the column or row we want to remain absolute. For example $C$1 is an absolute reference to the cell C1.

Let's do another example to illustrate absolute references. Imagine we need to multiply a group of numbers by a factor. In cell D1 we put 0.75. This is our factor. In D2, D3, and D4 we put 10, 20, and 30. In the E column, we will put our calculations. In cell E2 put the formula:

```
=D2*D1
```

This will give us the answer 7.5, which is correct. However, if we copy the formula in E2 to E3 and E4, we get answers of 200 and 600, which are wrong. If you look at the copied formulas, the references shifted. This is because we used a relative reference. We do want the first number to shift when we copy, but we need D1 to stay fixed. Edit the formula in E2 and change it to

```
=D2*$D$1
```

We still have the right answer in E2. Now, copy the formula in E2 to E3 and E4. We get the answers 15 and 22.5, which are the correct answers. If you look at the copied formulas in E3 and E4, you find the reference to D1 remained fixed.

## Four Ways to Reference Cells

With this in mind, this gives us four different ways we can reference a cell. They are relative, absolute, and two partially

absolute references.

• D1 – Relative, from cell E3, it is one column left and two rows up
• $D$1 – Absolute, from any position references cell D1
• $D1 – Partially absolute, column D is fixed but the row is relative
• D$1 – Partially absolute, column is relative but the row is fixed to 1

## Reference Cell in Another Sheet

To reference a cell in another sheet, we use dot notation to add the sheet name to the reference. For example, Sheet1.A1. This is handy if you need to carry a calculation or figure from one sheet to another. To illustrate, we will rename our current sheet, add a new one, and create a reference from one to the other.

Right-click on the tab for the current sheet and select "Rename Sheet." When prompted, name the sheet MyData and click OK. To create a new sheet, click on the plus (+) at the end of the sheet tabs. Select cell A1 in the new sheet. Type in

```
=MyData.E2
```

which will pick up the value of 7.5 from the cell E2 in the MyData sheet.

**NOTE**: If the sheet name contains spaces, surround the name with single quotes, as in 'My Sheet'.C3.

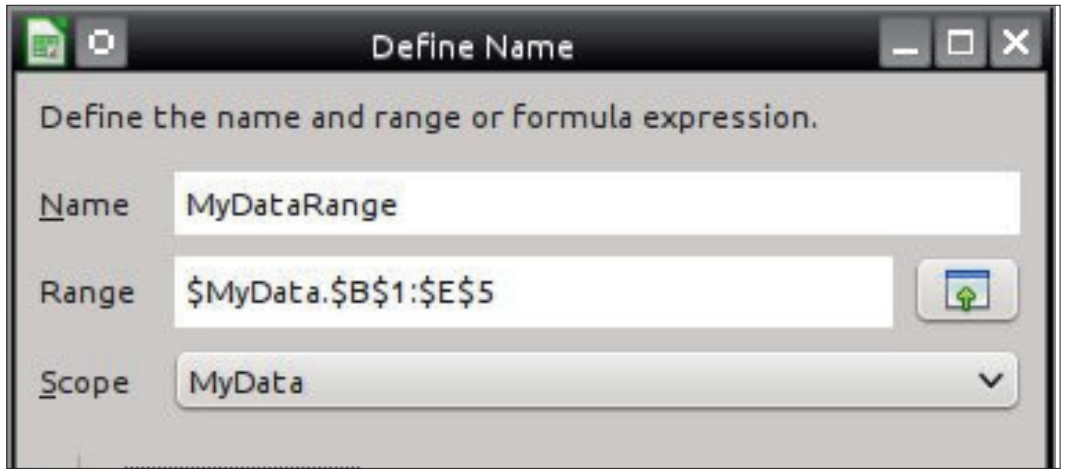
Just like other references, the reference to the sheet is absolute or relative depending on whether we put the dollar sign ($) in front of it.

## Cell Ranges

Sometimes, you need to reference a group of cells rather than just one. For such cases, we use cell ranges. A cell range is created by separating two cell references with a colon (:). The left cell references the upper left corner of the cell range, and the right cell references the lower right corner of the cell range. For example A1:C2 represents a range of six cells: A1, A2, B1, B2, C1, and C2. However, the range can also represent just one column or row as in C2:C100 or B3:H3.

The same rules for relative and absolute references apply to cell ranges. You can create a full or partial absolute reference. You can even apply a range across sheets. Let's say you need a cell range of all the A1 cells on all the sheets named Sheet1 through Sheet10. You would use the cell range Sheet1.A1:Sheet10.A1.

For convenience, you can name a range. To name a range, select a range of cells in the sheet. Insert > Names > Define brings up the "Define Name" dialog. Give the range a name. Keep in mind that cell range names can contain only letters, numbers, and underscore (_). Note the use of absolute references in the Range field. You can adjust your range as needed, manually or by clicking the range button and selecting the range with the mouse or cursor. The Scope field allows you to define whether the named range applies to the entire document or just a certain sheet. Click OK to save the range with the new name.



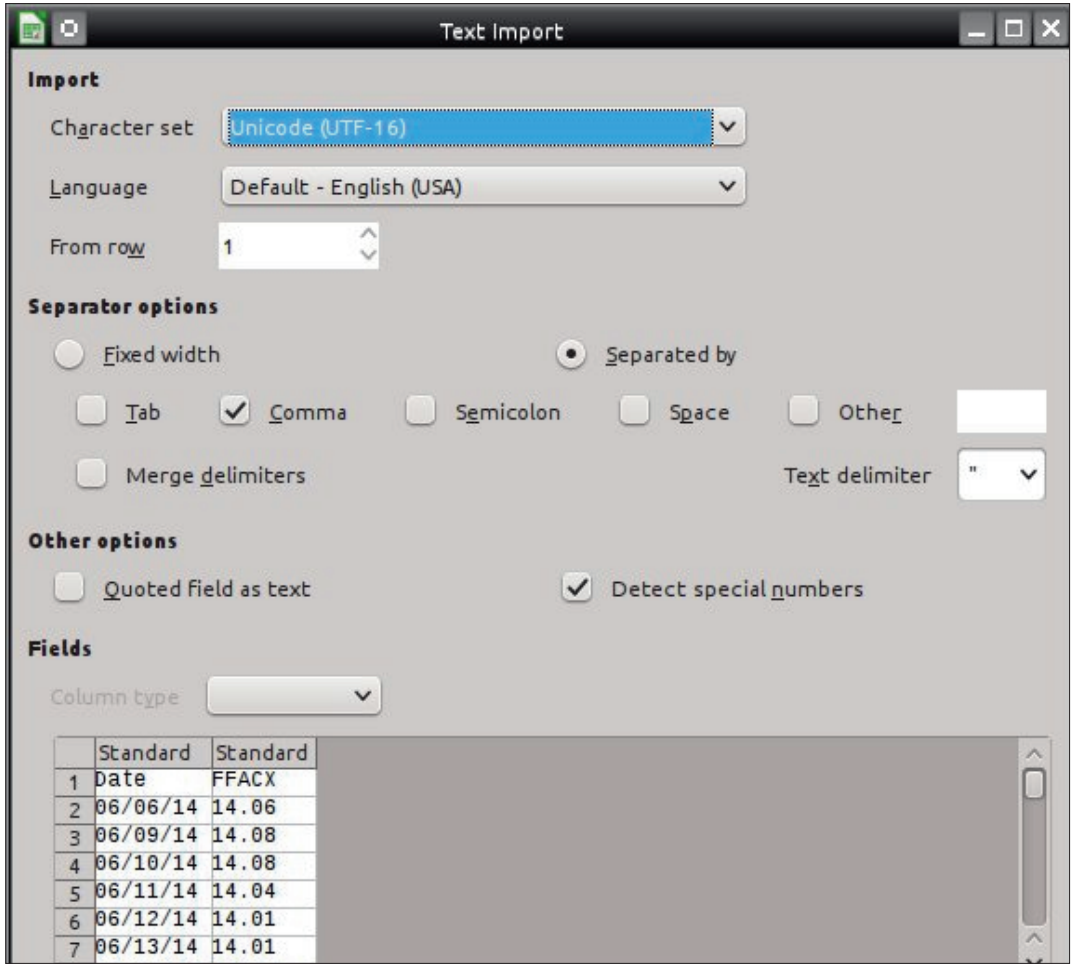

Cell references and ranges are fundamental when you begin to work on more complex sheet layouts, functions, and formulas in Calc documents. Understanding how relative and absolute references work can save time and prevent mistakes when copying formulas and references. While simple, incorrect use of references can lead to the wrong answer.

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at
http://eeperry.wordpress.com

# LibreOffice Pt.43 - Statistical Functions

Written by Elmer Perry

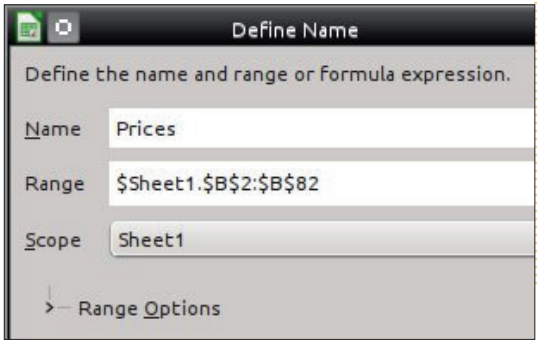
Spreadsheets are good for collecting data like temperatures, stock prices, and sports data. However, the data on its own does us little good. We need ways to analyze the data. LibreOffice Calc provides us with built-in functions to do this. In this article, we will look at a few of the simple statistical functions built into Calc. This is not meant as a thorough examination of all the functions, but more an exercise to get you comfortable using functions.




## Importing the Data

For our data, I have collected a few months worth of stock prices on the mutual fund FFACX. You can find the data at http://pastebin.com/AeLcyM1t. The data is laid out as comma-delimited plain text. Copy the data from Pastebin. Make sure that you copy from the "Raw Paste Data" text box. Create a new Calc document. Right-click on cell A1 and select Paste. The Text Import dialog will show. Under Separator Options, select "Separated by" and check Comma. Click OK. You now have two columns of data, the date and the price. Save the sheet.

## Creating a Named Cell Range




Throughout this article we will use the prices as our data range. Since we will use the range several times, we will name it to make the references easier. Select all the prices (cells B2:B82). The easiest way to select all the cells is to type the range B2:B82 into the cell name box on the formula toolbar and press Enter on the keyboard. Insert > Names > Define, and the "Define Name" dialog shows. Name the range "Prices". Notice the absolute reference in the Range text box ($Sheet1.$B$2:$B$82). Names apply to a specific group of cells, so the reference is absolute. Under the Scope, we will restrict the use of this name to just Sheet1. Click Add to create the range name.

Now, in any formula or function where we use the name "Prices", it is the same as typing the cell range $Sheet1.$B$2:$B$82.

## MAX and MIN

The first two statistical functions we will look at are MAX and MIN. Both functions accept a

list of values or range(s). MAX returns the maximum (or largest) value in the list. MIN does just the opposite, returning the minimum (or smallest) value in the list.

Move your cursor to D4. Type in "Highest." In the cell E4, type in the formula

```
=MAX(Prices)
```

You should get the result 14.16. If you look through the list of prices, you will discover this is the largest number in the list.

In D5 put "Lowest." The formula for E5 is

```
=MIN(Prices)
```

The result is 13.57, the lowest number in the list.

It is also possible to use these, or any Calc function, as an operand in a formula. For example, if we wanted to know the difference between the highest and lowest price, we could use the formula

```
=MAX(Prices) – MIN(Prices)
```

in cell E6. In the formula, the results of the functions are calculated first. MAX(Prices) becomes 14.16, and MIN(Prices) becomes 13.57. Then the result of 14.16-13.57 is placed in the cell E6. Place the text "Difference" in the cell D6 as a label.

## AVERAGE, MEDIAN, AND MODE

In statistics there are many ways to determine just what is the typical value for a set of numbers. Among these are the arithmetic average, the median, and the mode. The arithmetic average, known to most people as simply the average, is the sum of a series of numbers divided by the number of items in the series. In Calc we use the AVERAGE function to get the arithmetic average.

The median ranks the numbers from the lowest to the highest. If the number of items in the series is an odd number, it takes the one in the middle. If it is even, the median is the arithmetic average of the two center numbers. Calc uses the MEDIAN function to calculate the median for you.

Mode is the number that repeats most often. If there is a tie, it uses the smallest number. Calc uses the MODE function to get the mode for you.

We can see the results of these three functions by putting the following formulas in the cells E7, E8, and E9.

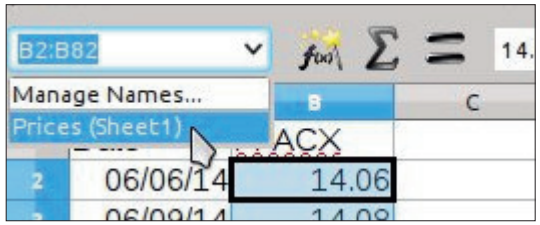
```
=AVERAGE(Prices)
```

```
=MEDIAN(Prices)
```

```
=MODE(Prices)
```

You will notice that the results are within a few hundredths of each others. This is not true in all cases. Numbers that are much larger or much smaller than all the others can affect the average. In those cases, the mode or median might better suit your needs for a typical value.

The Calc statistical functions help us to analyze the data in a Calc spreadsheet. We touched on only a few of the statistical functions. Calc has over 70 statistical functions. This is just one of many categories of functions available to us in Calc. You can get a list of all the Calc functions in the help documentation.

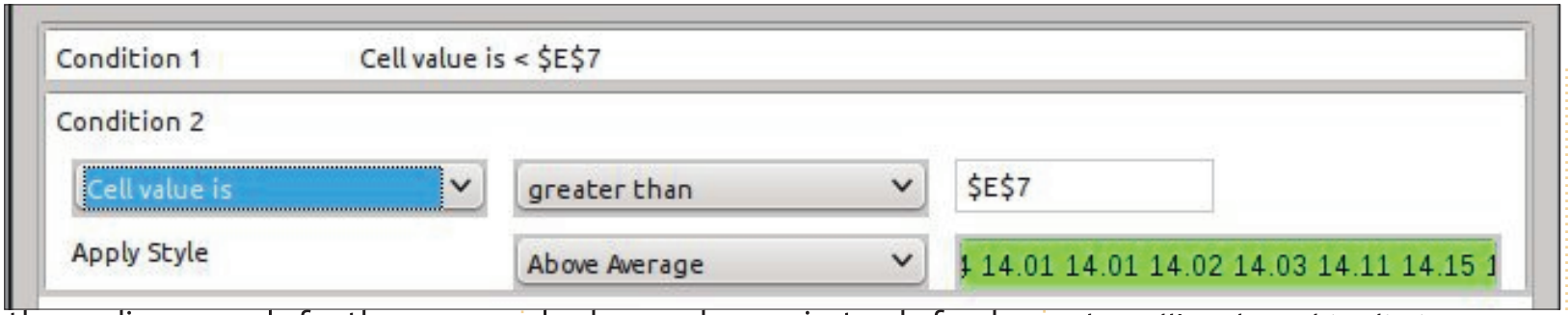



## CONDITIONAL FORMATTING

In our data set, the top and bottom are pretty close together, so the average will work good for us as the typical value for this data set. We can use conditional formatting to mark each of the prices as either above or below the average.

Start by selecting all the prices in the B column (B2:B82). Since we named the range B2:B82, a quick way to select all the prices is by using the drop down arrow for the cell name box on the formula toolbar and selecting the name "Prices(Sheet1)."

Format > Conditional Formatting > Condition will bring up the Conditional Formatting dialog. Select "Cell value is" from the left drop-down list. From the drop-down list in the center, select "less than." Enter $E$7 in the text box to the right. If you want to use




the median or mode for the comparison, you can use $E$8 or $E$9. We are using an absolute reference here because we want to reference the same cell regardless of what row we are formatting.

For the Apply Style, select "New Style" from the drop-down list. The Cell Style dialog will open. On the Organizer tab, name the style "Below Average." Switch to the Background tab and select the Red color swatch. Click OK to close the dialog and save the new style. You will see "Below Average" is now selected as the Apply Style.

Click Add to add a second condition. This time select "greater than" instead of "less than." Use the same absolute reference, $E$7, $E$8, or $E$9, as you used in the less than condition. Once again select "New Style" for the Apply Style. Give the new style the name "Above Average", and make the background green instead of red. OK to save the new style.

OK in the Conditional Formatting dialog will save the settings. Prices that are over the average will highlight in green, and the prices below the average will highlight in red.

**NOTE**: You can create your style for conditional formatting before creating the condition. In such a case, you would just select the style to use.

I hope this article has helped you to understand the use of the statistical functions demonstrated and functions in general. We saw how to use named ranges to identify cell ranges being used repeatedly. We used functions by themselves and as operands in a formula. Using conditional formatting, we highlighted certain cells to show visually the status of the cell's value. This eliminates the need to scroll back up the sheet to check the average value. Until next month, look up some functions in the help and put them to work for you. Also, play with some of the features of the conditional formatting and see what other visuals you can create.

Next time, I will show you how to validate cell values.

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at
http://eeperry.wordpress.com


## EXTRA! EXTRA! READ ALL ABOUT IT!

Our glorious news reporters are now posting regular news updates to the main Full Circle site.

Click the NEWS link, in the site menu at the top of the page, and you'll see the news headlines.

Alternatively, look on the right side of any page on the site, and you'll see the five latest news posts.

Feel free to discuss the news items. It's maybe something that can spill back from the site into the magazine. **Enjoy!**

# LibreOffice Pt.44 - Validating Data in Calc

Written by Elmer Perry

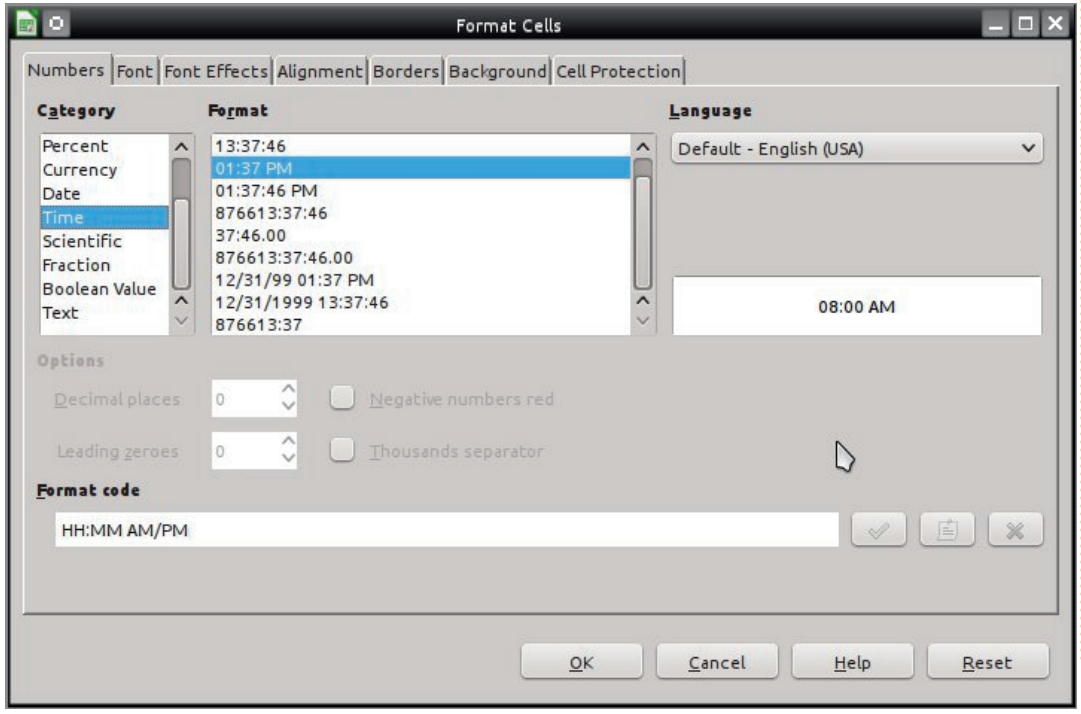
When you begin to create formulas in Calc, you soon realize that the wrong kind of data in a cell referenced by your formula can throw the results off. Calc does its best to interpret the data entered according to the formatting style of the cell. If you format the cell as a date type, Calc does its best to translate the input in that cell as a date. At times it is successful and other times not. Fortunately, Calc comes with validity options built in to help you design your spreadsheet in such a way as to give the user help with the input or even force them to enter the data type needed for the cell. In this article, we will look at the validity options and its capabilities.

## Sheet Setup

Before we get to the validity options of Calc, we need to set up a spreadsheet where we will use the options. The spreadsheet is a time sheet for showing the hours worked during a week. The time sheet works well for our example because on a given day, the next time input must have a greater value than the previous entry.

We will start by creating our title and column headers. In cell A1, enter "Time Sheet". On row 2, fill in columns A-F with the following titles: DAY, IN, OUT, IN, OUT, TOTALS. Now for the row headers. In cell A3, type in "Sunday". Making sure that cell A3 is highlighted, click on the small square in the lower right corner of the highlighted cell. The cursor will become a crosshair. Drag down to A9. When you release mouse button, the rest of the weekday names are filled in. This happens because the days of the week are one of the default sort lists. You can see all the lists and add your own at Tools > Options > LibreOffice Calc > Sort Lists.

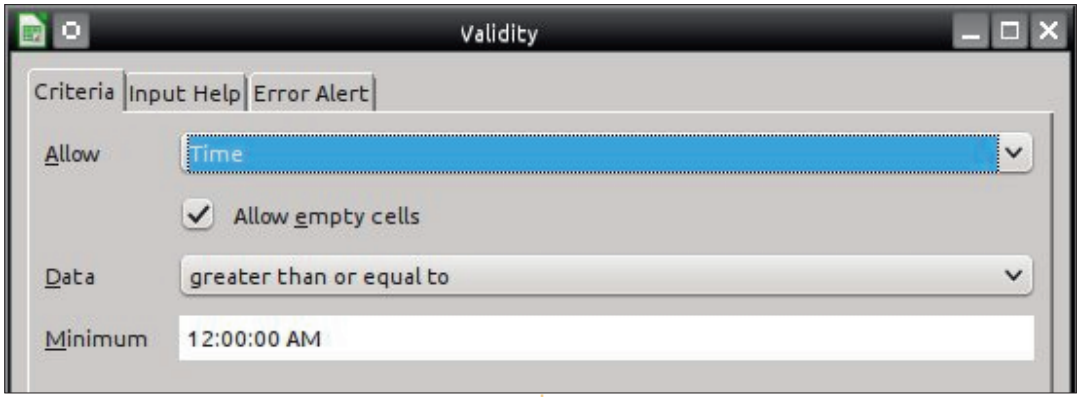
Now let's format the cells. Select B3:E9, right-click, and select Format Cells. Click the Numbers tab. From the Category list box, select Time. If you normally use a 12-hour clock, select the "01:37 PM" option under format. However, for a 24-hour clock, select "13:37." Click OK to save the options. Column F is the totals. We will need to select a time format, at least for the last one, that can go beyond 24 hours. Select cells F3:F10, right-click, select Format Cells. Again, on the Numbers tab, select the Time category, but for the format, select "876613:37." This will allow for totals that are greater than 24 hours. Click OK to save the settings.




If you haven't yet, you might want to save your sheet.

## Setup Validation

We will need to check the validity of the time inputs. We will want them in a Calc-acceptable time format. This is the only requirement for valid data in the B column. For the other columns (C-E), we will need to also make sure the input is greater than the input before it.

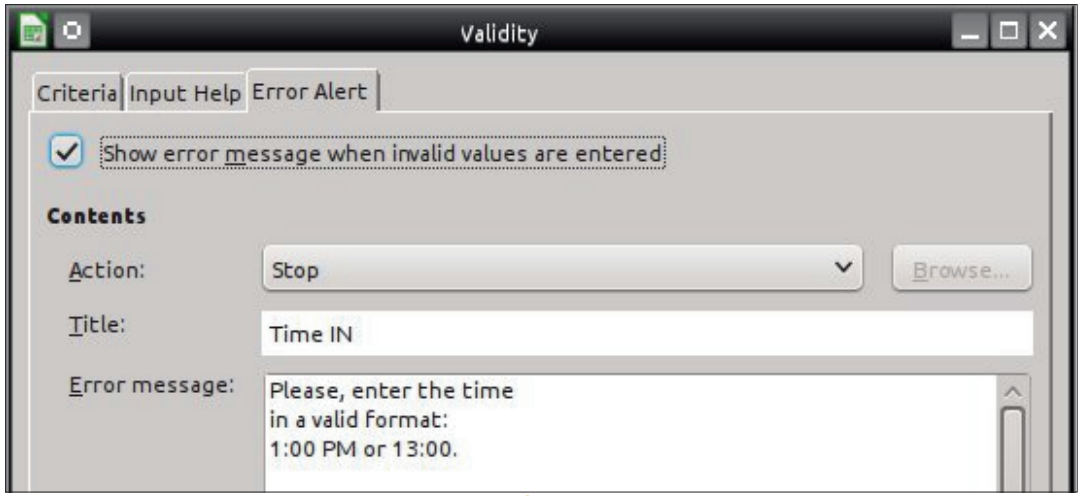



Select cell B3, then Data > Validity. The Validity dialog will appear.

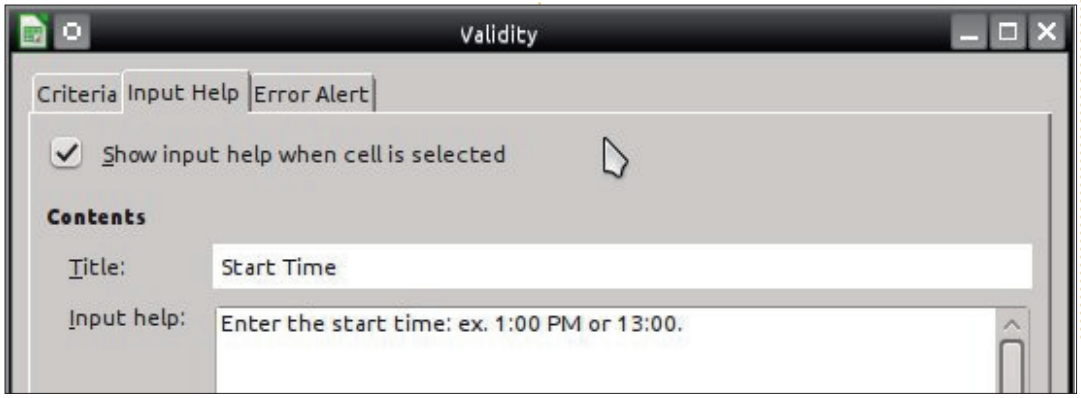
The Criteria tab (above) is where we control what constitutes valid data. The Allow drop-down list defines the type of data that is acceptable. The default is All Values. The other types are Whole Numbers, Decimal, Date, Time, Cell Range, List, and Text Length. The choices for the different types are basically the same except for Cell Range and List. With the cell Range, you define a cell range and the cell must contain a value that is in one of those cells. The defined range must consist of only one column or one row. With the List option, you define a list of acceptable values. With both the List and Cell Range options, you get a drop-down list box with the acceptable values. For our purposes, we need Allow set to Time.

Check the box for "Allow empty cells" to allow cells to remain empty. This will allow us to start with a blank time sheet.

The Data drop-down list allows you to select the comparative operator to use for this validation. The choices are equal, less than, greater than, less than or equal to, greater than or equal to, not equal, valid range, and invalid range. Each one asks for a minimum, maximum, or value to compare, except for the two range choices. The range choices require a minimum and maximum. For our purpose, we need the greater than operator. In the minimum text box, enter 12:00 AM or 00:00.




Click on the Input Help tab (below). The settings on this tab are optional. The idea is to provide the user with information about what to enter into the cell as a tip box that pops up when the cell is selected. To activate, click the checkbox for "Show input help when cell is selected." Create a title for the tip box by typing it in the Title text box. For us, we could use the title "Start Time". The Input Help text box is where you put the actual help tip like "Enter the start time: ex. 1:00 PM or 13:00".




Switch to the Error Alert tab (above). Here we can set the validation to display a message when invalid data is entered. To activate the setting, check the checkbox for "Show error message when invalid values are entered". There are four choices for the Action drop-down list, Stop,

Information, Warning, and Macro. Stop, the one we will use, prompts with a dialog and rejects the input when invalid data is entered. For Information and Warning, they prompt with a dialog containing OK and Cancel buttons when invalid data is entered. If the user clicks OK, the input is left as it is. If the user clicks Cancel, the input is rejected. Macro will allow you to select a macro to run when invalid data is entered. The Title and Error Message is the title and message for the dialog box. We could set them to "Invalid Time" and "Enter in time format: 13:00 or 1:00 PM".

Once you have everything set, click OK to save the Validity dialog settings.

We will copy cell B3 to cells B4:B9. Right-click cell B3 and select Copy. Select cells B4:B9, right-click, and select Paste. This will copy the validity settings to the cells. The whole column will have the same requirements for input.

For columns C, D, and E, we will do almost the same thing. We will go through the steps on C, and you can repeat for D and E. Select cell C3, Data > Validity. On the Criteria tab of the Validity dialog, select Time from the Allow drop-down list. Check to allow empty cells. Set Data to greater than, and set the minimum value to B3. Notice that we use a relative cell reference here. This will allow us to copy it to the other cells and have the reference translate. These criteria tell Calc that the cell requires a value greater than the value in cell B3. Do what you want with the help and error tabs. I do recommend using at least Information or Warning messages for invalid data. The messages could mention needing a greater value (or a later time). Right-click cell C3 and copy the cell, then paste it into cells C4:C9.

You can repeat for columns D and E. You can also just copy C3 to D3:D9 and E3:E9, but you will need to adjust the text in the dialogs for help and error.

## Total Formulas

Now that we have our validation set up, we need to create the formulas to give us our totals. We will start with the daily totals. Select cell F3. Enter the formula

```
=(C3-B3)+(E3-D3)
```

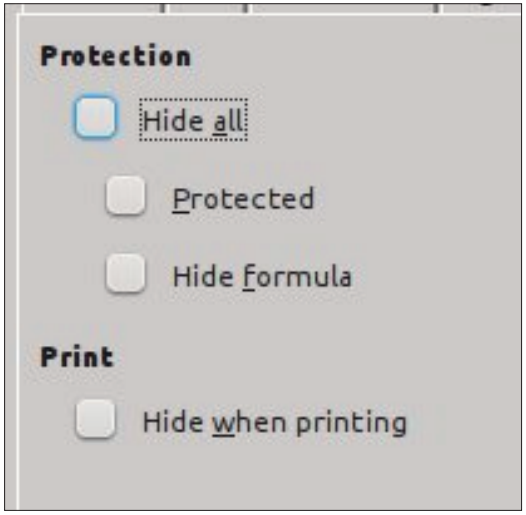
which will give us the total for Sunday's times. Right-click F3 and Copy. Select cells F4:F9, right-click, and Paste.

For the weekly total in F10, we will just sum the daily totals. Here is the formula:

```
=SUM(F3:F9)
```

## Protect Cells

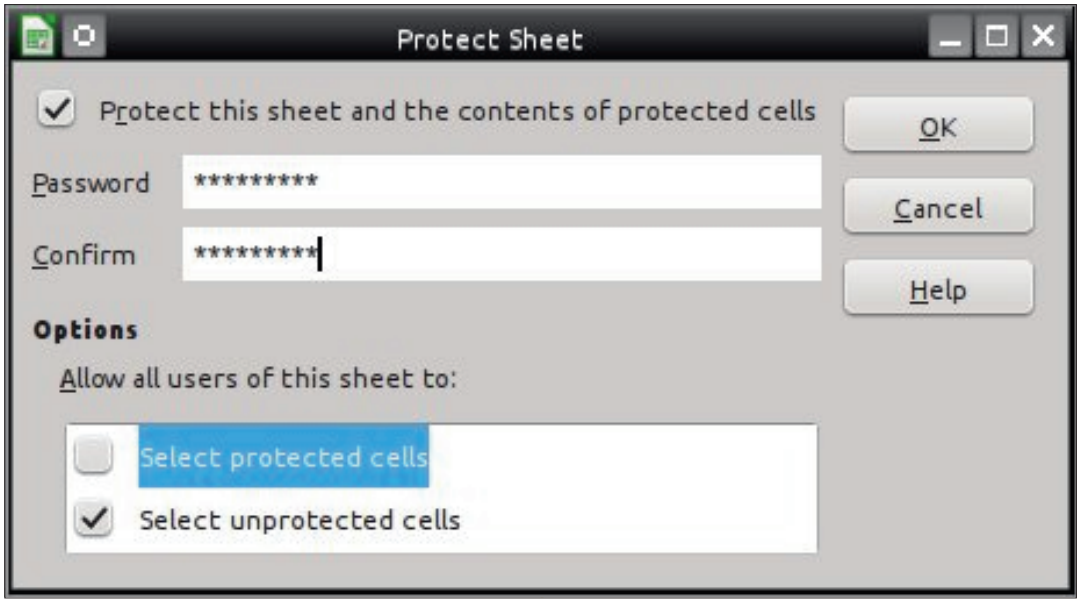
Once you have a sheet set up the way you like, you may want to protect the parts of the sheet you don't want changed like the labels and formulas. First, you need to tell Calc whether the cell is protected or not. Then you add protection to the sheet or document once everything is finished. In the case of our time sheet, we need to protect everything except for the cells where the user enters their times, B3:E9.




By default, the Protect option is turned on for all cells. To change the protection setting for the input cells, select B3:B9, Format > Cells, and the Format Cells dialog appears. Click on the Cell Protection tab and uncheck Protected.

At this point, you can still edit any cell because the sheet or document is not protected. To turn on protection for the sheet or document, Tools > Protect Document > Sheet (or Document). The Protect Sheet or Protect Document dialog will appear depending on which option you selected. Enter and confirm a password in the dialog. The options will allow you to check whether the user can select protected or unprotected cells. If you do not enter a password, then no password is required to remove protection from the sheet or document.

To remove protection from a sheet or document, Tools > Protect




Document > Sheet (or Document). If a password was used when protection was set, enter the password used to protect the sheet or document.

## Mark Invalid Data with Detective

If you selected Warning or Information from the Action drop-down list in the Validity dialog, a user could enter invalid data and click OK to keep the invalid input. This may generate strange results in your totals or an error. Tools > Detective > Mark Invalid Data will mark the invalid data. Once the user corrects the data, Tools > Detective > Mark Invalid Data should clear the marks, unless the data is still invalid. Notice from my sample that invalid data can cause other cells data to show as invalid.

The Calc Validity options are a great way to set up sheets for use by other people, or to keep you from entering invalid data on a complicated sheet. You can set it up to reject the invalid data outright, or for the user to make a choice about keeping the input. Once you have the sheet set the way you want it, you can protect the sheet from unwanted changes. This is a good way to protect formulas and labels. Finally, the Detective tool allows the user to mark invalid data they entered.

**Time Sheet**

| DAY | IN | OUT | IN | OUT | TOTALS |
|---|---|---|---|---|---|
| Sunday | 08:00 AM | 01:15 PM | 02:15 PM | 05:00 PM | 08:00 |
| Monday | 08:00 AM | 09:00 AM | 12:00 PM | 05:00 PM | 06:00 |
| Tuesday | 09:00 AM | 12:00 PM | 01:00 PM | 05:00 PM | 07:00 |
| Wednesday | 08:00 | 05:00 | 13:00 | 12:00 | 20:00 |
| Thursday | 09:00 | 12:00 | text | 17:00 | #VALUE! |
| Friday | 08:00 | 12:00 | 13:00 | 16:00 | 07:00 |
| Saturday | 09:00 | 11:00 | 12:00 | 18:00 | 08:00 |
| | | | | Total | #VALUE! |

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at
http://eeperry.wordpress.com


## EXTRA! EXTRA! READ ALL ABOUT IT!

Our glorious news reporters are now posting regular news updates to the main Full Circle site.

Click the NEWS link, in the site menu at the top of the page, and you'll see the news headlines.

Alternatively, look on the right side of any page on the site, and you'll see the five latest news posts.

Feel free to discuss the news items. It's maybe something that can spill back from the site into the magazine. **Enjoy!**

# LibreOffice Pt.45 - Calc Detective Tool

Written by Elmer Perry

In my last article, I showed you how to use the Mark Invalid Data tool in Calc's Detective tools. This time, I am going to discuss the rest of the tools in the Detective menu that help us trace the cells used in formulas. Through these tools, we can learn what cells affect the result of a formula, what formulas a cell affects, and what cells are involved in a formula that results in an error. The sheet we will use is small to help you understand how they work, but these tools are most helpful in a large sheets with complicated formulas.

## Setting Up the Sheet

Create a new, blank sheet. In cell A1, enter the value 13. Select cells A1:A6. Edit > Fill > Series to bring up the Fill Series dialog. For the Direction, select Down, and for the Series type, select AutoFill. Click OK, and the cells are filled with sequential numbers. Select cells A1:D6. Edit > Fill > Series. This time, select Right for the Direction, but again select AutoFill for the Series type. Click OK and the cells to the right are filled with sequential numbers.

Create totals for the rows and columns by selecting the blank cell at the end of the row or column. Click the SUM button on the formula toolbar. The cells to the left for rows, and above for the columns, are automatically selected. Press the Enter / Return key on the keyboard to accept the results. Repeat for each of the rows and columns.

Cell E7 will sum the totals of both the rows and the columns. The formula is

```
=SUM(A7:D7,E1:E6)
```

## Trace Precedents

The Trace Precedents function (bottom right) shows the cells used by the formula in the current cell. Traces are displayed on the sheet with blue arrows and blue frames around cell ranges. This is true for all the trace functions.

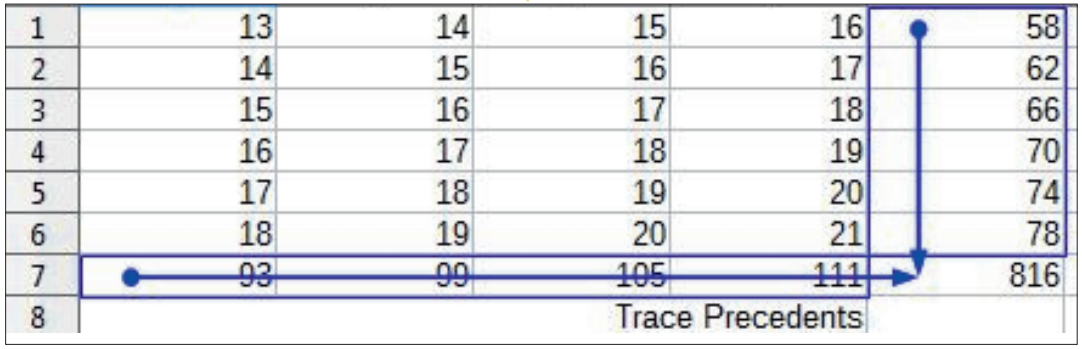
Select cell E7. Tools > Detective > Trace Precedents. Blue arrows and frames show the cells used by the formula. If you entered the formula correctly, this includes all the totals for the rows and columns. To clear the trace markings off the sheet, select Tools > Detective > Remove Precedents.

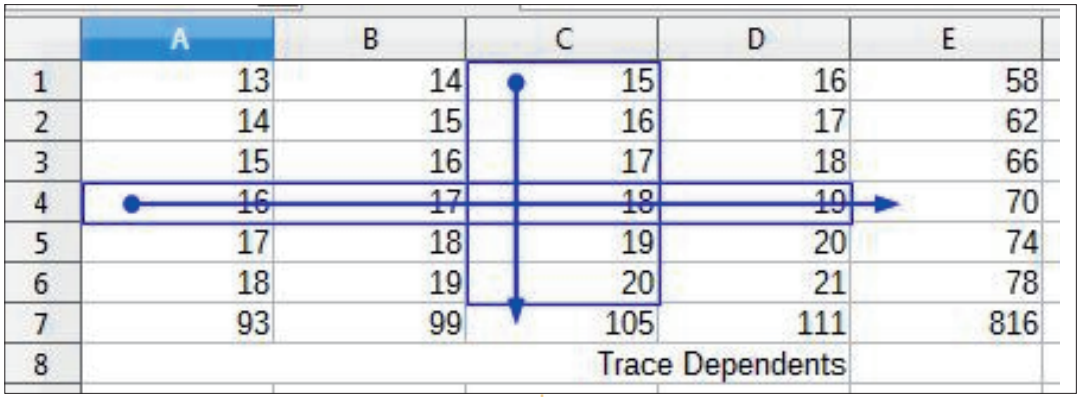
## Trace Dependents

Trace Dependents (next page, top left) draws arrows to the cells containing formulas that rely on the currently active cell. If you select C4 then Tools > Detective > Trace Dependents, you get arrows pointing to C7 and E4. Both of these cells contains formulas that reference C4 in their range. Just as with the Trace Precedents, the ranges of the two formulas are surrounded by a blue box. To clear the trace markers, Tools > Detective > Remove Dependents.

## Common Calc Errors

| | | | | | |
|---|---|---|---|---|---|
| 1 | 13 | 14 | 15 | 16 | 58 |
| 2 | 14 | 15 | 16 | 17 | 62 |
| 3 | 15 | 16 | 17 | 18 | 66 |
| 4 | 16 | 17 | 18 | 19 | 70 |
| 5 | 17 | 18 | 19 | 20 | 74 |
| 6 | 18 | 19 | 20 | 21 | 78 |
| 7 | 93 | 99 | 105 | 111 | 816 |
| 8 | Complete Sample Sheet | | | | |






Before we talk about Trace Error, let's take a quick look at some common errors you will see in Calc.

**#DIV0!** – The formula is trying to divide a number by zero. As we learned in elementary mathematics a long time ago, you can't divide a number by nothing. Some functions, like VARP and STDEV, will give this error when you fail to use the minimum required arguments.

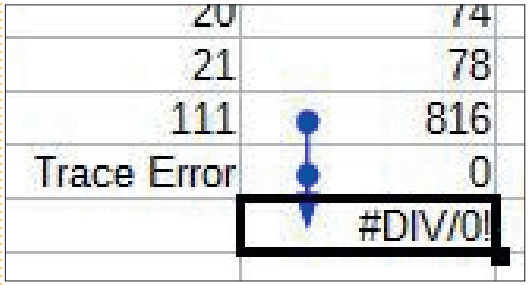
**#REF** – The cell or range reference is invalid. This mostly happens when you mistype your reference or you reference a cell or range that no longer exists. For example you have a reference to a sheet that has been deleted.

**#VALUE** – The input was a type other than what was expected. This is often caused by referencing a cell with text in a mathematical function or formula.

**Err:510** – A variable is missing from the formula. This can happen when you type two operators together, like =1 +* 3.

## Trace Error

Trace Error draws trace arrows to all the precedent cells which caused an error in the currently



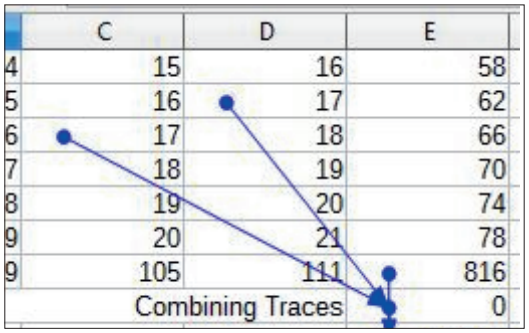

selected cell's formula. To demonstrate this, we will need to generate an error. #DIV0 is probably the easiest to generate. Enter the formula =C3-D2 in cell E8. The result is zero. In cell E9 enter the formula =E7/E9. This will generate a #DIV0 error.

To trace the error, select cell E9. Tools > Detective > Trace Error. A trace arrow is drawn through the cells involved in the formula. In our case, it is just two cells. You can change the minus to a plus and the arrow will clear and the error will go away, but for now, let's leave it the way it is. I have one more thing I want to show you. The only way to clear an error trace without correcting the error is Tools > Detective > Remove All Traces.

## Combining Traces

Tracking down a problem or an error is not always as simple as just using one of the trace tools. You might need to combine them to find the real issue. Let's take our error for example. We can select the cell E9, and run the error trace, and see that the formula uses the two cells above it. However, once you realize that both cells contain formulas as well, you can trace the precedents on cell E8 to see if you can find the problem. You then realize that the two cells used in the formula are the same value. Then it hits you; you meant to use C6 – not C3. Change C3 to C6 in the formula in E8, and the error and the error trace arrow go away. Also note that the precedents traces move with the change of the formula.

With the detective's trace tools in Calc, you can trace the cells used in a formula and determine why you didn't get the results you expected. Trace Precedents shows you the cells used by the formula in the current cell. Use Trace Dependents to show the cells containing formulas that use the currently selected cell. If you are trying to determine why a formula is generating an error in the current cell, you use the Trace Error tool. Finally, you can combine the different trace tools to get a broader view of what is happening, or not happening, in your sheet.



# LibreOffice Pt.46 - Entering Functions

Written by Elmer Perry

In past articles, I have discussed and used functions to illustrate other functionality in Calc, but today, I am going to show you three different ways to enter functions. I'll show you the structure of a function; we will create data for a spreadsheet; then I will apply each of the input methods: Function Wizard, Function List, and manual entry.

## Structure of a Function

It helps to understand the structure of functions if you plan to use them. I will use the following function for my discussion of function structure:

```
=PRODUCT(B5, A1:A6, 0.25)
```

Functions are always a part of a formula. When you use any formula or function, it must begin with an equals sign (=). If you use multiple functions, the equals sign is required only at the beginning.

The start of a function is the function name. By tradition, function names are entered in all upper-case letters, but Calc will recognize them in lower or mixed case letters. Keeping with the tradition, I usually enter function names in all capitals. The name of our function in the example is PRODUCT. PRODUCT is to multiplication what SUM is to addition, it multiplies all its arguments into a final total.

After the function name is the argument list, separated by commas, and surrounded by parenthesis. This is the (B5, A1:A6, 0.25) part of our sample function. Arguments can come in several forms, and the function will usually expect a certain type in each position of the arguments. Arguments can take the form of numbers (9), "Quoted text", cell reference (C3), cell range (C3:C10), comparisons (C3 > C1), or another function. Note that quotes around a number, "9", defines the argument as text – and not a number.

## Setting Up the Sheet

I work with installers of controlled access systems. When setting up a new system, it is necessary to calculate how many power supplies are needed in order to power the equipment for the site. We use a formula for calculating the voltage drop at each device. The calculation involves the input voltage, the current draw of the device plus the current draw of any devices after it, multiplied by the resistance of the length of wire to the device. The basic formula is

```
Vout = Vin – I(DR)
```

where Vin is the input voltage, I is the current draw of the device and any devices after it, D is the length of wire (in feet), and R is the resistance of the wire per foot. Let's set up a sheet to help us calculate the voltage at each device.

Start with the label "Start Volts" in cell A1. In cells A2:E2 put the following column headings: Device, Amps, Distance, Ohms/Foot, and Voltage. In cell B1 put 13.2 for your starting voltage. In A3:A5 put 1, 2, 3 for the devices. B3:B5 are the current draw for each device. Use 0.3, 0.25, and 0.5. The three distances for the wire are 75, 110, and 120. For the Ohms/Foot, use 0.00639 for all three. This is the approximate Ohms per foot for 16 AWG (US). Leave the Voltage column blank. This is where we will enter our formulas.

## Function Wizard

The function wizard is the most complete method for entering formulas with functions. It is also the slowest because of the many

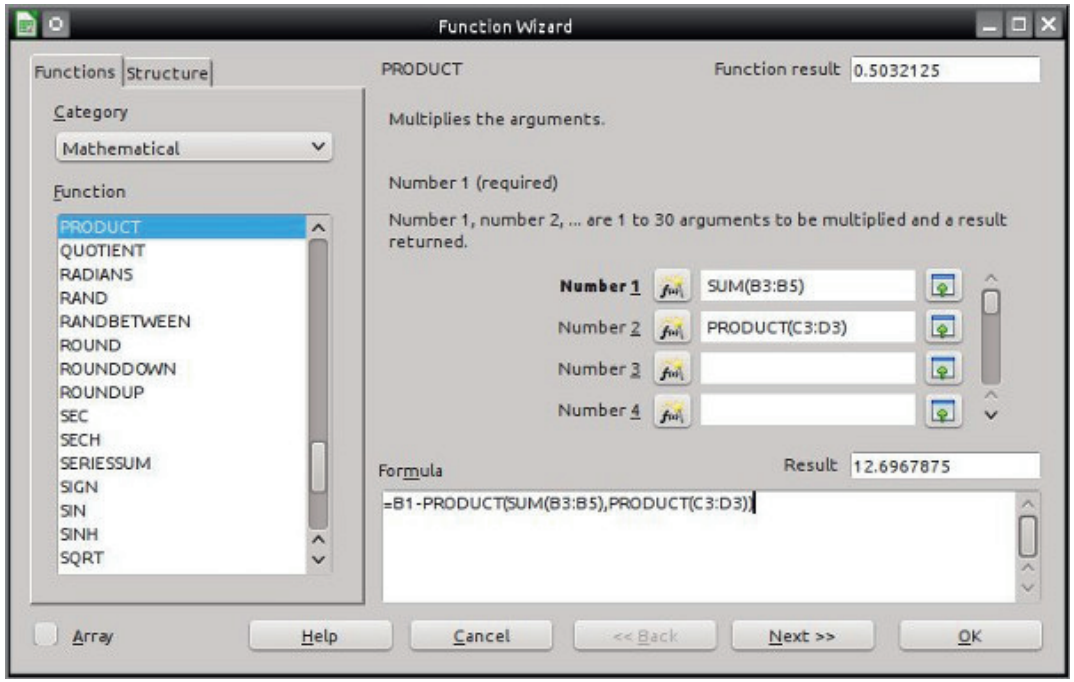
| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Start Volts | 13.2 | | | |
| 2 | Device | Amps | Distance | Ohms/Foot | Voltage |
| 3 | 1 | 0.3 | 75 | 0.00639 | |
| 4 | 2 | 0.25 | 110 | 0.00639 | |
| 5 | 3 | 0.5 | 120 | 0.00639 | |

options. The wizard is a great way to work through the set up of a complicated formula by allowing you to deal with individual pieces of information one at a time. We will use the wizard to create the voltage formula for the first device.

There are three ways to access the Function Wizard. Select cell E3 and do one of the following:

- Click the Function Wizard button on the formula toolbar.
- Insert > Function...
- CTRL + F2

The Function Wizard displays a function list box to the left. The Category drop-down list allows you to narrow the functions in the list to the selected category. There is also a Last Used category for selecting recently used functions. If you single-click on a function name, it displays a short description of the function to the right. When you double-click on a function, it inserts the function into the formula text box on the bottom right. Notice that the wizard has already inserted the equals sign for you. The right center displays text boxes for




entering the arguments for the function. Above the argument boxes, it displays the short description and a list of the arguments and their type. The top right shows the results of the current formula and the formula result is displayed above the formula edit box.

Our formula starts with the voltage coming into the device. For the first device this is 13.2 from cell B1, so click into the formula text box at the bottom and type “B1-”. From the category drop down list select Mathematical. Scroll down the list and double-click PRODUCT. The PRODUCT function is added to the formula.

Click into the Number 1 text box. The first argument is the sum of all the amps for all the devices. Click on the Function Wizard button to the left of the Number 1 text box. This gives you a blank function wizard screen. Note that you now have Back and Next buttons at the bottom. Select Mathematical from the category list, but this time double-click the SUM function. Click into the Number 1 text box. Use your mouse to select cells B3:B5. The range is added to the Number 1 text box for SUM.

Click Back twice to return to the PRODUCT function we started with. Notice that the SUM function is now in the Number 1 text box. Select the Number 2 text box. Double-click on PRODUCT again. In the Number 1 text box for the second PRODUCT function, enter or select the range C3:D3.

We are now finished with our formula. The final formula should look like

```
=B1-
PRODUCT(SUM(B3:B5),PRODUCT(C
3:D3))
```

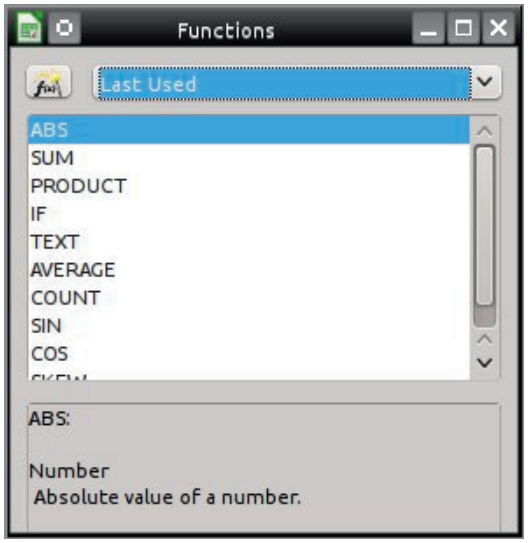
Click OK to finish the wizard.

NOTE: I could have used the multiplication operator (*) to accomplish the same thing in the PRODUCT function, but I used the function in order to illustrate the ability to use functions as arguments to other functions.

## Function List

The Function List is the wizard without the bells and whistles. In fact, it is just the function list

portion of the wizard. The idea behind it is to help you in adding functions directly into the cells. You can bring up the Function List by using the menus, Insert > Function List, or by clicking the Functions icon in the sidebar. When you select a function name in the list, a short description appears at the bottom of the list.




The Function List also has a category item called Last Used, containing a list of the functions you have used recently.

Let's use it to create the formula for the second device. Select the cell E4. Select the Input Line text box on the function toolbar. This is the best place to enter functions using the function list. For this device, we need the ending voltage of the previous one, so start the formula with "=E3-". You should see PRODUCT listed on your Last Used list. Double-click PRODUCT to add it to the formula. With the cursor between the parenthesis, double-click SUM, which should also show in the Last Used list. Select cell range B4:B5. Click into the formula and use the arrow keys to move the cursor outside SUM's parenthesis. Type a comma then double-click PRODUCT again. Type in or select the range C4:D4. Press Enter.

The final result should look like

```
=E3-
PRODUCT(SUM(B4:B5),PRODUCT(C
4:D4))
```

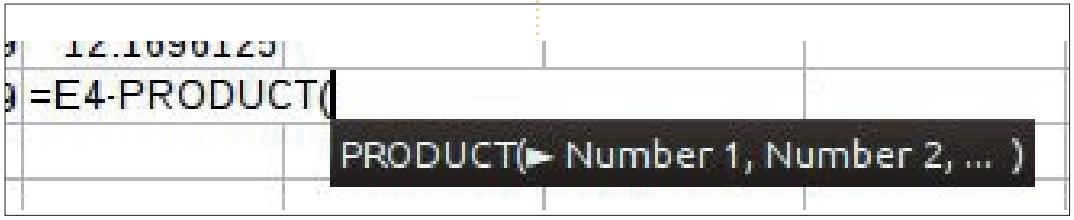
## Manual Entry

Manual entry is just that, typing the formula directly into the cell from memory. The formula for the last device is the easiest because you no longer need the sum of device currents because it is the only one left. Select cell E5 and type in

```
=E4-PRODUCT(B5,
PRODUCT(C5:D5))
```

and press Enter. While you are typing in the functions, Calc will show you a hint balloon of the function and its arguments.

Calc gives you three different methods for entering functions into a cell. Use the Function Wizard when you need as much guidance as possible, or when entering a complicated formula for the first time. The Function List gives you a list and short descriptions to aid you in using the correct arguments and functions in your formula. The manual method is great for entering short formulas, using functions you are familiar with, or repeating a formula you have used before.




**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at http://eeperry.wordpress.com

# LibreOffice Pt.47 - Linking To The Web

Spreadsheets are a great place to collect data. The web is a great resource for data and much of that data is dynamic. You may even want to collect this data into a spreadsheet and make the spreadsheet mirror the dynamic nature of the web data. Calc allows us to link to external data sources, including web pages, and it will surprise you how easy it is.

Many people trade stocks. Trading requires diligently tracking the stocks. In the past, I have shown this done manually, but today, I am going to show you a way to use a Calc spreadsheet to track the top 100 stocks as compiled by the web site barchart.com.

Like so many things, there is more than one way to do this. I'm going to show the method I feel is the easiest for discovering and getting exactly the information you want. You will import the web page using the Web Page Query filter. Once imported, you can examine the elements of the page to find the data you want to extract. You will then create your sheet of 100 stocks by pulling from your imported source file.

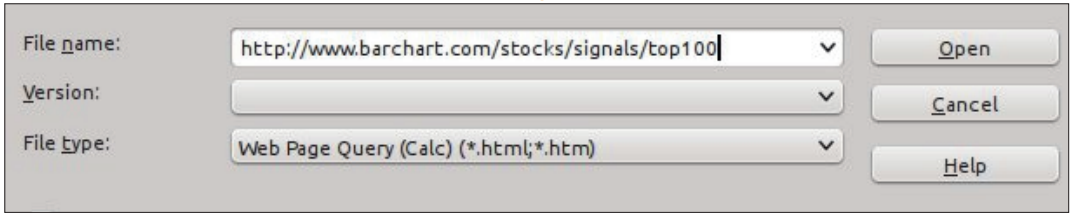
## Setting Up the Source Sheet

When you import the source using the Web Page Query filter, you are not actually working with a local copy, but a link to the page on the Internet. You will not save this import (but you could). Instead, you are using it as a reference to the actual page on the barchart.com web site.

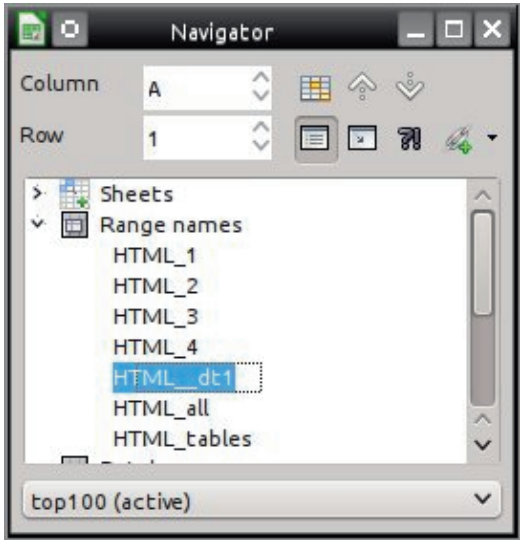
From the menus, File > Open. In the Open dialog, you will find the file type filter drop-down list at the bottom of the dialog. All the different file types recognized by LibreOffice are listed here. Scroll through and find the filter named "Web Page Query (Calc)". This will help you create your link to the web page. In the "File name" text box, enter (or copy and paste) the following URL:
http://www.barchart.com/stocks/signals/top100

Click the Open button. Calc will take a few seconds then come up with the Import Options dialog. The Automatic option will import the web page "as is." Custom allows you to select another language for importing the page. I recommend using Automatic as it has the greatest chance for proper interpretation. The "Detect special numbers (such as dates)" checkbox does what you think it does. When checked, it will detect dates, times, etc, and format them appropriately in the sheet. We do not have special numbers we are concerned about, so we don't need it. Click OK to accept the options. Depending on your Internet connection, computer speed and memory, Calc will take a few seconds to import the web page. Notice that it imports the entire web page minus the images.

**NOTE**: This is a link to the actual web page. Nothing has been saved on your local computer at this point.




## The Navigator




We will use the Navigator to examine the imported page and link the data to our new document. The Navigator shows you the elements and structure of a document and changes depending on the type of document you have open. Not only is it good for our purposes here, but for navigating and manipulating a document, especially a large document. Currently, there are four ways to open the Navigator:

- Press F5 on your keyboard
- View > Navigator
- Navigator tab on the sidebar
- Navigator button on the standard toolbar

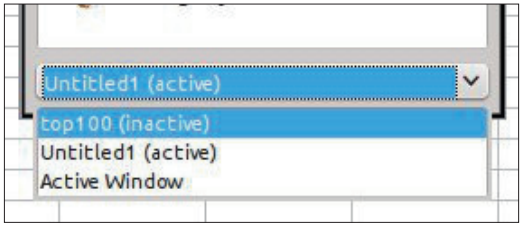
## Examine the Source

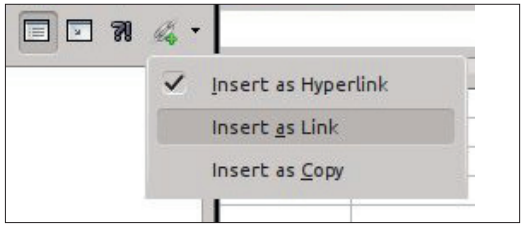
When a web page is imported, several range-names are created, as well as importing named tables on the web page. The prefix HTML_ is added to any names imported from the page. The filter creates two special ranges, HTML_all and HTML_tables. HTML_all allows you to select the entire document. HTML_tables allows you to select all the tables. The problem you run up against is the creator of the web page probably wasn't thinking about you importing his page into Calc. Imported table names were for the creator's reference not yours.

If you open the Navigator using one of the methods listed above, in our source document, you will discover a list of names under the "Range-names" item in the Navigator. Double-click on a range-name to highlight it in the document. As you go through the list, you soon discover that the names HTML_4 and HTML_dt1 both contain the table with our stock data. You will use one of these to create your stocks document.

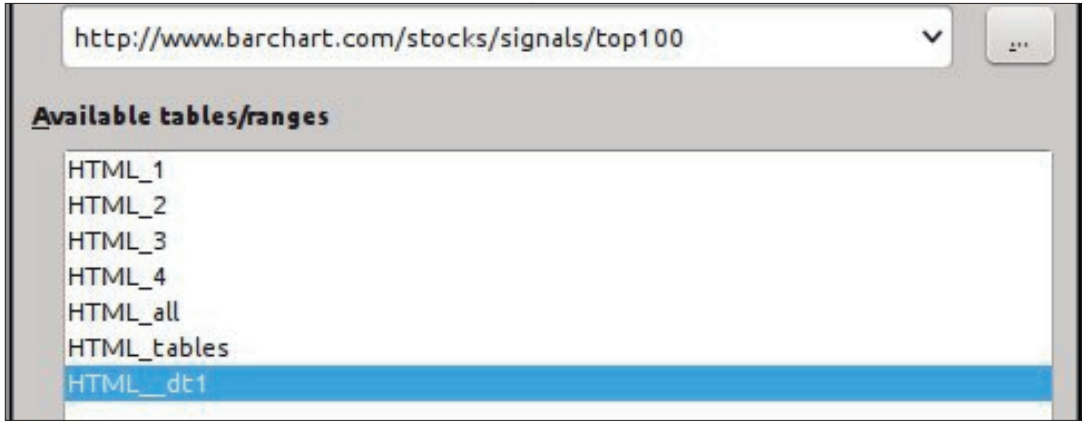
## Import Table to New Sheet

Now that you know what range-name to import for the stocks data, it's time to create the sheet you want to save and keep. You will import from the source document into a new document. Remember that your source document is just a link to the actual web page, nothing has been saved to your local computer yet.




From the menus, File > New > Spreadsheet. Use any of the four methods discussed above to open the Navigator. From the documents list at the bottom of the Navigator window/panel, select the source document, top100. Click on the drag-mode icon in the Navigator toolbar and change the setting to "Insert as link." Expand the entries under the "Range names." Select either HTML_4 or HTML_dt1, drag it to cell A1 in the new document, and release. After a few seconds, depending on your internet and computer speeds, the stocks data will appear in your new sheet. Save the new document. You can now close the source document. There is no need to save it. Your new document is actually linked to the page on the web site and not the source document.



You can close your new document, and when you open it, you are prompted about whether to update the links in the file. If you answer Yes, Calc will retrieve a fresh version of the page and update the data in your sheet. You can set the file to update periodically when it is opened. In the menus, Edit > Links brings up the Edit Links dialog. With the link selected, click on the Modify button to bring up the External Data dialog. Check the “Update every...” check box, and fill in the number of seconds between every update. For example, every five minutes is 300 seconds, ten minutes is 600 seconds, and an hour is 3,600 seconds. Click OK to save your changes and Close to close the Edit Link dialog.

Importing dynamic data from a web page in Calc is pretty simple. Use the Web Page Query filter to link the page to a sheet. With the Navigator, you can examine the page to determine which range-name contains the data you need. Once you know the range you need to use, you use the Navigator to drag the range-name into a new sheet and save the new document. The new document will prompt you to update every time you open the document or periodically, should you assign an update period to it.

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at
http://eeperry.wordpress.com

# LibreOffice Pt.48 - Insert & Link Sheets

Linking to data on the web is often useful, but, sometimes you need to just get data from a sheet in another Calc file. You can just import or link the whole sheet from another file. You do this through the Insert Sheet dialog. Another choice, with a little more power, is to create named ranges of the data you need to link to your new sheet. You can do this through the Navigator as we did with the web data, but there is another method for inserting through the External Data dialog.

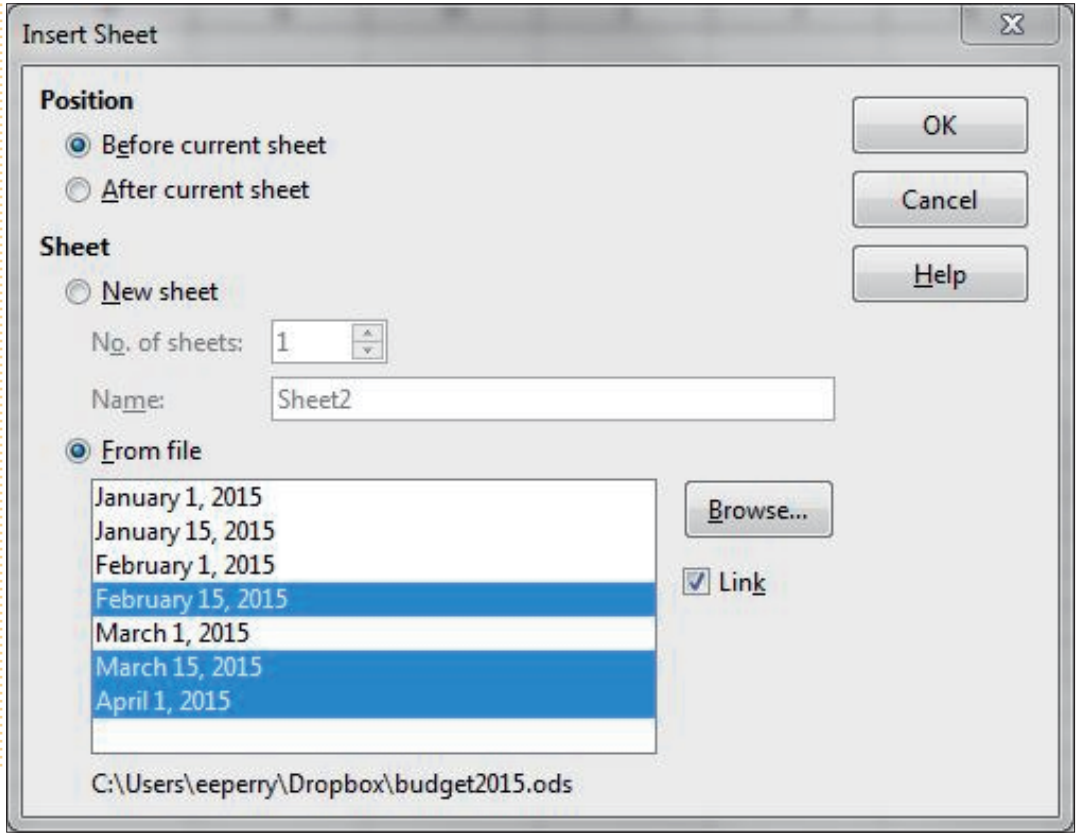
## Difference Between Insert and Link

Since our main topic concerns linking data from other sheets, you need to know the difference between inserting a sheet and linking a sheet. When a sheet is inserted, you can change the cells in both sheets and changes in one will not affect the other. However, when you create a link in sheet 2 to sheet 1, changes to cells in sheet 1 will override changes in sheet 2 when sheet 2 is updated. Changes in sheet 2 have no effect on sheet 1.

## Link/ Insert Whole Sheet

Sometimes, you just need the entire sheet from a spreadsheet file in your new spreadsheet file. If you want to make changes to the sheet, and have those changes stay, you will need to import the sheet. However, if you need any changes to the original sheet to apply to the new sheet also, you need to create a link. From the menus, Insert > Sheet will bring up the Insert Sheet dialog.

You have two choices for the position of the new sheet within the spreadsheet file. You can place it before or after the currently selected sheet. The Position options allows you to select where you want the imported / linked / new sheet(s) located.




You have the choice of creating new blank sheet(s) or select an existing sheet from another file. The settings under "New Sheet" allows you to create one or more new blank sheets. The settings under "From sheet" let you import, and optionally link, a sheet from another file.

For the "New sheet" options, you can specify a number of sheets to add and a name for the sheet (if you're adding one sheet). If you are creating more than one sheet, the option for the name is grayed out. The sheets are created with the default sheet prefix and a numeric iteration. You can set the default sheet prefix in Tools > Options > LibreOffice Calc > Defaults.

For the "From file" options, you use the Browse button to locate the file containing the sheet(s) you want to import into your new

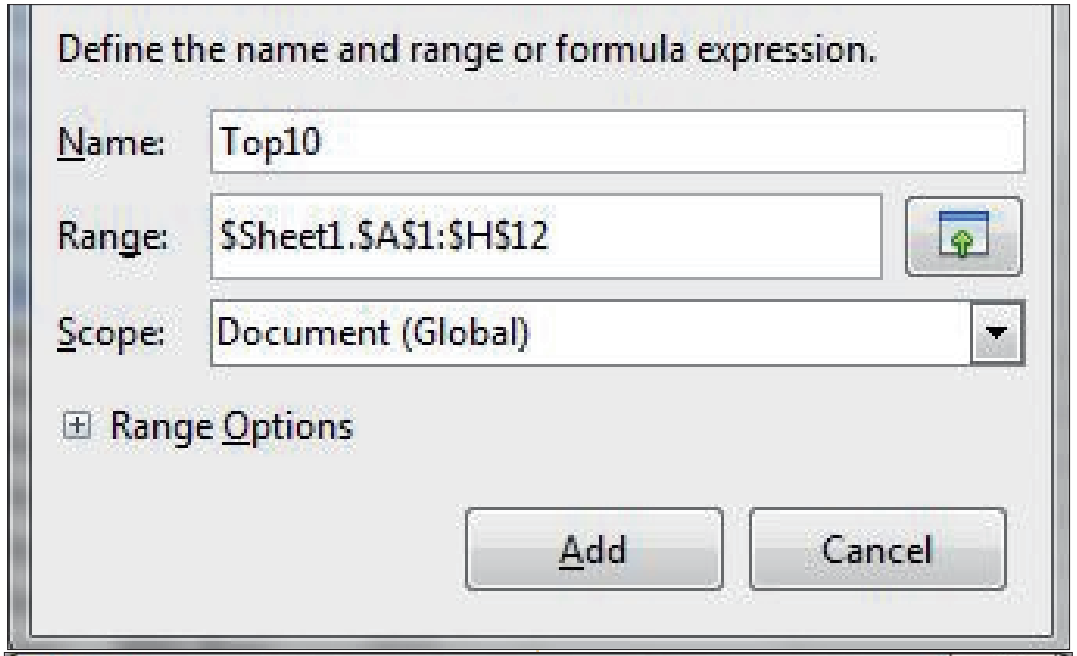
spreadsheet file. Once you open the file containing the sheets you want to use, a list of sheets will appear in the list box. Select the sheet(s) you want in your new file. To select sequential sheets, click on the first one, then hold SHIFT while clicking on the last one. To select non-sequential sheets, click on the first one, then hold CTRL while clicking on the others. Once you have your sheets selected, you can check the Link check box to link to the sheet(s) rather than just import a copy of them. Remember, when linked, the data will update from the original sheet.

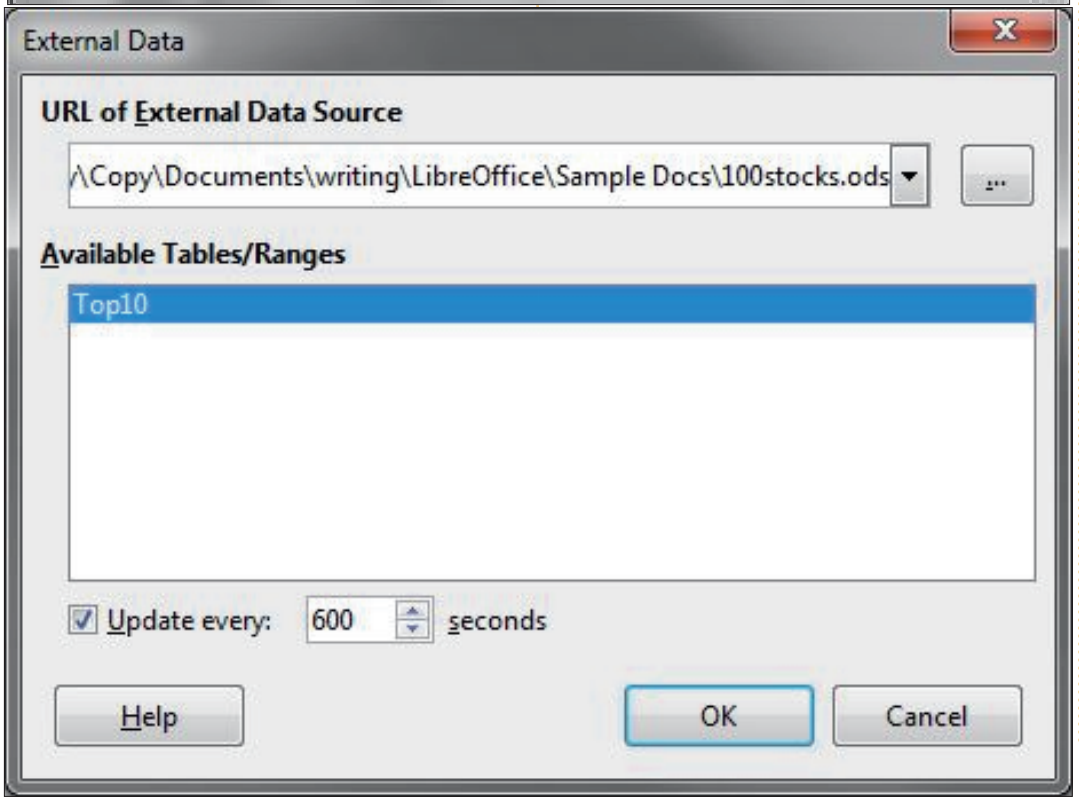
Click the OK button to import / create the sheets using the options you have selected.

## Link Part of a Sheet

When I showed you how to link to data on the web, I used the Navigator to link the data. Today, I am going to show you another method for linking data, but this time we will link data from another file rather than from the web.

When linking to just a section of a sheet, you need a way to define the section of the sheet you want to link. This is done by creating a named range. We discussed named ranges back in part 42 (Full Circle Magazine, issue 90). We will create a named range in order to link to that portion of the sheet.




For example, let's say you want to link to just the top ten stocks from the top 100 stocks we pulled from the web last time. Open up the 100 stocks file linked to the data on the web. Select the range A1:H12. Insert > Name > Define. The Define Name dialog will show. Give the range a name like "Top10". Remember that the name cannot contain spaces. The range should fill in with the range you selected. Leave the scope as "Document (Global)." Click the Add button, and save the file.

Create a new spreadsheet file, File > New > Spreadsheet. We will use the External Data dialog instead of the Navigator this time. Insert > Link to External Data opens the dialog. The drop-down list shows a list of recent documents. Select the top 100 stocks file. If the document you need does not appear in the drop-down list, you can click on the ellipse (…) button to browse to and select the file. Once you select your file, the

named ranges appear in the list box. Select the named range Top10 from the stocks file to link to the top 10 stocks. You can set how often the file should update when open by setting the “Update every” field. Keep in mind the number is in seconds.

Click OK and you now have a link to the top 10 stocks. The data will update from the original sheet every time you open the file or at the specified update interval.

You can link to a web page using the External Data dialog as well. Just type in or paste the URL into the drop down box and press enter. You will get the import data dialog discussed in the last article. You will get a list of link names. Unlike the Navigator method, there is no way to preview which element is the one you need. It becomes a matter of trial and error (mostly error). This is why I recommended the Navigator method as the best for linking to web data.

You can also use the Navigator to link to named ranges in other documents. Just drag the ranged range into your new document.

Not only can we link to data on the web, but we can also link to data in other Calc files. We can import or link entire sheets using the Insert Sheet dialog. If we need just a portion of a sheet, we can create a named range in the original sheet. In a new sheet, we can link to the named range in the original sheet through the External Data dialog. Always keep in mind the difference between linking and importing. Imported data is not affected by changes in the original, but linked data is affected by changes in the original.

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at
http://eeperry.wordpress.com

## FCM#100 SURVEY

The question is:

**What are your most loved/hated flavors and releases?**

Take the quick survey and we'll publish the results in FCM#100.

http://goo.gl/DPt2q0

# LibreOffice Pt.49 - Macro Security

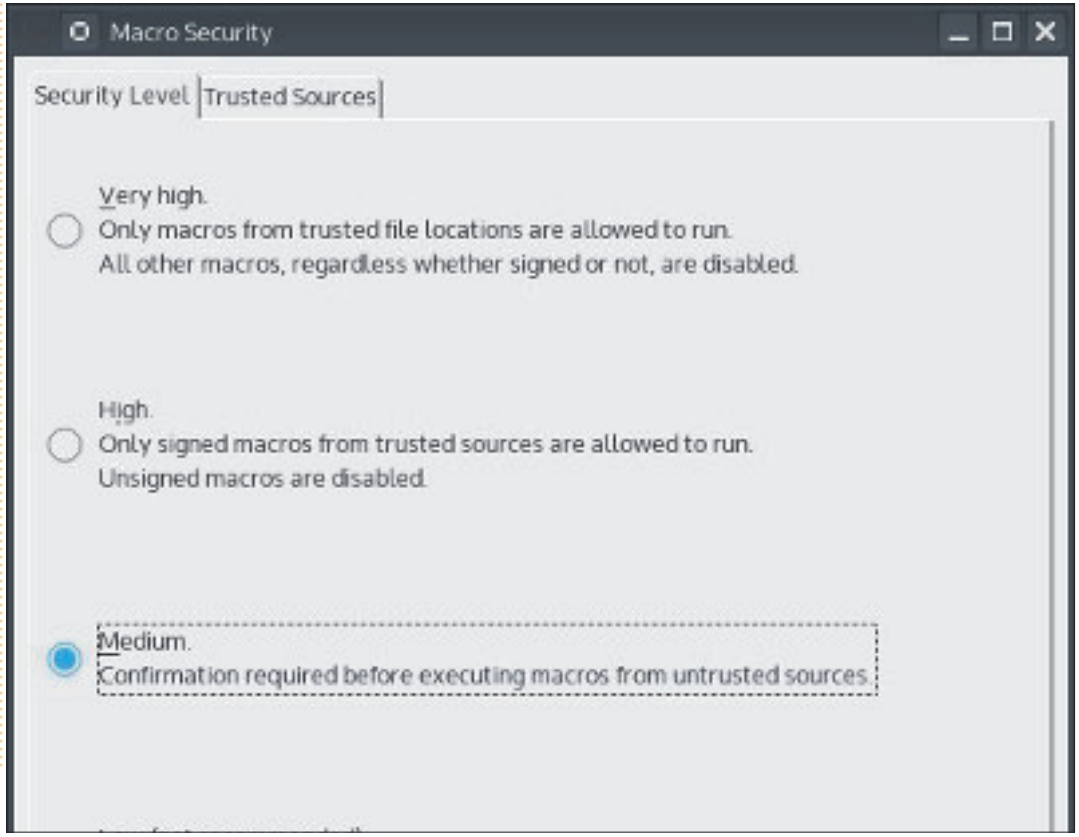
In next month's article, I will discuss the use of macros as functions, but before I do, I must discuss macro security. While macros are a powerful tool when used properly, macros can contain code that is harmful to the data on your computer. Through the years, documents with macros have been the transfer method for many computer viruses. With a little caution and a few settings, you can minimize the chances of your computer getting a virus from document macros.

## Security Levels

Open the macro security settings through the menus: Tools > Options > Security > Macro Security (button). LibreOffice has four different macro security levels that cover security – from no restrictions to highly restrictive. Each level has its merits. Let's look at each one in detail.

**Low**: This is the "Off" level. All macros are executed without prompting. They can run without you knowing, and they can damage your files and settings. It's like walking through a snake pit in your bare feet: you will get bitten. The only way this level would ever make sense is on a computer that is completely isolated from the Internet and never opens a file that was not created on that computer. Not very likely.

**Medium**: This level is the "Are you sure?" level. With medium level protection, the document will run macros if it comes from one of the trusted sources, discussed below, without any prompting. If the document is not from a trusted source, LibreOffice will prompt you about whether to run the macros in the document. You have the choice: Yes or No. I have recommendations later about how to make this decision.




**High**: This is the "hands off" level. Only signed macros from a trusted source, or macros from trusted file locations, are allowed to run. All others will have their macros disabled. You have no choice; you are never prompted. This is a level where you don't want the end users making the decisions, but you want LibreOffice to make the decision for them.

**Very High**: This is the "paranoid" level. Only files from trusted file locations can run macros. Again, you are not prompted or given a choice. If the file doesn't come from a trusted file location, the macros are disabled. This is the most locked-down, don't-trust-nobody level there is. If you think the world is out to steal your identity and know all your secrets, you might be right, and this is the level for you.

## Trusted Sources

The Trusted Sources tab allows you to identify the trusted sources

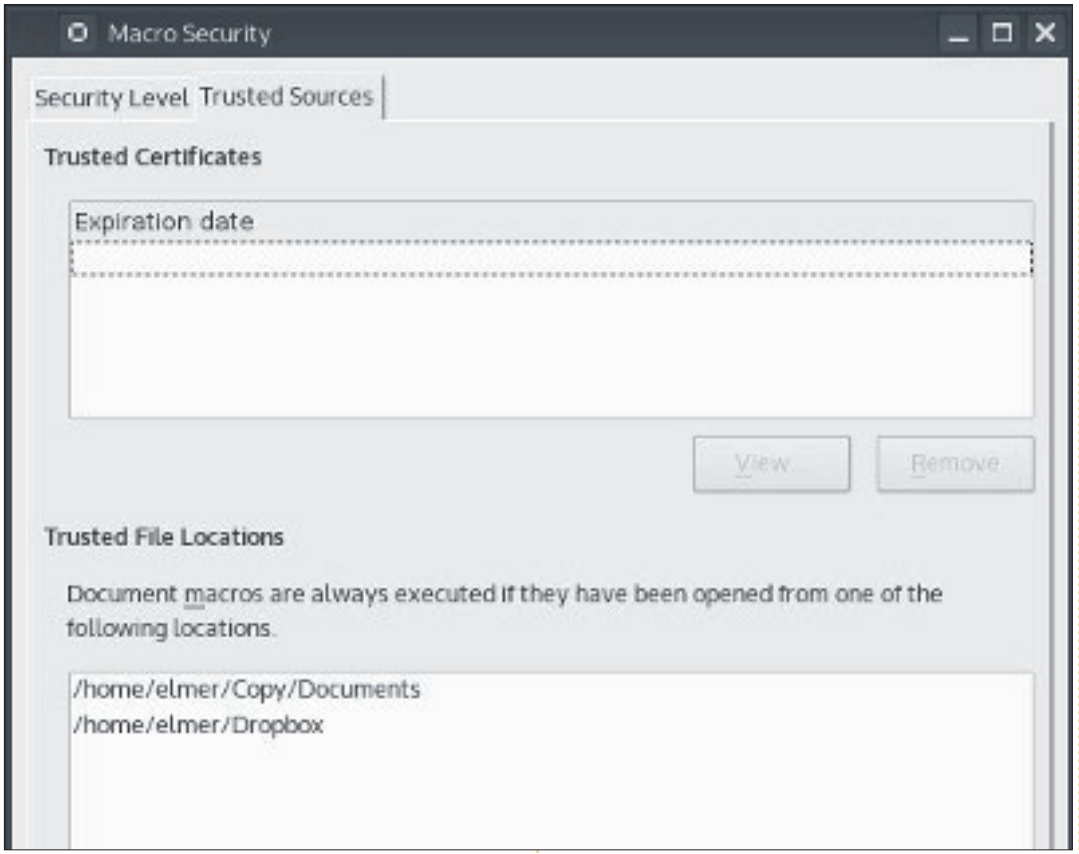
for your documents.

**Certificates**: Certificates are used to digitally sign documents. Certificates come from a certification authority. They are usually used on web sites and servers to authenticate the source. The installation of certificates is beyond the scope of this article, but to digitally sign a macro, Tools > Macros > Digital Signature.

**File Locations**: No matter what level you use – except Low – I recommend you define at least one trusted file location. You need at least one place where you can run proven files with macros without having to OK a prompt. Don't use a location where you usually download files from email or the Internet. Use a location where you collect and save documents you need to keep. Sometimes, two or three locations are helpful. Also, make sure the location isn't too general, like your home folder.

## Recommendations

Never, ever use Low. No, I mean NEVER. Don't try to argue that you know what you are doing, and you have a firewall, anti-virus, and malware protection. Don't do it! No. No Low level setting. Go there now in your copy of LibreOffice and change it to something else. There. Now, don't you feel safer already? Now, we can calmly discuss the benefits of the other levels.




Medium is my preferred setting. While it protects you, you also get the choice of making that decision for yourself. I recommend this setting for computers on your home network. The setting gives you protection, but does not take away your right to make a choice. If some computers are used by students, you will want to educate them on a good method for making the decision for documents from email and the Internet. Later I will offer you a method that I feel is useful.

High and Very High are best reserved for office networks and computers used by younger students. Use these when you are locking down a computer where you want to limit the power of the end user. I see this in my line of work all the time. The company has the user's computer limited in what they can do to protect the company's investment in the computer and data. Sometimes, this is set according to the experience and necessity of the users. If you are the network administrator, you will need to make this decision for each user.

As I said before, whatever level you decide to use, I recommend at least one trusted file location. In fact, for the Very High setting, you have no choice. Also, with file locations, you can avoid the need to sign the macros in every file with a security certificate.

## You Are Your Best Tool

The most important virus protection of all: the mushy gray matter between your ears. If you were not expecting a document to contain macros, then, maybe, you shouldn't allow the macros to run. Follow your instincts that developed in humans as a protective measure. Be the

skeptic! If you have a feeling that something is not right, maybe something is not right.

Take these steps when receiving a new file. Open the file from an untrusted file location, but do not allow the macros to run. Examine the macros in the document. If you have any questions about the macros, asks the person who sent the document. If they cannot give you a satisfactory answer as to why the macros are there, eliminate the document. Chances are, they are not your friend and do not have your best interest in mind (or their computer is infected with a virus). Yes, this may all sound a little paranoid, but better safe than losing time and data. If the document is clean (no macros) or the sender gives you a satisfactory reason for the macros, move the document to a safe file location.

While macros are useful, people also use them for malicious purposes. LibreOffice provides you with four different levels of protection against malicious macros. You should never use the Low level setting, but the Medium level is good for most home computers and networks. High and Very High are good in office environments where you need to control the end users interaction. Always take precautions when dealing with documents coming from other people. Sometimes, people unknowingly pass on documents that contain malicious code.

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at
http://eeperry.wordpress.com

## FCM#100 SURVEY

The question is:

**What are your most loved/hated flavors and releases?**

Take the quick survey and we'll publish the results in FCM#100.

http://goo.gl/DPt2q0

# LibreOffice Pt.50 - Macros As Functions

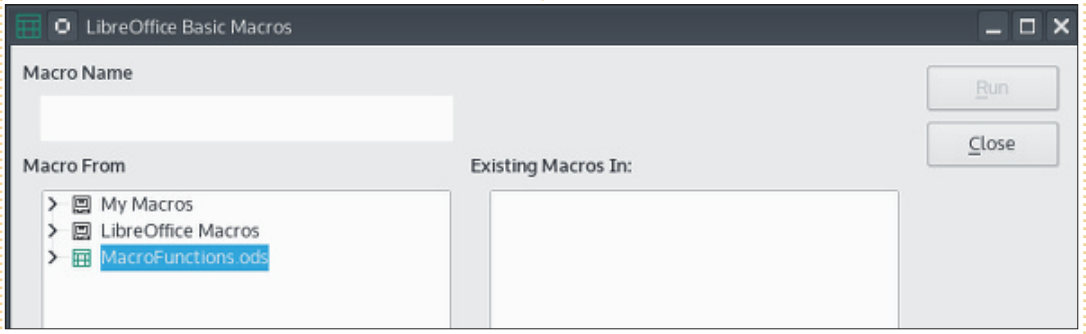
Written by Elmer Perry

LibreOffice Calc has hundreds of built-in functions. They cover mathematics, including geometry, trigonometry, and calculus; logical functions; cell functions; and text functions. After years of using Calc, I haven't had a need I couldn't solve or a formula I couldn't recreate using the functions in Calc.

However, I am aware that the day may come when I will need a highly specialized function, a function that does something that the built-in functions can't, or calculates an extremely complicated formula. Luckily, Calc allows you to use macros as functions. You can create your own functions and call them from within a cell's formula. You can even pass the values of cells or even cell ranges to your functions.

## Create User-Defined Functions

In order to create user defined functions, you first need a module for storing the macros. Create a new Calc file and save it as MacroFunctions.ods. Open the LibreOffice Basic Macros dialog: Tools > Macros > Organize Macros > LibreOffice Basic. In the Macro From list box, select the name of your file, MacroFunctions.ods. Click New. In the New Module dialog, give the module the name UserFunctions and click OK. LibreOffice will open your new module in the LibreOffice Basic IDE. The module automatically defines a blank main subroutine. You can leave it or delete it. The choice is yours. You will not use it in this case. The IDE is a mini programming editor. As a built-in macro editor in an office suite, it's actually pretty good. There are tools for testing and tracking macros, but all that is beyond the scope of today's discussion. In the IDE, you will write your first function. It is very simple. The function just returns the number five.




```
Function NumberFive()
        NumberFive = 5
End Function
```

The first line is the function definition. It begins with the word "Function" showing it as a function rather than a subroutine (Sub). The main difference between a function and subroutine is that a function returns a value. Next is the function name, NumberFive, followed by parentheses. The parentheses are required, even if they are empty. The second line of this function is the body of the function. The body of a function can contain any number of lines. This function simply returns the number 5. We return a value from a function by setting the function name (without the parentheses) equal to the value we want to return. Finally, we have the line "End Function" which denotes the end of the function. Once you have the new function typed in, click the save button.

To use the macro in our spreadsheet, select a cell and type

```
=NumberFive()
```

When you press Enter, the number 5 will appear in the cell where you typed the formula that uses the function name. You can even use the function as part of a bigger formula like

```
=2 + NumberFive() - 3
```

which should give you 4.

## Passing Arguments

Having a macro you created and

can use in a formula is great. To make a function really useful, you need the ability to send data to the function. You send data by the use of arguments. You can use text, numbers, cell references, and cell ranges as arguments. First, you will create a function which passes a single argument whether a cell reference or a value.

```
Function SqrIt(x)
        If IsNumeric(x) Then
                SqrIt = x * x
        Else
                SqrIt = 0.0
        End If
End Function
```

The signature of your new function is like the first one except it has a variable x in the parentheses. The x represents the value you are passing to the function. In the body of the function, it checks x to make sure it is a number. If it is a number, the function multiplies x by itself and returning the result. If x is not a number, it returns 0.0.

You can use hard-coded numbers as x when you use the function:

```
=SqrIt(3)
=SqrIt(2.4)
```

Or you can reference cells as x:

```
=SqrIt(A1)
=SqrIt(B4)
```

Or as part of a larger formula:

```
=NumberFive() + SqrIt(C4)
```

By default in LibreOffice Basic, arguments are passed by value. When you pass a cell reference to a function, the function does not receive a reference to the actual cell. Instead, the function receives the value of the cell or the result of its formula. If the cell A1 contains the number 3, or a formula that results in 3, the function SqrIt receives the value 3 and not a reference to A1.

## Passing Multiple Values

While passing one value to a function is useful, sometimes you need to pass multiple values. For example, you create a function that calculates the volume of a cuboid. A simplistic version of this function is represented by the function Vol (shown below).

In Vol, you pass the three needed values to calculate the volume of the cuboid. The parentheses contain three variables separated by commas. In the If statement, the function checks whether each of the variables is a number, and then if they are, it returns the product of the values. Otherwise, it returns 0.0.

We can use this function much as we have the others.

```
=Vol(2, 3, 4)
=Vol(A1, A2, A3)
=Vol(SqrIt(A1), A2, A3)
=SqrIt(Vol(A1, A2, A3))
```

## Passing A Cell Range

So far you have passed single-cell references to your functions, but you might want to pass a cell range rather than a single-cell reference. A cell range is passed to Basic functions as an array. An array is a collection of values. Cell ranges come across as multidimensional arrays, i.e. x(Row, Column). You can use a function named IsArray to determine whether the value being passed is an array. The function SumIt demonstrates the use of a cell range reference. SumIt will accept a single value or a cell range. If the argument is a single value, it returns the value. If the argument is a cell range, it sums the values of all the cells in the range. Code for this is shown on the next page, right hand side.

The body of the function defines three variables, TheSum, iRow, and iCol. iRow and iCol are defined as Integers, which are

```
Function Vol(a, b, c)
        If IsNumeric(a) AND IsNumeric(b) AND IsNumeric(c) Then
                Vol = a * b * c
        Else
                Vol = 0.0
        End If
End Function
```

```
Function SumIt(x)
        Dim TheSum as Double
        Dim iRow as Integer
        Dim iCol as Integer

        TheSum = 0.0

        If IsArray(x) Then
                For iRow = LBound(x, 1) To UBound(x, 1)
                        For iCol = LBound(x, 2) To UBound(x, 2)
                                TheSum = TheSum + x(iRow, iCol)
                        Next
                Next
        Else
                TheSum = x
        End If

        SumIt = TheSum
End Function
```

whole numbers, i.e. 1, 2, 3. These two variables are the row and column placeholders. TheSum is defined as a Double, which is a real, floating point number, i.e. 2.34, and will contain our running total. TheSum is assigned an initial value of 0.0.

You have only one argument in your function definition, x. The user could send a single value, single cell reference, or a cell range. The function tests for this using an If statement. It uses the IsArray function to check if x is an array. If it is, SumIt sets up two loops. The outer loop cycles through the row lower-to-upper values. The inner loop cycles through the column lower-to-upper values. The lower values are obtained through the LBound function, and the upper values are obtained through the UBound function. Both functions take a reference to the array, x, and the dimension of the array, 1 or 2. Remember, it references the values through x(row, column). The row is the first level, and the column is the second level. In the middle of the two loops, SumIt takes the current sum, TheSum, and adds the value of the current cell in the array to it, x(iRow, iColumn). Once the first row is complete and iColumn has reached its UBound limit, the iRow increases by one, and the inner loop starts over again. This procedure continues until both iRow and iColumn have reached their UBound limits. The two Next statements end the two loops once they reach the UBound limit for their range. The Else statement handles the case when x is not an array but a single value. It sets TheSum equal to the value of the single argument.

Finally, the function returns the value of TheSum.

This function allows you to actually use a cell range as your argument. You can also use a single value or cell as the argument. You can even use the function as part of a bigger function.

```
=SumIt(A3:C6)
=SumIt(A1)
=SqrIt(SumIt(A1:A5))
```

While Calc provides you with hundreds of functions for manipulating the data in your spreadsheets, you may occasionally need a specialized function that is not easily duplicated using the functions built into Calc. Once you create a function in Basic, you can call it from a cell using a formula. You can design your functions to accept a single value, a cell reference, or a cell range. This allows you to create very versatile functions.

**Elmer Perry**'s history of working, and programming, computers involves an Apple ][E, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu.
He blogs at http://eeperry.wordpress.com

## DDisk DDrive DDisaster

In Issue #80 of the magazine Ronnie wrote:

> WELCOME TO A PROPER ISSUE OF FULL CIRCLE!
>
> I have to start this month with an apology about the state of the previous issue (FCM#79). To cut a long story short: I ran a dd command without properly checking drive letters, and completely annihilated my 1TB drive partitions and lost all my data. Including, of course, the Scribus file for FCM#79. Needless to say, I've written up an article on how to backup your data and a brief article on data recovery. Take it from me, don't sit there and think (like I did) that it'll never happen to you. It can!

In this compilation I have used images of the pages from the Issue 79 PDF as published. Here are the raw text and images of that article for those who might wish to use them.

# LibreOffice Pt 32: Impress Remote

by Elmer Perry

If you have ever given a presentation, you know that moving back to the computer to advance your slides is a pain, especially if, like me, you move around a lot and actively engage your audience. I recently presented for a training session at work and constantly wished I had a remote. The Document Foundation has provided a solution in the Android application Impress Remote. Impress Remote allows you to control your Impress presentation from your Android phone or tablet.

Impress Remote requires LibreOffice version 4.0.1 or greater, and a phone or tablet running Android 2.3 or greater. If you own a recent phone or tablet and your Linux distribution is up to date, you shouldn't have any problem using the program.

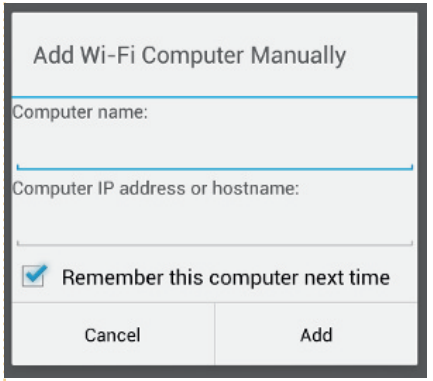
## Setup

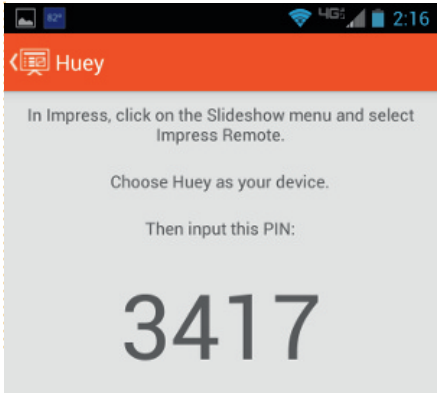
We will need to make changes to our LibreOffice Impress setup to run the remote program. Start by opening a new or existing presentation. Then Tools > Options > LibreOffice Impress > General. Check “Enable Remote Control”. Click OK. Tools > Options > LibreOffice > Advanced. Check “Enable experimental features”. Click OK. Restart LibreOffice and open your presentation.
When we set up the remote control app, we will need the IP address of the computer running LibreOffice. From a Linux terminal prompt, the following command should work for most users:

```
ifconfig eth0
```

The information you need is on the line that starts with “inet addr:xxx.xxx.xxx.xxx”, where xxx.xxx.xxx.xxx is the IP address for your computer. Write this address down and keep it for later. You will need it when you set up the remote app.

Now, we install the Impress Remote app. From the Google Play store, search for Impress Remote, and install the app on your phone or tablet. The first time you open the app, you see a mostly empty screen. Select “Add WI-FI Computer Manually”. Enter a name for the computer and the IP of the computer. Select Add. Select the computer from the list and let it connect. Back in Impress, Slide Show > Impress Remote. Select your remote device. Enter the code given you by the app. Click Select. In the remote app, click “Start Presentation” to start the presentation.

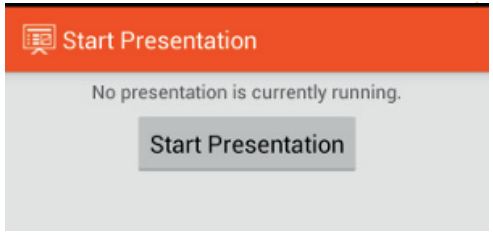


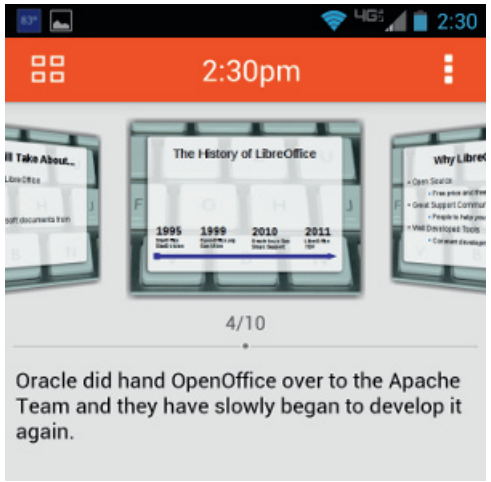
If your computer has Bluetooth, you can also connect by pairing your phone with your computer. Once you open the app, it will scan for your device using Bluetooth, and you can just select your device from the list. You still need to enable the remote and experimental options in LibreOffice.

[sidebar]NOTE: If you are running a firewall on your computer, you will need to open TCP port 1599 for communications through WiFi.

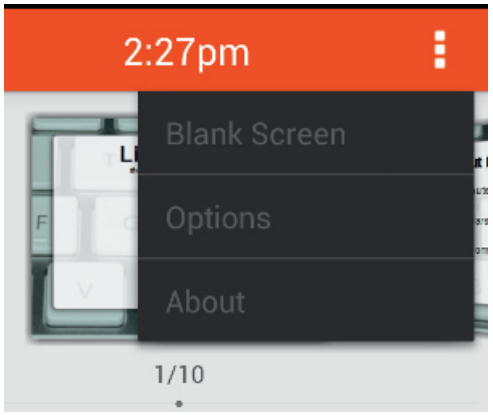
Using Impress Remote App
The remote app is pretty basic, but let's face it, the less complicated the better when you're giving a presentation. The tool bar across the top has the current time, which is handy when your presentation needs to start or end at certain times. To the left of the time is the view switcher, and to the right of the time is the app menu.



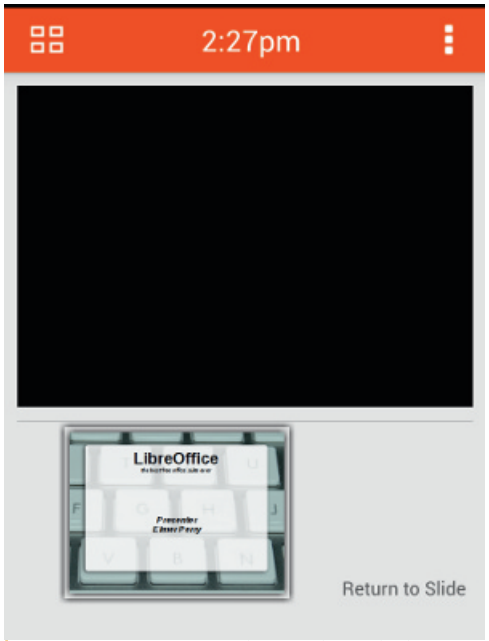

Once you start a presentation, you get the slide scroll view of your presentation. This view is the most useful, because while you are in scroll mode, you can also see any notes you made for the slide. While you can use your finger to move between slides, this is not the best method unless you are just needing to skip forward or move back in your presentation several slides at a time. The best, or designed, way to move through your presentation is with the volume up and down buttons. The up button moves forward in the presentation, and the down button moves backward in the presentation.



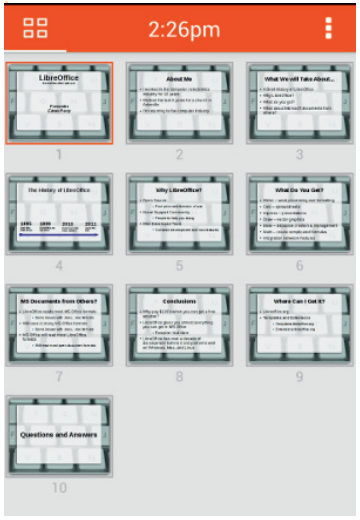

Sometimes, you need to pause a presentation and move your audiences' attention from the screen to something else. Impress Remote gives you the ability to blank the screen. In the app menu, select “Blank Screen”. Your presentation screen will go blank. When you are ready to return to the presentation, just click “Return to Slide”. The presentation will pick up where you left off.



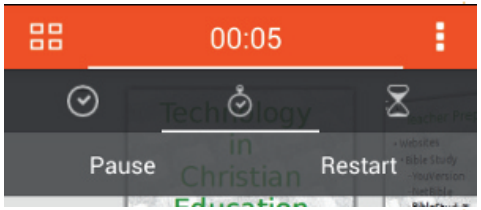

You can display your slides in two different ways. One we have seen already, the scroll mode. The other is the list mode. You can switch between the two mode by selecting the view switcher button. In the scroll mode, you move quickly to a slide by swiping with your finger. To select a slide in list



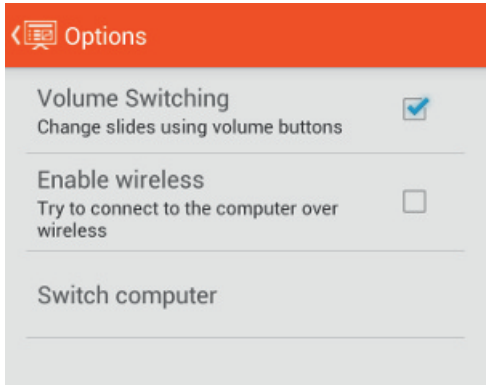

view, you just select the slide. This is practical only for fixed slides. Any slides with animations will require the use of the volume up and down buttons.



If you select the clock, you have the option of leaving it as the current time or starting a stopwatch. Select the stopwatch to use it. You will get a Start and Reset option. Press Start to start the timer. The timer will begin to count, and the options will change to Pause and Restart. Select Pause to pause the timer, and Restart to start over from 0.00. This is handy for timing an activity or working on your timing for your presentation.




In the app menu, there is an item for Options. The first option is for using the volume up and down buttons to control the presentation. I can't think of a good reason to uncheck this, but I'm guessing it is there because someone had a reason. The second option is for enabling a wireless connection between the phone and the computer. This allows the app to automatically search for devices on the wireless network that are running LibreOffice Impress with the remote feature turned on. Finally, the switch computer option allows you to

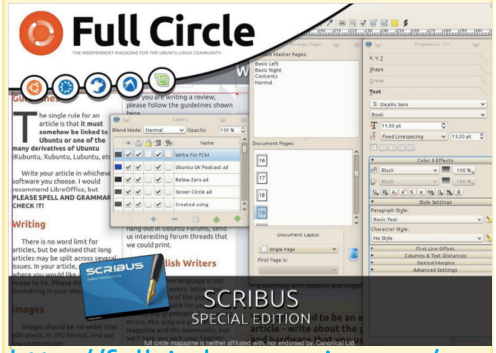



switch to a different computer.

Conclusion

When giving a presentation, it is nice to have mobility. The Android app Impress Remote gives you mobility by allowing you to control your Impress presentation from your Android phone or tablet. The app is easy to set up through Bluetooth or WiFi. The interface is not cluttered, making it easy to use and control. Since the app was developed by the same people who develop LibreOffice, future compatibility is almost assured.

Elmer Perry's history of working, and programming, computers involves an Apple IIE, adding some Amiga, a generous helping of DOS and Windows, a dash of Unix, and blend well with Linux and Ubuntu. He blogs at http://eeperry.wordpress.com


http://fullcirclemagazine.org/scribus-special-edition/


http://fullcirclemagazine.org/20

To
Read
More
Go To


# Full Circle Magazine

http://fullcirclemagazine.org/