Calc Guide

Chapter 9
Linking Calc Data:

Sharing data in and out of Calc

OpenOffice.org

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Authors

Peter Kupfer
Iain Roberts
Rob Scott
John Kane

Feedback

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Contents

Why use multiple sheets

Chapter 1 of the Calc guide introduced the concept of multiple sheets in a spreadsheet. Multiple sheets help keep information organized; once you link those sheets together, you unleash the full power of Calc. Consider this case:

> John is having trouble keeping track of his personal finances. He has several bank accounts and the information is scattered and disorganized. He can't get a good grasp on his finances until he can see everything at once.
>
> To resolve this, John decided to track his finances in OOo Calc. John knows Calc can do simple mathematical computations to help him keep a running tab of his accounts, and he wants to set up a summary sheet so that he can see all of his account balances at once.
>
> This can be accomplished easily.

Note	For users with experience using Microsoft Excel, a Calc sheet is called either a sheet or worksheet in Excel. What Excel calls a workbook, Calc calls a spreadsheet (the whole document).

Setting up multiple sheets in a spreadsheet

Chapter 1 of the Calc guide gives a detailed explanation of how to set up multiple sheets. Here is a quick review.

Identifying sheets

When you open a new spreadsheet it has, by default, three sheets named *Sheet1*, *Sheet2*, and *Sheet3*. Sheets in Calc are managed using tabs at the bottom of the spreadsheet as shown in Figure 1.
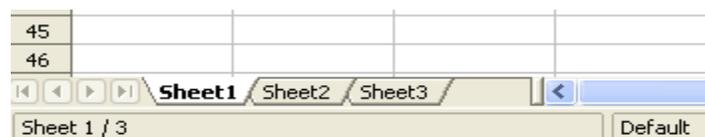
Figure 1: Default sheet tabs

Inserting new sheets

There are several ways to insert a new sheet. The first step, in all cases, is to select the sheet that will be next to the new sheet . Then any of the following options can be used.

- Select **Insert > Sheet** from the pull-down menu or

- Right-click on the tab and select **Insert Sheet**, or

- Click in an empty space at the end of the line of sheet tabs (see Figure 2).
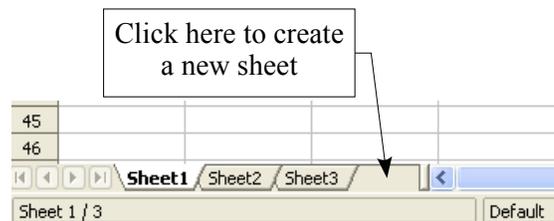
Figure 2: Creating a new sheet

Each method will open the Insert Sheet dialog (Figure 3). Here you can choose to put the new sheet before or after the selected sheet and how many sheets to insert.
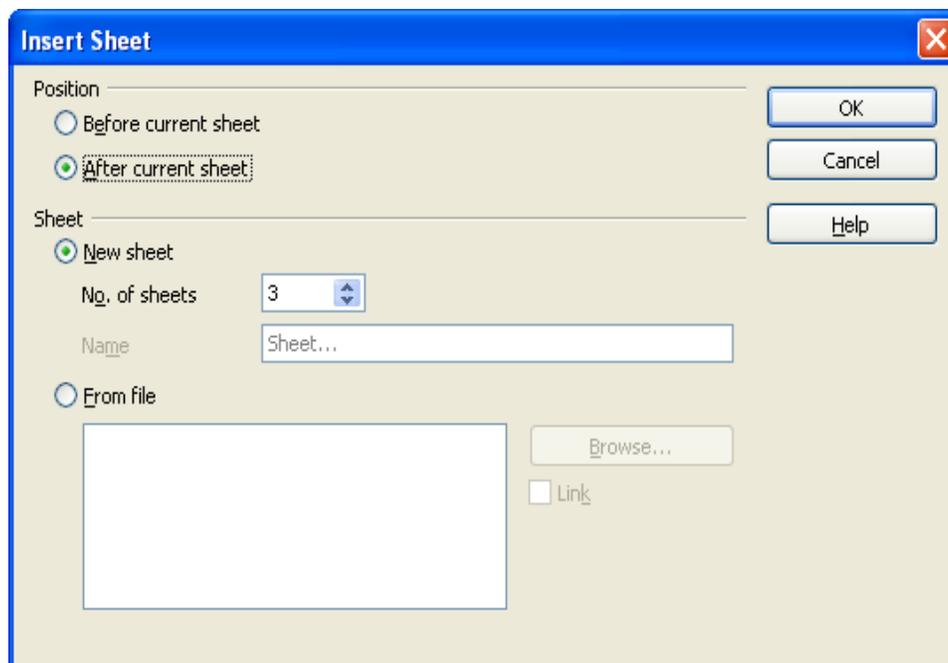
Figure 3. Insert Sheet dialog

We need 6 sheets, one for each of the 5 accounts and one as a summary sheet so we will add 3 more:. We also want to name each of these sheets for the account they represent: summary, checking account, savings account, credit card 1, credit card 2 and car loan.

Note	The From file option will add a sheet from a different spreadsheet file (for example, another Calc or Excel spreadsheet). Select the file and a list of the available sheets will appear in the box. Select the sheet to import. If, after you select the file, no sheets appear you probably selected an invalid file type (not a spreadsheet, for example).

Renaming sheets

Sheets can be renamed at any time. To give a sheet a more meaningful name:

- Enter the name in the name box when you create the sheet, or
- Right-click on a sheet tab, select **Rename Sheet** from the popup menu and replace the existing name.

Note	Sheet names must start with either a letter or a number. Spaces are allowed after that. Other characters are not allowed. An invalid name will produce the error message: Invalid Sheet Name.

Your sheet tab area should now look like this.

Figure 4: Six renamed sheets

Now we will set up the account ledgers. This is just a simple summary that includes the previous balance plus the amount of the current transaction. For withdrawals, we enter the current transaction as a negative number so the balance gets smaller. A basic ledger is shown in Figure 5.

Figure 5: Checking ledger

This ledger is set up in the sheet named *Checking Account*. The total balance is summed in cell F3. You can see the equation for it in the formula bar. It is the summary of the opening balance, cell C3, and all of the subsequent transactions.

Referencing other sheets

On the *Summary* sheet we display the balance from each of the other sheets. If you followed the example in Figure 5, the balance for each account will be in cell F3 in each sheet.

There are two ways to reference cells in other sheets: by entering the formula directly using the keyboard or by using the mouse. We will look at the mouse method first.

Creating the reference with the mouse

On the *Summary* sheet, set up a place for all five account balances, so we know where to put the cell reference. Figure 6 shows a blank summary sheet. We want to place the reference for the checking account balance in cell B3.
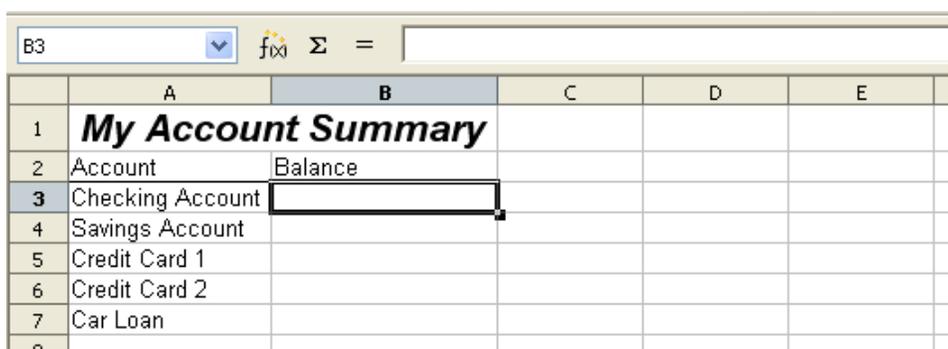
Figure 6: Blank summary

To make the cell reference in cell B3, select the cell and follow these steps.

1) Click on the = icon next to the input line. The icons will change and an equal sign will appear in the input line as in Figure 7.
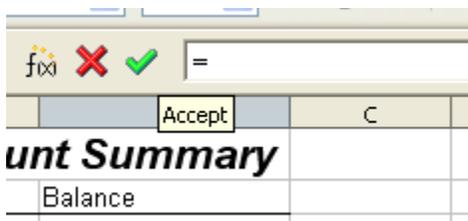
Figure 7: Equal sign in input line

2) Now, click on the sheet tab for the sheet containing the cell to be referenced. In this case that is the *Checking Account* sheet as shown in Figure 8.

Figure 8: Click on the checking account tab

3) Click on cell F3 (where the balance is) in the *Checking Account* sheet.

4) Return to the original sheet.

5) The phrase 'Checking Account'.F3 should appear in the input line as in Figure 9.

Figure 9: Cell reference selected

6) Click the green checkmark next to *input line* to finish.

7) On the *Summary* sheet you should now see Figure 10.

Figure 10: Finished checking account reference

Creating the reference with the keyboard

Looking at Figure 10 you can deduce how the cell reference is constructed. The reference has two parts: the sheet name and the cell name.

In Figure 10 the reference is *='Checking Account'.F3* and in general the format is *='Sheet Name'.Cell Reference*.

So, you can fill in the Savings Account cell reference by just typing it in. Assuming that the balance is in the same cell in the *Savings Account* sheet, F3, the cell reference should be *='Savings Account'.F3*.

Note	The sheet name is in single quotes, and the period (.) is outside of the quotes.

Figure 11: Savings account cell reference

Referencing other documents

John decides to keep his family account information in a different spreadsheet file than his own summary. Fortunately Calc can link different files together. The process is the same as described for different sheets in a single spreadsheet, but we add one more parameter to indicate which file the sheet is in.

Creating the reference with the mouse

To create the reference with the mouse, both spreadsheets need to be open. Select the cell in which the formula is going to be entered.

1) Click the = icon next to the input line.

2) Switch to the other spreadsheet (the process to do this will vary depending on which operating system you are using.)

3) Select the sheet and then the reference cell.

4) Switch back to the original spreadsheet.

5) Click on the green check mark next to the *input line*.

Your spreadsheet should now resemble Figure 12.

Figure 12: Linked files

You will get a good feel for the format of the reference if you look closely at the *input line* as in Figure 13.

Figure 13: Input Line for linked file

Based on this line you can create the reference using the keyboard.

Creating the reference with the keyboard

Typing the reference is simple once you know the format the reference takes. The reference has three parts to it:

- File name & path
- Sheet name
- Cell

Looking at Figure 13 you can see the the general format for the reference is

='file:///Path & File Name'#$SheetName.CellName.

Note	The reference for a file has three forward slashes /// and the reference for a hyperlink has two forward slashes //.

Hyperlinks and URLs

Hyperlinks can be used in OOo Calc to create spreadsheets that will be used in a web interface or to jump to a different location from within a spreadsheet. This section covers inserting, editing, removing, and using hyperlinks.

Creating hyperlinks

Hyperlinks can be created as you type, as a cut and paste, or inserted using the command: **Insert > Hyperlink**. Creating the hyperlink as you type or as a cut and paste is faster. .However, it will appear in the form <http://www .xyxyx.oog>. If we use the **Insert > Hyperlink** command we have better control of how it appears and we can give it a meaningful name.

Automatically creating hyperlinks

Creating hyperlinks by typing or pasting is very simple.

1) Navigate to the cell where the hyperlink should be, (B3 in our example.)

2) In the active cell, B3 in the example shown in Figure 14, type or paste the URL for the link.

3) Press *Enter*, and the text will automatically turn into a hyperlink.
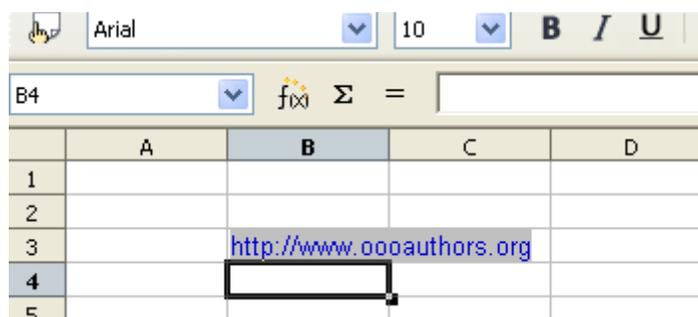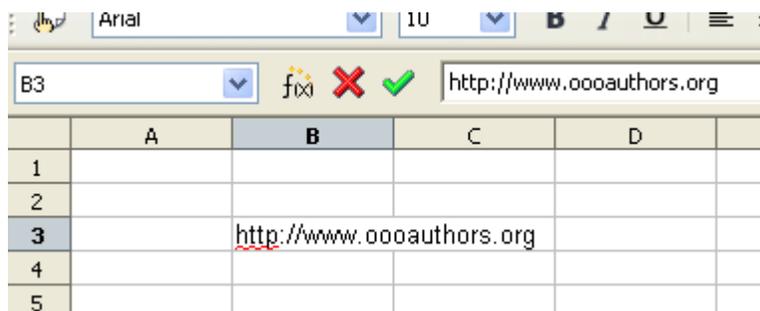
Figure 14: Creating an automatic hyperlink

Note	Automatic URL recognition can be turned off in the AutoCorrect menu. Select **Tools > AutoCorrect > Options > URL Recognition**.

Inserting hyperlinks with the Insert command

This method allows you to specify a name or message for the hyperlink.

1) Navigate to the cell where the hyperlink will be.Select **Insert > Hyperlink**, or click on the Insert Hyperlink button on the Main toolbar, 🌐 . The *Hyperlink dialog* window, shown in Figure 15,will appear.
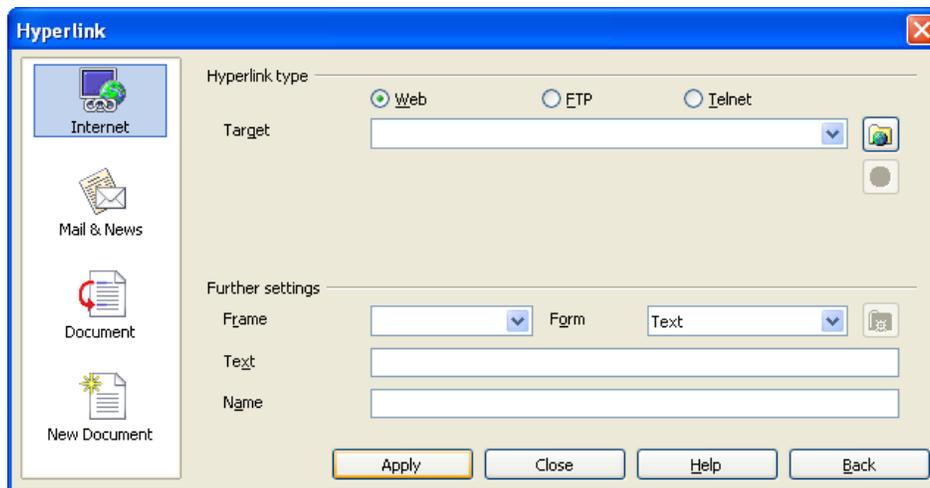
Figure 15: Hyperlink dialog

2) There are four options on the left of the screen to choose from:

- Internet – Makes a link to a site on the Internet. You can make a link to a web site, a FTP site, or a telnet site.

- Mail & News – Makes a link to an e-mail address or news list.

- Document – Makes a link to another place in the current document or a different document. This type of link will jump to a place in another document. It does not copy or display data as the links discussed earlier in the chapter do.

- New Document – Makes a link to a document that is yet to be created. You must select the document type, name, and location of the new document.

3) To set the destination of the link, type the URL (e-mail address or document name) into the *Target* input box.

4) Choose the different options under *Further settings*.

- Frame – Enter the name of the frame that you want the linked file to open in. If you leave this box blank, the linked file opens in the current browser window.

- Form – Specify whether the hyperlink is inserted as text or as a button.

- Text – Specify the visible text or button caption for the hyperlink.

- Name – Enter a name for the hyperlink. OpenOffice.org inserts a NAME tag in the hyperlink.

5) Click *Apply*.

In Figure 17 you can see the results from the settings in Figure 16. The button option was selected, to contrast the display in Figure 17 with the display in Figure 14 where the link is text.
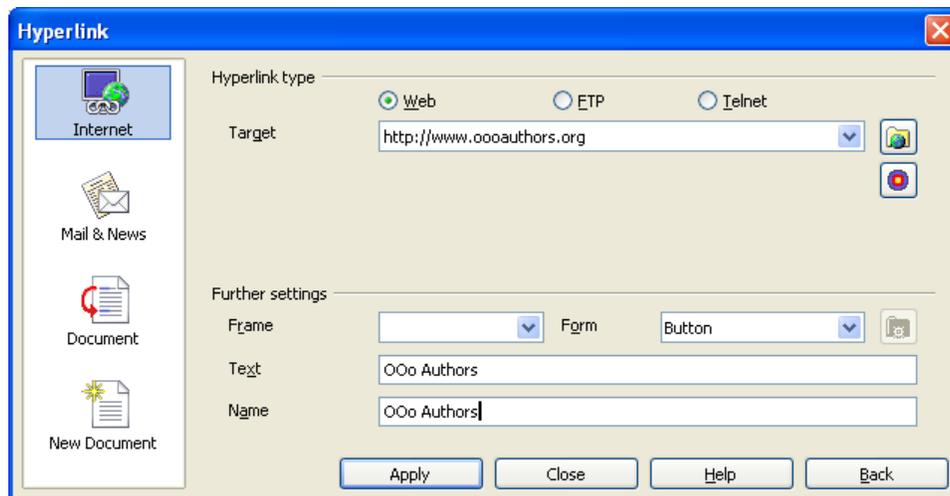
Figure 16: Insert hyperlink dialog with settings
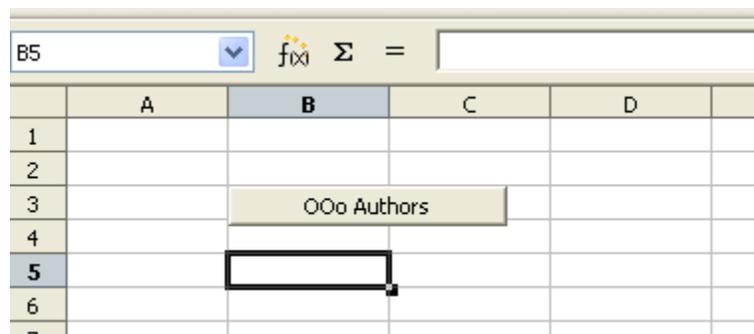
Figure 17: OOo Authors hyperlink as button

Note	A hyperlink button, is a type of form control. As with all form controls, it can be anchored or positioned by right-clicking on the button in design mode. More information about forms can be found in Chapter 15 of the *Writer Guide*.
	For the button to work , the spreadsheet must *not* be in design mode. To toggle design mode on and off, view the Form Controls toolbar (**View > Toolbars > Form Controls**) and press the Design Mode On/Off button ![icon].

Editing hyperlinks

You can edit a hyperlink at any time after it is created. This can be very useful for modifying hyperlinks that were created as text hyperlinks. Text and button hyperlinks are edited differently.

Editing text hyperlinks

1) Navigate to the cell that contains the hyperlink.

2) Click on the hyperlink button in the toolbar, ![icon] , or select **Insert > Hyperlink**. (This will not insert a new hyperlink.)

3) Both of these methods will open the *Hyperlink dialog* window seen in Figure 15.

| **Note** | Clicking on a text hyperlink makes OOo try to open a browser window instead of selecting the hyperlink. Select the link by navigating to the cell using the arrow keys and opening the *Hyperlink dialog* window from the toolbar or from **Insert > Hyperlink**. |

Editing button hyperlinks

1) Click on the Hyperlink button to select it (you must be in design mode, otherwise clicking it will launch your web browser).

2) Click on the the Hyperlink button in the toolbar, , or select **Insert > Hyperlink**. (This will not insert a new hyperlink.)

3) Either method will open the *Hyperlink dialog* window seen in Figure 15.

| **Note** | The only way to select a Hyperlink button is to click on it (while in design mode).You cannot use the arrow keys to navigate to the cell where the button appears to be. |

Removing hyperlinks

To remove a hyperlink, select it and press *Delete*. The *Delete* dialog will open if it is a text hyperlink.

Relative and absolute hyperlinks

Hyperlinks can be saved either as absolute or relative. An absolute hyperlink says, "Here is how to get there from this known starting point" and a relative hyperlink says, "Here is how to get there starting from where you are now".

To change the way that OOo saves the hyperlinks choose **Tools > Options > Load/Save > General** and choose if you want URLs saved relative to the *File System*, to the *Internet*, or both.

Calc always displays an absolute hyperlink. Don't be alarmed when it does this when you have chosen a relative hyperlink

If you have a relative hyperlink and you move files (the document and any linked files) on your computer, you shouldn't have to remake your hyperlink as long as you maintain the same directory structure. For instance, if you have two spreadsheets in the same folder linked to each other and you move the entire folder to a new location, the hyperlink will not break. This is only true as long as the files' locations relative to each other do not change.

In Figure 12 the path is *D:\My Documents* for the linked file. That is because the folder both sheets are in is in that directory as shown in Figure 18.
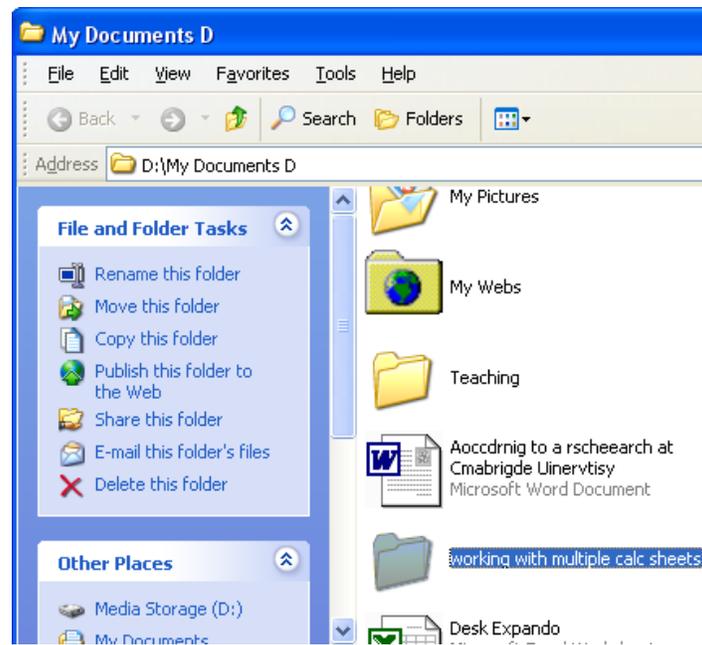
Figure 18: Files on D drive

If I move that folder to my *H:* drive (Figure 19) the links in Calc will automatically update (Figure 21) because I haven't changed the location of the files relative to each other. Both files are still in the *working with multiple sheets* folder as shown in Figure 20.
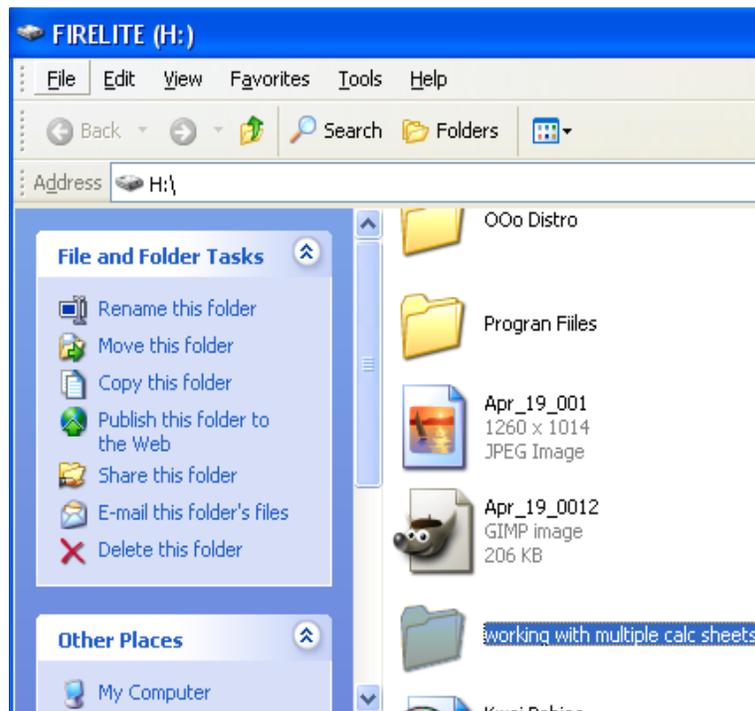
Figure 19: Files on H drive
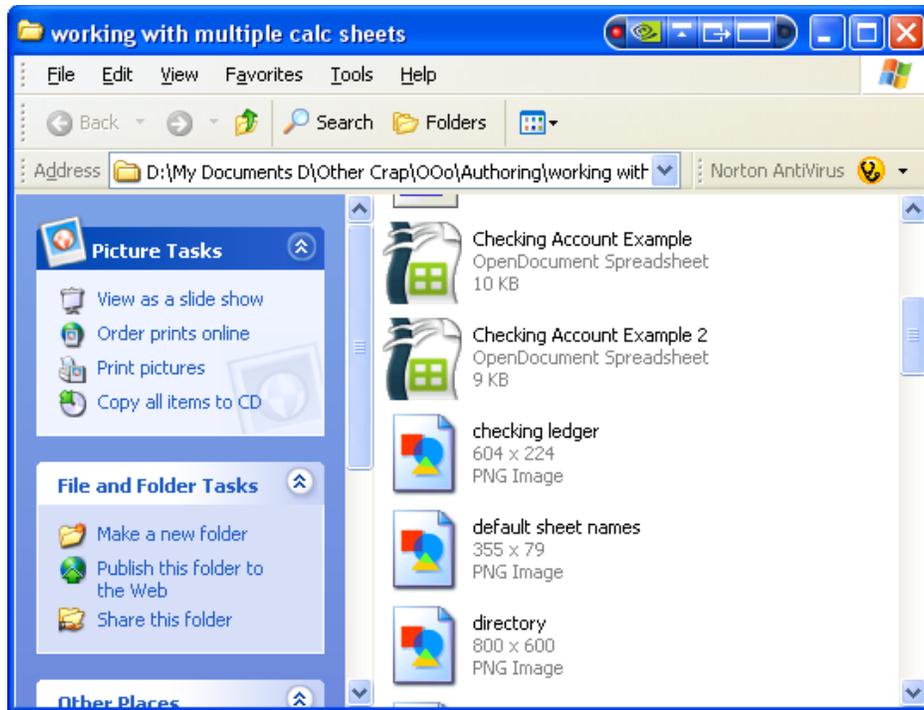
Figure 20: Directory with linked files

Figure 21: Updated links on H drive

Again, note that in both Figure 12 and Figure 21 the path is displayed as absolute even though it is relative.

Note	Make sure that the folder structure on your computer is the same as the file structure on your web server if you save your links as relative to the file system and you, are going to upload pages to the Internet.

TIP	When you rest your mouse on a hyperlink, a help tip displays the absolute reference, since OOo uses absolute path names internally. The complete path and address can only be seen when you view the result of the HTML export (Saving the spreadsheet as and HTML file), by loading the HTML file as "Text" or opening it with a text editor.

Embedding spreadsheets

Spreadsheets can be embedded in other OOo files. This is often used in Writer documents so that Calc data can be used in a text document. You can embed the spreadsheet as either an *OLE* or *DDE* object.

Object Linking and Embedding (OLE)

Object Linking and Embedding (OLE) objects can be linked to a target document or be embedded in the target document. Embedding inserts a copy of the object and details of the source program in the target document. If you want to edit the embedded spreadsheet, double click on the object.

To add an OLE object:

1) Place the cursor in the document and location you want the OLE object to be.

2) Select **Insert > Object > OLE Object**. The dialog in Figure 22 will open.
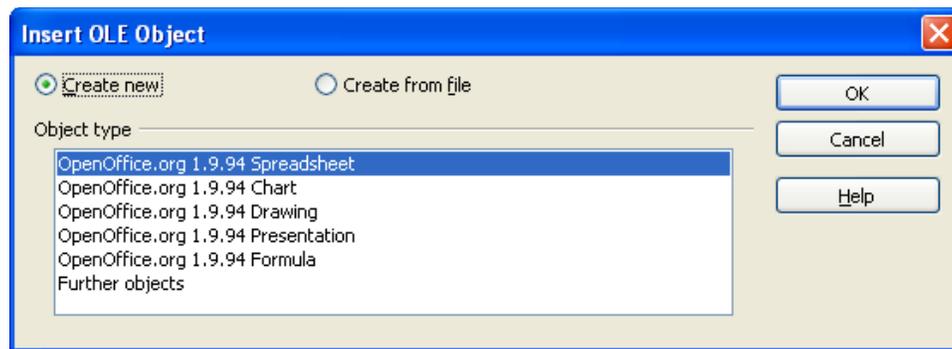
Figure 22: Insert OLE object dialog

3) You can either create a new OLE object or create from a file.

4) To create from a file, click on the *Create from file* radio button.

5) Put the file name in the input box (or click the **Search** button to find it).

6) If you want to create a link, check the *Link* checkbox. To embed the object so that it will not update, do not check the *Link* checkbox.

Non-Linked OLE object

If the OLE object is not linked, it can be edited in the new component. For instance, if you insert a spreadsheet into a Writer document, you can essentially treat it as a Writer table (with a little more power). To edit it, double click on it.

Linked OLE object

When the spreadsheet OLE object is linked, if you change it in Writer it will change in Calc; if you change it in Calc, it will change in Writer. This can be a very powerful tool if you create reports in Writer using Calc data, and   want to make a quick change without opening Calc.

Note   You can only edit one copy of a spreadsheet at t a time. If you have a linked OLE spreadsheet object in an open Writer document and then open the same spreadsheet in Calc, the Calc spreadsheet will be a read-only copy.

Dynamic Data Exchange (DDE)

DDE is a predecessor of OLE. With DDE, objects are linked through file reference, but not embedded. You can create DDE links either within Calc cells in a Calc sheet, or in Calc cells in another OOo doc such as in Writer.

DDE in Calc

Creating a DDE link in Calc is very similar to creating a cell reference. The process is a little different, but the result is the same.

1) In Calc, select the cells that you want to make the DDE link to.

2) Copy them: **Edit > Copy**.

3) Go to the place in the spreadsheet where you want to the link to be.

4) Select **Edit > Paste Special**.

5) When the *Paste Special* dialog opens, click the link checkbox on the bottom of the dialog.

6) Click **OK**.

The cells now reference the copied data, which may be from a different sheet. You can now edit the original cells and the linked cells will update.

Caution   You can update the original cells, but if you change the cells where you created the DDE link, the link will be erased.

DDE link in Writer

The process for creating a DDE link from Calc to Writer is similar to creating a link within Calc.

1) In Calc, select the cells to make the DDE link to.

2) Copy them.

3) Go to the place in your Writer document where you want the DDE link.

4) Select **Edit > Paste Special**.

5) Select *DDE Link*.

6) Click **OK**.

Now the link has been created in Writer. When the Calc spreadsheet is updated, the table in Writer is automatically updated. Remember, if you change the table in Writer, the link will be broken.