OpenOffice.org 3

Calc Guide

Chapter 10
Linking Calc Data

Sharing data in and out of Calc

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Contents

Why use multiple sheets?

Chapter 1 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

Chapter 1 gives a detailed explanation of how to set up multiple sheets in a spreadsheet. 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.
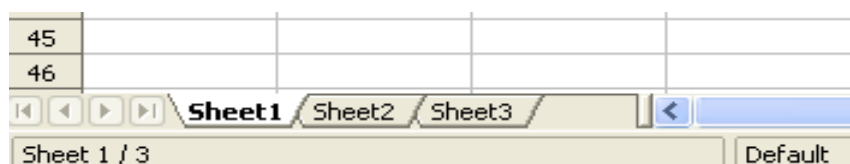

Figure 1: Default sheet tabs

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 do any of the following:

- Select **Insert > Sheet** from the menu bar, 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).
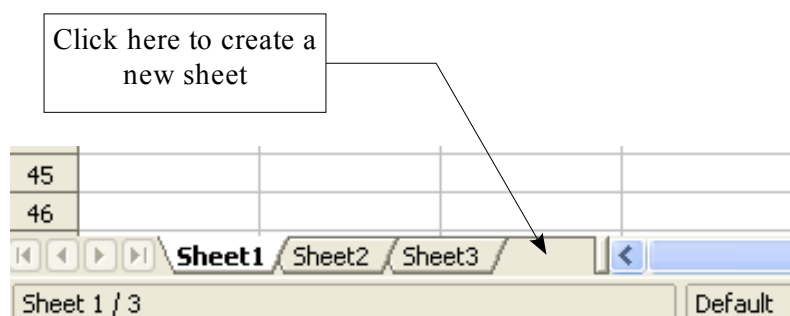

Figure 2: Creating a new sheet

Each method opens 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.
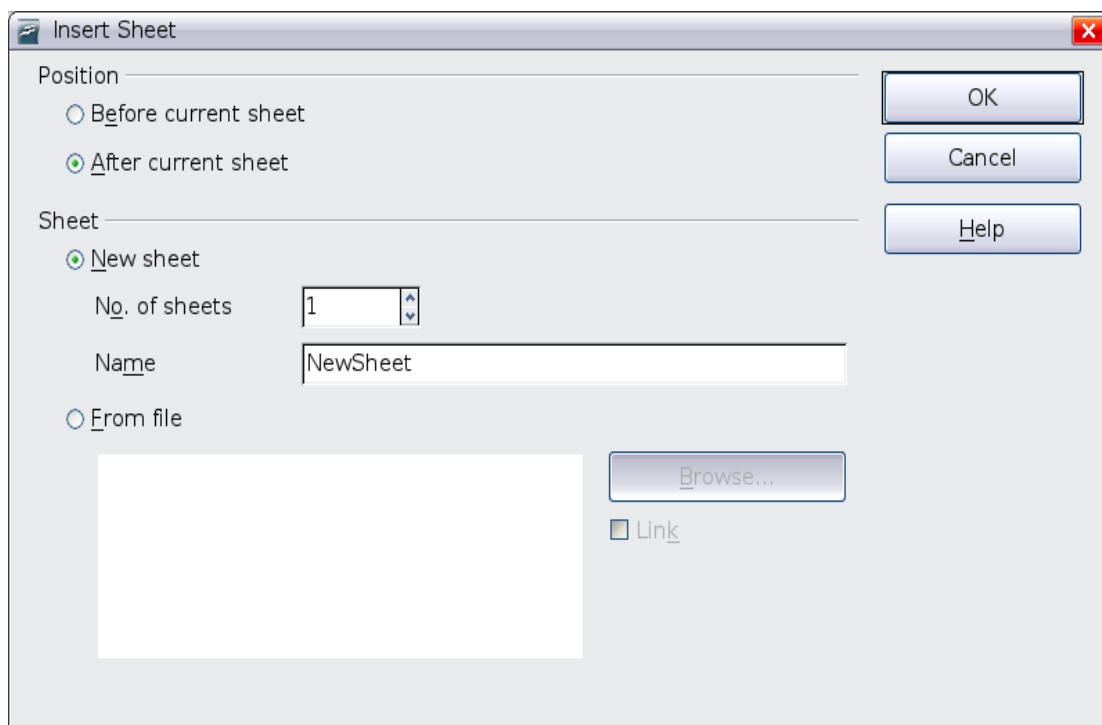

Figure 3. Insert Sheet dialog

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.

We have two choices: insert 3 new sheets and rename all 6 sheets afterwards; or rename the existing sheets, then insert the three new sheets 1 at a time, renaming each new sheet during the insert step.

To insert sheets and rename afterwards:

1) In the Insert Sheet dialog, choose the position for the new sheets (in this example, we use **After current sheet**).
2) Choose **New sheet** and **3** as the *No. of sheets*. (Three sheets are already provided by default.) Because you are inserting more than one sheet, the *Name* box is not available.
3) Click **OK** to insert the sheets.
4) For the next steps, go to "Renaming sheets" below.

To insert sheets and name them at the same time:

1) Rename the existing sheets Summary, Checking Account, and Savings Account, as described in "Renaming sheets" below.
2) In the Insert Sheet dialog, choose the position for the first new sheet.
3) Choose **New sheet** and 1 as the *No. of sheets*. The *Name* box is now available.
4) In the **Name** box, type a name for this new sheet, for example Credit Card 1.
5) Click **OK** to insert the sheet.
6) Repeat steps 1–4 for each new sheet, giving them the names Credit Card 2 and Car Loan.

On the Insert Sheet dialog, you can also add a sheet from a different spreadsheet file (for example, another Calc or Excel spreadsheet), by choosing the **From fil**e option. Click **Browse** and select the file; a list of the available sheets appears 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).

Tip	For a shortcut to inserting a sheet from another file, choose **Insert > Sheet from file** from the menu bar. The Insert Sheet dialog opens with the **From file** option preselected, and then the Insert dialog opens on top of it.

If you prefer, select the **Link** option to insert the external sheet as a link instead as a copy. This is one of several ways to include "live" data from another spreadsheet. (See also "Linking to external data" on page 19.) The links can be updated manually to show the current contents of the external file; or, depending on the options you have selected in **Tools > Options > OpenOffice.org Calc > General > Updating**, whenever the file is opened.

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 pop-up 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*.

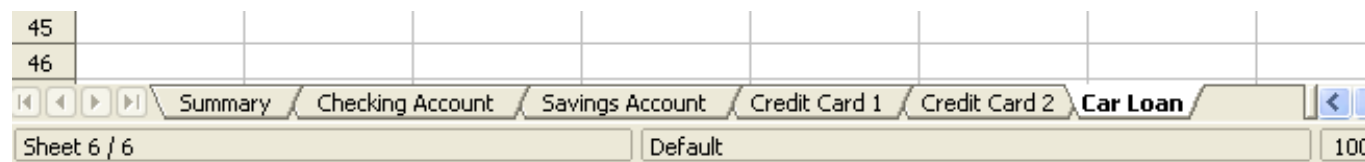Your sheet tab area should now look like this.

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.

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.

Figure 5: Checking ledger

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 change and an equals sign appears in the input line as in Figure 7.
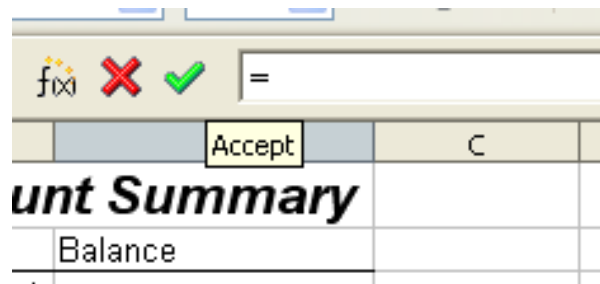
Figure 7: Equal sign in input line

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.

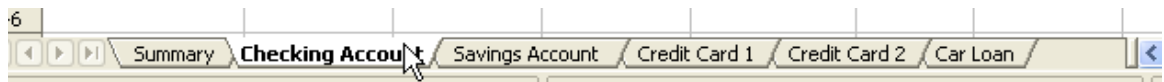*Figure 8: Click on the checking account tab*

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 in the input line to finish.

7) The *Summary* sheet should now look like Figure 10.

Figure 10: Finished checking account reference

Creating the reference with the keyboard

From 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*. (See Figure 11.)

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

Referencing other documents

John decides to keep his family account information in a different spreadsheet file from 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).

Figure 11: Savings account cell reference

3) Select the sheet and then the reference cell.
4) Switch back to the original spreadsheet.
5) Click on the green check mark on 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 and 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 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

When you type text (such as a website addresses or URL) that can be used as a hyperlink, OOo formats it automatically, creating the hyperlink and applying to the text a color and underlining. If this does not happen, you can enable this feature using **Tools > AutoCorrect > Options** and selecting **URL Recognition**.

Tips	If you do not want OOo to convert a specific URL to a hyperlink, select **Edit > Undo Insert** from the menu bar or press *Control+Z* immediately after the formatting has been applied.
	To change the color of hyperlinks, go to **Tools > Options > OpenOffice.org > Appearance**, scroll to *Unvisited links* and/or *Visited links*, pick the new colors and click **OK**. Caution: this will change the color for all hyperlinks in all components of OpenOffice.org—this may not be what you want.
	In Writer and Calc (but not Draw or Impress), you can also change the *Internet link* character style or define and apply new styles to selected links.

You can also insert and modify links using the Hyperlink dialog (Figure 14). To display the dialog, click the **Hyperlink** icon ⬗ on the Standard toolbar or select **Insert > Hyperlink** from the menu bar. To turn existing text into a link, highlight it before opening the Hyperlink dialog.

On the left hand side, select one of the four types of hyperlinks:

- **Internet**: a web address, normally starting with http://
- **Mail & News**: for example an email address.
- **Document**: the hyperlink points to another document or to another place in the presentation.
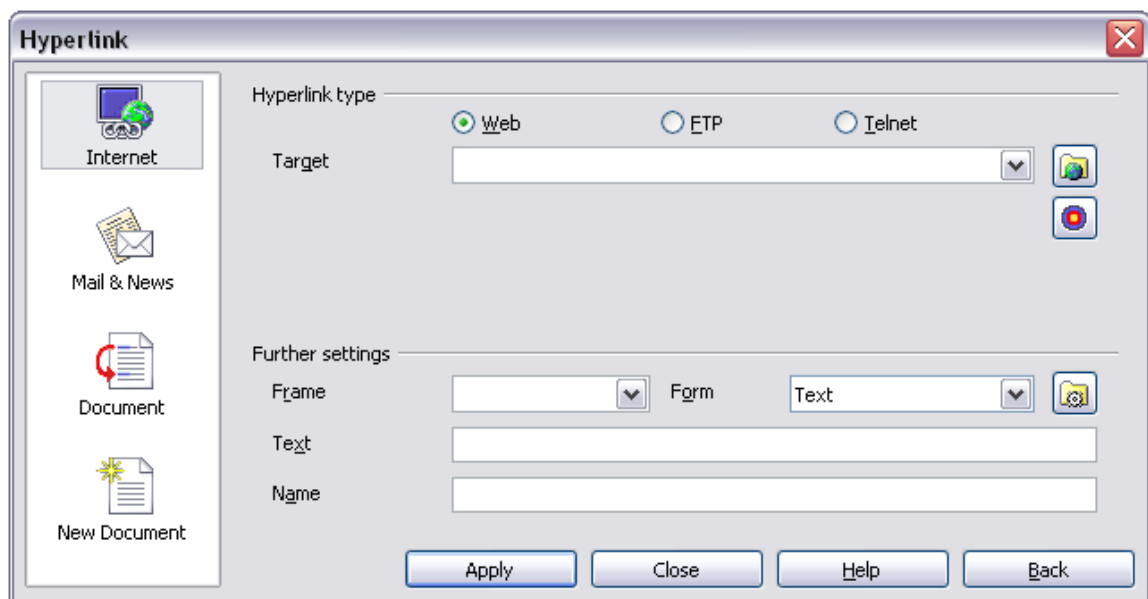- **New document**: the hyperlink creates a new document.

Figure 14. Hyperlink dialog showing details for Internet links

The top right part of the dialog changes according to the choice made for the hyperlink type. A full description of all the choices, and their interactions, is beyond the scope of this chapter. Here is a summary of the most common choices used in presentations.

For an *Internet* type hyperlink, choose the type of hyperlink (choose between Web, FTP or Telnet), and enter the required web address (URL).

For a *Mail and News* type hyperlink, specify whether it is a mail or news link, the receiver address and for email, also the subject.

For a *Document* type hyperlink, specify the document path (the **Open File** button opens a file browser); leave this blank if you want to link to a target in the same presentation. Optionally specify the target in the document (for example a specific slide). Click on the **Target** icon to

open the Navigator where you can select the target, or if you know the name of the target, you can type it into the box.

For a *New Document* type hyperlink, specify whether to edit the newly created document immediately or just create it (**Edit later**) and the type of document to create (text, spreadsheet, etc.). For a presentation, **Edit now** is the more likely choice. The **Select path** button opens a directory picker.

The *Further settings* section in the bottom right part of the dialog is common to all the hyperlink types, although some choices are more relevant to some types of links.

- Set the value of **Frame** to determine how the hyperlink will open. This applies to documents that open in a Web browser.
- **Form** specifies if the link is to be presented as text or as a button. Figure 15 shows a link formatted as a button.
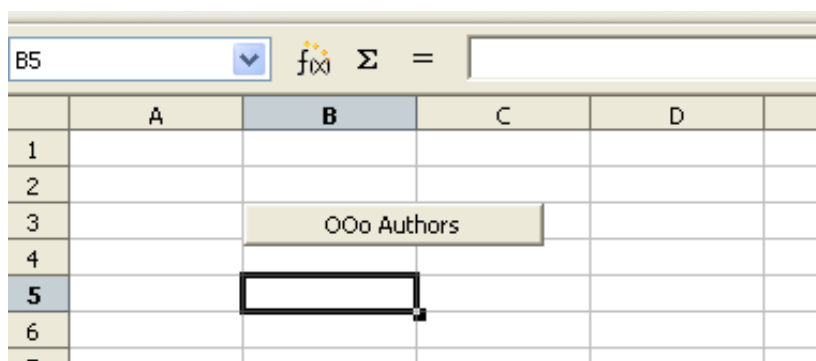

Figure 15: OOo Authors hyperlink as button

- **Text** specifies the text that will be visible to the user.
- **Name** is applicable to HTML documents. It specifies text that will be added as a NAME attribute in the HTML code behind the hyperlink.
- **Event** button: this button will be activated to allow OOo to react to events for which the user has written some code (macro). This function is not covered in this book.

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 click the **Design Mode On/Off** button .

Editing hyperlinks

To edit an existing link, place the cursor anywhere in the link and click **Edit > Hyperlink**. The Hyperlink dialog (Figure 14) opens. Make your changes and click **Apply**. If you need to edit several hyperlinks, you can leave the Hyperlink dialog open until you have edited all of them. Be sure to click **Apply** after each one. When you are finished, click **Close**.

The standard (default) behavior for activating hyperlinks in OOo 3 is to use *Ctrl+click*. This behavior can be changed in Tools **> Options > OpenOffice.org > Security > Options**, by deselecting the option **Ctrl-click required to follow hyperlinks**. If clicking in your links activates them, check that page to see if the option has been deselected.

Removing hyperlinks

To remove a hyperlink, select it and press the *Delete* key. The *Delete* dialog opens if it is a text hyperlink.

Relative and absolute hyperlinks

Hyperlinks can be saved as either 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 16.
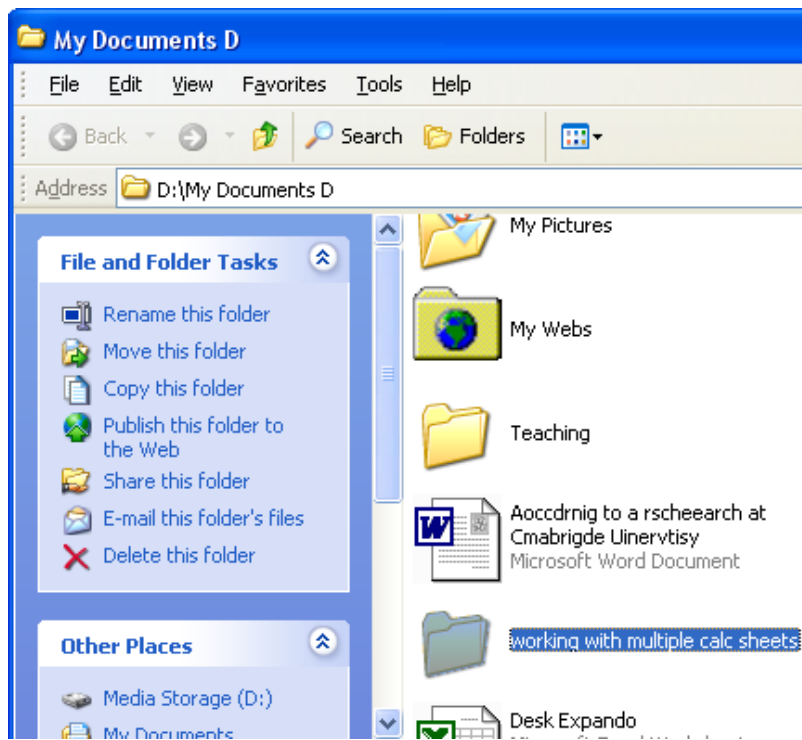
Figure 16: Files on D drive

If we move that folder to the *H:|* drive (Figure 17), the links in Calc will
automatically update (Figure 19) because we have not changed the
location of the files relative to each other. Both files are still in the
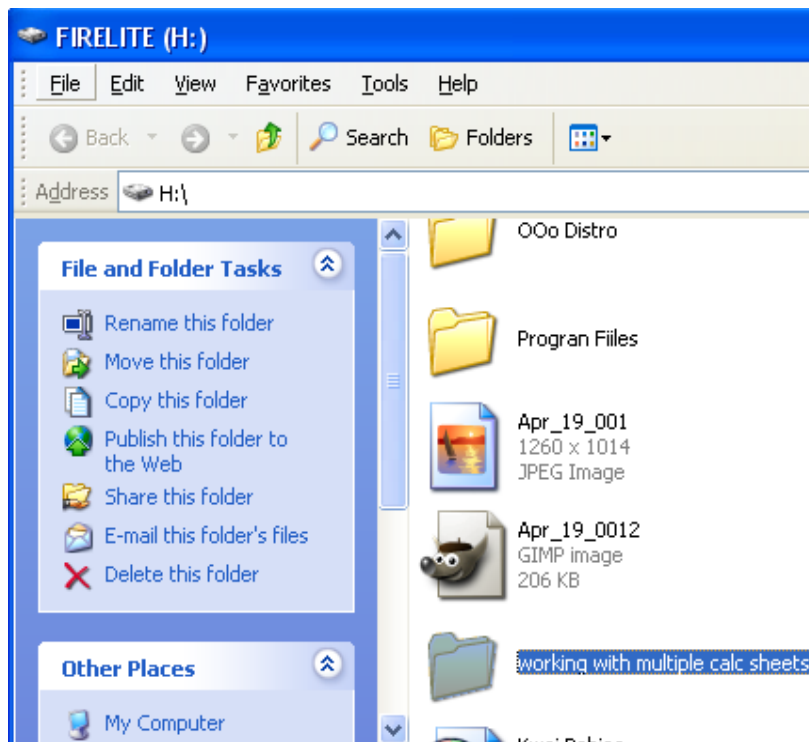*working with multiple sheets* folder as shown in Figure 18.
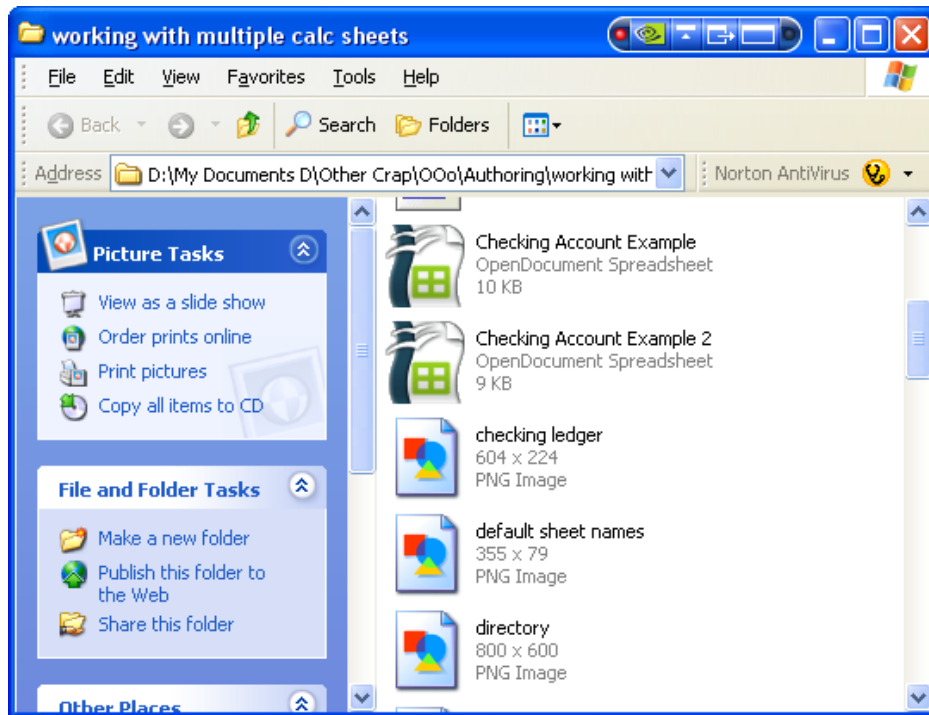

Figure 17: Files on H drive

Figure 18: Directory with linked files
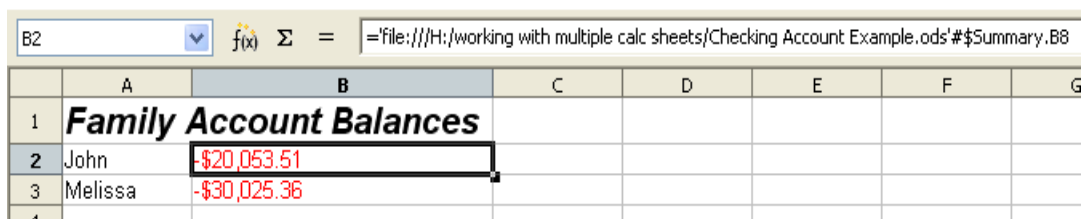
Figure 19: Updated links on H drive

Again, note that in both Figure 12 and Figure 19 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 the mouse cursor 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 an HTML file), by loading the HTML file as Text, or by opening it with a text editor.

Linking to external data

You can insert tables from HTML documents, and data located within named ranges from an OpenOffice.org Calc or Microsoft Excel spreadsheet, into a Calc spreadsheet. (To use other data sources, including database files in OOo Base, see "Linking to registered data sources" on page 24.)

You can do this in two ways: using the External Data dialog or using the Navigator. If your file has named ranges or named tables, and you know the name of the range or table you want to link to, using the External Data dialog method is quick and easy. However, if the file has several tables, and you want to pick only one of them, you may not be able to easily determine which is which; in that case, the Navigator method may be easier.

Using the External Data dialog

1) Open the Calc document where the external data is to be inserted. This is the target document.
2) Select the cell where the upper left-hand cell of the external data is to be inserted.
3) Choose **Insert > Link to External Data**.
4) On the External Data dialog (Figure 20), type the URL of the source document or click the [...] button to open a file selection dialog. Press *Enter* to get Calc to load the list of available tables.
5) In the *Available tables/range* list, select the named ranges or tables you want to insert. You can also specify that the ranges or tables are updated every n seconds.
6) Click **OK** to save and close this dialog.

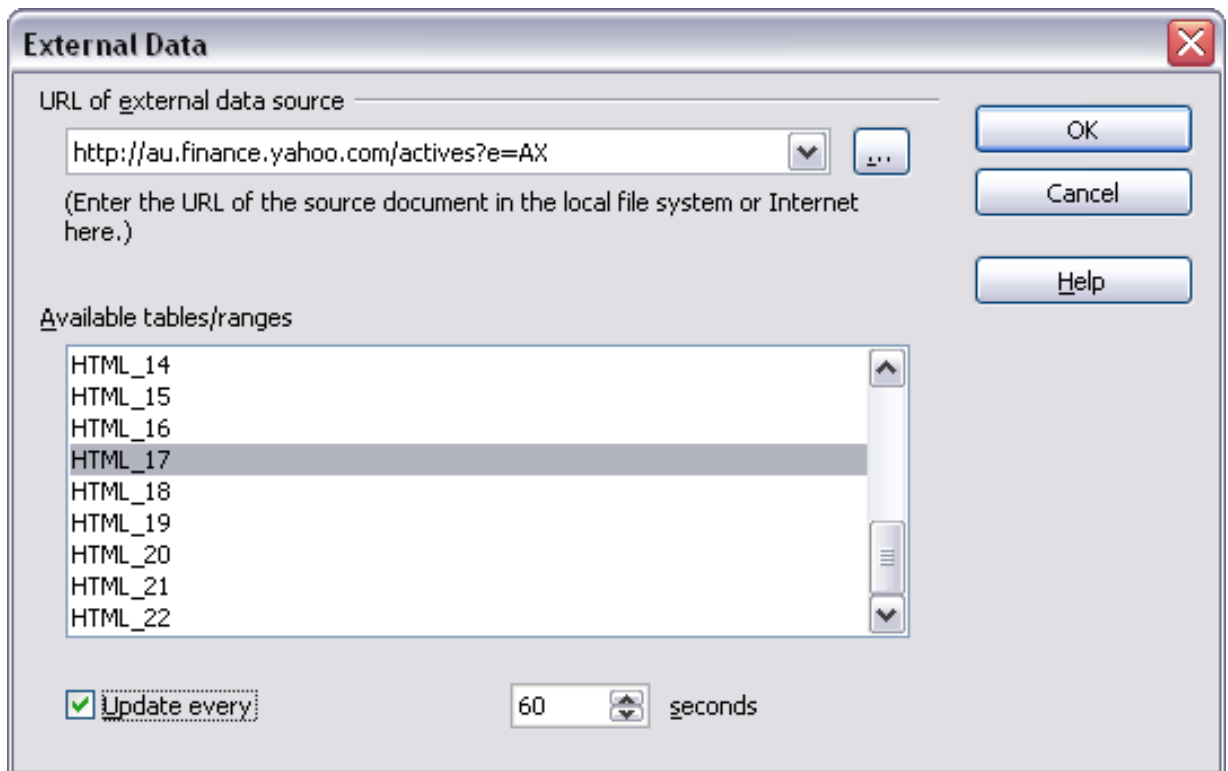|	
Notes	1) The *Available tables/ranges* list remains empty until you press Enter after selecting the URL of the source. 2) The **OK** button remains unavailable (greyed out) until you select one or more tables/ranges in the list. You can hold down the *Control* key while clicking on tables/ranges to select more than one. 3) No images are imported

Figure 20: Selecting a table or range in a source document from the Web

Using the Navigator

1) Open the OpenOffice.org Calc spreadsheet in which the external data is to be inserted (target document).

2) Open the document from which the external data is to be taken (source document). Choose **Web Page Query (OpenOffice.org Calc)** as the file type (Figure 21).
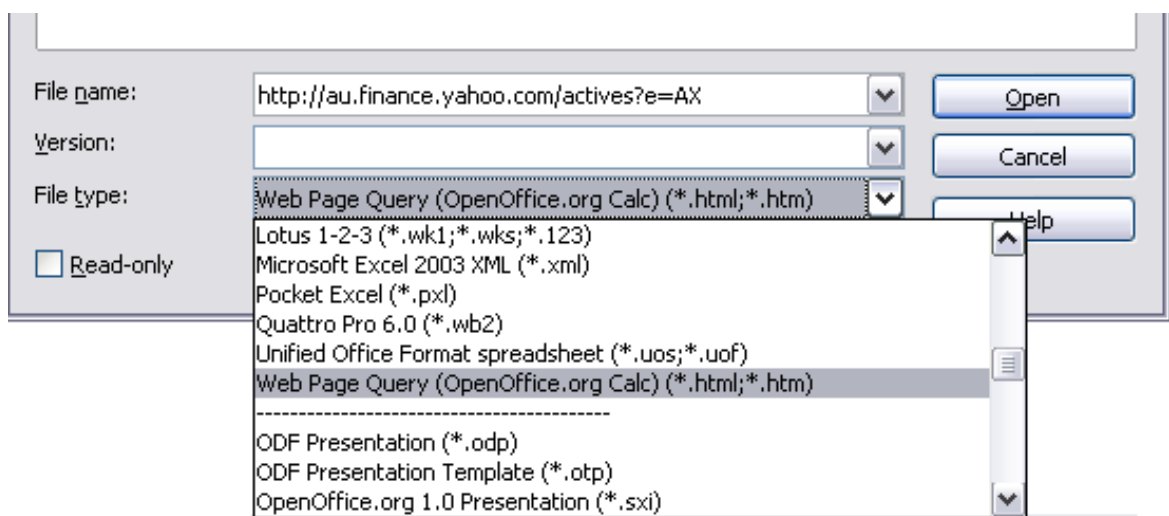

Figure 21: Opening a file using the Web Page Query filter

3) In the target document, open the Navigator.

4) At the bottom of the Navigator, select the source document. (In Figure 22, the source is named *actives.*)

   The Navigator now shows the range names or the tables contained in the source document (the example contains range names; other documents have a list of tables). Click on the + next to *Range names* to display the list.

5) In the Navigator, select the **Insert as Link** drag mode, as shown in Figure 22.

6) Select the required range or table and drag it from the Navigator into the target document, to the cell where you want the upper left-hand cell of the data range to be.
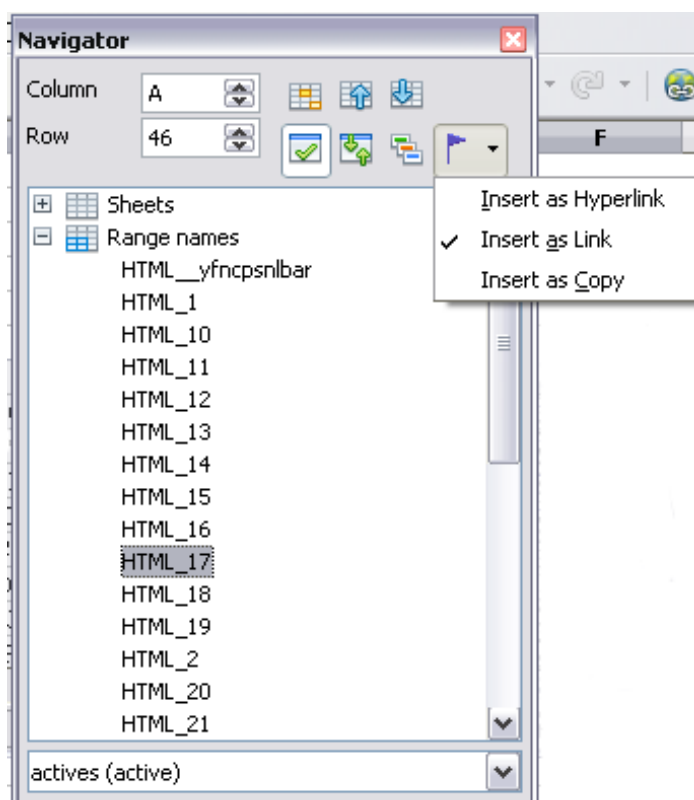

Figure 22: Selecting a data range in a source document, to be inserted as a link

7) In the target document, check the Navigator. Instead of a + by *Range names*, it shows a + by *Linked areas*. Click the + to see the same range name (see Figure 23).
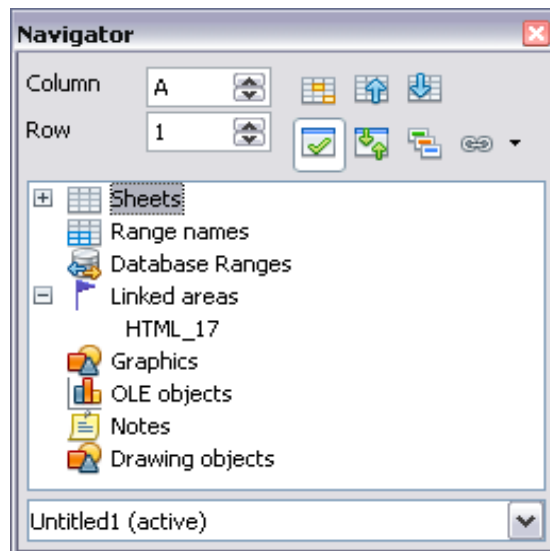
Figure 23: Linked areas in target spreadsheet

How to find the required data range or table

The examples above show that the import filter gave names to the data rangers (tables) in the sample web page starting from HTML_1. It also created two additional range names (not visible in the illustration):

HTML_all – designates the entire document

HTML_tables – designates all HTML tables in the document

If the data tables in the source HTML document have been given names (using the ID attribute on the TABLE tag), or the external spreadsheet includes named ranges, those names appear in the list along with the ranges Calc has sequentially numbered.

If the data range or table you want is not named, how can you tell which one to select?

Go to the source document, which you opened in Calc using the Web Page Query filter. Select the range you want. Look in the Navigator: the range name is highlighted (see Figure 24).

If the Formula Bar is visible, the range name is also displayed in the *Name* box at the left-hand end (see Figure 25).
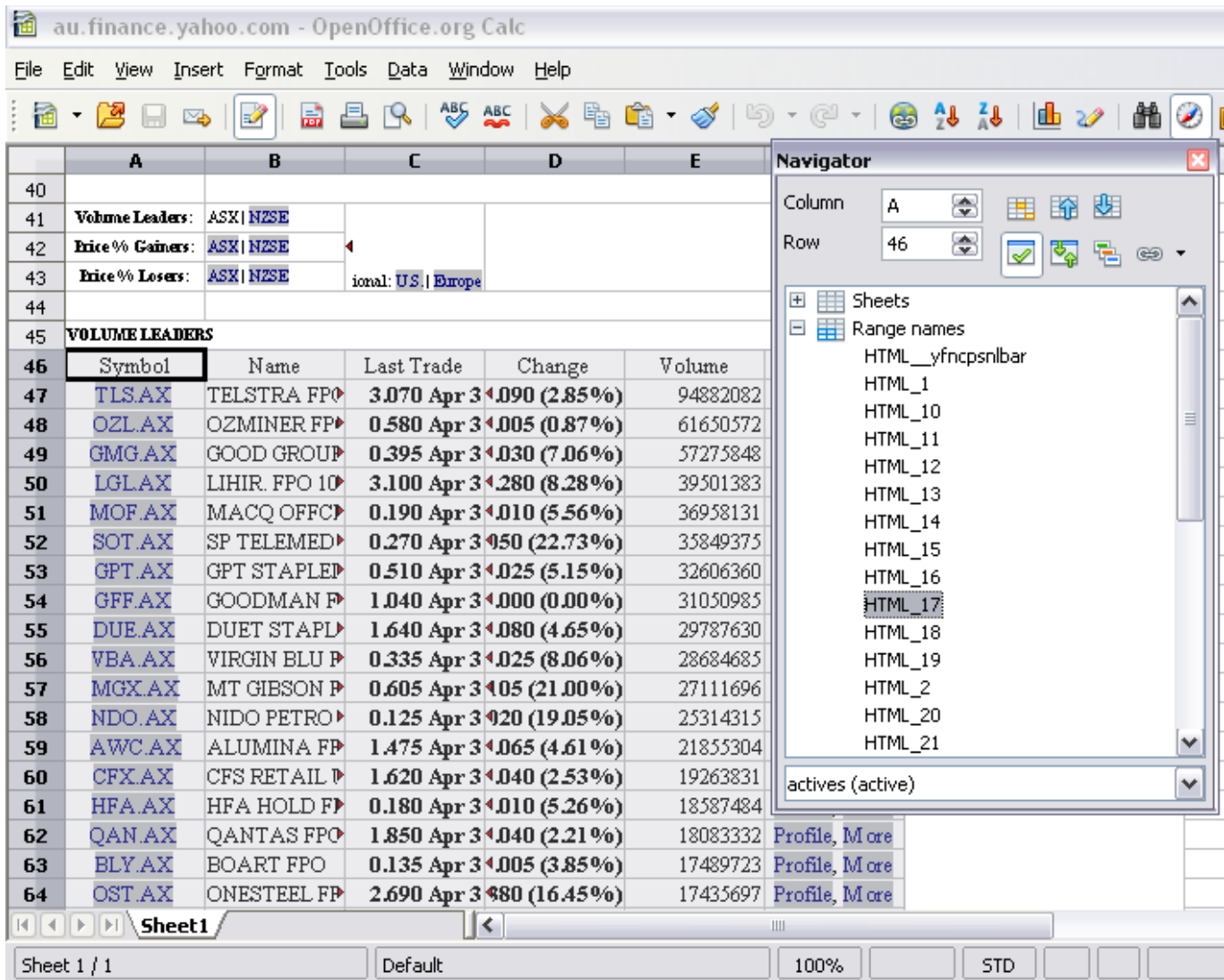
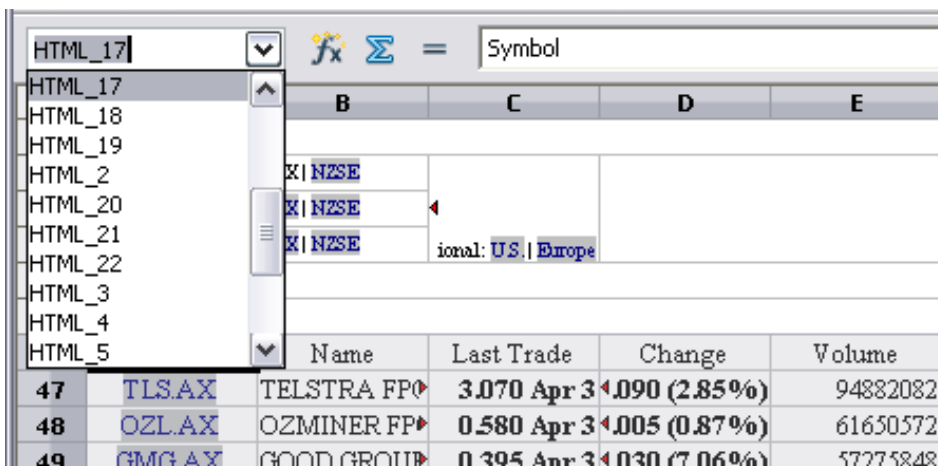Figure 24: Using the Navigator to find a data range name

Figure 25: Using the Name box to find a data range name

Linking to registered data sources

You can access a variety of databases and other data sources and link them into Calc documents.

First you need to register the data source with OOo. (To register means to tell OpenOffice.org what type of data source it is and where the file is located.) To do this:

1) Choose **File > New > Database** to open the Database Wizard.

2) Select **Connect to an existing database**. The choices for database type depend on your operating system. For example, Microsoft Access and other Microsoft products are not among the choices for Linux. In our example, we chose dBASE.
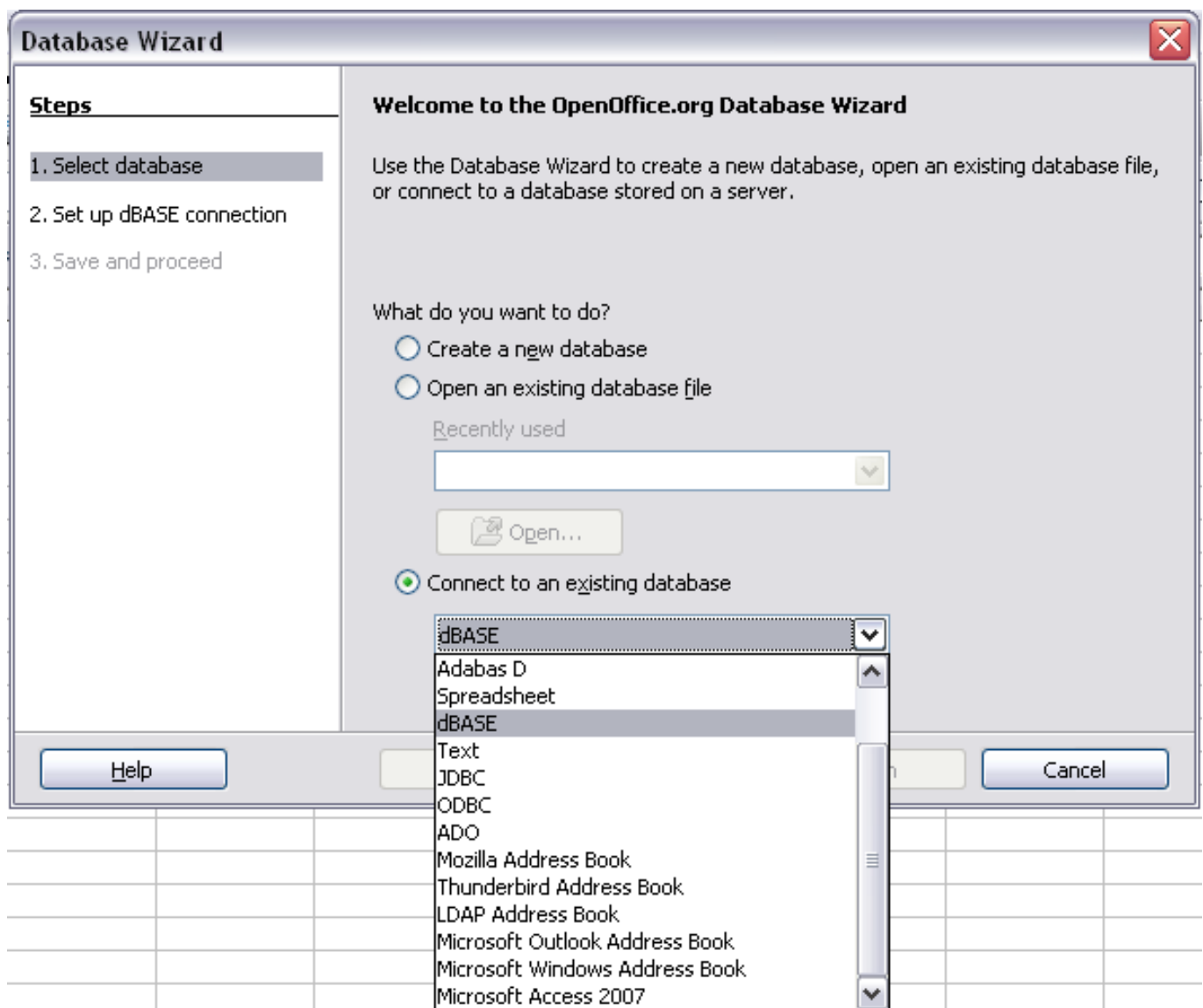

Figure 26: Registering a database using the Database Wizard

3) Click **Next**. Select *Register the database for me*, but do not select *Open the database for editing*.

4) Click **Finish**. Name and save the database in the location of your choice.

Once a data source has been registered, it can be used by any OOo component (for example Calc).

Viewing data sources

Open a document in Calc. To view the data sources available, press *F4* or select **View > Data Sources** from the menu bar. The Data Source View pane opens above the spreadsheet. A list of registered databases is in the Data Explorer area on the left. (The built-in Bibliography database is included in the list.)

To view each database, click on the **+** to the left of the name of the database. (This has been done for the Automobile database in Figure 27.) Click on the **+** next to Tables to view the individual tables.
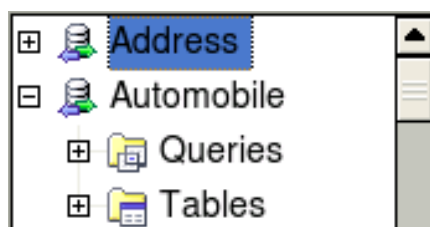

Figure 27: Databases

Now click on a table to see all the records held in it. The data records are displayed on the right side of the Data Source View pane. To see more columns, you can click the Explorer On/Off button to hide the Data Explorer area.

At the top of the Data Source View pane, below the Calc toolbars, is the Table Data bar. This toolbar includes button for saving records, editing data, finding records, sorting, filtering, and other functions. For more details about this toolbar, see the Help for *data source browser*.

Below the records is the Form Navigation bar, which shows which record is selected and the total number of records. To the right are five tiny buttons. The first four move backwards or forwards through the records, or to the beginning or end.

Figure 28: Data Source View navigation buttons

Editing data sources

Some data sources can be edited in the data source view. A spreadsheet can not.

In editable data sources, records can be edited, added, or deleted. If you cannot save your edits, you need to open of the database in Base and edit it there; see "Launching Base to work on data sources". You can also hide columns and make other changes to the display.

Launching Base to work on data sources

You can launch OOo Base at any time from the Data Source View pane. Right-click on a database or the Tables or Queries icons and select **Edit Database File**. Once in Base, you can edit, add, and delete tables, queries, forms, and reports.

For more about using Base, see Chapter 8 (Getting Started with Base) in the *Getting Started* guide.

Using data sources in Calc spreadsheets

Data can be placed into Calc documents from the tables in the data source pane.

You can insert one or more records into the current sheet of a spreadsheet by selecting the rows in the data source pane and dragging and dropping them into the spreadsheet. The data is inserted at the place where you release the mouse button.

There are two ways to enter data into a Calc spreadsheet. One enters the data into the spreadsheet cells. The other creates records in the spreadsheet just like they are done in creating a form in a database. While you can directly access the data in the spreadsheet cells, you can only see the data in the records created in the spreadsheet.

Entering data directly to the spreadsheet cells uses the *Data to Text* icon. But differences exist in these two situations.

Here are the steps.

1) Click the cell of the spreadsheet which you want to be the top left of your data including the column names.
2) Press *F4* to open the database source window and select the table containing the data you want to use.
3) Select the rows of data you want to add to the spreadsheet:
    - Click the gray box to the left of the row you want to select if only selecting one row. That row is highlighted.

- To select multiple contiguous rows, hold down the *Shift* key while clicking the gray box of the rows you need.
- To select multiple noncontiguous rows, hold down the *Control* key while selecting the rows. The selected rows are highlighted.
- To select all the rows, click the gray box in the upper left corner. All rows are highlighted.

4) Click the *Data to text* icon to insert the data into the spreadsheet cells.
5) Save the spreadsheet.

To add records to a spreadsheet, you need to have the Data Source pane open, your spreadsheet open, and the table you want to use selected. Follow these steps:

1) Click the gray box at the top of the column (containing the field name you wish to use) to highlight it.
2) Drop and drag the gray box to where you want the record to appear in the spreadsheet.
3) Repeat until you have moved all of the fields you need to where you want them.
4) Close the Data Source window: use *F4*.

5) Save the spreadsheet and click the *Edit File* button on the Standard toolbar, to make the spreadsheet read-only. All of the fields will show the value for the data of the first record you selected.
6) Add the *Form Navigation* toolbar: **View > Toolbars > Form Navigation**. By default, this toolbar opens at the bottom of the Calc window, just above the status bar.
7) Click the arrows on the Form Navigation toolbar to view the different records of the table. The number in the Record box changes as you move through the records. The data in the fields changes to corresponding to the data for that particular record number. You can also search for a specific record, sort and filter records, and do other tasks using this toolbar.

Embedding spreadsheets

Spreadsheets can be embedded in other OOo files. This is often used in Writer or Impress 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)

The major benefit of an OLE (Object Linking and Embedding) object is that it is quick and easy to edit the contents just by double-clicking on it. You can also insert a link to the object that will appear as an icon rather than an area showing the contents itself.

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.
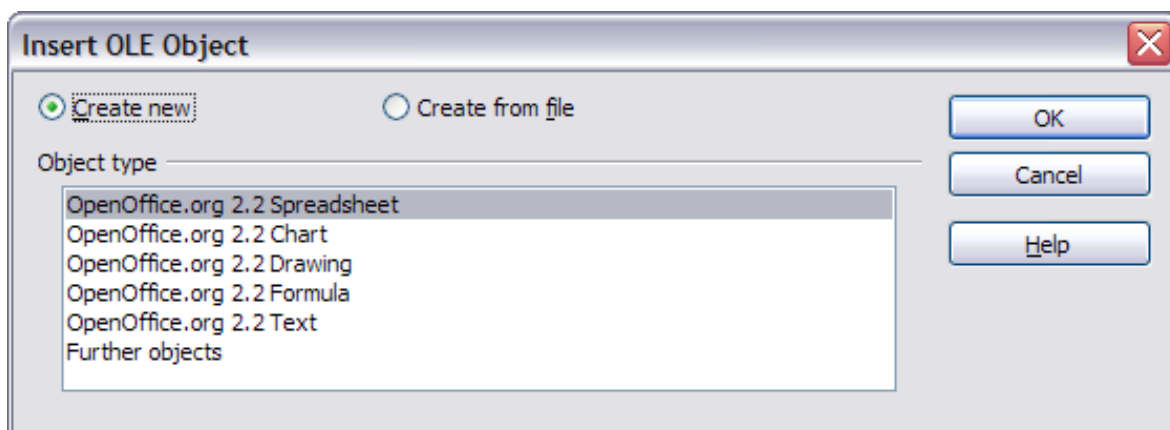2) Select **Insert > Object > OLE Object**. The dialog shown in Figure 29 opens.

Figure 29: Insert OLE object dialog

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

To create a new object:

1) Select **Create new** and select the object type among the available options.

Note   "Further objects" is only available under a Windows operating system. It does not appear in the list under any other system.

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2) Click **OK**. An empty container is placed in the slide.
3) Double-click on the OLE object to enter the edit mode of the object. The application devoted to handling that type of file will open the object.

Note	If the object inserted is handled by OpenOffice.org, then the transition to the program to manipulate the object will be seamless; in other cases the object opens in a new window and an option in the File menu becomes available to update the object you inserted.

To insert an existing object:
1) To create from a file, select **Create from file**. The dialog box changes to look like Figure 30.
2) To insert the object as a link, select the **Link to file** option. Otherwise, the object will be embedded.
3) Click **Search**, select the required file in the file picker window, then click **Open**. A section of the inserted file is shown in the document.
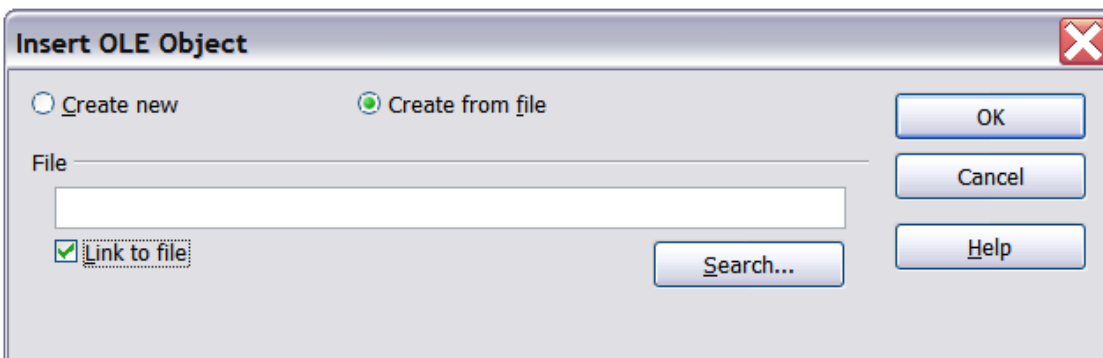

Figure 30: Inserting an object as a link

Other OLE objects

Under Windows, the Insert OLE Object dialog box has an extra entry, *Further objects*, as shown in Figure 29.
1) Double-click on the entry **Further objects** to open the dialog shown in Figure 31.
2) Select **Create New** to insert a new object of the type selected in the Object Type list, or select **Create from File** to create a new object from a file.
3) If you choose **Create from File,** the dialog shown in Figure 32 opens. Click **Browse** and choose the file to insert. The inserted file object is editable by the Windows program that created it.
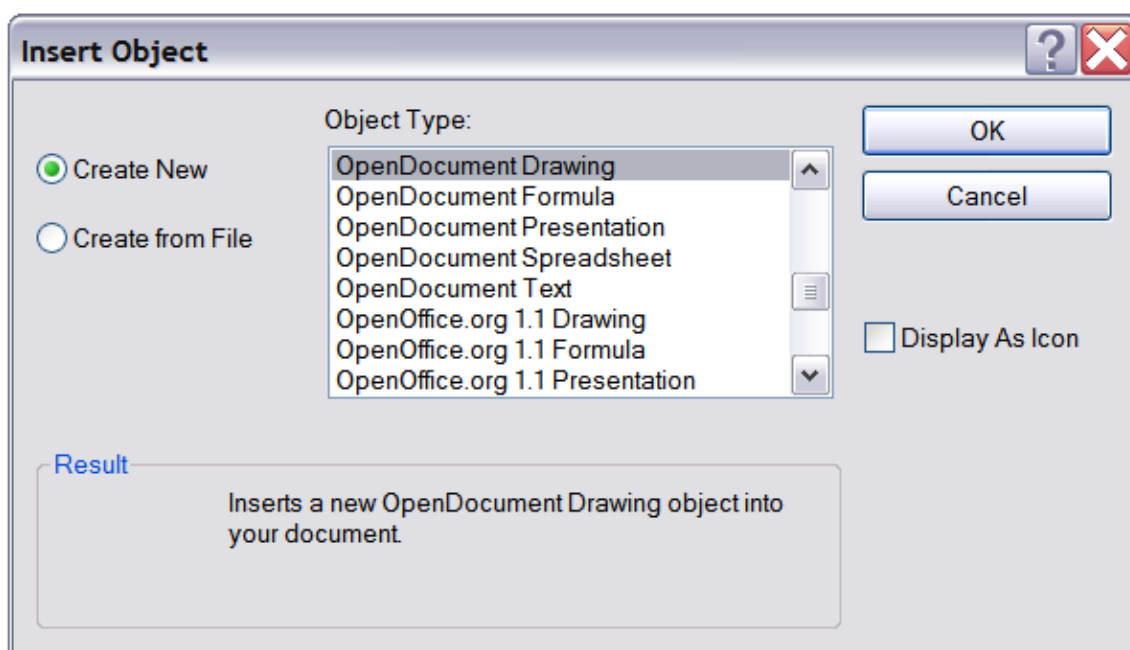
Figure 31: Advanced menu to insert an OLE object under Windows

If instead of inserting an object, you want to insert a *link* to an object, select the **Display As Icon** option.
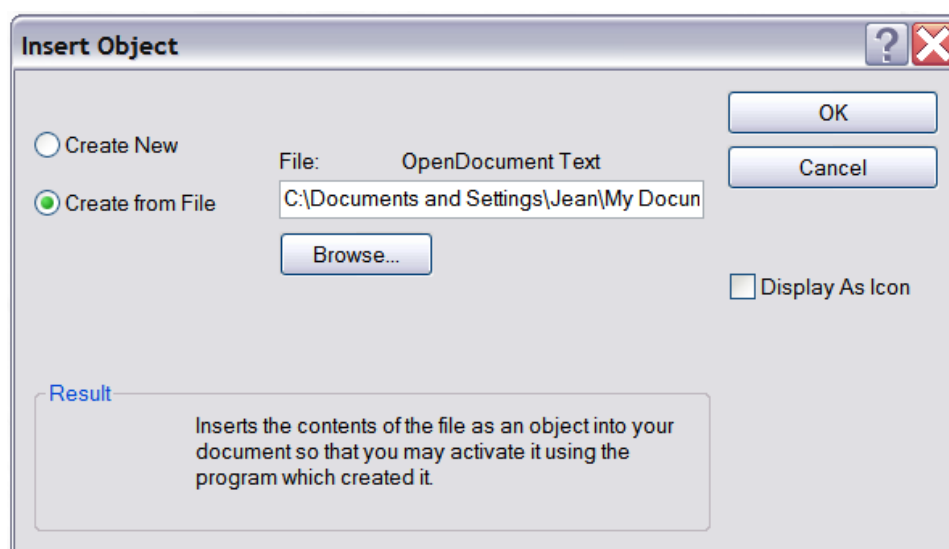

Figure 32: Insert object from a file

Non-linked OLE object

If the OLE object is not linked, it can be edited in the new document. 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 an acronym for Dynamic Data Exchange, a mechanism whereby selected data in document *A* can be pasted into document *B* as a linked, 'live' copy of the original. It would be used, for example, in a report written in Writer containing time-varying data, such as sales results sourced from a Calc spreadsheet. The DDE link ensures that, as the source spreadsheet is updated so is the report, thus reducing the scope for error and reducing the work involved in keeping the Writer document up to date.

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 link in Calc

Creating a DDE link in Calc is 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** or *Ctrl+C*.
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, select the **Link** option on the bottom left of the dialog (Figure 33). Click **OK**.

The cells now reference the copied data, and the formula bar shows a reference beginning with {=DDE.

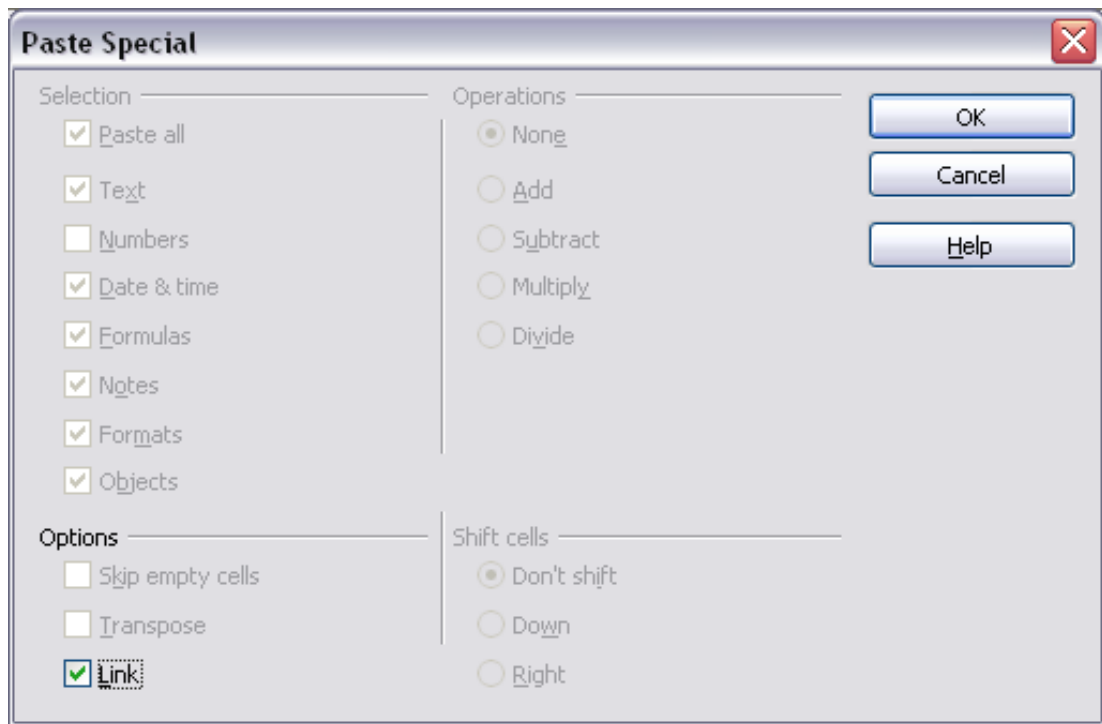If you now edit the original cells, the linked cells will update.

Figure 33: Paste Special dialog in Calc, with Link option selected

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. Copy them.
2) Go to the place in your Writer document where you want the DDE link. Select **Edit > Paste Special**.
3) Select *DDE Link* (Figure 34). Click **OK**.

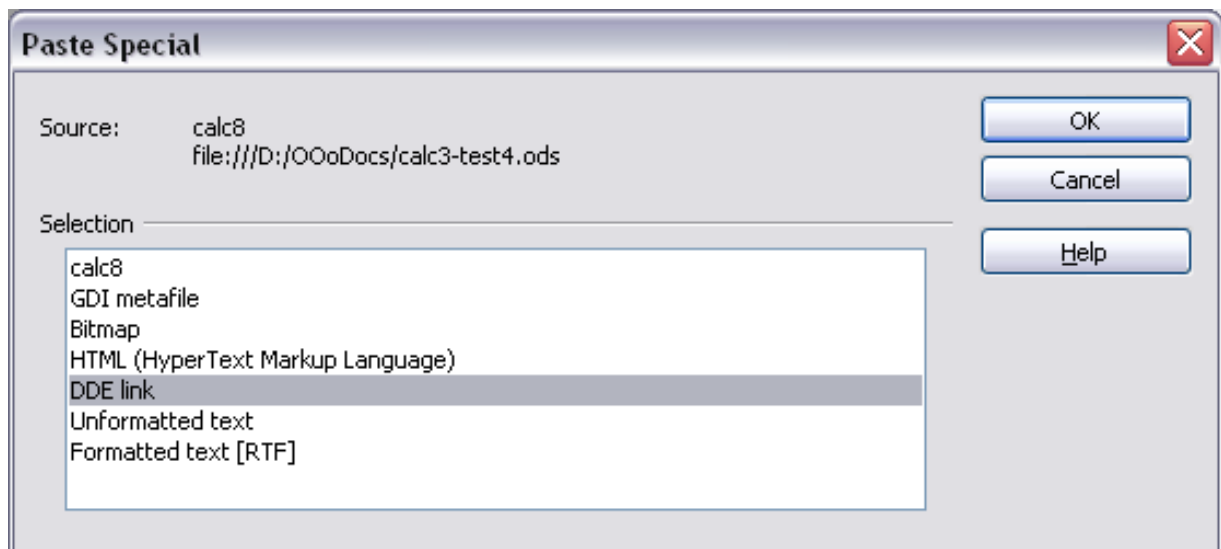Now the link has been created in Writer. When the Calc spreadsheet is updated, the table in Writer is automatically updated.

Figure 34: Paste Special dialog in Writer, with DDE link selected