

OpenOffice.org 1.0, ODBC, and MySQL 'How-to'

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'Access' your data - OpenOffice.org 1.0's best kept secret

'Access' for Linux?

The launch of OpenOffice.org 1.0 in 2002 removed at a stroke one major obstacle to the universal use of Linux on the desktop. At last, Linux users have office software - word processor, spreadsheet, graphics, and presentation - which not only works at least as well as the Microsoft Office equivalent, but can also use Microsoft Office file formats, and is genuinely open source.

However, this hasn't prevented objections from Microsoft diehards that they still can't migrate to Linux, because "Linux hasn't anything like Microsoft Access". Well, have I got news for you. It has, and it's called OpenOffice.org 1.0. One of the hidden secrets of OpenOffice.org 1.0 is that it also has a great user-friendly database front end. All you need to do is wire it up to one of the many open-source databases on Linux, and you have a Microsoft Access (and more) equivalent.

This document explains how to make this connection, and then provides a quick tour of the database tools within OpenOffice.org 1.0. Many hardened OpenOffice.org 1.0 users are completely unaware of what is hiding under the covers, and are amazed once they start playing with the 'hidden' tools.

Software options

OpenOffice.org 1.0 uses ODBC¹ to connect to databases. ODBC is common on MS-Windows platforms, but is much rarer on Linux. This article will explain step-by-step how to connect OpenOffice.org 1.0 to the MySQL database using unixODBC, an implementation of ODBC for *nix. There's no reason why you shouldn't use another database - as long as it's got an ODBC component, it should work. I just happen to use MySQL. The starting point for the examples illustrating this document was a clean laptop install of RedHat Linux 7.3, so the examples show software installation from RPMs. If you prefer another installation method, or another distribution, the principle is the same.

Like many procedures on Linux, it's not difficult to do. Just watch out for the 'gotchas' - little tricks which are trivial to solve, but which can cause hours of head scratching if you don't know how.

Notes for users of MS-Windows platforms

The next section of this document applies only to OpenOffice.org 1.0 on Linux. It's perfectly possible to install OpenOffice.org 1.0, MySQL and MyODBC on MS-Windows - anyone familiar with software installation on MS-Windows should find the process quite straightforward.

The rest of the document is applicable to all platforms on which OpenOffice.org 1.0 runs.

1 or JDBC, for Sun worshippers

Joining OpenOffice.org 1.0 to MySQL using ODBC

Installing MySQL

Check first to see if MySQL is already installed on your system (warning - the check is case sensitive)

```
[root@t22 RPMS]# rpm -qa | grep MySQL
[root@t22 RPMS]#
```

MySQL is not installed, so you need to download it from <http://www.mysql.com> and then install it.

Gotcha: there is a bug in the .49a and .50 versions of the MySQL client libraries, which prevents the ODBC connection working - you will see error messages like *relocation error: /usr/lib/libmyodbc.so: undefined symbol: init_dynamic_array*. So you need to get a .49 version - if necessary, search for it using <http://www.rpmfind.net>.

First of all, you need to install the MySQL server, which runs in the background on the computer and handles requests from users for access to MySQL databases.

MySQL Server installation

```
[root@t22 RPMS]# rpm -ivh MySQL-3.23.49-1.i386.rpm
Preparing...                               ##### [100%]
   1:MySQL                                 ##### [100%]
Installing all prepared tables

[...snip...]

Starting mysqld daemon with databases from /var/lib/mysql
[root@t22 RPMS]#
```

You now have a running MySQL database server. By default, the installation creates an empty database called *test*, accessible by a user *test* without a password (note: the MySQL username is an identifier you pass to MySQL when you make a connection - it's a different entity from the username you use to log on to Linux).

You now need to install the MySQL client so you can issue SQL commands to the server.

Installing the MySQL client

```
[root@t22 RPMS]# rpm -ivh MySQL-client-3.23.49-1.i386.rpm
Preparing...                               ##### [100%]
   1:MySQL-client                         ##### [100%]
[root@t22 RPMS]#
```

Testing MySQL

Now that the server is running, and you have the client software installed, you should test that you can access the server from a user account. Here I'm logged on to Linux as *john* but I connect using the pre-defined MySQL username *test*. I give the *select version();* command just to check everything's ok.

Testing the MySQL installation

```
[john@t22 john]$ mysql -utest
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 1 to server version: 3.23.49

Type 'help;' or '\h' for help. Type '\c' to clear the buffer.

mysql> select version();
+-----+
| version() |
+-----+
| 3.23.49   |
+-----+
1 row in set (0.00 sec)

mysql> exit
Bye
[john@t22 john]$
```

Installing unixODBC and the MySQL libraries

So far so good. You now need to install the ODBC driver, which provides a standard interface which programs like OpenOffice.org 1.0 can use to access databases. I use *unixODBC* from <http://www.unixodbc.org>.

Installing the ODBC software

```
[root@t22 RPMS]# [root@t22 RPMS]# rpm -ivh unixODBC-2.2.1-2.i386.rpm
Preparing...                               ##### [100%]
   1:unixODBC                               ##### [100%]
[root@t22 RPMS]#
```

You also need two further pieces of software from <http://www.mysql.com> - the *MyODBC* connection software, and a set of shared libraries it uses to talk to the MySQL server:

Installing the MySQL libraries

```
[root@t22 RPMS]# rpm -ivh MySQL-shared-3.23.49-1.i386.rpm
Preparing...                               ##### [100%]
   1:MySQL-shared                           ##### [100%]
[root@t22 RPMS]# rpm -ivh MyODBC-2.50.39-4.i386.rpm
Preparing...                               ##### [100%]
   1:MyODBC                                 ##### [100%]
[root@t22 RPMS]#
```

Creating the ODBC .ini files

Now you need to set up the .ini files used by ODBC. These are just text files which you can edit using your favourite text editor. You will probably find your RPMs have installed empty templates in */etc*

Gotcha: some packagers use */usr/local/etc* for the .ini files, and */usr/local/lib* for the libraries

odbcinst.ini lists the ODBC drivers installed on the system. You only need to define the MySQL driver:

```
/etc/odbcinst.ini

[MySQL]
Description      = ODBC Driver for MySQL
Driver           = /usr/lib/libmyodbc.so
Setup            = /usr/lib/libodbcmyS.so
FileUsage        = 1
CPTimeout        =
CPReuse          =
```

odbc.ini defines the links that users will use to link to the actual database via the driver. Links in *odbc.ini* are available to all users of your Linux system.

```
/etc/odbc.ini

[MySQL-test]
Description      = MySQL database test
Driver           = MySQL
Server           = localhost
Database         = test
Port             = 3306
Socket           =
Option           =
Stmt             =
```

Testing ODBC

You're now in a position to repeat the test connection from the user account, this time using the ODBC connection. *isql* is a little utility program provided by unixODBC:

Testing the ODBC software

```
[john@t22 john]$ isql MySQL-test
+-----+
| Connected!
|
| sql-statement
| help [tablename]
| quit
|
+-----+
SQL> select version();
+-----+
| version() |
+-----+
```

```
| 3.23.49 |  
+-----+  
1 rows affected  
SQL> quit  
[john@t22 john]$
```

Hint: if this doesn't work, try `isql MySQL-test -v` to get fuller error messages.

What's happening here is that the parameter you pass to `isql - MySQL-test -` is passed to the ODBC software. It looks up this parameter in `odbc.ini`, and finds the Driver `MySQL` and the connection information. It then looks up `MySQL` in `odbcinst.ini`, and finds where the libraries are.

If all this is working, you now have a working database, accessible from ODBC.

Setting up ODBC within OpenOffice.org 1.0

Nearly there. You now need to tell OpenOffice.org 1.0 about your ODBC connection. First of all, a couple of little gotchas.

Gotcha: OpenOffice.org 1.0 looks for a library `libodbc.so`. The RPM I loaded didn't create this:

```
[john@t22 john]$ whereis libodbc.so  
libodbc:  
[john@t22 john]$
```

so it was back to user root to create a link:

```
[root@t22 RPMS]# ln -s /usr/lib/libodbc.so.1 /usr/lib/libodbc.so
```

which solved the problem:

```
[john@t22 john]$ whereis libodbc.so  
libodbc: /usr/lib/libodbc.so  
[john@t22 john]$
```

Gotcha: If your RPMs have installed the libraries into `/usr/local/lib`, you still have a problem, because OpenOffice.org 1.0 won't look there, unless you:

```
[john@t22 john]$ export LD_LIBRARY_PATH=/usr/local/lib  
[john@t22 john]$
```

before you run OpenOffice.org 1.0

Now we are ready to go. Within OpenOffice.org 1.0, choose *Tools / Data Sources...* from the main menu (or press `F4`), then press the *New Data Source* button to open the *Data Source Administration* window. Type in Name `MySQL-test`, select Database type `ODBC` and press the `[...]` button. Next, select the data source you have just created in the *Data Source* dialogue (see Figure 1).

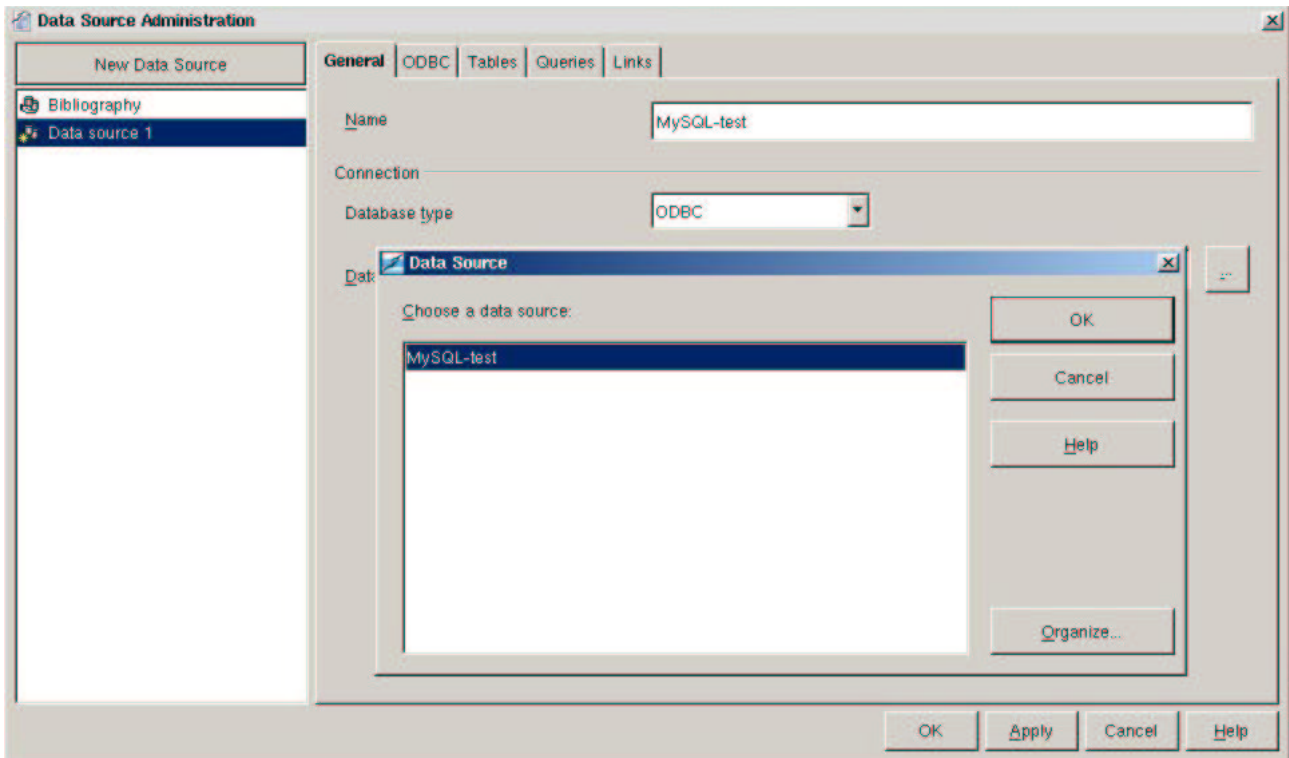


Figure 1 Selecting the new Data Source

Press OK. Back in the *Data Source Administration* window, choose the *ODBC* tab and enter User name *test*, press OK; and that's all the preparatory work finished.

Using the Data Source Tools in OpenOffice.org 1.0

Finding the Data Source Tools

To use database functions at any time, select *View / Data Sources* from the main menu (or press *F4*). The *Data Source Explorer* on the left hand side of the Data Sources screen shows all the data sources currently known to OpenOffice.org 1.0². The usual conventions apply - click on the + sign to show more information, right click on an item to see the tools available. The right hand side of the screen is the *Data Source Browser*, which shows the contents of any currently selected data source.

Working with Table Definitions

Creating a table

Expand the *MySQL-test* link in the Data Source Explorer by clicking on the plus sign; then right click on the *Tables* item to pop up a menu. Choose *New Table Design* to display the Table Design Screen (see Figure 2).

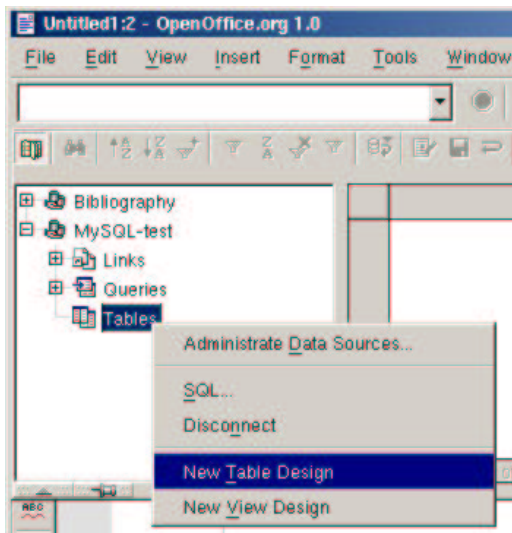


Figure 2 Using the Data Source Explorer

We're creating a table to hold a bookseller's stock list. OpenOffice.org 1.0 acts as a 'window' into MySQL, so the rules about what you can call fields, what types of data are available, etc are as per MySQL. The panel at the bottom right contains context sensitive help, but for definitive help you should look to the MySQL documentation³.

The completed table definition in the Table Design window is shown in Figure 3. Note that if you want to be able to update the data in this table within OpenOffice.org 1.0, you need to define one field as a *primary key* - you do this by right-clicking on the indicator bar at the left hand edge of the screen and setting the Primary Key flag. This is shown by a key symbol - this example shows ISBN is the primary key. When you have finished, click the *Save* button, name the table *stocklist*, and close the window. Your new table will now be visible in the Data Source Explorer.

Designing Indexes

There is also an index designer available from the Table Design window, either from *Tools / Index Design...* on the menu or the *Index Design* button on the toolbar (see Figure 4).

² The Bibliography data source is a default installed by OpenOffice.org 1.0.

³ for example, see http://mysql.com/documentation/mysql/bychapter/manual_Reference.html#Legal_names

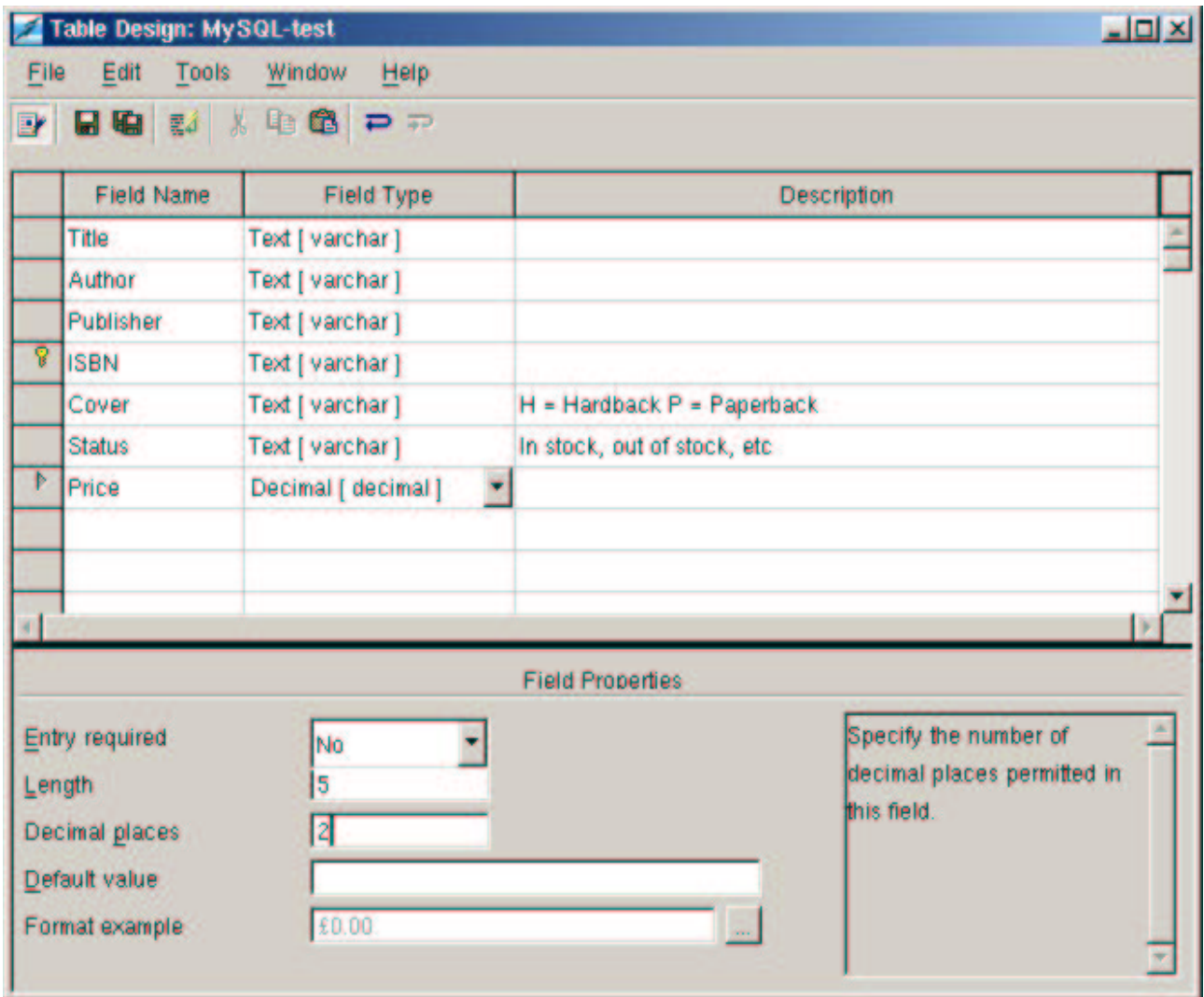


Figure 3 Table Design for stocklist

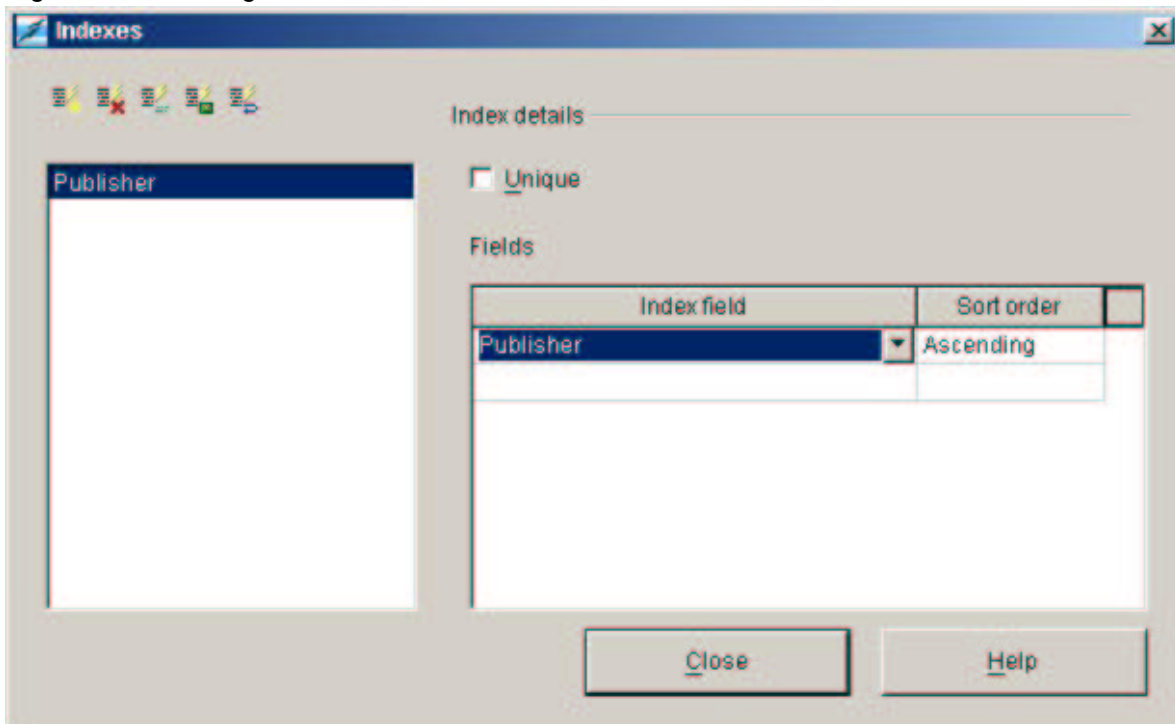


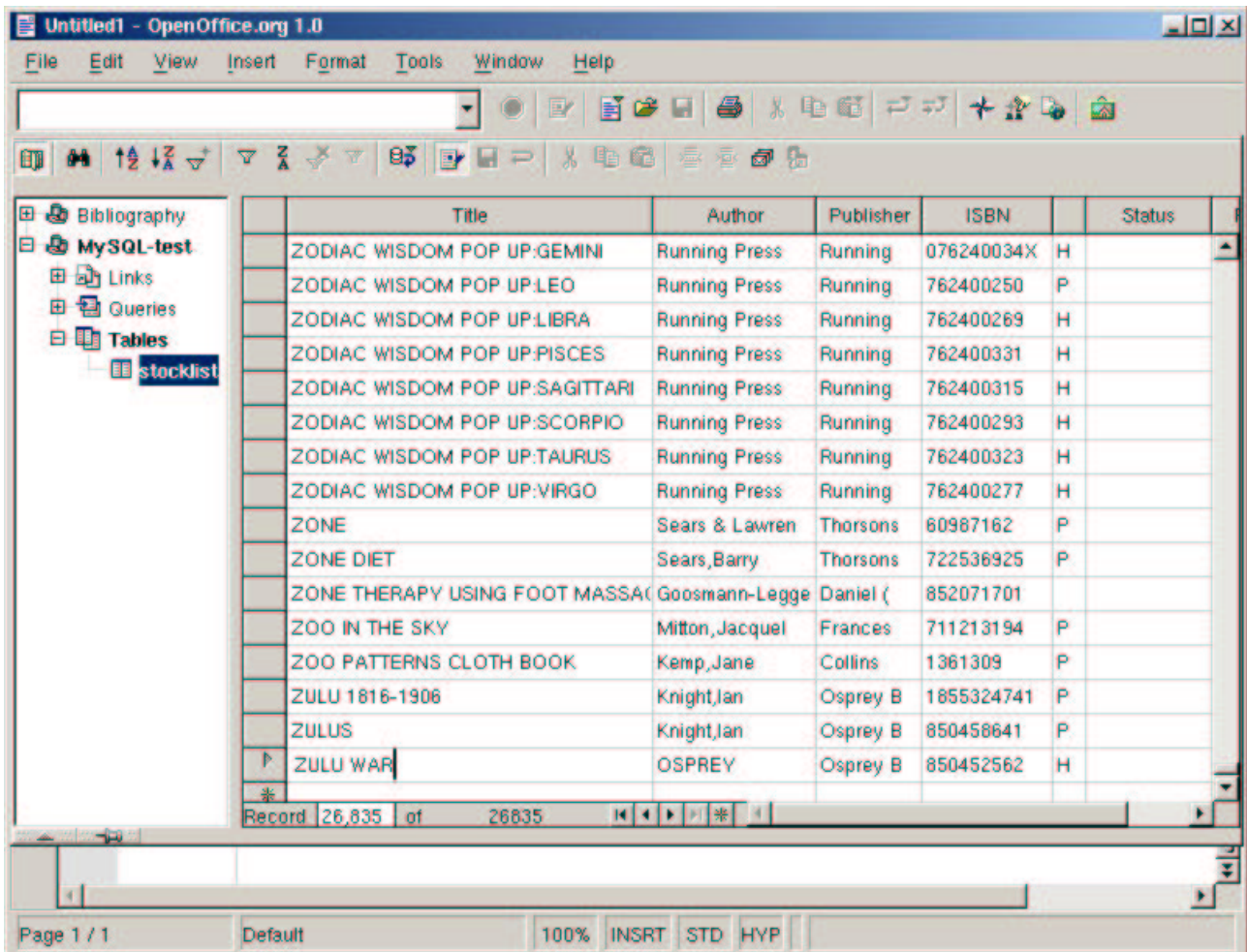
Figure 4 Index Designer

Changing the definition of a table

If you need to make changes to the fields in your table, right click on the table name in the Data Source Explorer and select *Edit Table*. This will put you back in the Table Design window.

Editing data

Tables can be edited directly from Data Sources screen - simply click on the tablename in the Data Source Explorer, and the contents of the table will be displayed in the Data Source Browser on the right. The example below shows the fully populated *stocklist* table.



Title	Author	Publisher	ISBN	Status
ZODIAC WISDOM POP UP:GEMINI	Running Press	Running	076240034X	H
ZODIAC WISDOM POP UP:LEO	Running Press	Running	762400250	P
ZODIAC WISDOM POP UP:LIBRA	Running Press	Running	762400269	H
ZODIAC WISDOM POP UP:PISCES	Running Press	Running	762400331	H
ZODIAC WISDOM POP UP:SAGITTARI	Running Press	Running	762400315	H
ZODIAC WISDOM POP UP:SCORPIO	Running Press	Running	762400293	H
ZODIAC WISDOM POP UP:TAURUS	Running Press	Running	762400323	H
ZODIAC WISDOM POP UP:VIRGO	Running Press	Running	762400277	H
ZONE	Sears & Lawren	Thorsons	60967162	P
ZONE DIET	Sears,Barry	Thorsons	722536925	P
ZONE THERAPY USING FOOT MASSAGE	Goosmann-Legge	Daniel (852071701	
ZOO IN THE SKY	Milton,Jacquel	Frances	711213194	P
ZOO PATTERNS CLOTH BOOK	Kemp,Jane	Collins	1361309	P
ZULU 1816-1906	Knight,Jan	Osprey B	1855324741	P
ZULUS	Knight,Jan	Osprey B	850458641	P
ZULU WAR	OSPREY	Osprey B	850452562	H

Figure 5 The stocklist table

Note the *Navigation Bar* at the bottom of the Data Source Browser to help you move rapidly through your table.

The usual 'spreadsheet' conventions also apply:

- double-click on a column heading to resize the column width;
- right click on a column heading to set the column width manually, set a new column format, or hide a column;
- right click on any of the row markers to set the row height or reformat the whole table.

Note: any comments you entered in the 'Description' field when you set up the table will appear as hints when you move the mouse cursor over the column heading in the Data Source Browser.

Using the Database Toolbar to work with your data

Much of the power of OpenOffice.org 1.0 is provided by the Database Toolbar that appears at the top of the Data Source Browser. This contains the following buttons from left to right – hover the mouse over each one to see a hint (make sure you have Tips enabled on the Help menu).

Displaying/Hiding the Data Source Explorer

Useful if you want to maximise the amount of data you can see on the screen – this button toggles the display of the Data Source Explorer on and off

Find Record

This button displays the *Record Search* dialogue. For example, see Figure 6 for an example of to find a book with the word 'biggles' in its title. Note that this will search the table record by record – which can be a slow process on big tables!

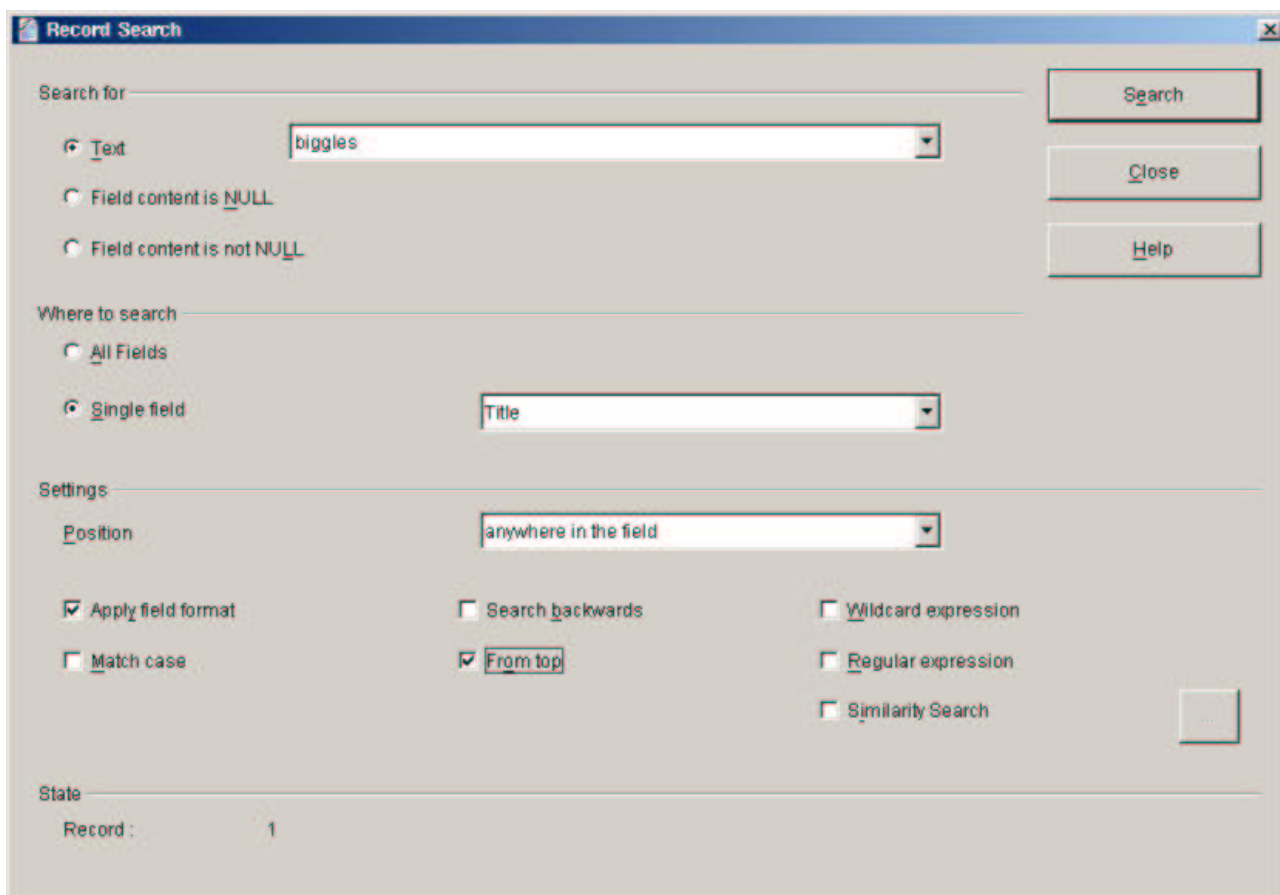


Figure 6 Record Search Dialogue

Sort Ascending / Sort Descending

Clicking on a column heading to select a field, and then pressing either of these buttons will cause the display in the Data Source Browser to be sorted on the selected column in either ascending or descending order.

Note: the *Sort* buttons only change the way the data is displayed - the underlying database is not affected.

AutoFilter

Auto Filtering is a very powerful tool for displaying only the records that meet certain criteria. For example, one of the publishers in the *stocklist* table is 'Dorling'. Clicking on the cell containing the word 'Dorling' (see Figure 7) and then pressing the *AutoFilter* button will display only the records where the publisher is 'Dorling'. Note that if you now do another autofilter, it will add to the one already in force – e.g. repeating the

process for Cover equals 'H' will show only the Publisher 'Dorling' Hardbacks. The *Remove Filter / Sort* button (see below) will reset the table view.

Note: filters only affect the way the table is displayed - they do not change the data in the database.

	Title	Author	Publisher	ISBN	Status	Price
	1001/THINGS/MUST/DO/BEFORE/MAR	Hall,Roland	Carlton	1842224026	P	£6.99
	1001/THINGS/MUST/DO/BEFORE/MAR	de Vries,Clare	Carlton	1842224034	P	£6.99
▶	1001 FACTS ABOUT DINOSAURS	Clark, Lindsay	Dorling	751344176	P NYP/ND	£4.99
	1001 FACTS ABOUT SHARKS	Hunter-Smart &	Dorling	751344184	P NYP/ND	£4.99
	1001 FACTS ABOUT SPACE	Stott & Twist	Dorling	075134415X	P NYP/ND	£4.99
	1001 FACTS ABOUT THE HUMAN BOD	Brewer & Craft	Dorling	751344168	P NYP/ND	£4.99
	1001 NIGHTS OF DRUMMER DONALD	Hopkins,Harry	Canongat	862418909	P	£9.99
	1001 THINGS TO SPOT ON THE FAR	Doherty,Gillia	Usborne	746029551	P	£4.99
	100 BEST AFTER DINNER STORIES	Piatkus	Piatkus	749911832	P	£5.99
	100 BEST POEMS FOR CHILDREN	ed McGough,Rog	Viking C	670894907	H	£12.99
	100 BEST ROUTES SCOTTISH MOUNT	Storer,RalpH	Warner (751518905	P	£6.99
	100 CLASSIC CLIMBS/CENTRAL/SOU	Ashton & Crock	Crowood	1852230258	P ODP	£12.99
	100 COUNTRYSIDE WALKS AROUND E	Storey,Derek	Mainstre	1840181826	P	£7.99
	100 FACIAL EXPRESSIONS	Doddell,Edwin	Basic Lit	006153076X	H	£5.00

Figure 7 Selecting a value for Auto-filtering

Default Filter

Using this button, you can see or change any filter currently in place. For example, if you have used the *Autofilter* as described above, and then pressed the *Default Filter* button, you would see the filter in Figure 8.

Operator	Field name	Condition	Value
	Publisher	like	Dorling
AND	Cover	like	H
AND	- none -		

Figure 8 Filtering

You could now refine your filter to display Dorling Hardbacks costing more than £30 by setting the an additional filter - see Figure 9

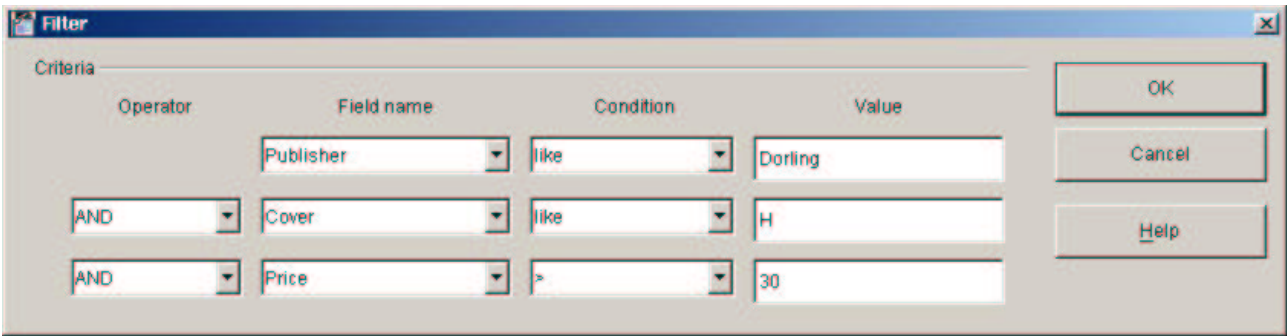


Figure 9 Filtering - adding another condition

with the results shown in Figure 10

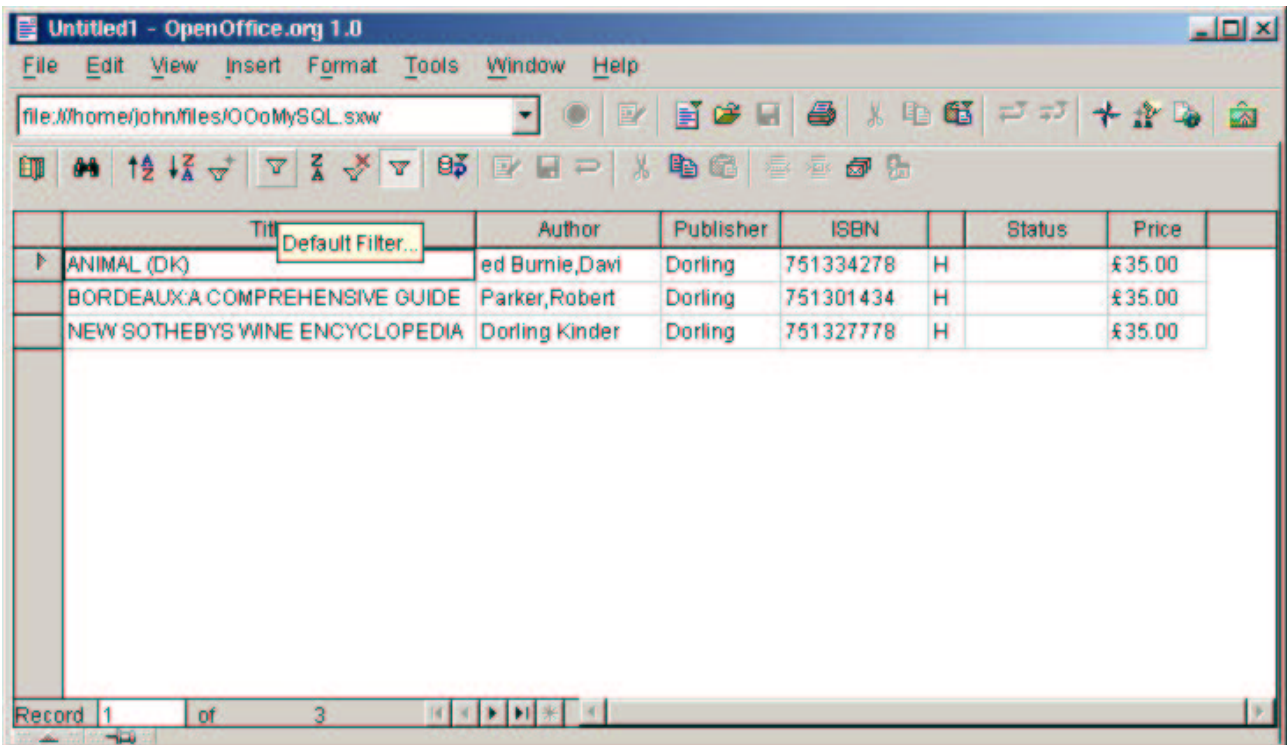


Figure 10 Filtered data

Sort

The *Sort Ascending* / *Sort Descending* buttons described on page 12 enable you to specify a simple sort on a single field with one click. The *Sort* button enables you to set up more complicated sorts, for example in alphabetical order of title by each author by each publisher (Figure 11).

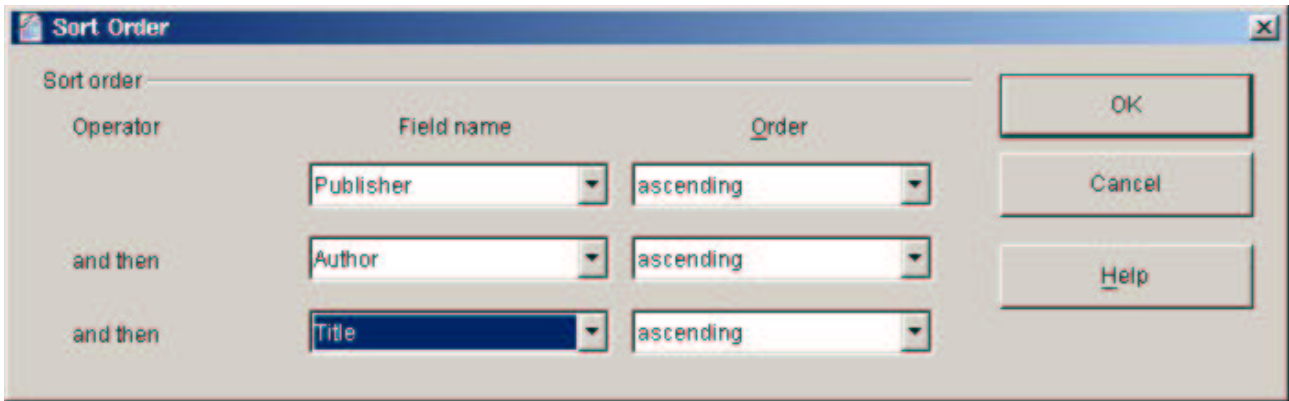


Figure 11 Sort Order Dialogue

Remove Filter / Sort

This button returns the view of the table to the default.

Apply Filter

If you have defined a filter using the *AutoFilter* or *Filter* buttons, this button will toggle the filter on and off.

Refresh

It is possible to open multiple editing windows onto the same table, either from one user or from many users if you are in a multi-user system. Pressing the *Refresh* button forces OpenOffice.org 1.0 to reload its view of the data from the database to reflect any changes made elsewhere to the underlying data.

Edit Data

If your table has a primary key defined, pressing this key will allow you to edit the data directly in the Data Source Browser. Any changes you make on the screen are posted to the database as you move on to a different record, or you can force an immediate update using the *Save Current Record* button.

Save Current Record

If you are editing a record, pressing this button forces any changes to be written immediately to the database.

Creating new Views of your data

The Database Toolbar is a very powerful tool for analysing and working on your data. However, it is sometimes useful to be able to set up a pre-set view of a table, for example for other people to use. For example, we might want to set up a view showing just the books published by Penguin which are currently in stock in alphabetic order of title.

In the Data Source Explorer of the Data Sources window, right click on *Queries* and select *New Query Design*. An Add Tables Dialogue will prompt for the tables to be used in the query – add the *stocklist* table then close the Add Tables Dialogue. You will then be in the Query Design screen, and can design your query (see Figure 12).

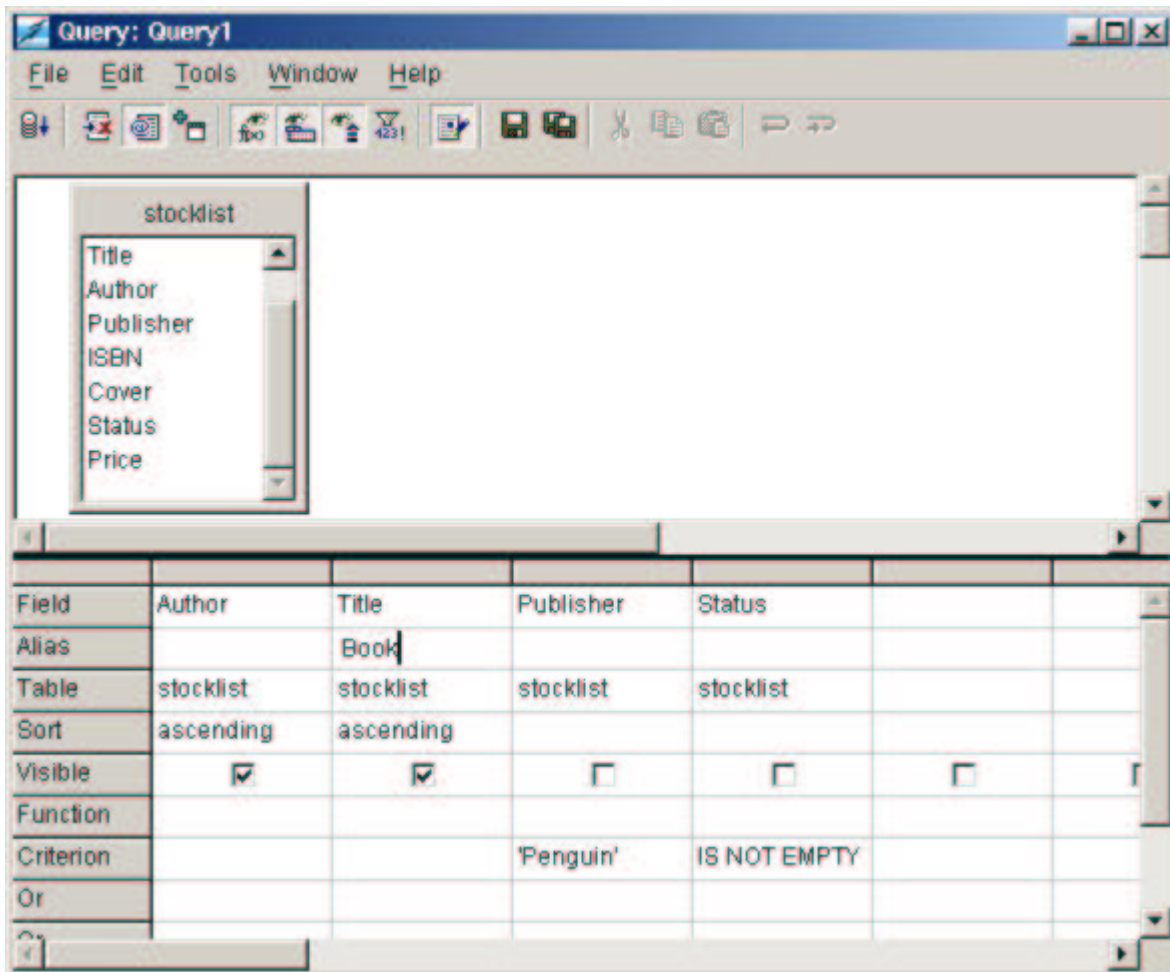


Figure 12 Penguins in Stock Query Design

Rows in the Query Design table

Field

The Fields to be included in the query can be double-clicked in the upper pane, or 'dragged and dropped' from the upper pane, or entered by clicking in the Field row of the bottom pane and using the drop-down boxes.

Alias

The 'Alias' row allows you to change a column heading.

Visible

The 'Visible' row allows fields to be used in selection criteria, but not to be displayed.

Functions

The 'Function' row allows you to specify summary or grouping functions (see the Advanced Examples later).

Criterion

The 'Criterion' row sets filter conditions – here we have specified Publisher equals 'Penguin' and Status is not empty (null)⁴.

The Query Toolbar

The Query Toolbar provides more functionality:

Run Query

will immediately display the results of your query in a new Data Source Browser (see Figure 13).

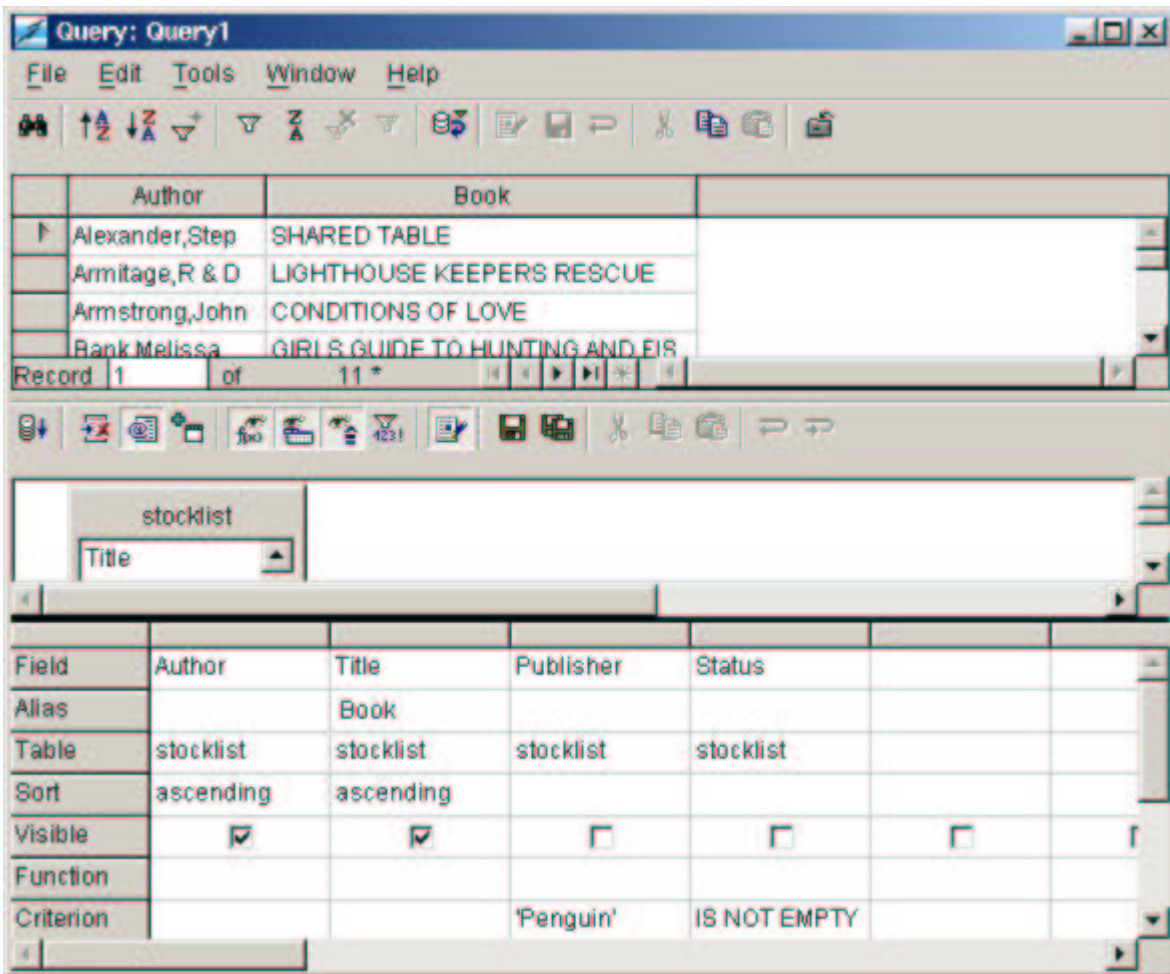


Figure 13 Query Designer with Data Source Browser

Note how this Data Source Browser has its own Toolbar as well!

Clear Query

Will remove the query design currently on display

Switch Design View On/Off

Behind the scenes, the Query Designer translates your design into the SQL commands which MySQL understands. For advanced users, this button will toggle the display of the raw SQL commands generated

⁴ You can specify wildcards in the usual way: *LIKE 'AB**'* finds everything starting with AB etc.

by the Query Designer. You can edit these commands directly, and the changes will be reflected back into the Data Designer.

Add tables...

Allows you to put multiple tables into your query. See 'More Complex Queries' on page 19.

Functions / Table Name / Alias

These buttons are toggles to display / hide the corresponding rows in the Query Designer

Distinct Values

This toggle allows you to create a query to answer questions like: "Show me all the authors who are in the stocklist". The example I am using has 25,000 records in it. If you try to answer the question by creating the following query:

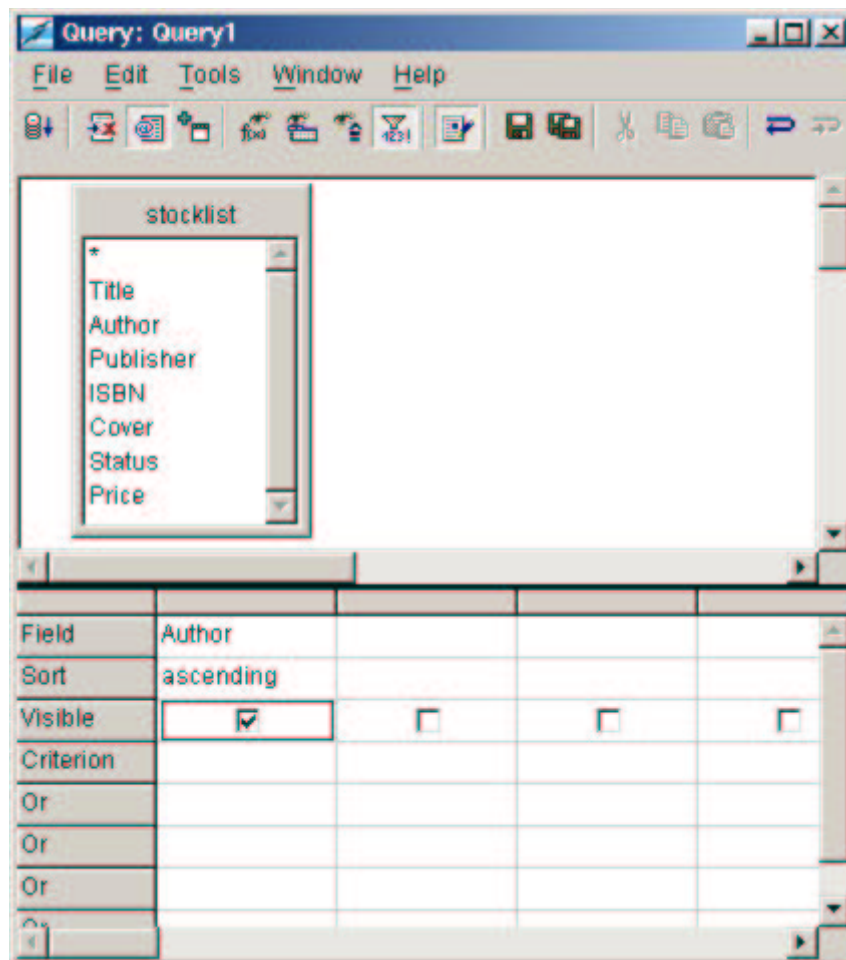


Figure 14 A 'distinct' Query

without the *Distinct* button being pressed, OpenOffice.org 1.0 would show you the 25,000 records – one for each record, with the same author listed as many times as they appear in the table. Selecting *Distinct* would show each author once only – which is what you want.

Edit

The *Edit* button toggles the Query Design in and out of edit mode.

Save

Stores the Query Design⁵. Once a query has been saved, it is available within the Data Source Explorer and its contents can be viewed in the Data Source Browser - see Figure 15.

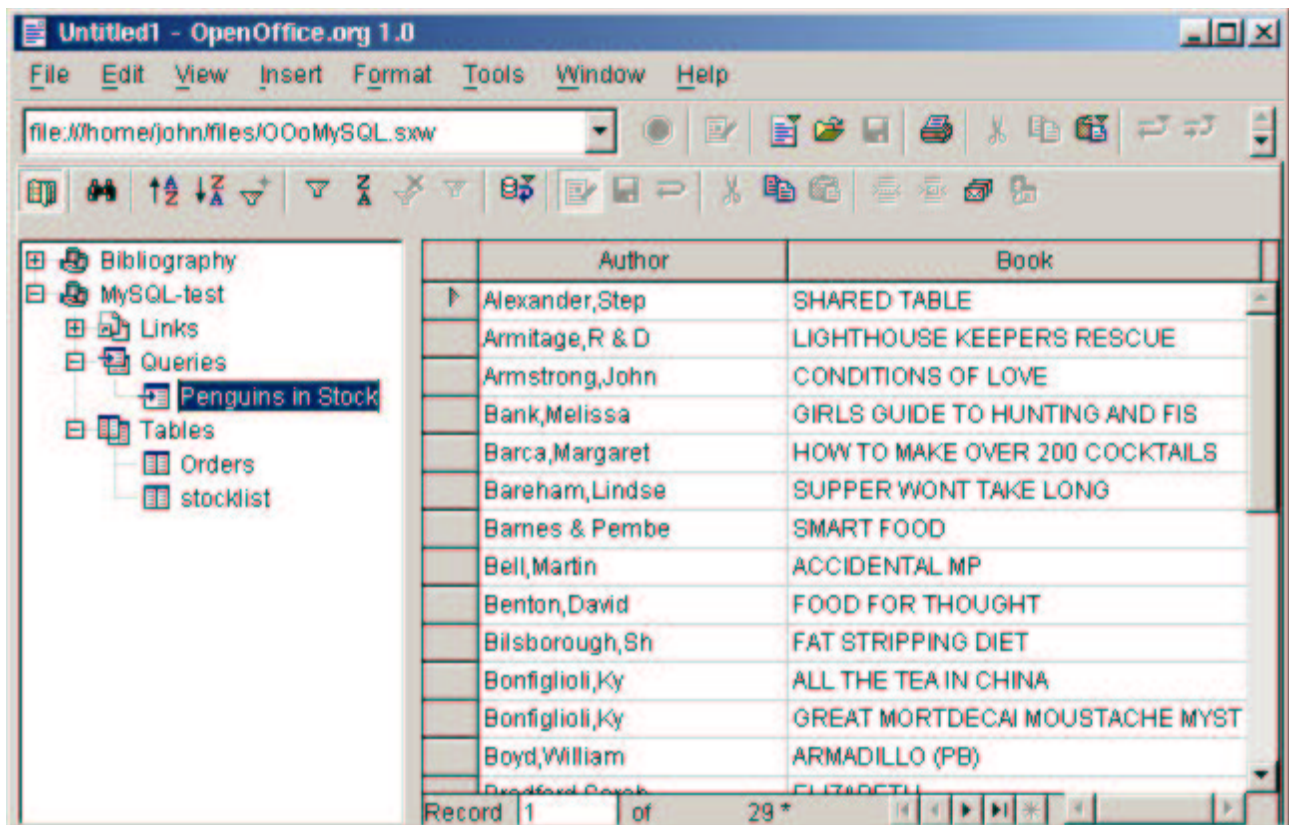


Figure 15 Displaying a Query

More Complex Queries

The Data Designer is a powerful tool for creating queries which means you can perform day to day enquiries without needing to know any SQL⁶. This includes joining and summarising tables.

Example 1 - Orders on Hand

As an example of what can be achieved, suppose you have created *Orders* - a table of books which have been ordered by customers, where you record the ISBN of the book and the quantity to order. The example in Figure 16 shows how you could link this table with the main *stocklist* table using the Query Designer.

Linking tables

Note how the two tables are linked through the common field ISBN – to create this in the Query Designer, simply 'drag and drop' the field from one list to the other⁷.

Calculated fields

The field 'Value' is defined as the product of Price and Order_Qty by entering the calculation in the 'Field' record.

⁵ Queries are stored in a file *DataAccess.xml* deep within the your OpenOffice.org directory structure.

⁶ You can also run any SQL commands directly, e.g. MySQL specific commands that are not understood by the Data Designer or by ODBC.

⁷ Advanced users can define the type of the link by double-clicking on the connection line

Formatting data

The 'No', 'Price', and 'Value' fields are formatted by right-clicking on the relevant columns and choosing the appropriate options (Right aligned, UK currency).

The screenshot shows the 'Orders on Hand' window in Microsoft Access. At the top is a menu bar (File, Edit, Tools, Window, Help) and a toolbar. Below is a data table with the following content:

	Author	Title	ISBN	No	Price	Value
▶	Arthus, Judith	BAUHAUS	1842220136	2	£9.99	£19.98
	Downey, Jonatha	COCKTAILS	1842224123	1	£14.99	£14.99
	Running Press	ARTFUL CAT MAGENTIC POSTCARDS	762408200	2	£8.99	£17.98
	Running Press	BOUQUET OF FLOWERS (MINI POP U	1561385743	5	£3.50	£17.50
	Taschen	CARL LARSSON POSTCARD BOOK	3822895806	1	£2.98	£2.98

Below the table is a status bar showing 'Record 1 of 5'. Underneath is another toolbar and a diagram showing two linked tables: 'Orders' and 'stocklist'. The 'Orders' table has fields 'ISBN' (primary key) and 'Order_Qty'. The 'stocklist' table has fields 'Title', 'Author', 'Publisher', and 'ISBN' (foreign key). A line connects the 'ISBN' field in 'Orders' to the 'ISBN' field in 'stocklist'.

At the bottom is a field list table:

Field	Publisher	Author	Title	ISBN	Order_Qty	Price	Price * Order_Qty
Alias					No		Value
Table	stocklist	stocklist	stocklist	Orders	Orders	stocklist	
Sort	ascending	ascending	ascending				
Visible	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criterion							
Or							

Figure 16 Advanced Query - Linked Tables

Example 2 – Summary Orders on Hand

Following on from the example above, the next query in Figure 17 shows how to obtain the total orders on hand by publisher.

Group and Sum functions

Often used together, the *Group* and *Sum* functions define at what level the data is required (Group), and how it is to be calculated (Sum).

	Publisher	No	Value
▶	Carlton	3	£34.97
	Running	7	£35.48
	Taschen	1	£2.98

Record 1 of 3

Field	Publisher	Order_Qty	Price * Order_Qty
Alias		No	Value
Table	stocklist	Orders	
Sort	ascending		
Visible	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Function	Group	Sum	Sum
Criterion			

Figure 17 Advanced Query - summarising linked tables

Using Data Sources in other OpenOffice.org 1.0 programs

So far, this document has concentrated on accessing data using the *F4 View / Data Sources* route. However, sometimes it is more convenient to pull data directly into another OpenOffice 1.0 tool, such as *Calc* or *Write*. This section shows you how.

Calc

Creating a link with Drag and Drop

Extracting data from a Data Source into a spreadsheet in OpenOffice.org is as simple as dragging and dropping. In Calc, press *F4* or *View / Data Sources...* as usual, and open the Table or Query you want to copy into Calc. It's easiest if you change from *Stick* to *Floating* view (use the pin icon at the bottom left of the Data Source Explorer) – see Figure 18.

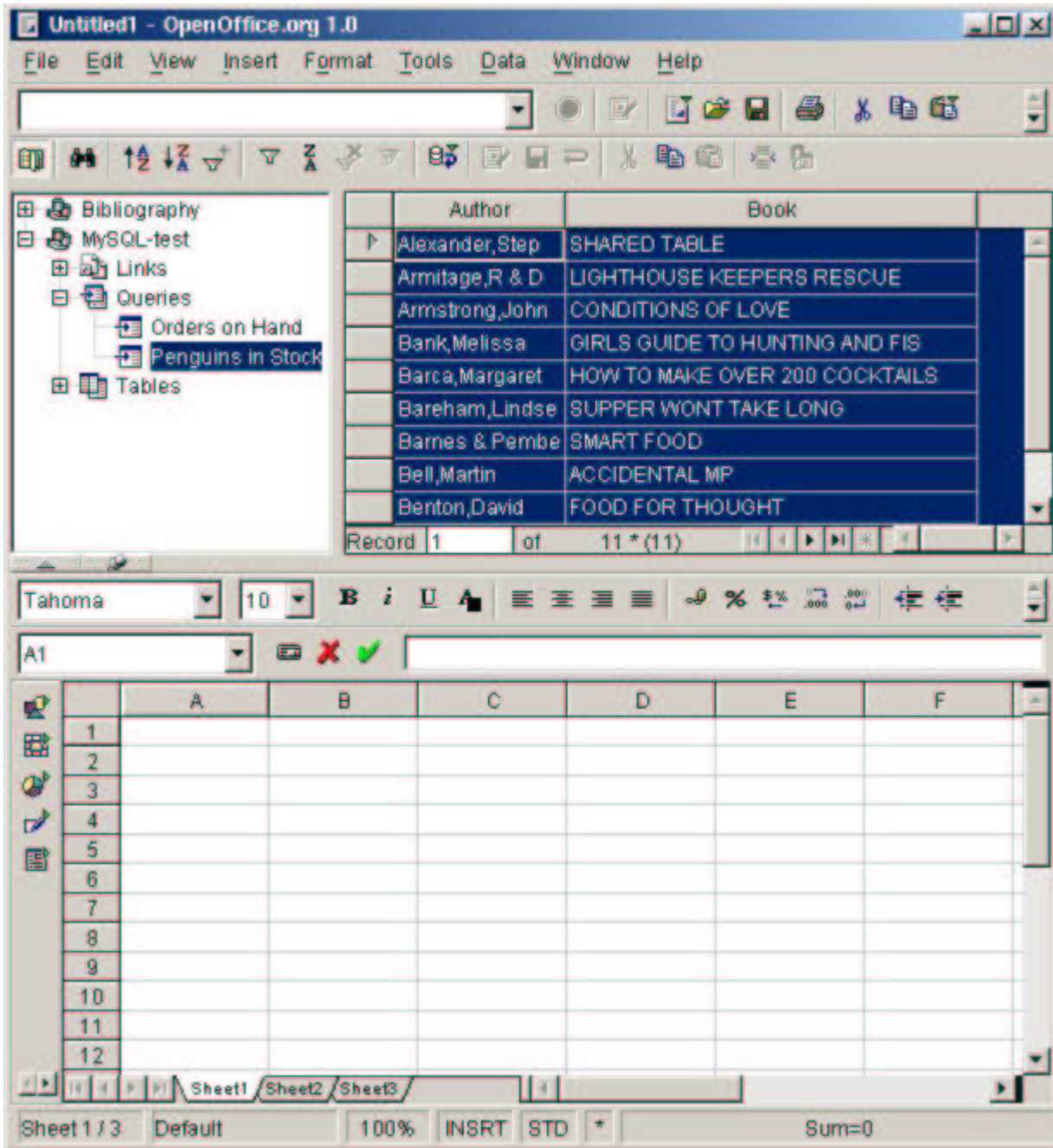


Figure 18 Dragging data into a spreadsheet

To link the data into the spreadsheet, simply click on the data, and drag the data into the spreadsheet. When you drop, a link will be created between the spreadsheet and the data source – see Figure 19.

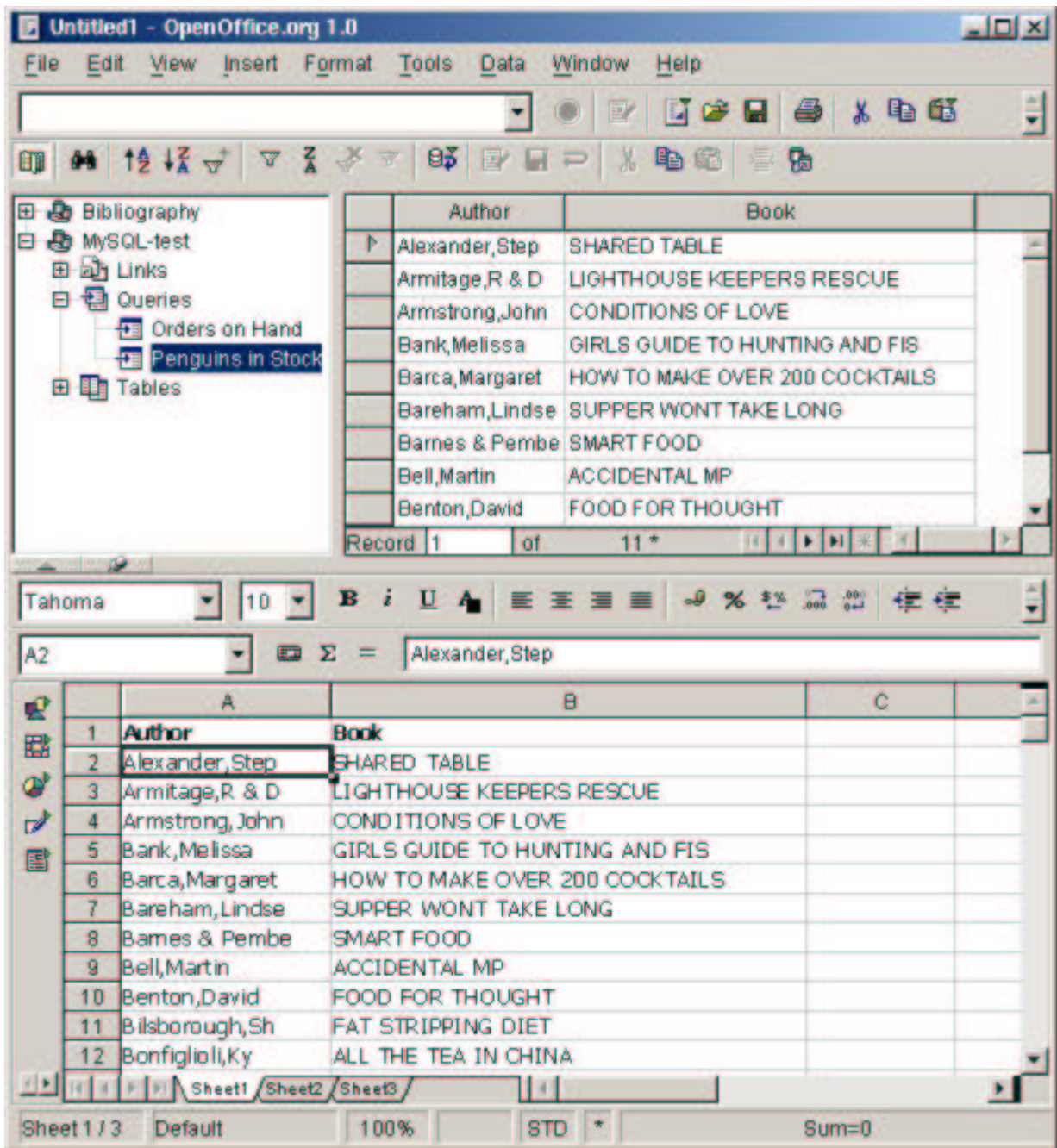


Figure 19 A linked spreadsheet

Menu Options

Once you have created the link, there are a number of menu commands you may find useful, accessible from the main menu once you select a cell containing linked data.

- Any time you want to update the spreadsheet with the latest data in the database, select **Data / Refresh Range** from the main menu
- **Data / Define Range** and press **More** allows you to choose whether column headings are imported; whether any formatting you set is removed at every **Data / Refresh Range**; and whether the imported data is saved with the spreadsheet or not (to save disk space)

Data Pilot

It is also worth noting that the DataPilot can access data directly from Data Sources, giving an amazingly powerful tool for crosstabulation, etc. Well worth exploring!

Word

Creating a link with Drag and Drop

Gotcha: Although it should be possible to 'drag and drop' data into a text document in the same way as a spreadsheet, this doesn't work correctly in OpenOffice.org 1.0.

However, there is a workaround.

Using the Database Toolbar

Selecting the data in the Data Source Browser enables two toolbar buttons, *Data to Text...* and *Data to Fields...*

Data to Text...

There are three options available from this toolbar.

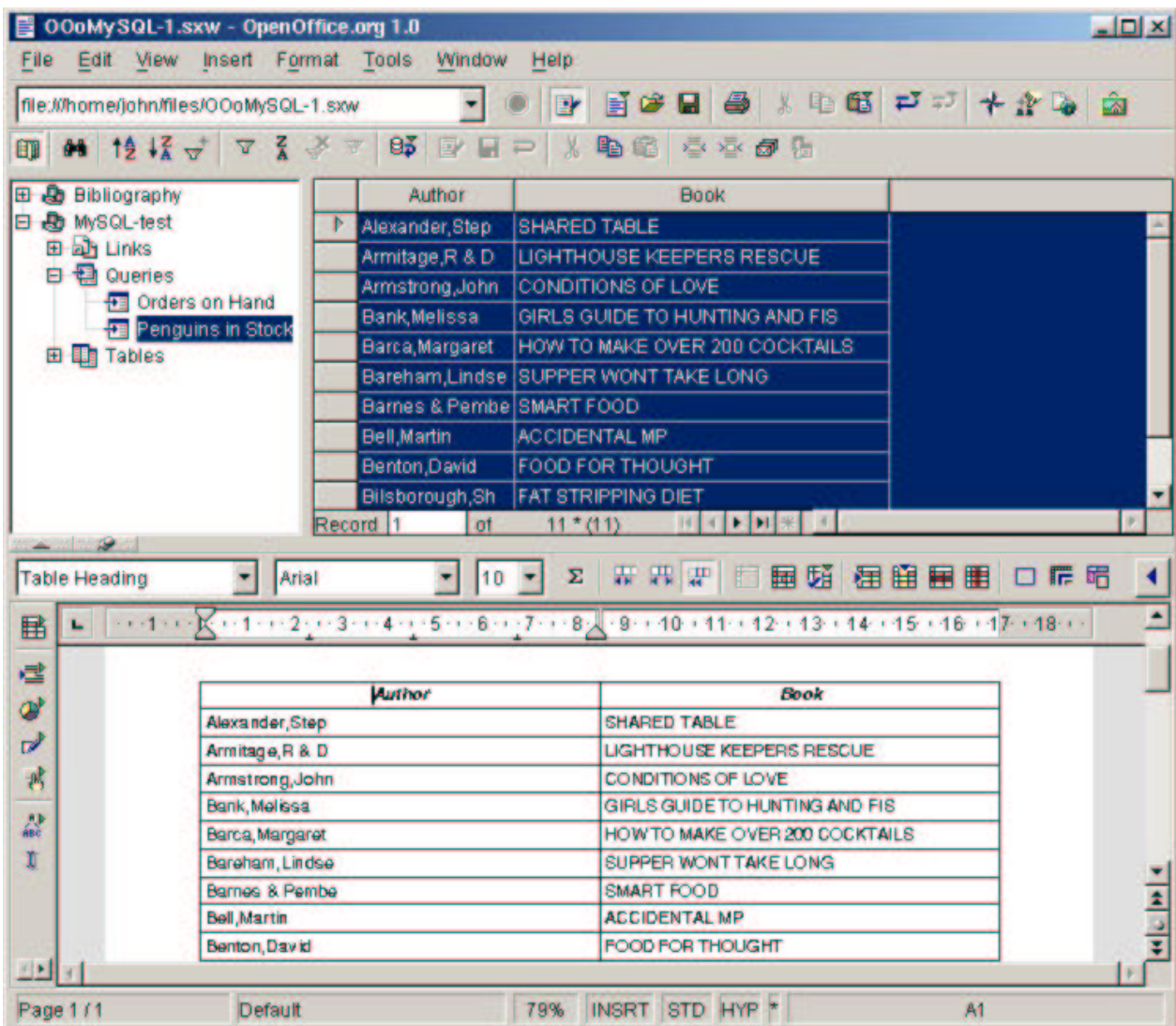


Figure 20 Inserting Data as a Table

- *Insert Data as Table* allows you to select fields from your data source, whose data is the copied into columns of a table in your document. The usual table formatting options are available. The data is copied in as text and will not change if the data in the database changes – see Figure 12.

- *Insert Data as Text* works similarly, expect the data is simply copied in without being formatted as a table – see Figure 21. Note: this is one way to convert a data source into a comma delimited text file for exporting to other software.

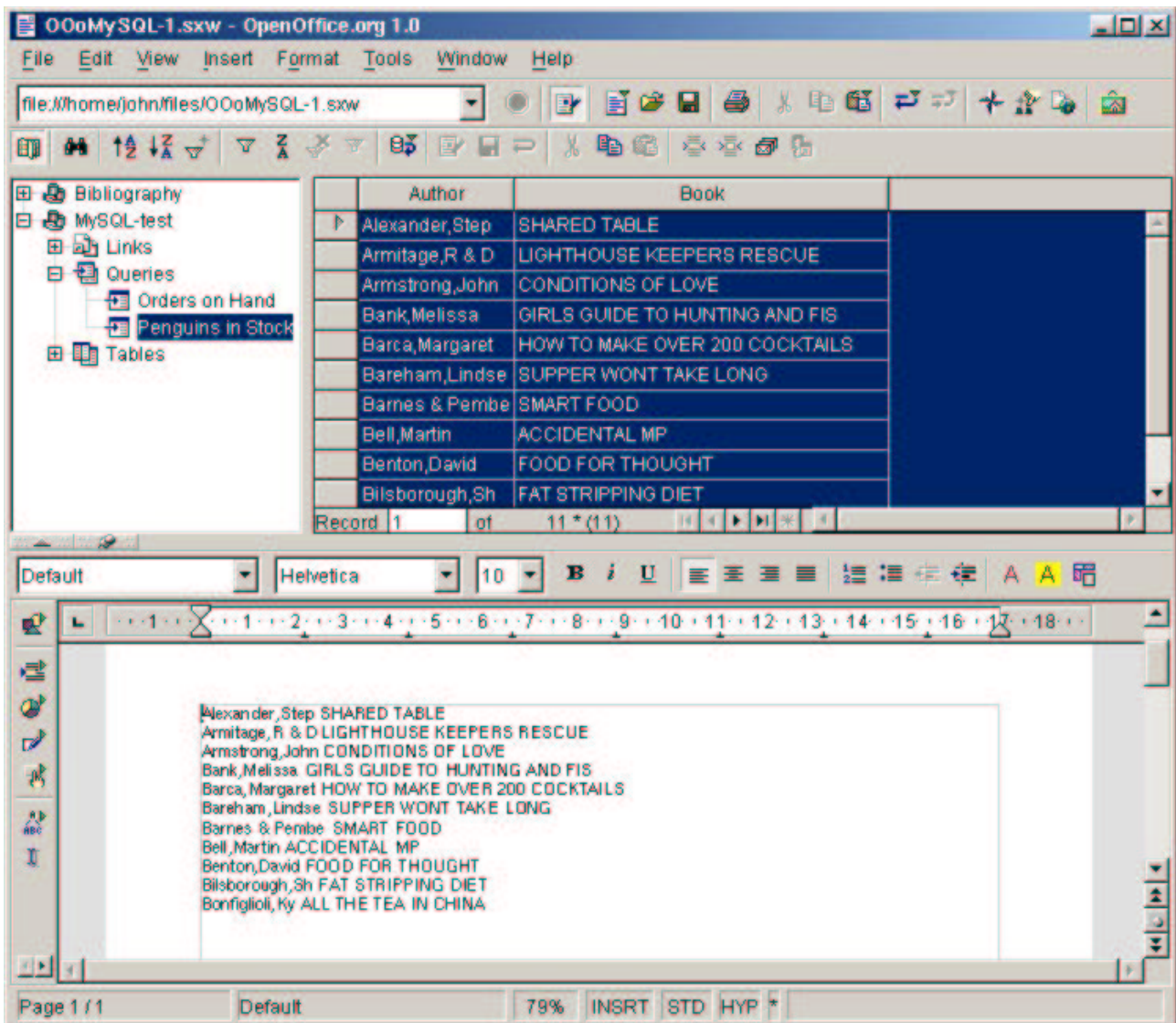


Figure 21 Insert Data as Text

- *Data to Fields...* is used for mail merge type operations. The mail merge facilities in OpenOffice.org 1.0 are comprehensive, and out of scope of this document (sorry).

Using the Form AutoPilot

OpenOffice.org 1.0 contains a complete programming environment using a variant of the popular BASIC programming language. Using this environment, developers can write complete applications for end users, such as sophisticated forms.

Fortunately, it is possible to create a fully-functioned form without any programming knowledge, by using the *Form AutoPilot*.

The Form AutoPilot in action

From the main menu, select *File / AutoPilot / Form...* Choose the *MySQL-test* database, and the *Orders on Hand* Query. Copy all the fields from the *Existing Fields* box to the *Fields in Form* box, and press *Next*. OpenOffice.org 1.0 will start to build your form in a new window. On the *Choose Layout* dialogue, any selections you make will be reflected immediately in the new form. Figure 22 shows the result of accepting the defaults and pressing *Create*.

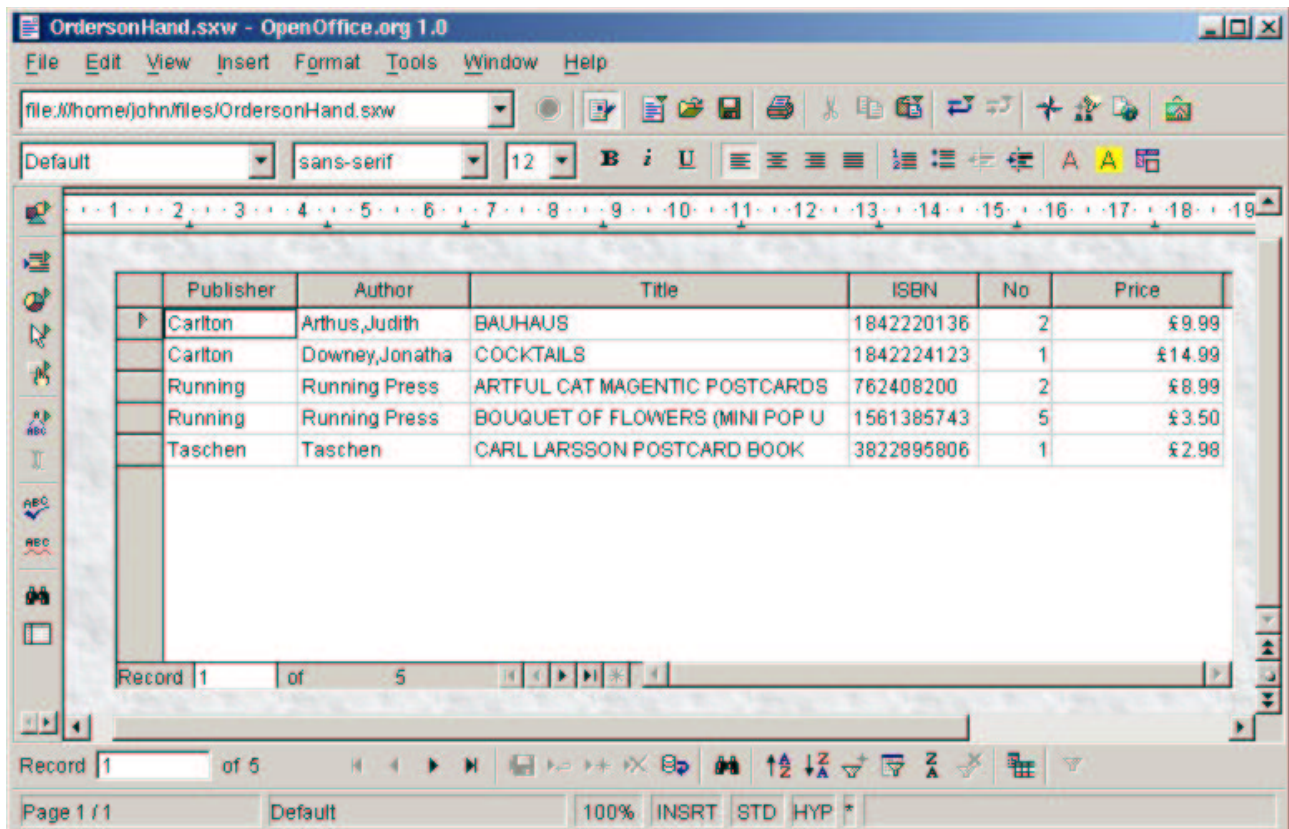


Figure 22 A Form created by the AutoPilot

What the AutoPilot has done is build into one form all the functionality needed to maintain this table, with both a Data Navigation Toolbar, and a Database Toolbar including commonly-used tools for filtering, sorting, etc. This is a very easy way to create a simple database application.

Note - if you want to explore the options available for developing this form further, pressing the *Form* button on the toolbar on the left hand side of the screen will toggle the window in and out of *Design* mode. In *Design* mode, you can select items on the form and right click on them to display and edit their *Properties*, *Data*, and *Events*.

Welcome to the world of OpenOffice.org 1.0 BASIC programming – you have now reached the end of what this document can teach you!