OOo Base: Polish

Data is useless if you can't find the information you're looking for. In his second database installment, **Andy Channelle** refines his form and reports on queries.

Our expert

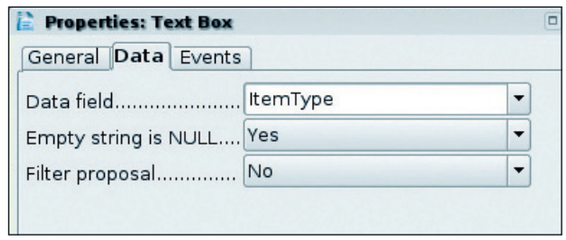
Andy Channelle
Andy has been taking his first steps in Linux software for the past six years and has been interested in technology since the advent of the Dragon 32.

Last issue I exposed my white goods shopping habits to the world in the interests of showing you how to build a simple home inventory database. To recap, we used the wizards in *OpenOffice.org Base* to define the data we'd be working with (the Table wizard) and create a simple form for data entry (Form Wizard), then used the Table interface to enter, sort and filter data. At the end we had one table and one form. Our table had several 'fields' as column headings such as Item and Serial Number, and we had manually entered some data into the cells. This time we're going to add some space for notes and category information to the table, play with an interactive widget for the form and introduce queries and reports as ways to reorganise the database.

Our first job is to edit the database table to add a place for notes and an ItemType option. The latter will enable users to find all items relating to, for example, 'computers' or 'kitchen'. To do this, launch *OOo Base* and open your database from last time. Enter the Tables part of the database by clicking on the appropriate entry in the left-hand pane of the *Base* main window, then right-click on the table we created.

Now select the Edit option from the context menu to enter the table edit screen. This screen is, like the table itself, very spreadsheet-like, but this time there will only be three columns named Field Name, Field Type and

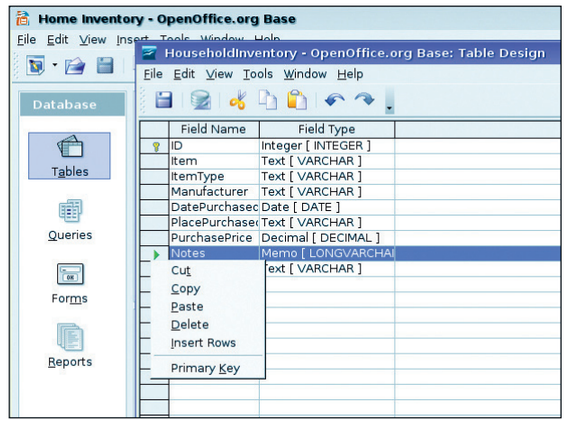
"Forms make viewing individual data entries a lot easier on the brain."



In your database form, double-click on any element to launch this configuration dialog box for tweaks.

Description *(see image below)*. The Name and Type columns should be populated with the fields you set up using the Table wizard last time. Adding a new data field is as simple as clicking in one of the vacant Field Name cells, providing a name and defining the correct data type. Our new ItemType field can be set to the usual Text [VARCHAR] data type, but the new Notes field, which potentially will contain more information, is best set to the Memo [LONGVARCHAR] data type. Don't let this bamboozle you – the 'VARCHAR' element just means 'variable character', so LONGVARCHAR is the same but with space for longer text strings.

Take a look at the image below again. If you wanted to change the order of the fields in the table, it's not possible to simply move fields up and down the list – but you can cut and paste rows by clicking on the left-most cell where the little green arrow appears, then right-clicking to get the context-sensitive menu. When you do this, everything below the cut row(s) will shift up to the first vacant row, and any paste operation will deposit the cut row(s) at the bottom of the table. It can be a bit of a fiddly procedure, but you'll



Right-click on the far-left column to pop up the context sensitive menu with the usual options. Note the data types.

» **Last month** We built an entire database from scratch with *OpenOffice.org Base*.

your database

quickly get used to it! When you have added the new fields and their location is right, you can – optionally – enter a description, then hit the disk icon on the toolbar at the top of the window to save the table.

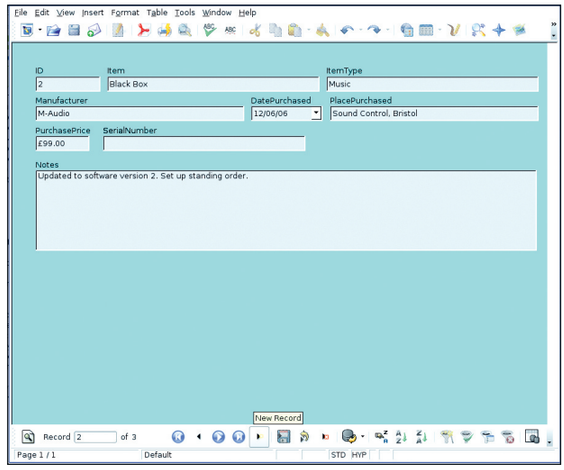
Once the Edit window is closed down, double-click on the table in the main *OOo Base* window to open it up ready for you to add some data. Note that if you already have data entered into the table, it won't be destroyed by editing the table structure, but you will have to go over previous entries and update the new fields – it's always easier to get it right first time.

Modifying the form

Though it's entirely possible to use the table for data entry, it's much nicer to do it through the form we created *(see image right)*. Forms also make viewing individual entries a lot easier on the brain, because each record is displayed on its own screen. Anyway, we built a form last time using the Form wizard, and we're now going to add the Notes and ItemType space that we just added to the table, and also improve the design by adding a date widget.

To start, click on the Forms icon on the left and then right-click on the Household Inventory form (or whatever you chose to call it) and select Edit to launch the main edit screen. If the Form Design toolbar and Form Controls toolbox are not on the screen, activate them from the View > Toolbars menu.

The first job is to make a space for the new ItemType field. Fortunately, *OOo*'s Form wizard automatically groups fields by their labels, which means that it's easy to just click on a field and drag it to a new location. Of course, if you want to move the label and field separately, you can ungroup them by selecting the required field and doing Format > Group > Ungroup – use the click, Shift-click method to select multiple page elements and then do Format > Group > Group to lasso them back together. We have clicked and dragged things around to create a space in the top »



› Entering data into a form is far more sensible than using tables, and it's easier to see a product's details.

Quick tip

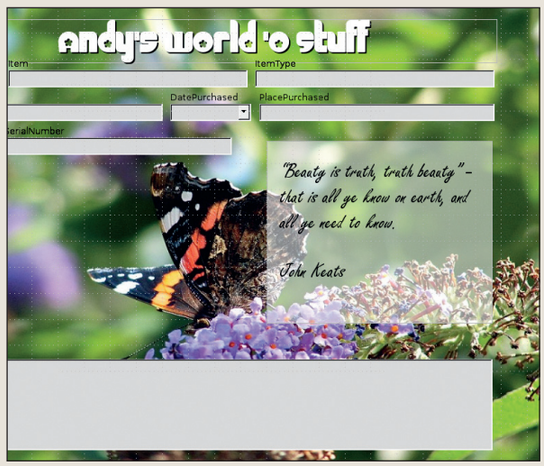
You can always find the latest version of *OOo* at **www.openoffice.org**. If you're working with the version that came with your distro, an upgrade might be in order...

It's not a crime to be good-looking!

If you take more than a cursory glance at the form designer in *OOo Base*, you'll notice that it is, in fact, just *OOo Writer*. And this is great, because it means that each tool available in the word processor is on hand for the purposes of designing beautiful forms. Of course, forms are meant to be grey, nondescript and utilitarian – it's something to do with the British institutional image of the form filler – but any follower of John Keats understands that we find truth in beauty and in beauty, truth. Anyhoo, let's make things prettier.

To start, open up a previously-made form by right-clicking on its name and selecting Edit. Ours has a very prison-like background colour called Teal, and I'll get rid of that first. Do Format > Page and then select the Background tab. In this section it's possible to change the colour of the page or, even better, drop in a lovely picture. To do the latter, select Graphic in the 'As' drop-down list, hit the Browse button and find a suitable picture. The control at the bottom of the window has options for forcing the image to take up the whole space, tiling it or placing it in a particular position.

Some images are not particularly suited for a form background, but you could lighten them up in *Gimp* so that the text of the form's boxes remains visible. You might also move things around a bit to make them more aesthetically pleasing, drop in a transparent box with some suitably philosophical quote, or change the form title to something less, ahem, local government.



› Not all forms have to be as grim as a P45. When it comes to our database, butterflies, silly fonts and profound quotes are definitely the way to go. Or not.

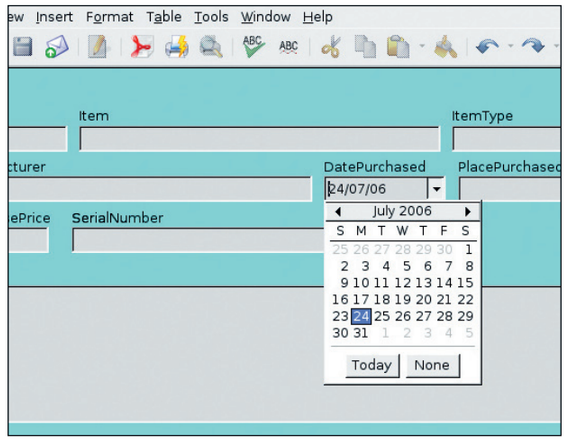
» right of the form ready to receive the ItemType field.

We now need to insert a new ItemType box on the form. From the Form Controls toolbox, select the Text Box icon and draw a new text box in the right location. This is exactly the same as drawing a square in an illustration package, so you can resize the box by clicking and dragging any of the control points on the corners or edges of the box. If you need a little more precision than your eye can provide, right-click on the box and select Position and Size from the context-sensitive menu. In this box you can change – surprise, surprise! – the position and size of the selected element.

With the box sized and positioned correctly, we can now define how the database will 'see' it. Double-click on the element and then, in the resulting Properties dialog box, select the Data tab. The salient option here is Datafield and it really needs to tie up with the database table label, which in this case is ItemType. It's worth, as we're here, having a quick scout around this dialog box, because there's a lot that can be done here. Under the General tab, for example, are options for adding a 3D look to the form (as sported in this tutorial's screenshots); changing the tab order of the box (that is, the order in which a user can navigate form elements using the Tab key; and setting some default text in each box or making a box read-only. More ambitiously, the Events tab can associate complex macros with a range of mouse or keyboard events – but that's a little beyond the scope of this tutorial.

Once the box is configured to your liking, select Label Field, draw a space above (or alongside) the previously made box, then type the desired label into the space – I've labelled it ItemType to keep it simple. Once this is done, click, shift-click both elements and group them together. We'll now do the same for the Notes element, but this time make the much box bigger (there will probably be more information in it) and, in the Properties dialog box, select Multi-Line in the Text type option under the General tab.

While we're in the Form Editor, we can also add a calendar widget to the Date Purchased field, which might make filling in the form a little easier. Double-click on the field and, in the General tab, locate the entry labelled Dropdown and select Yes. And that's it. Hit the Save button and we're ready to enter some data. You can close the Form Designer window using either the File > Quit menu

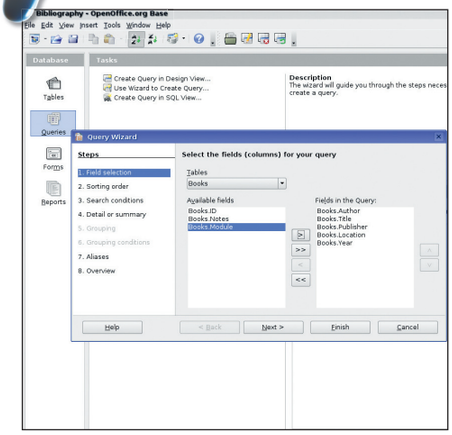


› **A calendar widget makes entering dates a bit easier.**

Quick tip

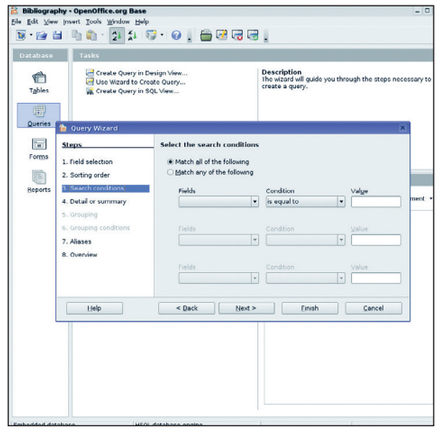
OOo Base offers a multi-line text box option with full formatting facilities, which is especially good for long notes. It's a bit buggy though, so I suggest you use it carefully.

Step by step: Running a query in OOo Base



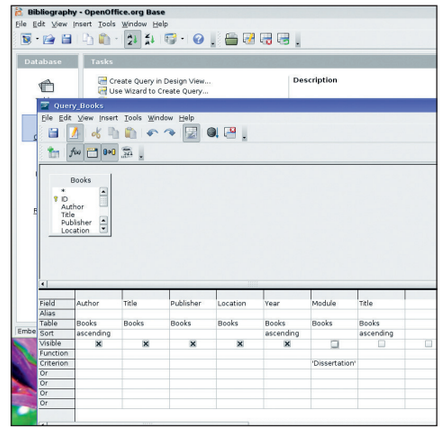
1 Define search criteria

The first step in sending a query to your database is to select the Query option on the left of the main window and then choose the Use Wizard To Create Query... option to start a familiar-looking wizard. The idea here is to define which particular elements of the database you want to display. Hit the Next button and then choose how the results will be ordered – in my bibliography example, I've chosen to sort by author, then by year, then by title. Hit the Next button again to go to the Search Conditions section. This is really important because it allows us to include or exclude particular records, and fortunately the search conditions don't necessarily need to include those fields we have opted to display.



2 Set the field condition

My bibliographic database contains references from each course I have been on over the last couple of years, but I'm only interested in looking at those used for my dissertation. In this case, I can set the Field, Condition and Value options to 'Books.Module', 'Is Equal To' and 'Dissertation' respectively, which will only show results that have been linked to the Dissertation in the Module field. In the final dialog box, select the Modify Query option to open the query in Design view before running it. Design view has two main panes – showing each active table and the query criteria – and the usual array of toolbars and menus. I just want to deselect the Module column in the bottom pane so that the module name is not displayed in the final results.



3 Submit the query

You can test the query by hitting the Run Query icon in the toolbar, and the resulting table will be displayed in a third pane of the window. Queries can be run at any time from the Queries window, and it is easy to edit them by right-clicking on the query in question and selecting the Edit option. You can, of course, build as many queries as you like, which means that it's possible to look at the same database in a number of different ways for various purposes.

When you get back to the main UI window, double-click on the Household Inventory form to open it ready for data. There's a little bit of a quirk in that when you do this, the database form may have a read-only suffix on the title bar, but don't be concerned; entries are saved in the normal manner when input this way. Depending on the way that OOo has been set up on your machine, you may have the right toolbars enabled already. If the navigation toolbar is not positioned along the bottom of the window (it has Back, Forward, Save, Undo, etc buttons on it), do View > Toolbars > Form Navigation to put it there.

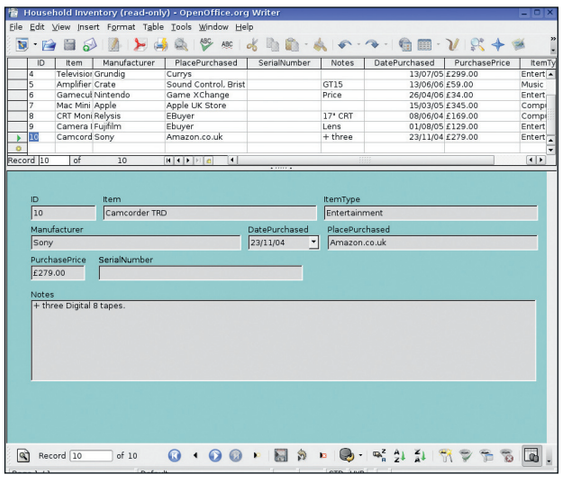
Get typing

We put some data into the database last time using the table option, so some records will already be filled out. You can navigate through these by using the Back and Forward buttons on the navigation toolbar; or to get inputting right away, hit the New Record button, which is at the far right of the first section of icons (it has an arrow and a little star on it). You should now be faced with a blank record complete with a cursor blinking expectantly in the first field, which would usually be the ID field. You can now begin typing the data into the various fields, tabbing between them – which was where the Tab Order option came in earlier – or selecting each field in turn with the mouse. Once a record is finished, hit the New Record button again. This will save the current record and offer up a new blank one ready for data.

The navigation bar along the bottom holds tools such as filters and sort options, an undo button, a Delete Record option and, at the far right of the toolbar, an icon that displays both the database table and the form, which is very useful for examining the detail of an item and its relationship to other data within the database.

Turning data into information

So far we've worked on the structure of the database and getting data into tables. Both of these are vital to get right, but the thing that databases are really good at is turning data into usable information – and this means using queries. Don't panic: whether you know it or not, it's likely that you're already very familiar with the concept of database queries, as every time you visit Google and enter a search string you're creating a query. The internet can be regarded as a massive database, and the reliability of Google's search results are based on the way it has categorised that database. As an example, let's think about a standard search for *Linux Format*. From the front page, we enter the search string 'Linux Format' and hit the Search button. Google is actually going to search for 'Linux' and 'Format', and so a page with both those words in will be closer to the top of the list of results than pages that feature only one of the words. Now imagine the table that this search is using. One column might be labelled 'Linux' and one might be labelled 'Format' and the database would give priority to pages that were included in both columns.



› Don't waste time flitting between screen views – you can see both the form and its table on the same screen.

Object selection tips

Linux desktop environments and applications feature a standard way to select icons or files with the mouse: the left mouse button. Once an item has been clicked on, some visual change will occur to tell you that the icon, option, file, whatever, has been selected – usually the icon will be enclosed in a border, or the background colour of a text label will change.

Sometimes, though, we need to select more than one item in a folder, and to do this we can use either Shift+click or Ctrl+click. The former is for selecting a range of files that are adjacent in a file manager or file browser list, while the latter is for selecting non-adjacent items in a list.

Shift+click involves clicking on the first option with the mouse button, holding down either of the Shift keys on the keyboard and then clicking on a second file on the screen. Everything between the two clicked items will be selected and can be edited, cut, copied or dragged to a different location. Ctrl+click involves clicking a first object, holding down the Control key and clicking again – this will select only those files that you have clicked, and you can select as many files as you like.

"Every time you visit Google and enter a search you're creating a query."

In database terminology, a query is simply a way of filtering your data to look at a subset of the entire database. We looked at filters last issue, and the idea of queries is basically the same – except that with a query we can save these criteria and run it at any time, or refine it as needs change. Let's look at an example.

This example will move on from the Household Inventory database (which is a bit small for meaningful querying – I need to buy more stuff!) and on to another real-world project, an essay-specific bibliography created from a list of books and journals referenced throughout the university year. This can be tailored to any database – your fields will just have different names. For the HOWTO, read the Step By Step on the opposite page.

The other side of the search coin is reports. These do the same job as queries, with the added advantage that the results are output as a table in *OOo Writer* that can be printed and distributed in the usual manner. The process of creating a report is very similar to that of building a query, but with an extra section in which we can choose a style appropriate to the data being presented. Again, *OOo Base* saves the report criteria under the Reports tab, which means a report can be run on the same database a number of times as the data changes.

OOo Base is capable of managing a larger projects such as membership lists and stock inventories as well as small data sets. I've covered the basics over the past two issues, but the elements are applicable across the whole range of applications. Always remember that a useful database depends on your getting the structure right, so spend as much time as possible refining it from the ground up, and you'll find it much easier to get to the data. LXF

Quick tip

Most operations that you do with a mouse in *OOo* can also be accomplished with keystrokes, usually using a combination of the control key (Ctrl) and a letter. For example Ctrl+C and Crtl+V will cut and paste any selected text or object. The key needed for a particular task is usually underlined in *OOo*'s menus.

» Next month Like Google, we'll be getting some Windows apps to run with *Wine*.