Getting Started Guide

Chapter *10*
Getting Started with Base:

Introduction to Data Sources

OpenOffice.org

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Contents

Introduction

A data source, or database, is a collection of information which can be accessed or managed by OpenOffice.org (OOo). For example, a list of names and addresses is a data source which could be used for producing a mail merge letter. A shop stock list could be a data source managed through OOo.

Note	OpenOffice.org uses the terms "Data Source" and "Database" to refer to the same thing, which could be a database such as MySQL or dBase or a spreadsheet or text document holding data.

This chapter is an introduction to the use of data sources. For further information, see the *Database Guide*.

This chapter covers creating a database, showing what is contained in a database and how the different parts are used by OOo. It also covers using the Base component of OOo to register other data sources. A data source can be a database, spreadsheet or text document.

Caution ⚠	The database in OOo requires Sun's Java Runtime Environment (JRE). If you do not have it on your computer, download it from www.java.com and install it following the instructions on the site. It should be Java 5.0 or higher. In OOo, use **Tools > Options > OpenOffice.org > Java** to register Java.

Creating a database

In this example, we are going to step through the creation of a new database. This database will contain two address books: one for acquaintances and one for relatives and two information sections: one for acquaintances and one for relatives.

Creating a new database
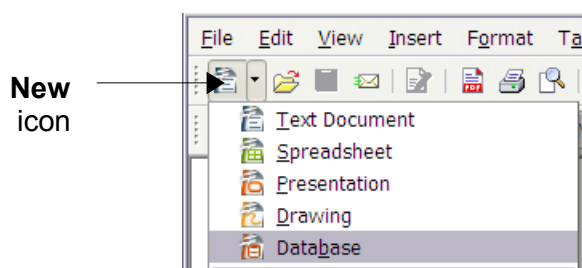
Figure 1: Creating a new database

To create a new database, click the **New** icon. In the drop-down menu select **Database** (Figure 1). This opens the Database Wizard. You may also open the Database Wizard using **File > New > Database**.

The first step of the Database Wizard has one question with two choices: **Create a new database** or **Connect to an existing database**. For this example, select **Create a new database** and then click **Next**.

The second step has two questions with two choices each. The default choice for the first question is **Yes, register the database for me** and the default choice for the second question is **Open the database for editing**. Make sure these choices are selected and click **Finish**.

Note	If the database is not registered, it will not be accessible to the other OOo components such as Writer and Calc. If the database is registered, other components can access it.

Save the new database with the name *Information*. This opens the Information – OpenOffice.org Base window.

TIP	Every time the *Information* database is opened, the Information – OpenOffice.org Base window opens. Changes can then be made to the database.

Creating database tables

Note	In a database, a table is where information about one group of things is stored. For example, a table might hold an address book, a stock list, a phone book or a price list. A database can have from one to several tables.

When the Information – OpenOffice.org Base window opens, *Forms* is highlighted. Click on *Tables* to highlight it, as shown in Figure 2. We will create the *Acquaintance Addresses* table using the Table Wizard, and the *Acquaintance Information* table using the Design Mode method. We will create the *Relatives Addresses* and *Information* tables by copying and pasting.

Similarly, both *Information* tables have several fields containing the months of the year in them. By making a table for the months of the year, we can make our work easier when we enter data into each form. This will be obvious after we have created the forms. (This table is only a source for the list to be inserted into the two Information forms we will create, so we do not need to create additional forms.)
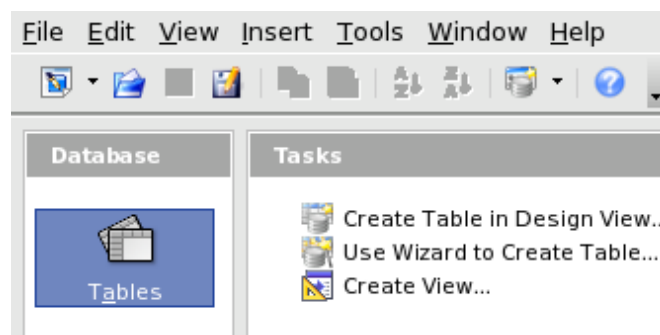

Figure 2: Creating tables

Using the Wizard to create a table

Caution	Every table requires a *Primary key field*. (What this field does will be explained later.) We will use this field to number our entries and want that number to automatically increase as we add each entry.

First table to be created: an address book for acquaintances.

Click *Use Wizard to Create Table*. This opens the Table Wizard.

Note	A field in a table is one bit of information. For example, in a price list table, there might be one field for item name, one for the description and a third for the price. More fields may be added as needed.

Step 1: Select fields.

You have a choice of two categories of suggested tables: Business and Personal. Each category contains its own suggested tables from which to choose. Each table has a list of available fields. We will use the Addresses table in the Personal category to select the fields we need.

1) *Category*: Select *Personal*. The *Sample Tables* drop down list changes to a list of personal sample tables.

2) *Sample Tables*: Select *Addresses*. The *Available fields* window changes to a list of available fields for this table.

3) *Selected Fields*: Using the **>** button, move these fields from the *Available fields* window to the *Selected fields* window in this order: *AddressID, FirstName, LastName, SpouseName, Address, City, StateOrProvince, PostalCode, CountryOrRegion, PhoneNumber, MobileNumber* (cell phone)*,* and *EmailAddress*.

4) If a mistake is made in the order as listed above, click on the field name that is in the wrong order to highlight it. Use the **Up** or **Down** arrow on the right side of the *Selected Fields* list (see Figure 3) to move the field name to the correct position. Click **Next**.
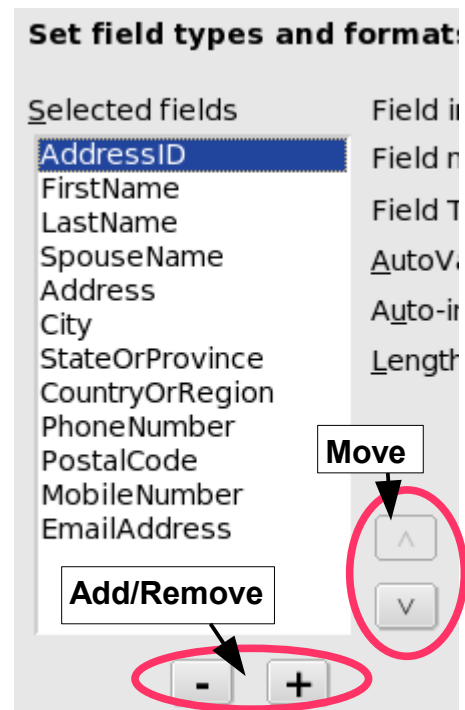
Figure 3: Order of fields

Caution	Below the *Selected Fields* list are two buttons: one with a +, and one with a –. These buttons are used to add or to remove fields from the *Selected Fields* list. Be careful when using these buttons until well acquainted with how to create tables (Figure 3).

Step 2: Set field types and formats.

In this step you give the fields their properties. As each field is selected, the information on the right changes. You can then make changes to meet your needs. (See Figure 4.)

Figure 4: Changing field types

Note	If any of these fields requires an entry, set *Entry required* to **Yes**. If *Entry required* is set to Yes, this field must have something in it. For example if FirstName has E*ntry required* set to Yes, having an entry with the first name missing will not be allowed. In general, only set *Entry required* to **Yes** if something must always be put in that field. By default, *Entry required* is set to **No**.

- *AddressID:* Change *AutoValue* from **No** to **Yes**.

- *FirstName*:

  - *Entry required*: If a *FirstName* will be entered for every person, change *Entry required* to *Yes*. Otherwise, leave *Entry required* as *No*.

  - *Length*: The length must be at least as large as the number of characters in the longest name in your list. If you are not sure what this value should be, look at the longest name you have and count the number of letters in the name. Add 5 to that number in case a name added later might be longer. For example, if the longest first name you have has 12 letters, use the value 17. (Suggestion: since most first names are shorter than 20 letters, you could use 20 as the value. Unless you know some people with long first names, this value should be sufficient.)

Note	In Base the maximum length of each field must be specified on creation. It is not easy to change this later, so if in doubt specify a greater length.

- *LastName*: *Length=20* should be sufficient.

- *SpouseName*: *Length=20* should be sufficient. *Entry required* should be *No.* (Not everyone has a spouse.)

- *Address*: Change *Length* to 50 unless someone's address is longer. In such cases, adjust *Length* accordingly.

- *City*: *Length=20* should be sufficient.

- *StateOrProvince*: *Length* for this depends upon your location. In USA, *2* is sufficient. Select the number which is appropriate for the addresses of the people in your list.

- *PostalCode: Length* should match your local area and preferences. Even in the USA, some use only five digits (#####) and others use nine (#####-####). These require a *Length* of *5* and *10* respectively.

- *CountryOrRegion*: *Entry required* should be *No*. Use the *Length* that is appropriate for you.

- *PhoneNumber*: *Entry required* should be *No*. Adjust *Length* according to your needs. Make sure to count all the signs, spaces, parentheses, dashes, and digits. For example, (555) 333-2222 needs a *Length* of *14*. If the phone number includes an extension, make sure you include the number of letters and digits in your *Length*.

- *MobileNumber*: Make the same adjustments as *PhoneNumber*. This could also be used for a pager number. In such cases, make sure to include enough space for all of the needed information.

- *EmailAddress*: Since there are some long email addresses, change only *Entry required* to *No*. Some people may not have an email address.

When you have finished, click **Next**.

Note	Each field also has a *Field Type*. In Base the field type must be specified. These types include text, integer, date and decimal. If the field is going to have general information in it (for example a name or a description) then you want to use text. If the field will always contain a number (for example a price) the type should be decimal or another appropriate numeric field. The wizard picks the right field type, so to get an idea of how this works, see what the wizard has chosen for different fields.

Step 3: Set primary key.

1) *Create a primary key* should be checked.

2) Select option *Use an existing field as a primary key*.

3) In *Fieldname* drop down list, select *AddressID*.

4) Check *Auto value*.

5) Click **Next**.

Note   A primary key uniquely identifies an item (or record) in the table. For example, you might know two people called "Randy Herring" or three people living at the same address and the database needs to distinguish between them.

The simplest method is to assign a unique number to each one: number the first person 1, the second 2 and so on. Each entry has one number and every number is different, so it is easy to say "record ID 172". This is the option chosen here: AddressID has nothing to do with a real address; it is just a number assigned automatically by Base to each record.

There are more complex ways of doing this, all answering the question "How do I make sure that every single record in my database can be uniquely identified?"

Step 4: Create the table.

1) If desired, rename the table at this point. If you rename it, make the name meaningful to you. For this example, rename the table to *Acquaintance Addresses*.

2) Leave the option *Insert data immediately* checked.

3) Click **Finish** to complete the table wizard. Close the window created by the table wizard. You are now back to the main window of the database with the listing of the tables, queries, forms, and reports.

Creating a table by copying an existing table

Now create a second table which will be the address book for relatives. Since the *Relative Addresses* table is similar to the *Acquaintance Addresses* table, we will create it by making a copy of the *Acquaintance Addresses* table and modifying it.

1) Click on the **Tables** icon in the Database pane to see the existing tables.

2) Right-click on the *Acquaintance Addresses* table icon. Select **Copy** from the context menu.

3) Move the mouse pointer below this table, right-click, and select **Paste** from the context menu. The *Copy table* window opens.

4) Change the table name to *Relative Addresses* and click **Next**.

5) Click the **>>** button to move all the Fields from the left window to the right window and click **Next**.

6) Since all the Fields already have the proper File Type formating, no changes should be needed. However, this is the time and place to make these changes if they are needed. (See **Caution** below for the reason why.) Click **Create**. The new table is created.

Caution   Once tables have been created using the wizard, editing them is limited. **The Primary key can not be changed in any way**. It is possible to add new fields and remove fields. It is possible to change the field type when creating the field as well as later as long as it is not the primary key. Once data has been added to the database, deleting a field will also delete any data contained in that field. When creating a new table, it pays to create the fields with the correct names, length and format before data is added.

Creating tables in Design View

Design View is a more advanced method for creating a new table. It allows you to directly enter information about each field in the table.

Note	While the *Field type* and *formatting* are different in *Design View*, the concepts are the same as in the Wizard.

Both the *Acquaintance Information* and *Relative Information* tables will be created with this method. Both tables use the same fields: *ID*, *FirstName*, *LastName*, *SpouseName*, *WedDateM* (month married), *WedDateD* (date married), *WedDateY* (year married), *HusBDM* (his birth month), *HusBDD* (his birth date), *HusBDY* (year of his birth), *WifeBDM* (her birth month), *WifeBDD* (day of her birth), *WifeBDY* (year of her birth), *Ch1* (oldest child), *Ch1BDM* (month of Ch1's birth), *Ch1BDD* (day of Ch1's birth), and *Ch1BDY* (year of Ch1's birth).
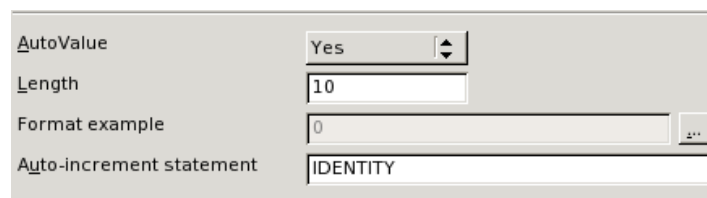
TIP	For purposes of an example we are only using one child in the family. Additional fields can be created in the table for those having relatives and acquaintances with more than one child. Those additional fields need to be in the same order as I have them above. For example, for two children the added fields would be: Ch2, Ch2BDM, Ch2BDD, and Ch2BDY.
	If you prefer to have the day precede the month, as in 1 January instead of January 1, put each field containing the day before the corresponding field containing the month. For example, put WedDateD just before WedDateM and Ch1BDD just before Ch1BDM.

1) Click *Create Table in Design View.*

2) *ID* entries:

    a) Enter *ID* as the first *Field Name*.

    b) Select *Integer[INTEGER]* as the *Field Type*.

    c) Change the *Field Properties* in the bottom section.

       • Change *AutoValue* from *No* to *Yes* (Figure 5).

Figure 5: Field Properties section (AutoValue)

    d) Set *ID* as the *Primary key.*

       • Right-click on the green triangle to the left of *ID*.

       • Click *Primary Key* in the context menu. This places a key icon in front of *ID*.

Note	The primary key serves only one purpose. Any name can be used for this field. It is not necessary to use *ID* as the name of the primary key field.

   3) All other entries:

      a) Enter the next field name in the first column (*Field Name* column).

      b) Select the *Field Type* for each field.

- For field names ending with D or Y (for example, WedDateD or WedDateY), select *Small Integer[SMALLINT]*.

- All other fields use the default setting (*Text[VARCHAR]*.

      c) Select the *Field Properties* (Figure 6).

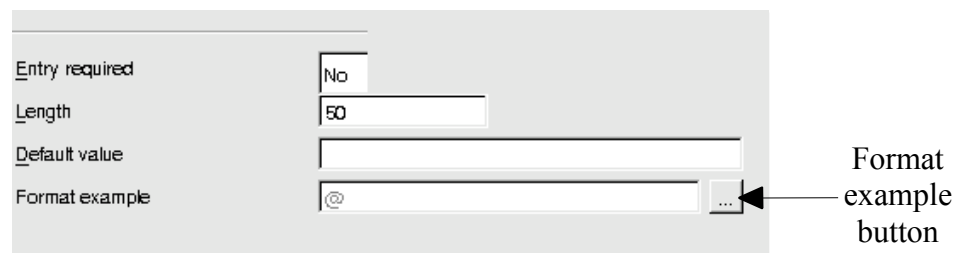*Figure 6: Field Properties section*

- Change *Entry required* from *No* to *Yes* only for fields which will always have an entry.

- Change the *Length* to match the longest entry expected for the field. (20 should be sufficient for most name fields unless one of your names is longer.)

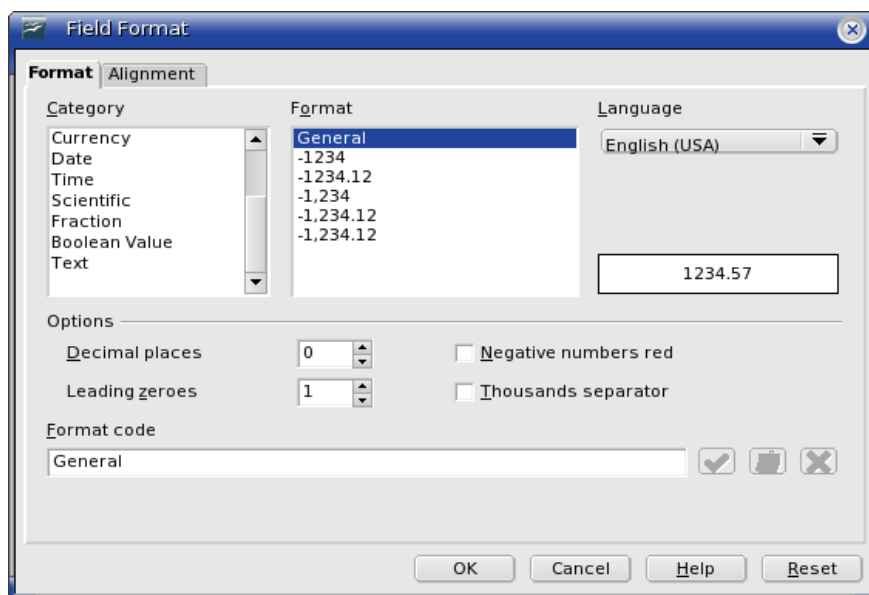- For more detailed formating, click the *Format example* button (Figure 7).

Figure 7: Field Format options

4) Repeat these steps for each field in the table.

    To access additional formatting options, click the button to the right of the Format example panel (*Format example* button).

5) *Description* can be anything, or can be left blank. **(**Figure 8 is an example of this.)

6) To save and close the table, select **File > Close**. The suggested Table Name can be left as it is. Our example uses *Acquaintance Information* as its name.

The fourth table, *Relative Information,* can be created by following the same steps as when you created the *Acquaintance Information* table. Or, you can right-click on *Acquaintance Information*, and select **Copy** from the context menu. Right-click just below *Relative Addresses*, and select **Paste** from the context menu. Follow the directions on page 6.

WedDateM	Text [VARCHAR]	Month of wedding
WedDateD	Small Integer [SMALLINT]	Day of wedding
WedDateY	Small Integer [SMALLINT]	Year of wedding
HusBDM	Text [VARCHAR]	His month of birth
HusBDD	Small Integer [SMALLINT]	His day of birth
HusBDY	Small Integer [SMALLINT]	His year of birth
WifeBDM	Text [VARCHAR]	Her month of birth
WifeBDD	Small Integer [SMALLINT]	Her day of birth
WifeBDY	Small Integer [SMALLINT]	Her year of birth
Ch1	Text [VARCHAR]	Oldest child
Ch1BDM	Text [VARCHAR]	month of birth
Ch1BDD	Small Integer [SMALLINT]	day of birth
Ch1BDY	Small Integer [SMALLINT]	year of birth

Figure 8: Example of Description entries

Creating tables for the list box

When the same information can be used in several fields, design a table for each type of information. Each table will contain two fields: the information field, and *ID* in this order.

1) Follow the directions in "Creating tables in Design View" on page 7. In the table we will create, the two fields can be *name* and *ID*. Make sure that the *AutoValue* is set to **Yes** for the *ID* field. Also make sure to select the *ID* field as the primary key. (See Figure 9.)

2) Save the table using the name *Months*.

Field Name	Field Type
name	Text [VARCHAR]
ID	Integer [INTEGER]

Figure 9: Table in Design View

Note: If you have several tables to create with the same fields, design one table and produce the other tables by cutting and pasting. (See "Creating a table by copying an existing table" on page 6.)

Adding data to the list table

List tables do not require a form. Instead, add their data directly to the table. In our example, add the months of the year in the name field of the *Months* table. The *AutoValue* selection of the *AddressID* field automatically adds consecutive numbers to this field.

We will use the abbreviations for the months of the year found in the **Number Format** for Dates: *Jan., Feb., Mar., Apr., May, Jun., Jul., Aug., Sep., Oct., Nov.*, and *Dec.* as in Figure 10.
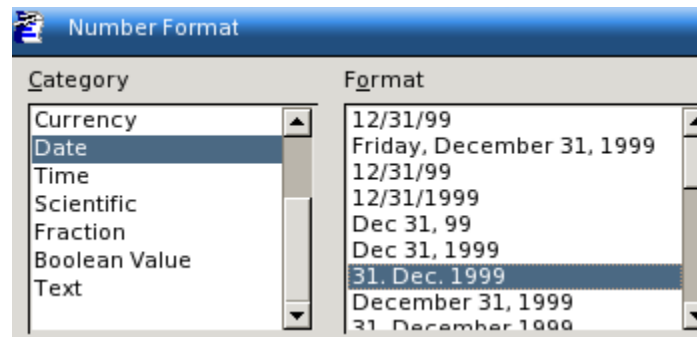

Figure 10: Available date formats

1) In the main database window, click on the *Tables* icon (Figure 11). Right-click on *Months* and select **Open** from the context menu.

2) Enter the name of the first month in the *Name* field. (Use abbreviations for the months.) Use the *Down Arrow* to move to the second row of the *Name* field. Enter the name of the second month. Continue until you have added all twelve months.

3) Save and close the table window.

Tip	The *Enter* key can also be used to move from field entry to field entry. For this example, enter Jan. in the first *Name* field. *Enter* moves the cursor to the *ID* field. *Enter* then moves the cursor to the second *Name* field.

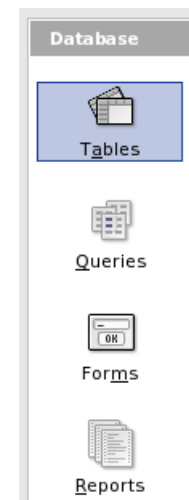|	
Note	The *ID* field contains *<AutoField>* until you use the *Down Arrow* to move to the second row. Then it becomes a 1. As you add the names of the months and move down another row, the rows of the *ID* field change to consecutive positive numbers.

Figure 11: Database parts

Creating a database form

A form is a front end for data entry and editing. Instead of a list of records, a form can include additional text, graphics, selection boxes and many other elements.

Using the Wizard to create forms

Click on **Tables** in the Database pane, as in Figure 11, then right-click *Acquaintance Addresses* in the *Table* section of the window and **s**elect **Form Wizard** from the context menu. (The same wizard can be accessed by clicking on *Forms* in the Database pane and selecting *Use Wizard to Create Form.)*

Step 1: Create the form.

  1) Under *Tables or queries* select *Acquaintance Addresses* from the drop-down list (Figure 12). This creates the fields in the *Available Fields* list.

  2) Since these fields are already in the correct order, click **>>** to move all these fields to the *Fields in the Form* list.

Tip	The arrow buttons between the *Available Fields* and *Fields in the Form* lists move fields between these two windows. The up and down arrows on the right side of the *Fields in the Form* window move a selected field up or down.
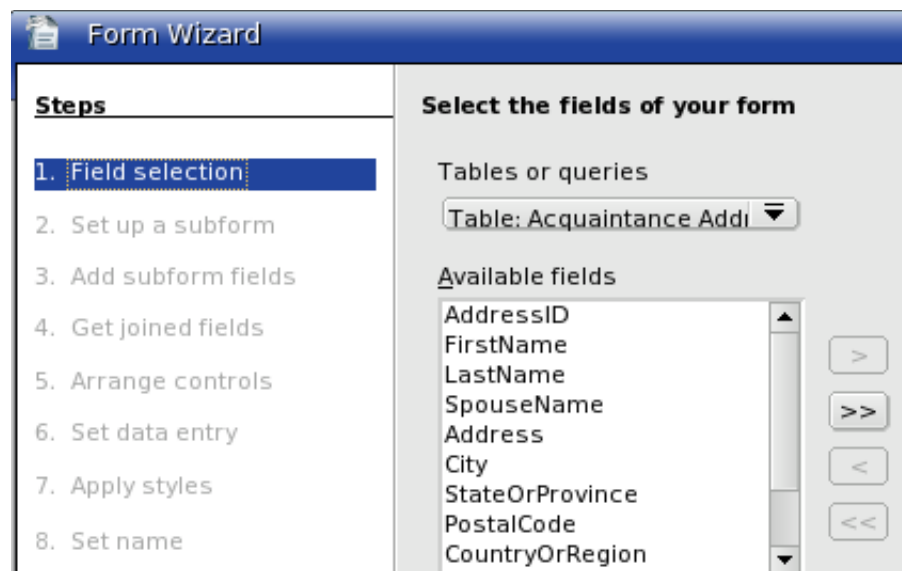
Figure 12: Form Wizard

  3) Click **Next**.

  4) This form will not have any subform. Click **Next**.

  5) *Arrange Controls*: Choices for *Arrangement of the main form* are from left to right: C*olumnar-Labels Left, Columnar-Labels Top, Data Sheet,* and *In Blocks-Labels Above.* Select *Columnar-Labels Top* and then click **Next**.

  6) *Set Data Entry*: Use the default selection: *The form is to display all data*. Click **Next**.

  7) *Apply Styles*: The *Apply styles* window contains ten backgrounds. Select the one you desire. Suggestion: leave it *Beige*. Select the *Field border* also. Suggestion: *3D look*. Click **Next**.

Tip	By moving the top of the *Form Wizard* window down enough to view the top of the form, you can see what a given style will look like by selecting it. Select as many as you want until you see the one that best suits you. This works for selecting the *Field border* also.

8) *Set Name*: Sometimes the *Form Name* should be different from the *Table Name* it is linked with. It is your choice. Suggestion: *Acquaintance Addresses*. Since modifications to this form will be made next, select *Modify the Form* under the question *How do you want to proceed after creating the form?* Click **Finish**.

Step 2: Modify the form.

Shorten and then move the fields. The final form contains four rows. Row 1 contains *Address ID*. Row 2 contains *FirstName, LastName* and *SpouseName*. Row 3 contains *Address, City, StateOrProvince, PostalCode* and *CountryOrRegion*. Row 4 contains *PhoneNumber, MobileNumber* and *EmailAddress*. Finally set the *Tab* order of the fields if necessary.

Note	When you click a field, it is selected. It has eight green squares (called *handles*)around it. *Control+mouse click* only the *Field* or its *Label* to select one but not both. Figure 13 shows the *AddressID Field* selected but not the *AddressID Label*.
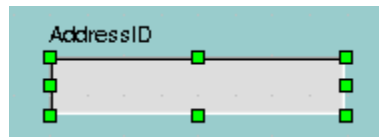
Figure 13: Selected field

1) *Control+click* on the *AddressID Field.* Move the mouse pointer to the middle handle on the right side. It becomes Figure 14. Drag the handle to the left to shorten the field. Suggestion: Reduce the size of the field to the same length as the *AddressID* label.
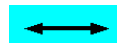
Figure 14: Single arrow

2) Repeat the process for each of the other fields. Adjust the length of a field to what is reasonable for it. (For example, the *StateOrProvince* field can be shortened considerably while the *Address* field might need to remain as it is.)

Note	*Control + click* on the label of a field selects it. This allows changes to be made for it. (More details on this are found in the *Design View Form* creation section.)

3) To move a field and its label, click on it to select it. Move the mouse pointer inside the field or its label. The mouse arrow becomes Figure 15. Drag the selected area to the desired place in the form.

Figure 15: Double arrow

Note	Hold down the *left mouse button* while dragging the selected area.

Caution ⚠	Do not use *Control+click* when moving a field. It moves either the field or the label but not both. To move both, use a *mouse click* and drag to the desired spot.

4) To change the background of the form, right-click on the background to open a context menu and choose **Page > Background**. Select **Color** from the **As** dropdown list. The color can be changed by clicking on the desired color. Suggestion: select *Orange 4*. Click **OK**.

5) By changing the **As** window from **Color** to **Graphic**, a graphic file can be used as the background. (Figure 16 uses flower.gif as its background.)

   a) Click **Cancel** at the bottom of the *Page style: Default* window to close it.

   b) Use **Tools > Options > OpenOffice.org > Paths > graphics** to locate the folder containing flower.gif. (Write it down if necessary.)

   c) Reopen the Page Style: Default window. (Right-click one the page and select **Page > Background** from the context menu.)

   d) Select **As > Graphic,** and click the **Browse** button.

   • Browse to the folder containing *flower.gif*, and select it.

   • Click **Open**, and then click **OK** in the Page Style: Default window.

6) The finished form should look something like Figure 16.

Figure 16: Addresses form

7) If the words in the Labels of the form are too small, increase the font size.

   a) Control+click on a label to select it.

   b) Right-click on the selected label. Select **Control** from the context menu.

   c) Click on the **Font** button to open the Font Character window (Figure 17). Here you can change the font, its size, typeface, and font effects (use the Font Effects tab for this last one). Make the changes you desire.

   d) Repeat a) through c) for the other labels.

   e) The fonts for the fields can be changed in the same way.
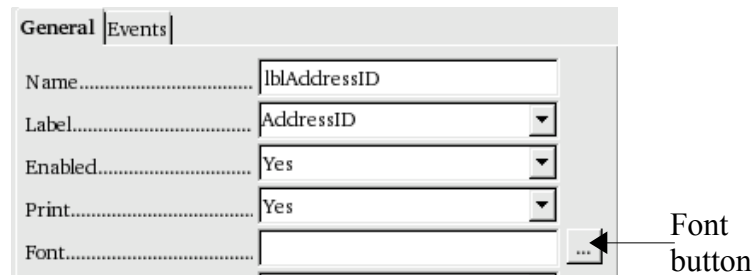
Figure 17: Changing Font characteristics

8) Check the tab order. The tab order should be correct, but we need to make sure.

   a) Click on the *AddressID* field to highlight it.

   b) Click on the *Activation Order* icon in the *Form* toolbar. (See Figure 18.)

Figure 18: Form toolbar

   c) Make sure the order of the fields matches the listing in Figure 19. If a field in in the wrong place in the list, click on the field to highlight it.

   - If it needs moving up, click the **Move Up** button to put it where you want it.

   - If it needs moving down, click the **Move Down** button to put it where you want it.

   - When you have the correct order, click **OK** closing the Tab Order Window.

9) The Acquaintance Addresses form is completed. Save and close the Acquaintance Addresses OpenOffice.org Writer window to return to the Information – OpenOffice.org Base window.

To create the *Relative Addresses* form, follow the same nine steps as you just did for the *Acquaintance Addresses* form.

Figure 19: Order of fields

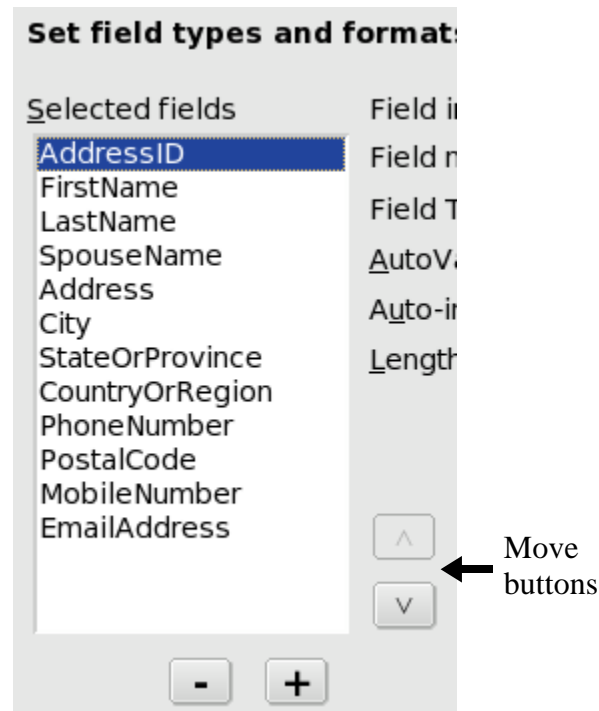| Caution	Do not use the copy and paste method to create new forms from already created ones. When a form is created, a link is formed between it and the table for which it was created. Copying and pasting preserves this link to the original table. Each form created needs to be linked a separate table.

Creating forms in Design View

This method requires using the *Database Controls* and *Database Form Design Toolbars* extensively. These techniques are beyond the scope of this document. Instructions for creating forms using Design view will be described in the *Database Guide*.

Creating subforms

Again, this is beyond the scope of this document. Creation of subforms will be described in the *Database Guide*.

Creating a view of multiple tables

In the main database window (Information – OpenOffice.org Base), click on the *Table* icon to highlight it. In the *Task* section, there are three icons. The first two we have used to create tables. The third icon is labeled *Create View*. Clicking on this icon opens the *View1 – OpenOffice.org View Design*. While it has a different name, its functions and appearance are similar to when you create a query using the *Design View*.

Queries can be created from this window following the directions given in "Creating queries" on page 21. I advise reading the entire section on creating queries first.

You can also create a table from this window which is a combination of the already created tables. Since the steps are the same as those used when creating a query in Design View, wait until you have read the entire section on creating queries.

To create such a table, follow the first three steps in "Using the Design View to create a query" on page 25. At the end of step 3, a cross-reference returns you to this section. Save the table with a name of your choosing, and then close the window.

Accessing other data sources

OpenOffice.org allows data sources to be accessed and then linked into OOo documents. For example, a mail merge links an external document containing a list of names and addresses into a letter, with one copy of the letter being generated for each entry.

> **New in 2.0**
>
> In OpenOffice.org 1.x, the option **Tools > Data Sources** allowed a new data source (or database) to be registered so any OOo component could use it. This option does not exist in OOo2.0.
>
> To register a data source in OOo2.0, select **File > New > Database**, select **Connect to an existing database**, and select the type of data source to connect to. The exact source can then be chosen in the wizard.

Once a data source has been registered, it can be used in any other OOo component (for example Writer or Calc) by selecting **View > Data Sources** or pressing the *F4* key.

New > Database opens the *Database Wizard* window. Select **Connect to an existing database**. This allows access to the list of data sources that can be registered with OOo. These data sources can be accessed similarly to a dBase database as explained in the next section.

Tip	Mozilla Address Books and dBase databases (among others) can be accessed, and entries can be added or changed. Spreadsheets can be accessed, but no changes can be made in the spreadsheet entries.

Accessing a dBase database

1) **File > New > Database** opens the *Database Wizard* window.

Note	Clicking the *New* icon and *Database* in the drop-down menu also open the *Database Wizard* window. (See Figure 1.)

2) Select **Connect to an existing database**. Pressing the *TAB* key highlights the *Database type* drop-down list. Typing *D* selects *dBase.* Click **Next.**

Note	Clicking the arrows opens a menu from which you can select *dBase* (Figure 20).

Figure 20: Database type selection

3) Click *Browse* and select the folder containing the database. Click **Next**.

4) Accept the default settings: *Register the database for me,* and *Open the database for editing*. Click **Finish**. Name and save the database in the location of your choice.

5) Create the *Form* using the *Form Wizard* as explained in "Creating a database form" beginning on page 10.

Accessing a Mozilla address book

Accessing a Mozilla Address Book is very similar to accessing a dBase database.

1) Select **File > New > Database.**

2) Select *Connect to an existing database*. Select *Mozilla Address Book* as the database type (Figure 20).

3) Register this data source.

These are steps 1, 2 and 4 of *Accessing a dBase Database* above.

Accessing spreadsheets

Accessing a spreadsheet is also very similar to accessing a dBase database.

1) Select **File > New > Database**.

2) Select *Connect to an existing database*. Select *Spreadsheet* as the *Database type* (Figure 20).

3) Click **Browse** to locate the spreadsheet you want to access. If the spreadsheet is password protected, check the *Password required* box. Click **Next**.

4) If the spreadsheet requires a user's name, enter it. If a password is also required, check its box. Click **Next**.

Registering databases created by OOo2.0

This is a simple procedure. **Tools > Options > OpenOffice.org Base > Databases.** Under *Registered databases,*there is a list of these databases. Below this list are three buttons: **New..., Delete, Edit...** To register a database created by OOo2.0:

1) Click **New.**

2) **Browse** to where the database is located.

3) Make sure the registered name is correct.

4) Click **OK.**

Using data sources in OpenOffice.org

Having registered the data source, whether a spreadsheet, text document, external database or other accepted data source, you can use it in other OpenOffice.org components including Writer and Calc.

Viewing data sources

Open a document in Writer or Calc. To view the data sources available, press *F4* or select **View > Data Sources** from the pull-down menu. This brings up a list of registered databases, which will include Bibliography and any other database registered.

To view each database, click on the + to the left of the database's name. (This has been done for the Information database in Figure 21.) This brings up Tables and Queries. Click on the + next to Tables to view the individual tables created. Now double-click on a table to see all the records held in it.
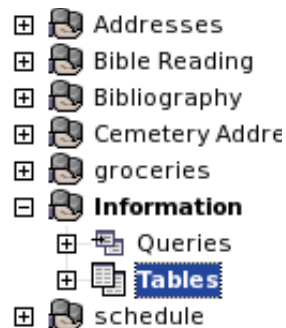
Figure 21: Databases

Editing data sources

Some data sources can be edited in the View Data Sources dialog. A spreadsheet can not. A record can be edited, added or deleted.

The data is displayed on the right side of the screen. Click in a field to edit the value.

Beneath the records are five tiny buttons. The first four move backwards or forwards through the records, or to the beginning or end. The fifth button, with a small star, inserts a new record (Figure 22).

Figure 22: View Data Sources navigation buttons

To delete a record, right-click on the gray box to the left of a row to highlight the entire row, and select **Delete Rows** to remove the selected row.

Launching Base to work on data sources

You can launch OOo Base at any time from the View Data Source pane. Just 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.

Using data sources in OOo documents

To insert a field from a table into a document (for example a Calc spreadsheet or Writer document), click on the field name (the gray square at the top of the field list) and, with the left mouse button held down, drag the field onto the document. In a Writer document, it will appear as <FIELD> (where FIELD is the name of the field you dragged). In Calc it will appear as a text box.

One common way to use a data source is to perform a mail merge. Selecting **Tools > Mail Merge Wizard** or clicking on the Mail Merge icon (a small paper-and-envelope icon on the View Data Source pane) launches the Mail Merge wizard which steps through creating a mail merge document. This is covered in the chapter titled "Using Mail Merge" in the *Writer Guide*.

Entering data in a form

Records are used to organize the data we enter into a form. Enter all the data concerning each person that you want to be a part of the database. When you press the *Tab* key after entering the data in the last field of the form for the first person, all the fields are cleared except possibly the AddressID field. You have just completed making the first record for the Acquaintance Addressees form of your database. Each time you do this, you are adding another record. (For example, the record in Figure 23. If the cursor is in in the EmailAddress field, pressing the *Tab* key clears all of the fields in the form except for the AddressID field. The number in the box at the bottom left changes from the number 1 to the number 2.)

At the bottom left of the form is the word *Record*. After it is information as to which record is showing and how many records there are. In this case, record 1 of 3 records is showing. To the right of this are additional icons which allow you to move from one record to another (the arrows), add a new record, delete a record, plus more functions.

The purpose of a database is to store information in a way that can be accessed later when needed. This section describes how to enter your data so that it can be used later. You need to be in the Information – OpenOffice.org Base window. In our example we will be entering data in the *Acquaintance Information* form. Adding data to the other forms should be done the same way.

Figure 23: Single Record

If you do not want to use your own data to fill in the fields of this form, use the following information for five fictitious families. Each field entry is separated by a semi-colon (;). If the *ID* field contains *<AutoField>*, begin entering the data with in the *FirstName* field. Otherwise, enter the numbers in the *ID* field: the number 1 in the first record, the number 2 in the second record, and continue through the number 5 in the fifth record. (Not all records will all the fields filled in. For example, Sam & Alice do not have any children.)

1; Sam; Spade; Alice; Aug.; 22; 2000; Apr.; 1; 1980; May; 31; 1982

2; Billy; Appleseed; Ruth; Jul.; 4; 1996; Dec.; 25; 1974; Jan.; 1; 1975; Chad; Feb.; 2; 1998

3; Junior; Salesman; Deloris; Jul.; 31; 1992; Apr.; 1; 1973; Sep.; 22; 1975; Samantha; Jan.; 5; 1993

4; Jamie; Spencer; Alice; Jan.; 1; 2004; Apr.; 22; 1985; Jun.; 15; 1985

5; Webster; Callahan; Betty; Nov.; 22; 1990; Aug.; 16; 1968; Dec.; 25; 1970; Ed; Jan.; 10; 1991

1) If the Forms icon is not highlighted, select the *Forms* icon on the left, or use *Alt+m*. Double-click on the *Acquaintance Information* icon.

2) ID field:

   - If *<AutoField>* is **not** present in the ID field, click inside this field and enter a number. (Suggestion: enter 1.) Then press the *Tab* key.

   - If *<AutoField>* is present, click in the FirstName field.

3) For the rest of the fields in the form beginning with FirstName:

   - If a field should be left empty, press the *Tab* key to move to the next field.

   - Otherwise, enter the data and press the *Tab* key to move to the next field.

- To move backwards through the fields, use the *Shift+Tab* combination.

- Pressing the *Tab* key in the last field enters all the data for that record (saves it) and begins the next record. (*Shift+Tab* while the cursor is in the first field of a record enters the data for that record (saves it) and moves the cursor to the last field of the previous record. This only works for record number 2 and above.)

4) When you have entered all the data you need, close the Acquaintance Information – OpenOffice.org Writer window.

Enter data in the Acquaintance Addresses form the same way. Note that the first three fields of this form are to be the same as in the Acquaintance Information form. Enter the other data as appropriate following the same steps as for the Acquaintance Information form.

Creating queries

Queries are used to get specific information from a database. In our example database, a simple query could create a list of all the wedding anniversaries in a given month. We will do this using a wizard. A more complex query could create a list of all the birthdays in a given month. We will do this using the Design View. We will create a query searching the Acquaintance Addresses Information tables for all wedding anniversaries in July and the addresses of the couples for which this applies. This query will include the following information: *FirstName*, *LastName*, *SpouseName*, *Address*, *City*, *StateOrProvince*, *PostalCode*, *CountryOrRegion*, and the wedding date (month, day, and year). This way we can find out who has a wedding anniversary in July, what day of July it is, and the couple's address so we can send them a card.

Note	Queries blur the differences between a database and a data source. A database is only one type of data source. However, searching for usable information from a data source requires a query. Since the query, one part of a database, does this, the data source appears to become one part of that database: its table or tables. Query results, themselves, are special tables within the database.

Using the Wizard to create a query

Make sure you are in the Information – OpenOffice.org Base window. Click the **Queries** icon to highlight it. In the *Task* section of this window, double-click on the *Use Wizard to create Query...* icon. This opens the Query Wizard window (Figure 24).

| **Note**	When working with a query, more than one table can be used. Since different tables may contain the exact same field names, the format for naming fields in a query is Table name and field name. A period (.) is placed between the table name and the field name. In our example, the table name is two words, so the period comes after the second word of the table name and before the field name. (For example, the FirstName field of the Acquaintance Addressees table is named *Acquaintance Addressees.FirstName*. The FirstName field of the Acquaintance Information table is named *Acquaintance Information.FirstName*.)
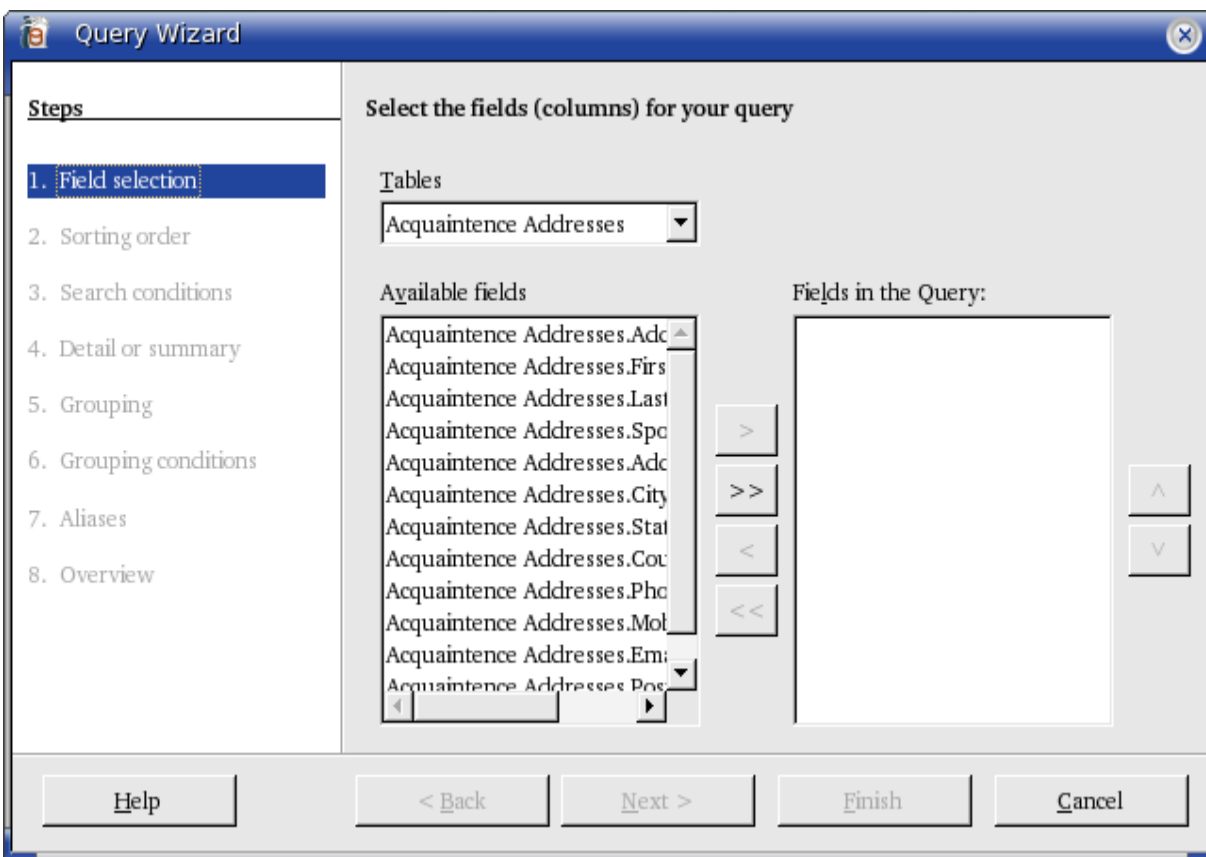
Figure 24: First page of the Query Wizard

Step 1: Select the fields.

1) Since most of the information we want is in the Acquaintance Addresses, make sure this table is listed under *Tables*. All the fields of the Acquaintance Addresses table are listed in the *Available fields* window.

   Using the arrow (>), move these *Available fields* over to the *Fields in the Query* window: Acquaintance Addresses.FirstName, Acquaintance Addresses.LastName, Acquaintance Addresses.SpouseName, Acquaintance Addresses.Address, Acquaintance Addresses.City, Acquaintance Addresses.StateOrProvince, Acquaintance Addresses.PostalCode, and Acquaintance Addresses.CountryOrRegion.

2) Change the *Tables* drop down entry from *Acquaintance Addresses* to *Acquaintance Information*.

   Using the arrow (>), move these *Available fields* over to the *Fields in the Query* window: Acquaintance Information.WedDateM, Acquaintance Information.WedDateD, and Acquaintance Information.WedDateY. These three fields will appear below the Acquaintance Addresses.CountryOrRegion field.

3) Click **Next.**

Step 2: Select the sorting order.

Up to four fields can be used to sort the information of our query. A little simple logic helps at this point. Which field is most important? I suggest listing the date of the month first (WedDateD). The LastName could come second. The FirstName or SpouseName could be the third field to sort by. You might want to sort them in a different way. Feel free to do so.

1) In the drop-down list under *Sort by*, select *Acquaintance Information.WedDateD*.

2) In the drop-down list under the first *Then by*, select *Acquaintance Addresses.LastName*.

3) In the drop-down list under the second *Then by*, select *Acquaintance Addresses.FirstName*.

4) Click **Next**.

Step 3: Select the search conditions.

1) Since we are only searching for information in one field, the default setting of *Match all of the following* will work.

Note	*Match any of the following* setting could be used in a query looking for all the birthdays in April for example. This will be done in the next section: Create a report using the Design View.

2) Select *Acquaintance Information.WedDateM* from the top *Fields* drop down list. Set the condition to *is equal to*. Enter *7* as the value. (July is the seventh month of the calendar year.) Click **Next** at the bottom of the window.

Step 4: Select type of query.

We want simple information, so the default setting: *Detailed query* is what we want. Click **Next** at the bottom of the window.

Note	Since we have a simple query, the *Grouping* and *Grouping conditions* are not needed. Those two steps are skipped in our query.

Step 5: Assign aliases if desired.

We want the default settings. Click **Next** at the bottom of the window.

Step 6: Overview.

Name the query (suggestion: *Query_Weddings*). To the right of this are two choices. Select *Modify Query*. Click **Finish**.

Step 7: Modifying the query.

The Query_Weddings window opens. The tables used in our query are shown in Figure 25. We want to link these two tables so that they act as one.
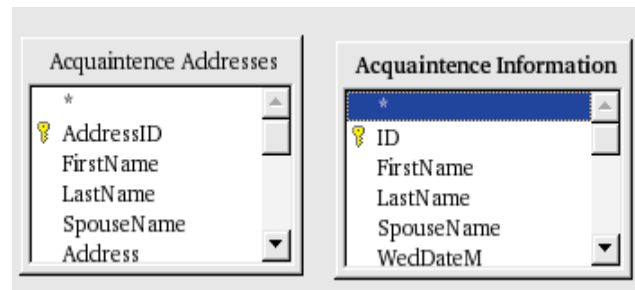
Figure 25: Tables used in Query

If the two tables are not linked, the first three columns look like Figure 26. All of the entries of the first table are listed.

Figure 26: Query results with unlinked tables

To link the two tables, click on the AddressID field of the Acquaintance Addressees table (Figure 25) and drag the mouse cursor over to the ID field of the *Acquaintance Information* table of Figure 25. A line will appear connecting the AddressID and ID fields.

Once we have linked the two tables, we can run the query again. To do so, click the *Run Query* icon. (The one with the green check in Figure 27.) The first three columns of the result are in Figure 28. Two couples were married in July, and only these two are listed using the linked tables.
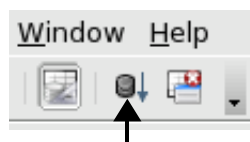

Figure 27: Run Query icon

Figure 28: Query results with linked tables

Note	When editing a Query, you can change the size and position of the tables. *Click+drag* on the heading of the table to move it. Moving the mouse cursor to an edge cause the cursor to change to a double arrow; increase or decrease the size of the table the same way you increase or decrease the size of a window.

> **Tip**   By editing the Query_Weddings we can get a list of the wedding anniversaries for any given month. In the Information – OpenOffice.org Base window, select *Queries*. Right click on the Query_Weddings icon and select **Edit** from the context menu. In the Query_Weddings window, replace the '7' with the number of whatever month you want. (The 7 is in the Criterion row and WedDateM column.) Make sure to put an apostrophe before and after the number. Then rerun the Query. (Figure 27).
>
> You can create a form for the Query_Weddings query. Right-click on the Query_Weddings icon, and select **Form Wizard** from the context menu. See "Creating a database form" on page 10 for directions.

Using the Design View to create a query

Creating a query using Design View is not as hard as it may first seem. For our query, we want to know who has a birthday in August. Go to the *Task* section of the Information – OpenOffice.org Base window. Select *Create Query in Design View.* The *Query1 – OpenOffice.org Query Design* and *Add Table* windows open.

Step 1: Add tables.

  1) Click on *Acquaintance Addressees*, and then click **Add.**

  2) Click on *Acquaintance Information*, and then click **Add**.

  3) Click **Close.**

This opens these two tables. (See Figure 25.)

Step 2: Link the two tables.

Click on *AddressID* in the Acquaintance Addresses table and drag the mouse cursor to *Id* in the Acquaintance Information table. A line segment now connects these two fields.

Step 3: Fill in the names of the fields of the query.

Double-click on the fields you want to use in the order you want to use them. Some of the fields will come from the Acquaintance Addressees table, and some of the fields will come from the Acquaintance Information table. If you accidentally put a field in the wrong order, click on the gray rectangle above that field and drag its entire column to the correct position.

  1) From the Acquaintance Addressees table, double-click on these fields in this order: *FirstName*, *LastName*, *SpouseName*.

  2) From the Acquaintance Information table, double-click on these fields in this order: HusBDM, HusBDD, HusBDD, WifeBDM, WifeBDD, WifeBDY, Ch1, Ch1BDM, Ch1BDD, and Ch1BDY.

  3) From the Acquaintance Addressees table, double-click on these fields in this order: *Address*, *City*, *StateOrProvince*, *PostalCode*, *CountryOrRegion*.

> **Tip**   The above steps can also be used to create a single table from the fields of two or more tables. If this is what you are doing with these three steps, please now return to "Creating a view of multiple tables" on page 15. Otherwise ignore this tip.

Step 4: Enter the criteria for the query.

We enter the information we will be searching for in the *Criterion* row of our query (Figure 29). How we place this information determines what our results will be. If we want two or more fields to have specific information in them at the same time, we enter all of this information in the Criterion row. This is referred to as the *And* condition. The sought for information is all placed in the Criterion row in the columns with the proper field names.

In our example, we are looking for all families in which at least one of its members has a birthday in August. This is the *Or* condition. (The husband *Or* the wife *Or* the child was born in August.)

Note	To fully use queries requires a knowledge of mathematics and specifically set operations (unions, intersections, complements, and any combinations of these).

Field	FirstName	LastName	SpouseName
Alias			
Table	Acquaintence Ac	Acquaintence Ac	Acquaintence Ac
Sort			
Visible	☑	☑	☑
Function			
Criterion			
Or			
Or			
Or			
Or			

Figure 29: Query setup table

1) All entries in the Query setup table must be in this form: 'entry' (an apostrophe, the entry, and another apostrophe).

2) Since August is the eighth month, an *8* will be entered in the fields. In Figure 29, the four rows below the Criterion row are labeled *Or.* When an entry exists in the *Criterion* row and another in the first *Or* row, a search is made for all record which fit either the information in the *Criterion* row or the *Or* row.

3) The fields we are concerned with are HusBDM, WifeBDM, and Ch1BDM.

   • In the Criterion row and HusBDM column, enter '8' (apostrophe 8 apostrophe).

   • In the first Or row and WifeBDM column enter '8'.

   • In the second Or row and Ch1BDM column enter '8'.

   • The results should look somewhat like Figure 30. (The figure does not show the FirstName, LastName, and SpouseName fields. Your table will have these three fields between the column containing the row names and the HusBDM column.)

Field	HisBDM ▼	HisBDD	HisBDY	HerBDM	HBDD	HBDY	Ch1	Ch1BDM
Alias								
Table	Acquaintence	Acquainten	Acquainte:	Acquaintenc	Acquainte	Acquaintei	Acquainte:	Acquainte
Sort								
Visible	☑	☑	☑	☑	☑	☑	☑	☑
Function								
Criterion	'8'							
Or				'8'				
Or								'8'

Figure 30: Using the Or condition over three fields

4) Click the *Run Query* icon (Figure 27 on page 24).

5) Save the Query, name it *Query_Birthdays* and close the window.

Tip	This query can be used for finding what people have birthdays in any given month. Change the 8's to the number of a different month. Make sure that an apostrophe comes before and after the number.

Creating reports

Reports provide information found in the database in a useful way. In this they are similar to queries. Reports are generated from the database's tables or queries. They can contain all of the fields of the table or query or just a selected group of fields. Reports can be static or dynamic in nature. Static reports contain the data in the selected fields at the time the report was created. Dynamic reports can be updated to show the latest data.

We will create a dynamic report of the wedding anniversaries of a given month. The Query_Weddings query is the basis for our report: Monthly Wedding Anniversaries. Editing the query for the month we seek and saving the query changes updates the report at the same time.

Step 1: Access the report generating wizard in one of two ways.

- Click on the *Reports* icon in the Information – OpenOffice.org Base window, and click on *Use Wizard to Create Report.*

  or

- Right-click on a query or table and select **Report Wizard** in the context menu.

Step 2: The Report Wizard (Figure 31).

In the Tables or Queries drop down list, select Query: Query_Weddings.

- Use the double arrow (>>) to move all the fields from *Available fields* to *Fields in report.*
- Click **Next.**

2) Change the labels for part of the fields.

- For labels containing more than one word, put a space between words. (For example, FirstName becomes First Name, LastName becomes Last Name, and CountryOrRegion becomes Country Or Region.)

- Change PostalCode to Postal Code, WedDateM to Month, WedDateD to Date, and WedDateY to Year.

- Click **Next**.

3) Grouping. We will group items in this report by the LastName field.

- Click on *LastName* in the *Fields* list and use the arrow (>) to move it to the *Groupings* list.
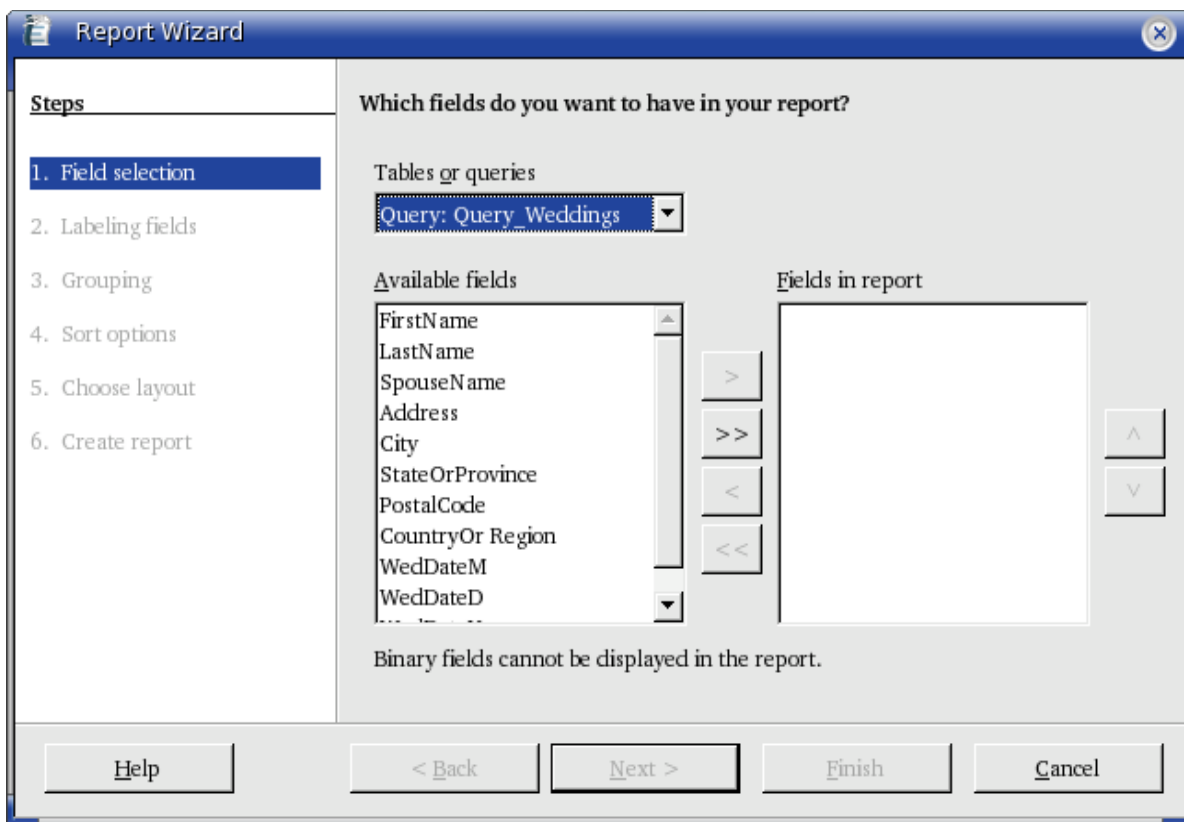
- Click **Next**.

Figure 31. The first page of the Report Wizard

4) Layout of the report: We will use the default settings. This includes the Landscape orientation at the bottom of the Report Wizard. Click **Next**.

Note	It might be worthwhile spending some time selecting the different layout choices available in reports just to see which ones can meet your needs.

5) Creating the report:

- Name the report *Query_Weddings*.

- What kind of report do you want to create? Select *Dynamic*.

- How do you want to proceed after creating the report? Select *Modify report layout*.

- Click **Finish**.

6) Modifying the report. The report contains a table with the information from the Query. It may contain some unrecognizable words (Figure 32). We will be changing the vertical alignment of the second row.

- Click on the cell below label *First Name* and drag the mouse cursor to the right to highlight the second row.

- Right-click anywhere in a highlighted cell. Select **Cell > Center** to set the correct alignment.

- If you desire, you can change the widths of any of the cells at this point.

- **Save** and **Close** the Query_Weddings – OpenOffice.org Writer window.

Last Name	Ut wisi enim ad			
	First Name	*Spouse's Name*	*Address*	*City*
	Ut wisi	Ut wisi	Ut wisi enim ad minim	Ut wisi

Figure 32: First part of Report table

Note	Queries can be changed from the Information – OpenOffice.org Base window by right-clicking on the desired Query and selecting **Edit** from the context menu.

Tip	If a report is created as dynamic and the report is based upon a query, the report will change every time the query changes. (For example, you change the Query_Birthdays query to search for April instead of August. The next time the Query_Birthdays report is accessed, it will list the information for the people with birthdays in April instead of August.)