



Using Microsoft Access

Relational Queries

Creating a query can be a little different when there is more than one table involved. First of all, if you want to create a query that makes use of more than one table, it is necessary to make sure the tables have the necessary relationships created. Secondly, in your query design, you will be selecting fields from more than one table, which can sometimes be a little confusing.

In the following exercises, we will be using a database called *Music Collection 2.mdb*. This is similar to the one you created in the previous exercises. The only difference is that it has a lot of CD and Songs records already entered. If this database is not available, you can enter some of your own records in to the one you have created, but the exercises will assume you are using records in the *Music Collection 2.mdb* database.

Exercise 1. Checking the Existing Records

- 1) Begin by opening the *Music Collection 2.mdb* database.
- 2) Open the CDS table. 7 CDs have already been entered.

CD #	CD Title	CD Type	Label	Released	Purchased	Cost	Cover	Description
1	Innocent Eyes	Album	Sony	2003	22/09/03	\$25.95	Bitmap Image	
2	Satisfaction	CD Single	EMI	2003	11/05/03	\$6.95	Bitmap Image	
3	Wild 15 - Wild	Compilation	Central Station	2003	15/04/04	\$32.95	Bitmap Image	Double Di
4	Wiggly Safari	Album		2002	12/10/02	\$19.95	Bitmap Image	Album fea
5	Love Actually	Soundtrack		2003	27/11/03	\$27.95	Bitmap Image	
6	Urban Classics	Compilation	Gold Seal	2002	06/02/04	\$36.00	Bitmap Image	Double Di
7	Let's Get It Sta	CD Single		2004	22/06/04	\$4.95	Bitmap Image	

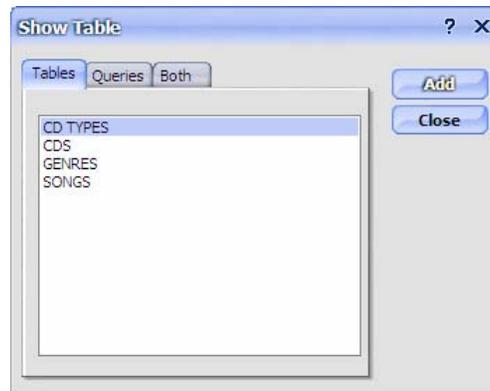
- 3) Close the table and open the SONGS table. Songs for each of the CDs in the CDS table have already been entered.

Song #	Song Title	Artist	Genre	Duration	Track #
1	Born To Try	Delta Goodrem	Pop		1
2	Innocent Eyes	Delta Goodrem	Pop		2
3	Not Me, Not I	Delta Goodrem	Pop		3
4	Throw It Away	Delta Goodrem	Pop		4
5	Lost Without You	Delta Goodrem	Pop		5
6	Predictable	Delta Goodrem	Pop		6
7	Butterfly	Delta Goodrem	Pop		7
8	In My Own Time	Delta Goodrem	Pop		8

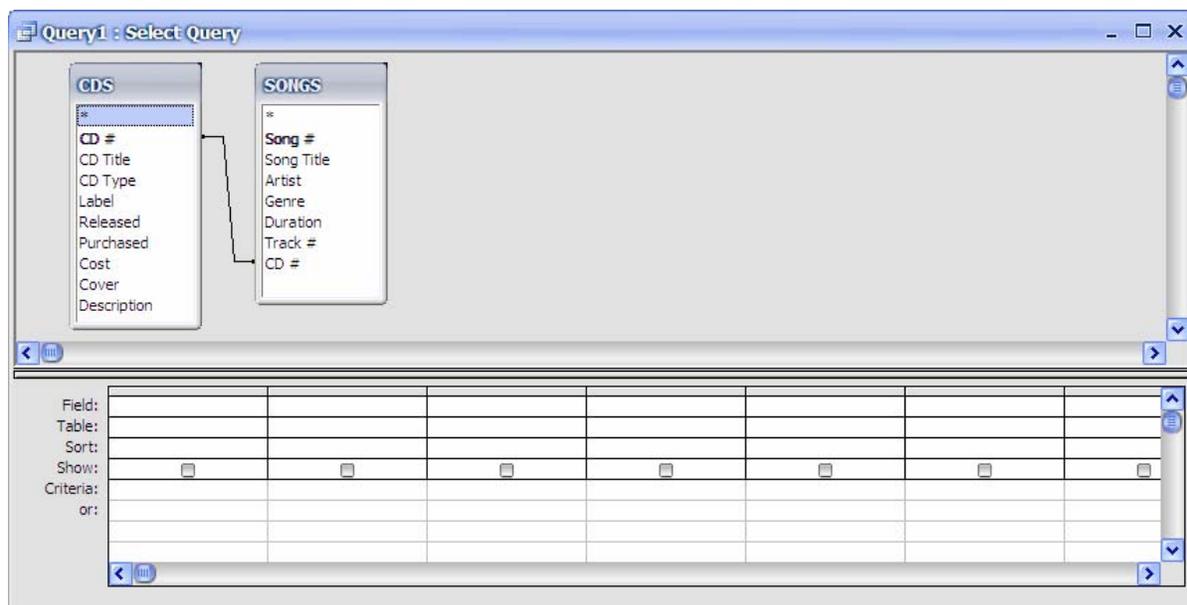
- 4) Close the table.

Exercise 2. Creating a Relational Query

- 1) Go to the **Queries** section of the **Database Window**.
- 2) Double click on the option which says **Create a Query in Design View**.



- 3) Double-click on *CDS* and *SONGS* to add them both to the *Query Design* window.
- 4) Click **Close** to close the *Show Table* dialog.
- 5) Resize and adjust your design window so that you have enough room to work with.



We will start by creating a query which shows all songs by a particular artist. We want the results of the query to display some fields from the Songs table and some fields from the CDS table so we know which CD each song is found on.

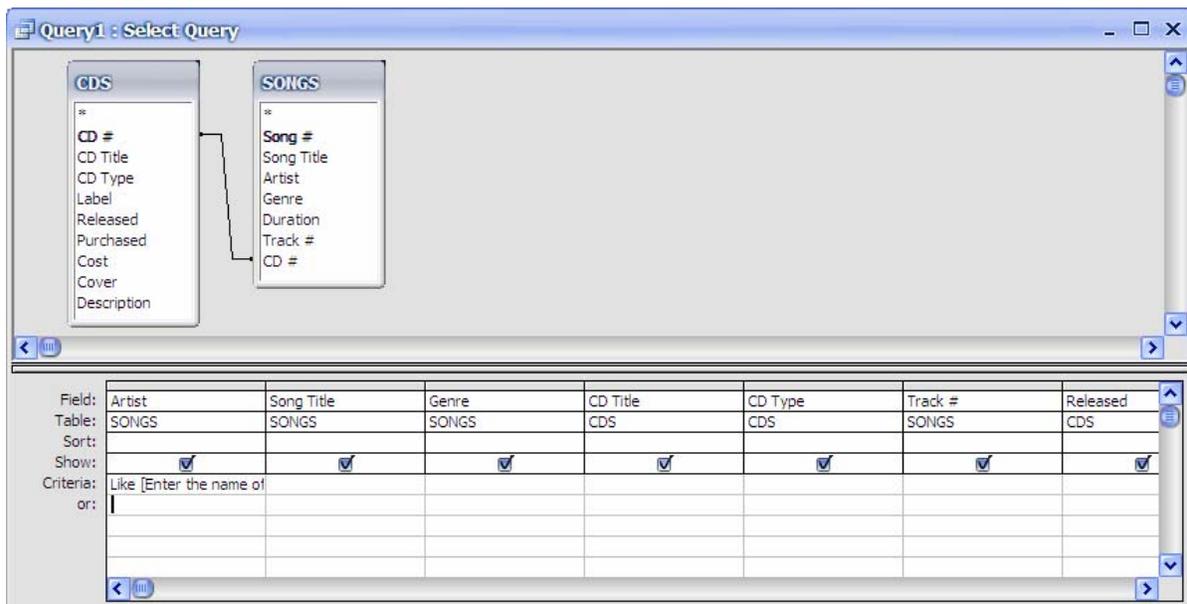
6) Double click on each of the following fields to add them to the **QBE** (Query by Example) grid.

Field	From table:
Artist	SONGS
Song Title	SONGS
Genre	SONGS
CD Title	CDS
CD Type	CDS
Track #	SONGS
Released	CDS

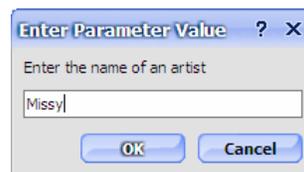
7) Under the Artist field, enter the following parameter criteria:

*like [Enter the name of an artist] & **

Your query design should look similar to the example below.



8) Click the View icon  to test the query.

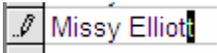


9) For the criteria, enter Missy.

Artist	Song Title	Genre	CD Title	CD Type	Track #
Missy Elliott	Get Ur Freak On (Superchumbo Mix)	Top 40 Dance	Wild 15 - Wild \$	Compilation	14
Missy Elliot	I'm Really Hot	Rap	I'm Really Hot	CD Single	1
Missv Elliott	Go To The Floor	Rap	Under Construc	Album	1

In the query results, you may notice that one of the artist entries in the results is spelt differently from the others (the second one in the above example). If we hadn't used a wildcard, we would only see entries that were exactly the same as the criteria so that one may not have appeared.

- 10) Correct the differently spelt entry so that it is the same as the others.
- 11) Click the **View** icon  to return to the design view.
- 12) Click the **Save** icon  to save the Query.



- 13) Enter *artist search* as the query name.
- 14) Close the query.

Note Query results are really just a selection of data from the tables in the database. When you edit data in a query result, it is just the same as editing the data directly in the tables.

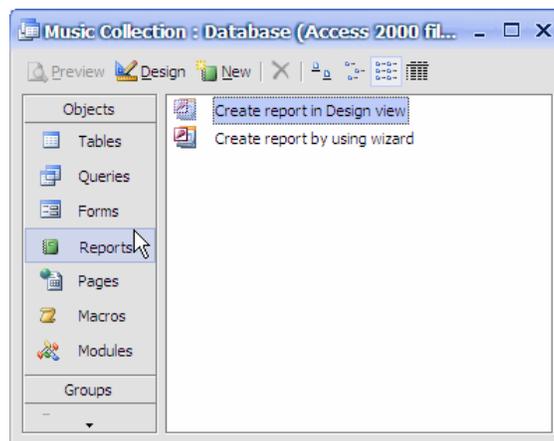
Relational Reports

Creating a report in a relational database is much the same as creating a report from a single table database. You can create a report directly from the table(s) or you can create a report based on a query (which in many cases is based on more than one table).

Exercise 3. Creating a Multi-table Report

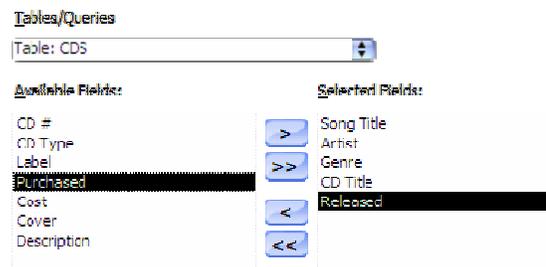
In the following exercise, we will create a report based on more than one table, which will list all of the songs in the database grouped by *genre*.

- 1) From the database window, change to the Reports section.



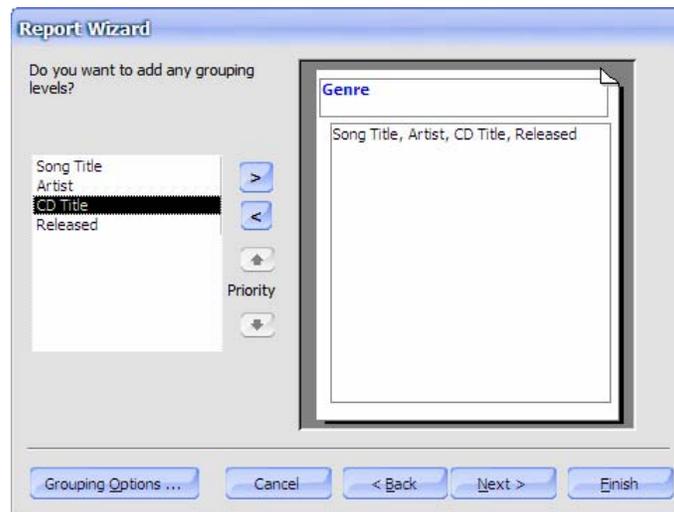
- 2) Double-click on the option which says **Create report by using wizard**. The report wizard will begin.
- 3) Select the following fields for the report.

Field Name	From Table:
Song Title	SONGS
Artist	SONGS
Genre	SONGS
CD Title	CDS
Released	CDS

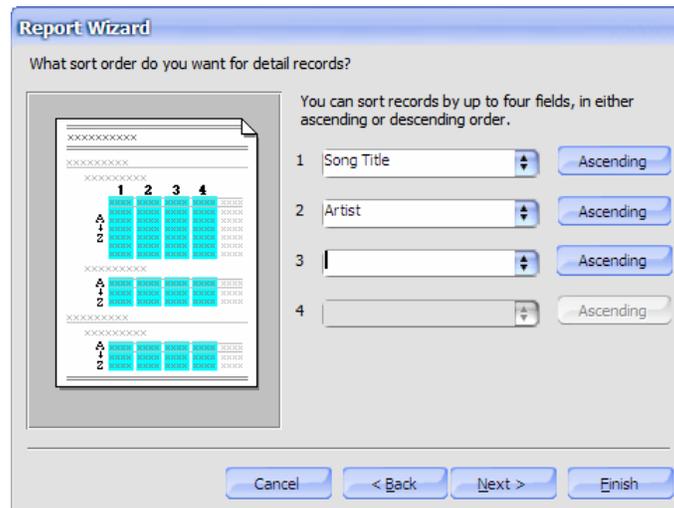


- 4) Click **Next** to continue.

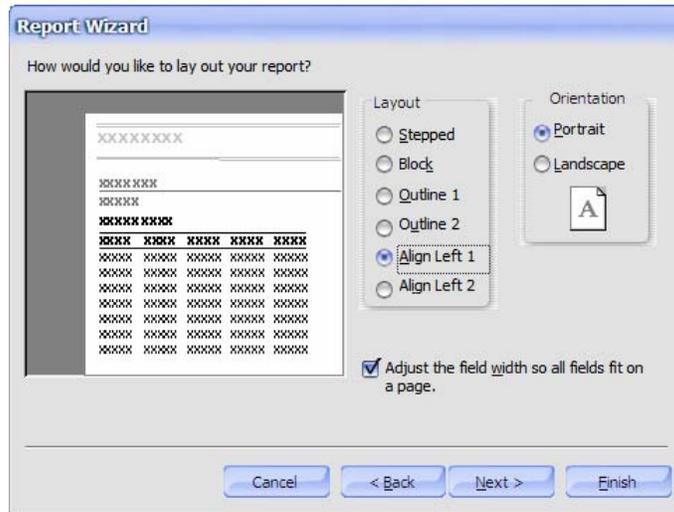
- 5) For the next step of the wizard, make sure view **by SONGS** is selected and click **Next** to continue.
- 6) In the next step, double-click on *Genre* in the list of fields to add that field as a grouping level. This is because we want the songs grouped by their genres.



- 7) Click **Next** to continue.
- 8) For the sorting order, choose *Song Title* and the *Artist* as shown below, then click **Next** to continue.



9) For the report layout, choose **Align Left 1** as shown below and click **Next** to continue.



10) Select **Compact** as the report style and click **Next**.

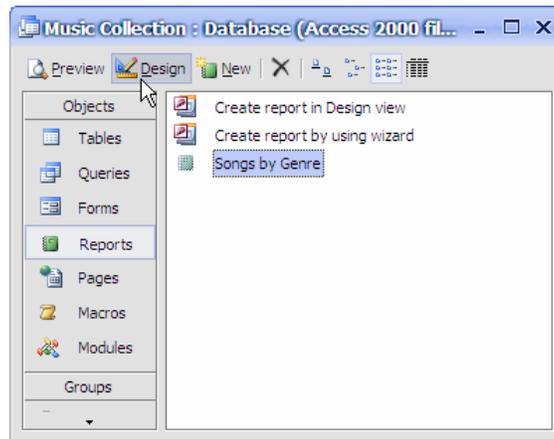
11) For the report title (and main heading) enter *Songs by Genre*. Click **Finish** when done.

Songs by Genre

Genre	CDs			
	Song Title	Artist	CD Title	Released
	Be With You (Kob Rem)	Kob And Victor Lopez	Wild 15 - Wild Summer	2003
	John Wayne (Sleazeola)	Stone Phazers	Wild 15 - Wild Summer	2003
	Joyenergizer (Physical)	Joy Kitikonti	Wild 16 - Wild Summer	2003
	Mindblower (Club Cavi)	Mass Medium	Wild 15 - Wild Summer	2003
	My House (Barthezz MI)	Party XI	Wild 15 - Wild Summer	2003
	No Sleep	Volkswagen	Wild 15 - Wild Summer	2003
	Satisfaction	Benny Bennasal	Satisfaction	2003
Genre	Kids			
	Song Title	Artist	CD Title	Released
	Another Cuppa	The Wiggles	Wiggly Safari	2002

12) Close the report when finished. It will already have been saved as part of the wizard.

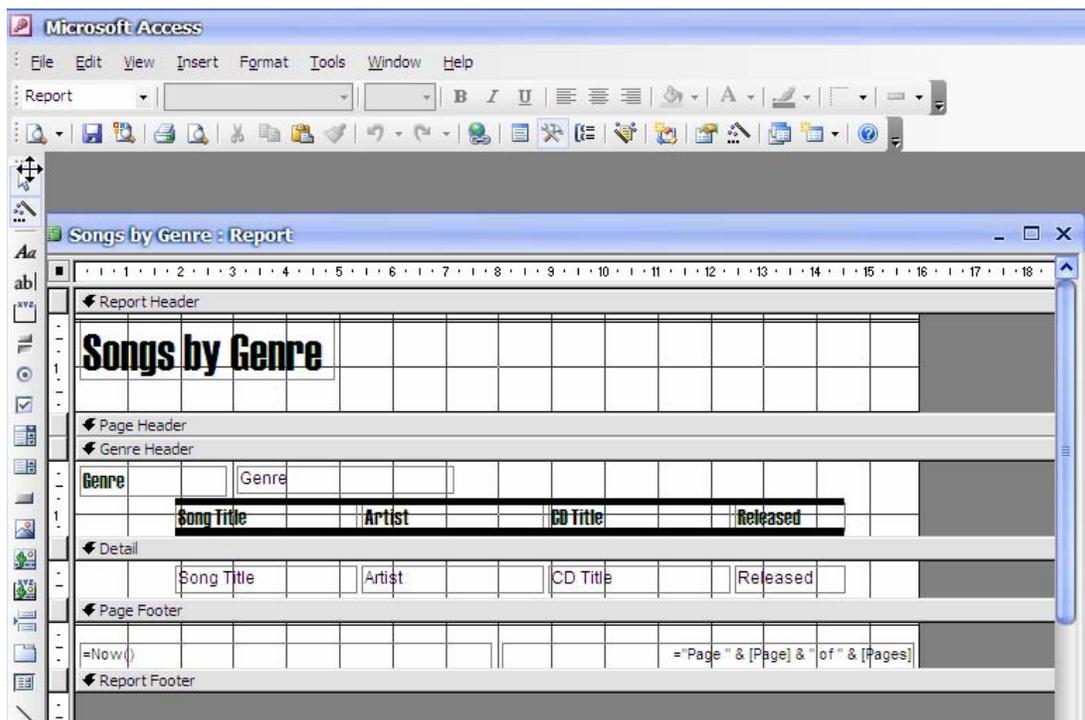
Exercise 4. Report Modifications



- 1) Make sure the Songs by Genres report is selected in the Database Window and click the  Design button.

In design view, it is useful to position the Toolbox on the side of the screen, so that it is still available without getting in the way.

- 2) Move your mouse to the top part of the toolbox as shown to the right.
- 3) Click on this top part of the toolbox and drag so that your mouse turns in to the movement cursor. 
- 4) Drag the toolbox so that it is positioned to the left of the screen as shown.



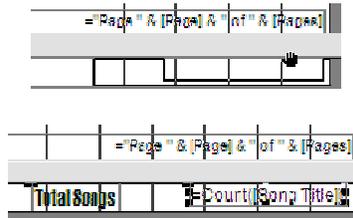
We will put a text box in the Report Footer that will display the total number of songs listed in the report.

- 5) From the toolbox, click the Text Box icon. 
- 6) Click in the middle of the Report Footer area to place the textbox.



A Text Box will be created in the position you clicked on with a label to the left of it (remember to leave room for the label to the left of the textbox when you place it)

- 7) Click in the **Label** and change the text from *Text23*: to *Total Songs*.
- 8) Click in the **Text Box** (which currently shows *Unbound*) and enter `=count([Song Title])`.
- 9) Position the label and textbox to the right of the Report Footer area. You can drag them with the mouse as shown.



Note Dragging on a textbox or label will have a different effect depending on where you are dragging from. E.g.

Dragging on one of the squares around the border



Re-size the textbox

Dragging on a border of the object



Move the object and linked caption/textbox

Dragging the top-left corner of the object

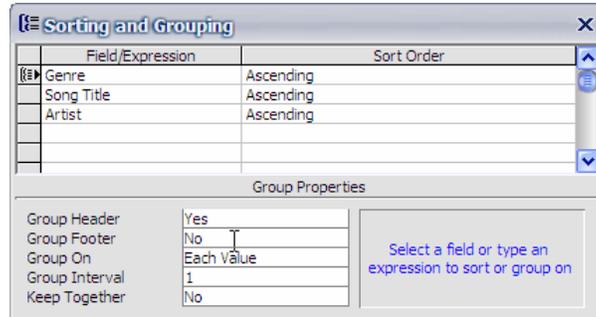


Move the object without linked caption/textbox

- 10) Make sure the textbox is selected and click the **Align Left**  icon so that the resulting total will appear in the left of the textbox area.

Now we will copy this total so that a total will also appear after each genre group. First we will need to make sure there is a space to put a genre total. If you look in your report design you will see that there is a Genre Header but no Genre Footer.

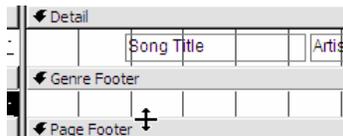
11) From the **View** menu select **Sorting and Grouping**.



12) Make sure the *Genre* field is selected in the top part of the **Sorting and Grouping** window. In the bottom half of the window, change the **Group Footer** property to *Yes*.

13) Close the **Sorting and Grouping** window when done.

14) Re-size the new Genres Footer as shown so that it is about ½cm high as shown (each square represents 1cm).



15) Select the textbox if it is not already selected. You will know it is selected when it is surrounded by selection boxes. `=Count([Song Title])`

16) Select copy by clicking the **Copy** icon  on the toolbar (or by using another method such as the **[Ctrl][C]** keyboard shortcut).

17) Click on the *Genre Footer* to select it. 

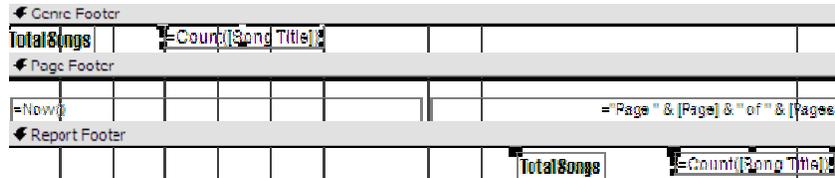
18) Paste a copy of the selected textbox by clicking the **Paste** icon  (or any other method such as the **[Ctrl][V]** shortcut). A copy of the textbox and the linked label will both appear in the *Genre Footer* area.



We could drag the new total so that it lines up with the one in the Report Footer but you can easily be more precise using some of the built-in tools.

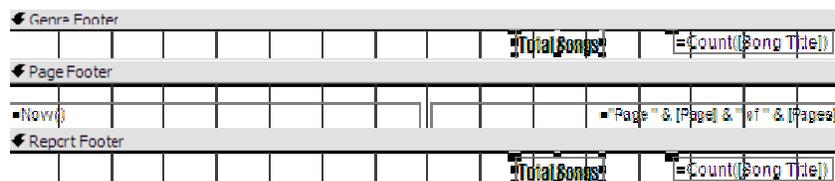
19) Click on the textbox in the Genre Footer.

20) Hold down **[Shift]** and click on the textbox in the Report Footer. Both textboxes will be selected as shown.



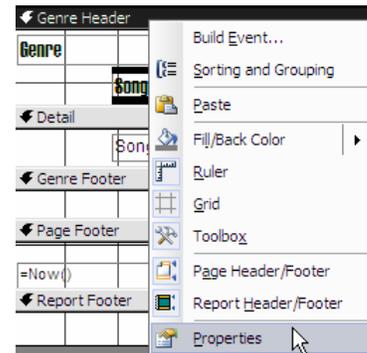
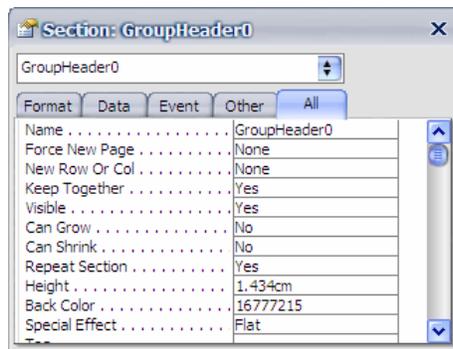
21) From the **Format** menu select **Align** and then **Right**. Both textboxes will now be lined up along their right edges.

22) Follow the same procedure to line up the Total Songs labels as so that the report design appears as shown.



The last thing we will do is to change the properties of the **Genre Header**. Some of the genres will go over more than one page. We will change the properties to make sure that the header is repeated at the top of each page in these cases.

23) Right-click on the **Genre Header** and select **Properties**.



24) Find the **Repeat Section** property and change it to *Yes*. Close the properties window.

25) Save the changes and click the Preview icon  on the toolbar, to view the changes.

26) Close the report when done.

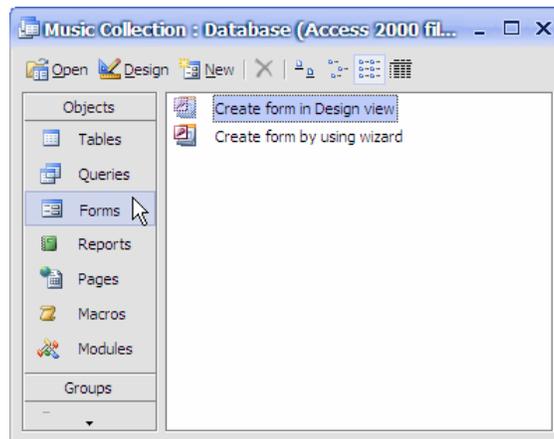
Note Remember that whenever you are modifying properties in Access, you can press the **[F1]** key for a detailed explanation of any property you have selected. It's a great way to learn about all of the different properties, many of which can be extremely useful.

Relational Forms

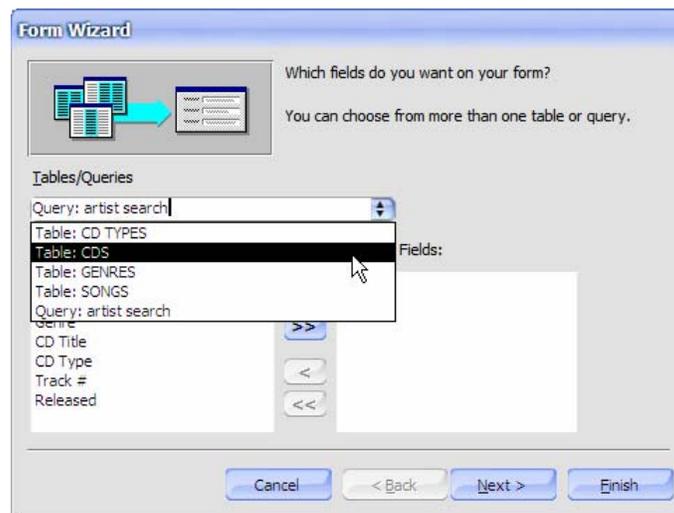
Creating a form that is based on more than one relational table provides an easy way to add or edit data in your database. In the example that we have been working on, when a new CD is entered in to the database, the user will most likely want to enter details of songs on that CD straight away. The CD details and Song details are in separate tables but we can use a form to bring it all together in the same place.

Exercise 5. Creating a Relational Form

- 1) Make sure you are in the **Database Window** and go to the **Forms** section.

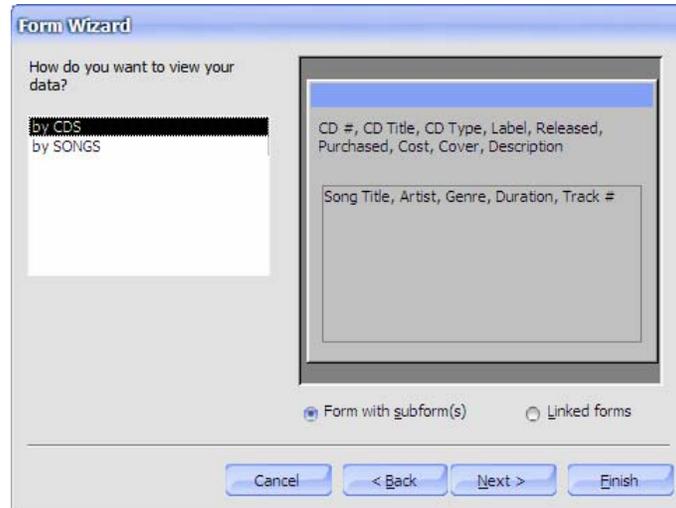


- 2) Double-click the option that says **Create form by using wizard**.



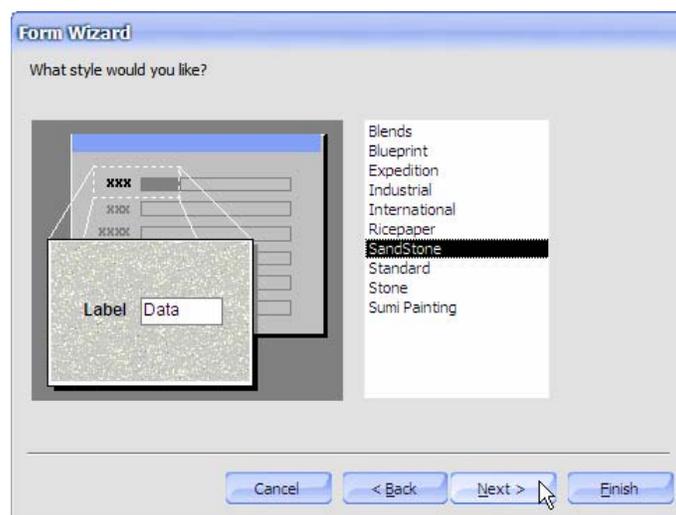
- 3) From the list of **Tables/Queries** select *Table: CDS*.
- 4) Click the **>>** button to select all of the fields from this table.

- 5) Use the **Tables/Queries** list again to select *Table: SONGS*.
- 6) Double-click on the following fields from the *SONGS* table –
Song Title, Artists, Genre, Duration and *Track #*.
- 7) Click **Next** to continue.



The next step asks how you want to view the data in the form. The default option is a form with a subform. That means that the wizard will actually be creating two forms. One form will be a small form showing song details. This form will be displayed inside a larger form containing the CD details. Because of the relationship between the *CDS* and *SONGS* table, the songs subform will only show the songs for the CD that is being displayed in the main form.

- 8) Make sure that **by CDS** is selected and click **Next**.
- 9) The next step asks how you want the subform to appear while it is in the main form. Make sure **Datasheet** is selected so that the subform will appear as a table.
- 10) Click **Next** to continue.
- 11) The next step allows you to select a style for your form. Click on each of the different styles and then select one that suits you.



12) Click **Next** to continue.

13) In the last step you can specify names for both the main form and the subform. Call the first form *CD Entry* and the second form *CD Entry Subform* as shown above.

14) Click **Finish** to complete the wizard. The completed forms will be automatically saved and then displayed together as a form with a subform inside.

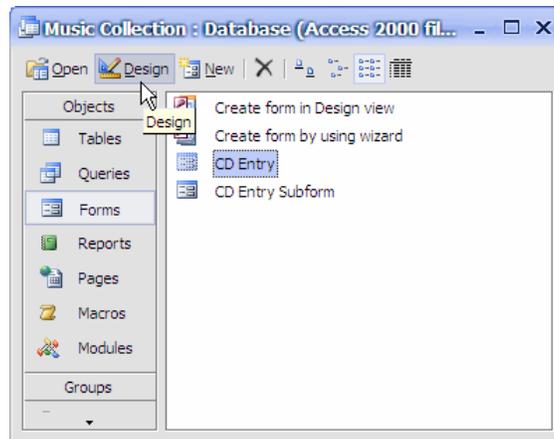
15) Click the next record button  at the bottom of the form a few times to see how the CDs display in the form. Notice the songs on each CD displayed in the subform.

16) Close the form when complete.

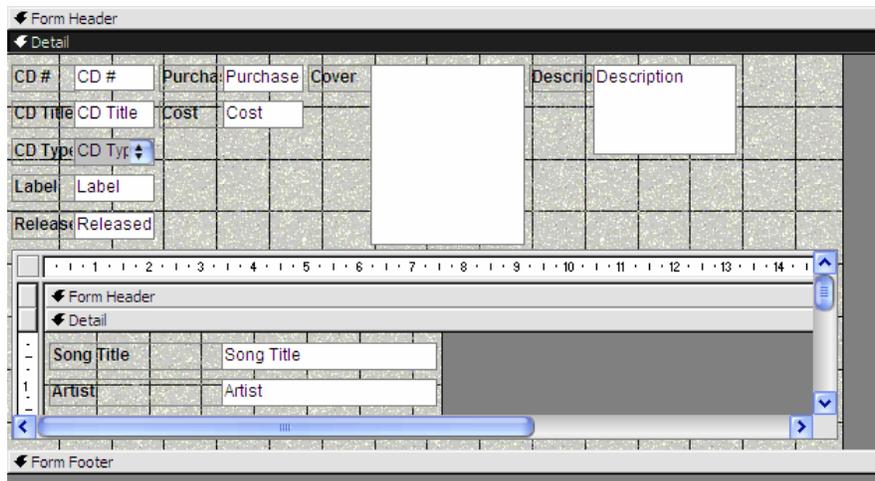
Exercise 6. Customising a Form

Once a form has been created it can be customised to suit your needs and tastes. What follows are a few examples of ways a form can be modified. Once you have completed this exercise, you may want to experiment with further modifications to your own form. Some of the examples below may appear a little different if you chose a different style for your form. While you are working on design changes in a form it is a good idea to save the changes periodically.

- 1) Make sure you are in the **Forms** section of the **Database Window** with the *CD Entry* form selected.



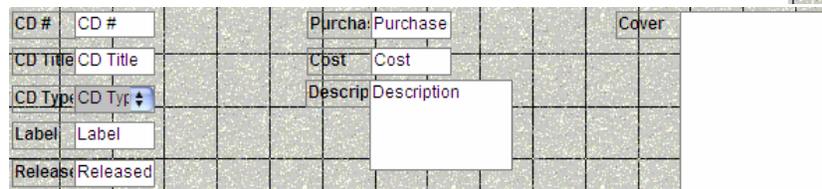
- 2) Click the **Design** button to open the form in design view. Most of our modifications will be moving and re-sizing objects to make the form easier to use.
- 3) The *CD Entry* label next to the subform isn't really needed and it's taking up space that could be used for the subform itself. Click on the label so that it is selected as shown to the right and press the **[Delete]** key to remove it.
 
- 4) Move your mouse to the right edge of the form and re-size it to make the form wider.
 
- 5) Click on the subform to select it.
- 6) Move your mouse over the resizing handle on the left of the subform and drag to the left so that it extends to the left edge of the main form.
 
- 7) Resize the right edge of the subform also to make it as wide as the main form.



- 8) Drag the *Description* field so that it is under the *Purchase* and *Cost* fields. Move the *Cover* field to the right of the form.

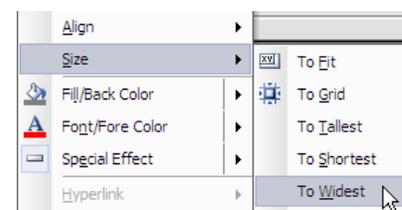
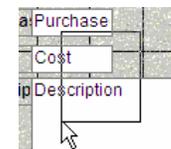


- 9) Drag your mouse around the *Purchase*, *Cost* and *Description* fields to select all of them. When they are all selected, move them in to the centre of the form.

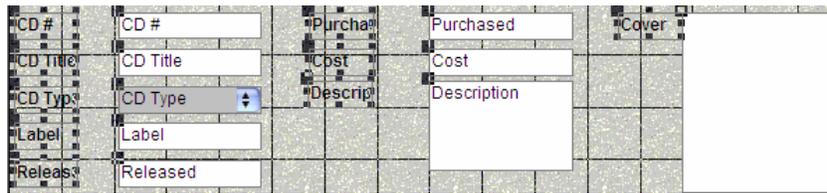


At the moment, the Textboxes and the labels for each field are too close together so it is not possible to see all of the text in the label. First we'll widen the boxes a little.

- 10) Use the method shown above to select the textboxes only (without the labels) for the *Purchase*, *Cost* and *Description* fields by dragging a selection box over all three textboxes. Note that when you are dragging to select, you don't need to drag the whole way around each object. If your selection area covers at least part of the object it will be included in the selection.
- 11) Right-click on one of the selected textboxes and from the menu that appears, select **Size** and then **To Widest**. This will resize all of the selected objects so that they are the same width as whichever one is the widest (which in this case would be the description). This option is also available from the main **Format** menu at the top of the screen.



- 12) Click on the textbox for the *Purchased* field so that it is selected as shown.
- 13) Move your mouse over the top-left corner of the textbox (the large black square marker) and carefully drag to the right to increase the gap between the textbox and label.
- 14) With that textbox still selected, hold down the [Shift] key and click the text boxes for the *Cost* field and the *Description* field. All three textboxes should now be selected as shown.
- 15) Right-click on one of the selected textboxes. From the menu which appears, select Align and then Right (this option is also available on the Format menu from the top of the screen). The textboxes will now line up with whichever one is furthest to the right, which in this case would be the one you just moved.
- 16) Select the textboxes for the *CD #*, *CD Title*, *CD Type*, *Label* and *Released* fields using any method shown previously.
- 17) While they are all selected, you can re-size them all at the same time. Move your mouse over the right selection handle of any one of those textboxes and drag to the right until they are all about the same width as the three textboxes you moved previously (you could have also used the Size/To Widest option to get the all the same size).
- 18) Use the techniques already shown to increase the gap between the textboxes and labels.
- 19) Click on the label for *CD #*. Hold down the [Shift] key and click on each of the other labels on the form so that they are all selected as shown



- 20) Resizing labels is a little easier. Because they will always contain the same text when the form is being used, you can use an autofit option so they are just big enough to fit their contents. Move your mouse over the right resizing handle of any one of the labels and double-click to activate the autofit function. All selected labels will now be resized to fit their contents.
- 21) Click the View icon on the toolbar to view the working form.
- 22) The last thing we'll do is resize the columns in the subform to make them fit better. Move your mouse between the column headings and drag left or right to adjust the column width.
- 23) Re-size all of the columns until the form appears similar to the example shown. Save and close the form when done.

