

8 Querying the Database

One of the most useful features of a database is that you can select exactly the data you want. You will need to create a Query to do this in Access. There are a number of different types of Query, but the most common type is a Select Query. As the name implies, the purpose of this type of Query is to allow you to select exactly the data you need. A Select Query can also be used to carry out arithmetical actions: for example, you can create a calculated field in a Query.

Other types of Query can delete records, change and append records.

Although there is a 'Query Wizard' in Access, the following section is concerned with creating a Query in Design View.

In general terms, the steps you need to follow are:

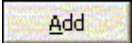
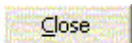
1. Tell Access which tables you want to extract data from.
2. Define the fields you want to work with.
3. Tell Access what you want it to do with the fields, e.g. sort in a certain order, or select according to given criteria
4. Save the query.

8.1 Creating a Query in Design View

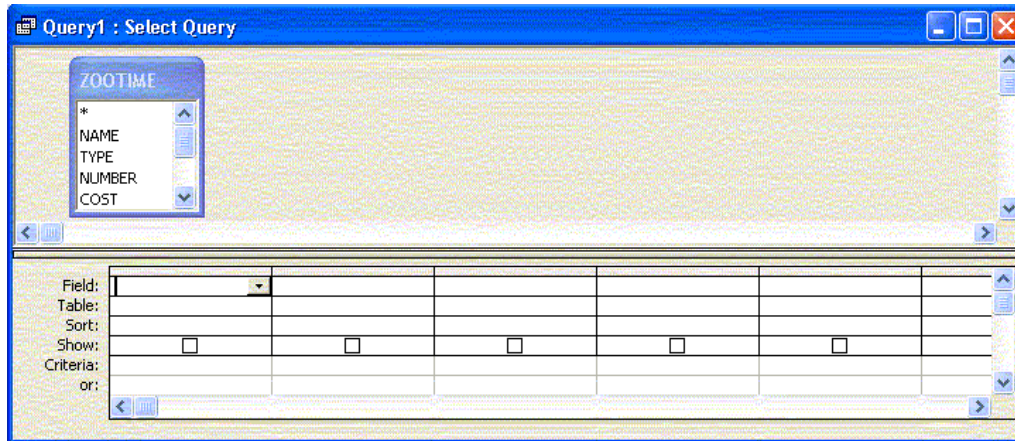
- On the Database Window, select the **Queries** tab.
- **Double-click** *Create query in Design view*

Access displays the 'Show Table' window:



- **Click** the required table(s) or queries. You are not limited to 1 table and you can build a query 'on top of' another query.
- **Click** 
- **Click**  (when you have added all the tables and queries you need).

The *Show Table* window closes leaving the Query window open as shown below:



The query window is driven by a method known as 'Query-By-Example' (QBE).

This allows you to click and drag fields from the field list at the top of the screen to columns in the bottom half. The area at the bottom of the window, as seen above, is the 'QBE grid'. This is where your selection criteria and any sorting details are placed.

The QBE row details are as follows:

Field	The name of the field on which the selection or the sort is to be carried out.
Table	The name of the table or query from which the selected field comes.
Sort	Ascending, Descending or not sorted can be specified here for each field that is required in the output.
Show	Click the check box on this row to toggle the appearance of the field when you run the Query. A tick indicates the field will display.
Criteria	Enter the selection criteria. For example, to select all people with surname Smith, you would type Smith . Of course, the entry depends upon the field.

8.1.1 Defining Query Fields

- **Double-click** the required field in the Table 'frame' towards the top of the window
The new field appears in the next available blank column in the QBE grid at the bottom of the screen.

8.1.2 Comparison Operators

Queries often use 'Comparison Operators' to define selection criteria. For example, you may wish to select all members who are 30 days overdue with their membership fee. If so, you need to specify the overdue criteria. This is done by using the comparison operator > (greater than).

The comparison operators available are:

Operator	Use	Example
=	Equals	=Smith - the name smith
>	Greater than	>200 , or >S - Greater than 200, or 'further down' the alphabet than s.
<	Less than	<200 - Less than 200.
>=	Greater than or equal to	>=200 - Greater than or equal to 200.
<=	Less than or equal to	<=200 - Less than or equal to 200.
<>	Not equal to	<>25/12/94 - All dates except Christmas Day 1994.
Between	Between two values	Between A and M (inclusive).
Is Null	an empty field	Is Null
Is Not Null	Not an empty field	Is Not Null
Like	Pattern match	Like Smi* - Where the first 3 letters are Smi.

8.1.3 Logical Operators

Operator	Use	Example
AND	Both criteria are true	>200 and <300 - Greater than 200 and less than 300.
OR	One or the other criteria is true	Smith or Jones
NOT	The criteria is not true	Not Smith - Everything except Smith.

8.2 Running and Testing the Query


When you are satisfied you have specified your selection and output criteria correctly, run the query:

- **Click** 

Your Query results will be displayed in Datasheet view, very much like a table. If you want to change the Query after viewing your output:

- **Click** 

8.3 Saving the Query

- **Click** 
- **Type** the name of the Query.

It is good practice to name objects in such a way that you (and other people) can later identify them easily. Some databases have a large number of queries, (and tables, reports and forms). It is very difficult to work with lists of queries called Query1, Query2 and so on. Always try to use meaningful names for your queries and other Access objects. This can help you recognise at-a-glance what each one does.



One of the most important advantages of Queries is that they can be used as the basis of reports and forms.