## Objectives: to create select queries, to filter by form

**Useful operators in criteria:**

Wildcards:

|  |  |  |  |
| --- | --- | --- | --- |
| \* | matches any string of characters | ? | matches single character |
| Like "m\*" | anything starting with m | Like "\*m"  | anything ending in m |
| Like “[a-z]\*” | Anything starting with a lower case letter | In (A,B,C,) | Any record containing a value of A, B or C in the specified field |
| < | Less than | > | Greater than |
| = | Equal to | <> | Not equal to |
|  | between … and …. |  | AND, OR, NOT |

1. Open **Access.** Open your **imported Excel** database from practical 1 and 2, which holds the imported data.
2. From the **Hel**p, read *Queries 🡺 Select data by using a query*🡺 *Overview* and *Create a query by working in design view.*You should also read through the *Introduction to queries.*
3. Open the table holding the countries data**.** Scroll round itto see what it contains. Close thetable. **Create a new query** as follows:
* Click the **Create** tab
* Click the icon **Query Design**
* In the **Show Table** dialogue box choose the table that holds your country data
* **Add** it to the query window and close the dialogue box
1. **Adding fields:** Add a field by each of these ways
* drag it from the field list into the QBE grid
* moving your mouse pointer to the right hand end of a ‘box’ (cell) in the Field row and selecting a field from the drop down list.

Drag another field ‘on top of’ another that is already in the QBE grid.

Where is it inserted?

**Selecting fields:** Move the pointer to the thin grey bar at the top of your last field in the QBE grid. When it changes to a downward pointing arrow, click your left mouse button. This selects the field.

**Moving fields:** With a field selected, point at the area of the thin grey bar. Now drag the field so that it becomes the first field on the left.

**Deleting fields:** With a field selected, press the delete key to remove a field from the QBE grid.

**Resizing columns:** Move the pointer above the boundary between 2 columns in the thin grey bar area. When it changes to a double-headed arrow, you can drag the column so that it changes width.

The results of a query can be seen by clicking the Run icon.

Create the queries below. You should view the datasheet each time you add something to the query designand check that it is doing what you expected. It is easier to spot errors in thedesign by being methodical in this way. **Pay particular attention to which fields should be shown or hidden**.

1. **Example of a simple query with sort.**
Design a query that shows for each **capital**: its name, population and whether or not it is a seaport. The output should be in increasing order of population of capital. **Save this query as Query\_e.** View the datasheet.

Check with a partner that you have produced the same output. If results differ and you cannot work out why between you, call in a demonstrator. Conferring is encouraged in practical classes but is **not permitted in assignment work**

1. Resize the column widths so the data fits on 1 page. Note thatyou can also change the margins and page orientation via the **Print Preview** menu when the query datasheet is open.

You may choose to print copies of an example page of any datasheets that you produceto go in your practical file

1. **Example with sort on more than one field.**
If you sort by more than one field, which field takes precedence in the sorting? …………………

Design a single query that lists the country name and capital city for all the countries. Countries whose Capitals are seaports should appear first in the output, in alphabetical order by country, then all the countries whose capital is NOT a seaport, again in alphabetical order by country. **The country name should appear in the first column** **of the datasheet output**. Save this as **Query\_**g.

1. **Example with criteria on single field with sort. \*\*\* See first page for useful criteria \*\*\***
Design a query that lists the names of countries (in reverse alphabetical order) whose population is more than 200,000. Save this as **Query\_**h.
2. **Multiple criteria (and) with sort**
Design a query that lists the names and national population of countries (in alphabetical order by country) whose country name starts in the range a-e **and** whose capital has a population of less than 1,000,000. Save this as **Query\_**i.

**SIGN OFF POINT (1 of 2): Part (d) and queries e, g, h and i**

You may continue to work on until a demonstrator becomes free.

1. **Multiple criteria (either/or) with sort.**
Design a single query that lists the names of countries (in alphabetical order) **either** with an area in the range 200 –500 sq km, **or** whose country name ends in **land**. Save this as **Query\_**j.
2. **A complex example**
Design a query that lists the names, population and population of capital (in order of increasing country population) of countries whose population is larger than 10,000,000, whose capital is NOT a seaport **and** whose population in the capital is less than 3,000,000. The same query should also list the same details for any country whose capital is a seaport with a population in the capital greater than 3,000,000. Save this as **Query\_**k.
3. **Parameter Queries - selecting data of the user’s choice:**
Find *Queries 🡺 Make your queries interactive by using parameters****.* Read** ‘**Overview’** and ‘**Use parameters in queries’** in this section***.***Design **one** query that will list all data for a country *of the user's choice*.
**Test using Spain.** Save this as **Query\_l**.
4. You may print out your QBE grids (after resizing the column widths so that the text is visible) using the **Print Screen** key to capture thescreen when the query is open in Design view. This copies the screen to theWindows clipboard. You can use this method to paste all the screen dumps into a (single) *Word* document and save or print them all. This record of the design views will complementthe datasheet views of your queries in your practical file.

**SORTING FINDING AND FILTERING INFORMATION IN A FORM**

1. Select the table you are using in the navigation pane and use the Form Wizard tool to create a form. Use the (Z-A) descending sort button on the toolbar to sort in reverse order of capital name (located in the ***Home*** tab). Move through the records to see that this has been achieved. Now try an ascending (A-Z) sort on the country population field.
2. Use the **Find** toolbar button (binoculars) to find the record for the country Denmark. What are the options in the Find and Replace dialogue box?
3. Use the **tab key** to move the focus to the Seaport controls. Move the mouse slowly over the toolbar buttons to find the **Filter Selection** button.

Select the ‘***Is Selected’*** option and scroll through the forms to see that only 10 seaports are displayed. Turn the filter back off using the **Toggle Filter** button.

Clear all filters by using the clear button underneath the sort A-Z buttons.

1. Click on the **Advanced** then **Filter by Form** button: Make sure that the Seaport field is ticked and enter >3000000 in the Population of Capital field. Now click on the **Or tab** (at the bottom of the form), enter >10000000 in your country population field and enter <3000000 in your population of capital field. Click in the Seaport field to turn it from grey (not set) to blank white (NOT a seaport). Make sure that you click on the **Apply filter** button (under **Advanced**) and check that the records retrieved match the above criteria. Click on the **Filter by form** button again.
The filter is saved with the form. Move your mouse over the **Save** in the toolbar. Notice that it now saves the filter as a query. Do this, calling the query **Filter\_Q**.
2. Close the form and open the query **Filter\_Q** and **Query\_k** in **Design view**.

Compare the QBE grids for **Filter\_Q** and **Query\_k.** To what number is a tick in a check box converted?
Change each to datasheet view and see that these retrieve the same records. Screen dump and save the filter QBE grid.

**SIGN OFF POINT (2 of 2):
Queries J, k, L, paragraph (o), Filter\_Q and paragraph (r). Screen dump of QBE grid and datasheet**

This work must be signed off by the end of your next practical.