Introduction
A query is a means of extracting information from tables. You can use queries to analyse the data in a table or to extract data for a form or report. Queries are commonly used to display data from two or more related tables.

All queries you create and save are listed under Queries in the Navigation pane. You can double-click a query to run it and display the results.

The Query Wizard
The Query Wizard guides you through the steps for creating a basic select query.

1. Select the Create tab.
2. Click the Query Wizard button in the Queries group.
3. In the New Query dialog box, select Simple Query Wizard.
4. Click the OK button.
5. In the Available fields: list, select the first field you want in the query.
6. Click the arrow to the right of the Available Fields list box.
7. The field is added to the Selected fields: list.
8. Add other fields as required in the same way.
9. Click the Next button.
10. Change the name of the query if you wish.
11. Click the Finish button.

The result of the query is displayed in the document window.

Creating A Query in Design View
Although a wizard can be useful when you build your first queries, you do not need to use a wizard. You can create a query in Design view. This option gives you the most flexibility in designing a query. It allows you to add criteria for selecting records, as well as sorting the dynaset.

1. Select the Create tab.
2. Click the Query Design button in the Queries group.
3. Select the table you want to use.
4. Click the Add button.
5. Repeat for additional tables.
6. Click the Close button.
7. In the field list in the upper pane, double-click in turn on each field you want to include in the query.
8. In the Design grid, enter any required criteria for the result of the query.
9. In the Sort box, click the list arrow to specify a sort order.
10. Click the Save button.

11. Type a name for the query.
12. Click the OK button.

Query Design view and the Show Table dialog box
A completed query design
You can also drag the fields you want to use in a query to the design grid and then add the desired criteria and sort orders. You can add all the fields from a table to the design grid by dragging the asterisk (*) at the top of the field list to the Field row in any column. You can also add a field to a query by clicking in any blank column in the Field row, clicking the drop-down arrow, and then selecting the field you want to add, or by dragging the field to the design grid.

Running A Query
When you open a query, Access runs the query and displays its dynaset in Datasheet view. If you have added records since the last time you ran the query, the new records will appear as long as they meet the query criteria.
Access 2013 – Introduction to Queries

**From the Navigation Pane**

1. If necessary, click the small filter button at the top of the Navigation Pane and click Queries or All Access Objects.

2. Double-click the query you want to open.

Or

1. Right click the query you want to open.
2. In the shortcut menu, click Open.

**From Design View**

You can run a query and display its dynaset directly from Design View. This option is useful for testing the query design to see if displays contains the desired information. While viewing a query, you can switch back to Design view at any time to make any necessary changes.

1. In Query Design view, click the Run or the upper half of the View button in the Results group.
2. To return to Design View, click the lower half of the View button in the Views group on the Home tab of the Ribbon.

**Using Multiple Tables in a Query**

You can use more than one table in a query. The field lists of all tables added to a query appear in the top pane of Design View.

**Join lines will show between the related fields if the tables have had relationships created between them or, if the tables follow the following rules:**

- Related field names are identically spelled.
- Related field are same data type (exception to this is the AutoNumber field which is compatible to a number field in another table with a Long Integer field size.
- One of the related fields is a Primary Key.

The tables must be joined in order for the query to produce accurate and meaningful results. If the tables do not join automatically, you can create a manual join in the top pane of Design view by clicking and dragging between the related fields.

**Adding tables to a query**

When you create a new query in Design view, the Show Table dialog box opens automatically so that you can add the desired table(s). However, when you modify an existing query in Design view, you must manually open it.

1. Open the query in Design View.
2. In the query grid, click in the sort row under the field that you want to sort by.
3. Click the drop-down arrow.
4. Select a sort option.
5. View or Run the query.
6. Save changes, if desired.

**Sorting a Query**

When you run a query, the records in the dynaset appear in the same order in which they appear in the design grid. You can either sort the dynaset or assigning a sort order in the query design. You can sort a dynaset just as you would sort a table; however, you would have to perform the sort every time you run the query. If you assign a sort order in the query design, Access will sort the dynaset automatically each time you run the query.

**Single level sorting**

1. Open the query in Design View.
2. In the query grid, click in the sort row under the field that you want to sort by.
3. Select a sort option.
4. View or Run the query.
5. Save changes, if necessary.

**Multiple level sorting**

1. Open the query that you want to add a sort order to in Design View.
2. In the query grid, arrange the fields so that the ones you want to sort on are in a left-to-right order. It is not necessary for them to be the first fields at the left of the grid.
3. Click in the sort row under the field that you want to sort by first (the one nearest to the left of the grid).
4. Select a sort option.
5. Click in the sort row under the field that you want to sort by next (the second nearest to the left of the grid).
6. Select a sort option.
7. Continue in similar fashion until all fields have their sort order defined.
8. View or Run the query.
9. Save changes, if necessary.
Adding Criteria to a Query

You can add criteria to a query in order to limit the number of records returned or to group records. The simplest criterion is to find all records matching a single value. For example, the criteria in the picture below will limit the records returned only to where *Surrey* is in the *County* field.

You can also use comparison operators to limit the query results to a group of records. Comparison operators are symbols that represent conditions recognized by Access. The following comparison operators are available in Access:

<table>
<thead>
<tr>
<th>Operator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;</td>
<td>less than</td>
</tr>
<tr>
<td>&lt;=</td>
<td>less than or equal to</td>
</tr>
<tr>
<td>&gt;</td>
<td>greater than</td>
</tr>
<tr>
<td>&gt;=</td>
<td>greater than or equal to</td>
</tr>
<tr>
<td>=</td>
<td>equal to</td>
</tr>
<tr>
<td>&lt;&gt;</td>
<td>not equal to</td>
</tr>
<tr>
<td>Not</td>
<td>reverses logic</td>
</tr>
</tbody>
</table>

You can use one or more comparison operators to compare a specified value to all the values in a field. For example, you may want to find all customers with credit limits of less than £1000 or all customers with a contract date on or before January 2012; you can use a combination of comparison operators and field values to write an expression defining the desired criteria (e.g., <1000 or <=1/1/01, respectively). When you run the query, only those records with values meeting the specified criteria appear in the dynaset.

**Tip:** If columns are not in the required order, you can move them in the dynaset without affecting the sort order.

### Using an AND Condition

Many times, a query requires more than one condition to obtain the desired result. If you want to find all customers in one region with sales to date of over £10,000, for example, you need two conditions:

- Region=South AND Sales to Date>10000
- The records must meet both conditions in order to be included in the query results.

1. Open the required query in **Design View**.
2. Click in the **Criteria** row of the first field.
3. Type the desired criteria.
4. Type additional criteria in the same **Criteria** row of one or more other fields.
5. Press **Enter**.
6. **View or Run** the query.

**Example of an AND criteria.** Extracts only records where Publisher is *Penguin* and Cost is greater than 10

### Using an OR Condition

There are times you may want to find records that meet only one of several specified conditions. This is called an **OR** condition. For example, you want to find all customers in Surrey or all customers with sales to date of over £10,000 (irrespective of whether they are in Surrey), you would need two conditions:

- Country = Surrey OR Sales to Date > 10000
- A record needs to meet only one of the conditions in order to be included in the dynaset.

**Examples of an OR conditions.** Extracts only records where Publisher is *Penguin or Corgi or Bantam.*

1. Open the required query in **Design View**.
2. Click in the **Criteria** row of the first field.
3. Type the desired criteria.
4. Click in the **Or** row of the next required field.
5. Type the second criteria.
6. Press **Enter**.
7. **View or Run** the query.

**Using the BETWEEN AND Condition**

You can use the **Between And** condition to find data that includes or falls between two stated values. The Between And operator is inclusive - all records with values that include or fall between the stated criteria are included in the dynaset. It can be used in text, numeric, or date fields.

Spaces must be included between the criteria and the words Between and And. If you do not include the proper spacing, the Data type mismatch in criteria expression error message will appear. You do not have to type the criteria with capital letters B and A; Access will do it for you when you view or run the query.

**Example of a BETWEEN AND criteria.** Extracts records where the Purchased Date is in January 2010

1. Open the required query in **Design View**.
2. Click in the **Criteria** row of the first field.
3. Type **Between**, a space, the first value in the range, a space, **And**, a space, the last value in the range.
4. Press **Enter**.
5. **View or Run** the query.

**Using a Wildcard Character**

You can use a wildcard in a query in place of one or several characters. Wildcard characters are helpful when you want to find criteria with a pattern (such as all last names beginning with M), or if you are not sure exactly how values you want to find appear (such as the correct spelling—Kline or Klein). When you use wildcard characters (? and *), Access automatically inserts the word Like before the criteria and quotation marks (" ") around text.

Common wildcards are listed in the following table:
Access 2013 – Introduction to Queries

<table>
<thead>
<tr>
<th>Character</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>Matches any number of characters. You can use the asterisk anywhere in a character string.</td>
<td>wh* finds what, white, and why, but not awhile or watch.</td>
</tr>
<tr>
<td>?</td>
<td>Matches any single alphabetic character.</td>
<td>B?ll finds ball, bell, and bill</td>
</tr>
<tr>
<td>[ ]</td>
<td>Matches any single character within the brackets.</td>
<td>B[ae]ll finds ball and bell but not bill</td>
</tr>
<tr>
<td>!</td>
<td>Matches any character not in the brackets.</td>
<td>b[ae]ll finds bill and bull but not ball or bell</td>
</tr>
<tr>
<td>-</td>
<td>Matches any one of a range of characters. You must specify the range in ascending order (A to Z, not Z to A).</td>
<td>b[a-c]d finds bad, bbd, and bcd</td>
</tr>
<tr>
<td>#</td>
<td>Matches any single numeric character.</td>
<td>1#3 finds 103, 113, 123</td>
</tr>
</tbody>
</table>

Example of wildcard criteria. Extracts all records where the ShopName starts with Sport. The rest of the name can be any combination of letters and numbers (Like “Sport*”)

Example of wildcard criteria. Extracts all records where the ShopName starts with Sp, the third character can be anything, the fourth character must be an R and the rest of the name can be any combination of letters and numbers (Like “Sp?r*”)

Hiding a Field In a Query

You can select records that meet specified field criteria without displaying the field in the dynaset. This option is useful when all the records meet the same specified criteria and, as a result, the field does not need to appear.
1. Open the query in Design View.
2. Untick the Show check box for the field you want to hide.

Printing a Query

You can print a query dynaset. You can run the query and then print the dynaset, or you can save time by printing the dynaset directly from the main application window.

If you print the dynaset from the application window, Access runs the query and sends the results directly to the printer, rather than to the screen.

Access 2013 still retains a separate Print Preview screen (unlike other Office 2013 applications).
1. Select the query you want to print in the Navigation Pane or, open the query to view it.
2. Select the File tab.
3. Select Print at the left.
4. Click Quick Print or, click Print for more printing options (eg. select a printer, number of copies, etc.).