Working with an Existing Query

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A **Select query** is a stored question about the data stored in a database’s tables. Only the question is stored, not the resulting data. Select queries are the foundation of much of what you do in Access. They underlie most forms and reports, and they allow you to view the data you want, when you want.

You use a simple Select query to define the tables and fields whose data you want to view, and also to specify the criteria that limits the data the query’s output displays. A Select query is a query of a table or tables that just displays data; the query doesn’t modify data in any way. An example is a query that allows you to view customers who have placed orders in the past month.

You can use more advanced Select queries to summarize data, supply the results of calculations, or cross-tabulate data. You can use **Action queries** to add, edit, or delete data from tables, based on selected criteria, but this chapter covers Select queries.

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**Open a Query in Datasheet View**

You can easily view the results of a query at any time. This is considered the **Datasheet view** of a query. The Datasheet view of a query reflects any criteria, sort order, and other parameters defined for the query.

1. **Select Queries in the List of Objects**
   Click to select **Queries** in the list of objects in the **Database** window.

2. **Click to Select the Query to Run**
   Locate the query whose results you want to view in Datasheet view. Click to select that query.

3. **Select Open on the Database Window Toolbar**
   Select **Open** on the **Database** window toolbar or double-click the query to run it. The result of the query appears in Datasheet view.
There are several different ways that you can cause a query to run. In fact, you have seen two of them already. Here’s a list of some of the techniques you can use to run a query:

- Select a query and then select **Open** from the Database window.
- Right-click a query in the Database window and then select **Open**.
- While in the Design view of a query, use the **View** tool to select Datasheet view.
- While in the Design view of a query, right-click the gray area of the query grid and select **Datasheet View**.
- Click the **Run** button (which looks like an exclamation point) on the Query Design toolbar.
## Open a Query in Design View

### Before You Begin

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td>5 Filter Table Data</td>
</tr>
<tr>
<td>✔</td>
<td>9 Open a Query in Datasheet View</td>
</tr>
</tbody>
</table>

### See Also

- ➜ 13 Refine a Query with Criteria
- ➜ 48 Create Queries
- ➜ 52 About Building Queries Based on Multiple Tables

### TIP

It is easy to toggle back and forth between Datasheet view and Design view. You accomplish it by using the View tool on the Query Design and Query Datasheet toolbars. The View tool allows you to toggle between the various views available for a query. This makes it very easy for you to switch from Design view to Datasheet view and back as needed.

A query has an underlying design, which you can think of as the blueprint for the query. This is considered the Design view of the query. This blueprint—not the result of running the query—is what Access stores in the database when you save a query.

### Select the Query to Design

It is not necessary to first run a query to view its design. You can go directly into Design view of a query from the Database window. Simply select the query from the list of queries in the Database window.

### Click the Design Tool on the Database Window Toolbar

Click the Design tool on the Database window toolbar. The query appears in Design view.
Add Fields to a Query

When viewing a query in Design view, you might decide to modify the fields that you want to include in the query’s output. In other words, you might want to add fields to or remove fields from the query grid. You would do this if you had an existing query and you realized that it was missing fields, if you had a new query and were adding fields for the first time, or if you were working with an existing query and realized that you no longer wanted to include a field in the query.

Sometimes you need to insert a field between two existing fields. For example, your query might already contain the city and postal code, and you have decided to add a region field and place it between the city and the postal code fields. Other times you want to add a field to the end of the list of existing fields. And sometimes you need to add a contiguous group or a noncontiguous group of fields from the field list to the query grid. You would add a noncontiguous list of fields when there are several fields that you want to add to the query, but they do not appear together in the field list. It would be very tedious if you had to add each field, one field at a time, in order to accomplish these tasks. Fortunately, the process for adding fields in all of these scenarios in Access is simple.
### Add Fields to a Query

#### 1. Add a Field Between Other Fields

Drag the field from the field list to the grid and drop it where you want it to appear. The fields already included in the query then move over to the right.

#### 2. Add a Field to the End of the Query Grid

Double-click in the field list on the field that you want to add. Access adds the field at the end of the existing field list. This is the technique that I use to add fields to a new query as I build it. I generally double-click each field that I want to add to the query. Access simply adds each field to the query grid in the order in which I select the fields.
3 **Add Contiguous Fields to the Grid**

Click the first field that you want to add to the query.

Scroll through the field list until you can see the last field that you want to add to the query.

Hold down the *Shift* key as you click the last field that you want to add to the query.

Drag the fields as a group to the query grid. The fields are placed on the query grid at the position where you dropped them.

4 **Add Non-Contiguous Fields to the Grid**

Click the first field that you want to add.

Hold down the *Ctrl* key as you click each additional field that you want to add.

Drag the fields to the query grid by clicking any of the selected fields and dragging to the query grid. Access adds the selected fields to the query grid at the position at which you drop them.

12 **Order a Query Result**

You might want to modify the sort order designated by the designer of a query. As described in the text that follows, you can sort on a single field or on multiple fields, and you can sort in ascending order or in descending order. For example, you might want to sort in ascending order by company name in a company table, but in descending order by sales amount in a sales table so that the highest sales amount appears first. An example where you might want to sort on multiple fields would be employee last name combined with employee first name.

1 **Open the Query in Design View**

Select *Queries* in the list of objects in the Database window. Click to select the query whose sort order you wish to modify. Click *Design*. 
Order a Query Result

1. **Click the Sort Row**
   - Click within the query’s **Sort** row, which allows you to control sorting options for the query.

2. **Click the Sort Drop-Down Arrow**
   - Click the **Sort** drop-down arrow button to display the choices for the sort order.
4 Select the Sort Order

Select the sort order:

- Ascending—A to Z or 0 to 9
- Descending—Z to A or 9 to 0
- Not Sorted—No sorting

To sort on more than one field, repeat steps one through four for each additional field that you want to sort by.

Access sorts the data in the query grid from left to right, meaning that if the first name field appears on the query grid before the last name field, the data appears in order by first name and then within first name by last name. Because you probably want the data in order by last name and then by first name, you need to move the last name field so that it appears before the first name field. You must click the gray selector bar that contains the field name. This selects the entire column. You can then drag the field to the new location.

5 Click the Run Button

Click the Run button. The data appears in the designated sort order.

13 Refine a Query with Criteria

You can limit the records that you see in the result of a query by adding criteria to the query. For example, you might want to see just the customers in California, or you might want to view just the orders with sales over $500. You could also view sales that occurred within a specific date range. By using criteria, you can easily accomplish any of these tasks, and many, many more.

1 Open the Query in Design View

From the Database window, select Tables in the object list. Double-click to open the table whose data you wish to filter.
Refine a Query with Criteria

1. Select the Criteria Row
   Select the cell on the Criteria row below the field for which you want to add the condition.

2. Type the Criteria
   Type the criteria you want to apply for that field. For example, type USA in the Country field.

Select the criteria row of any additional fields for which you wish to add criteria. Type the criteria that you want to apply for that field.
There may be times when you want to create a query that contains two or more conditions. You would do this, for example, if you only wanted records in the state of California that had sales within a certain date range to appear in the output. The **And condition** is used to indicate that both of those conditions must be met in order for the row to be included in the resulting recordset. You can use the And condition in the same field or on multiple fields.

By placing criteria for multiple fields on the *same* line of the query grid, you create an And condition. This means that both conditions must be true in order for the records to appear in the result. An example of an And condition on two fields would be State Field = ‘TX’ And Credit limit >=5000.

There are only a few situations in which you would use an And condition in a single field. This is because in most situations, using the And condition in a single field would yield a recordset with no results. For example, the criteria State = TX And State = CA would yield no results because the state cannot be equal to both values at the same time. On the other hand, HireDate > 7/1/2001 And HireDate < 6/30/2002 would return all employees hired in that date range. To enter this criteria in the criteria cell simply type the first criterion, the keyword And, and then the second criterion.

You can use wildcards to select records that follow a pattern. However, you can use the wildcard characters only in Text or Date/Time fields. You use the * to substitute for multiple characters and the ? to substitute for single characters. Type the criteria, using a wildcard in the desired expression. The expression Like Sales* entered for the Contact Title field returns all rows where the Contact Title begins with Sales.

<table>
<thead>
<tr>
<th>Expression</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sm?th</td>
<td>Finds Smith or Smyth.</td>
</tr>
<tr>
<td>L*ng</td>
<td>Finds any record that starts with L and ends in ng.</td>
</tr>
<tr>
<td>*th</td>
<td>Finds any record that ends in th (for example, 158th or Garth).</td>
</tr>
<tr>
<td><em>on</em></td>
<td>Finds any record that has on anywhere in the field.</td>
</tr>
</tbody>
</table>
Sometimes you want to select records in a table that fall within a range of values. You can use comparison operators (\(=\), \(<\), \(>\), \(\leq\), and \(\geq\)) to create criteria based on the comparison of the value contained in a field to a value that you specify in your criteria. Each record is evaluated, and only records that meet the condition are included in the recordset. Select the cell on the Criteria row below the field for which you want to apply the condition. Type a comparison operator and the criterion you want the query to apply (for example, \(>100\)).

Many comparison operators are available within Access. The following table gives an example of comparison operators used for a field called Sales. It shows the operators, provides an example of each, and discusses the records that Access would include in the output.

### Comparison Operators Used to Compare Against a Field Called Sales

<table>
<thead>
<tr>
<th>Operator</th>
<th>Indicates</th>
<th>Example</th>
<th>Includes Records Where</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;</td>
<td>Greater than</td>
<td>(&gt;7500)</td>
<td>sales are over 7500</td>
</tr>
<tr>
<td>(\geq)</td>
<td>Greater than or equal to</td>
<td>(\geq7500)</td>
<td>sales are 7500 or more</td>
</tr>
<tr>
<td>&lt;</td>
<td>Less than</td>
<td>(&lt;7500)</td>
<td>sales are under 7500</td>
</tr>
<tr>
<td>(\leq)</td>
<td>Less than or equal to</td>
<td>(\leq7500)</td>
<td>sales are 7500 or less</td>
</tr>
<tr>
<td>(&lt;&gt;)</td>
<td>Does not equal</td>
<td>(&lt;&gt;7500)</td>
<td>sales are not 7500</td>
</tr>
<tr>
<td>Between</td>
<td>Range of values</td>
<td>Between 0 and 7500</td>
<td>sales are between 0 and 7500</td>
</tr>
</tbody>
</table>

You can use the word Not in place of the \(<>\) symbols.

The **Or condition** states that either condition of two conditions should be met in order for the record to appear in the result set. You can use the Or condition on a single field or on more than one field. To add an Or condition to the query, type the first criterion you want the query to apply. For example, you could type Sales Manager as a criterion for the Contact Title field. Select the cell below the current cell (this is the Or row). Type the second criterion you want the query to apply. For example, you could type Sales Agent as the criterion for the Contact Title field.

An alternative to using the Or condition on a single field is to use the Or condition to create criteria on multiple fields. An example
would be City equals London or Contact Title equals Sales Agent. These criteria would return all companies in London, regardless of the contact title, and all sales agents, regardless of the city. Type the first criterion you want the query to apply. Select the cell in the Or row below the second field for which you want to apply the criterion. Type the second criterion you want the query to apply.

### Rules for Criteria, Based on Type of Field

<table>
<thead>
<tr>
<th>Type of Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text</td>
<td>After you type the text, Access puts quotes around the text entered.</td>
</tr>
<tr>
<td>Number/Currency</td>
<td>You type the digits, without commas or dollar signs but with decimals, if applicable.</td>
</tr>
<tr>
<td>Date/Time</td>
<td>You enter any date or time format.</td>
</tr>
<tr>
<td>Counter</td>
<td>You type the digits.</td>
</tr>
<tr>
<td>Yes/No</td>
<td>For a yes, you type yes or true. For no, you type no or false.</td>
</tr>
</tbody>
</table>

**NOTE**

Although Access is not case sensitive, and you can therefore enter criteria in either upper- or lowercase, the criteria you enter must follow specific rules. These rules vary depending on the type of field the criteria apply to.

### 4 Click the Run Button

Click the Run button. The results of the query appear.

### 14 Save a Query

If you wish to run your query again at a later time, you are going to want to save it.

#### 1 Click the Save Button

To save a query, click the Save button on the toolbar. The Save As dialog box appears.

#### 2 Provide a Name and Click OK

After you provide a name and click OK, Access saves the Structured Query Language (SQL) statement underlying the query. It does not save the result of the query.
It is easy to print query results. Although not as elegant as a printed report, printed query results are often sufficient to meet people's needs.

1 Run the Query
Run the query whose results you want to print.

2 Click the Print Icon
Click the Print icon on the toolbar to send the query directly to the printer; or select File, Print to invoke the Print dialog box; or click the Print Preview icon to preview the query before you send it to a printer.

3 Modify Print Settings
Go to the Print dialog box and click Setup, or go to the Print Preview window and click Setup to modify the print setup as well as other print settings. Click OK when finished.
4 Click the Print Icon

From the Print dialog, click OK to print, or from the Print Preview window, click the Print icon after you have designated all of the desired settings. This will send the document to the printer.

16 Close a Query

You close a query by using the close button (the x) in the upper-right corner of the Query Design window. How Access responds depends on the following three conditions:

- Whether you previously named and saved the query
- Whether you made design changes to the query
- Whether you made changes to the layout of the query while you were in Datasheet view
If you did not previously name and save the query, Access prompts you, asking if you want to save the query when you attempt to close it.

If you previously named and saved the query but did not make any design or layout changes to the query, Access provides no prompts. If you made design changes or design and layout changes, Access asks if you want to save those design changes. If you made only layout changes, Access asks if you want to save the layout changes.

1. **Click the Close Button**
   After you have made all of the necessary changes to the query, click the Close button.

2. **Respond to the Prompt**
   Designate Yes, you want to save the query, No, you wish to exit without saving the query, or Cancel, you wish to continue working on the query without exiting.

3. **Name the Query and Click OK**
   Provide a name for the query and click OK.