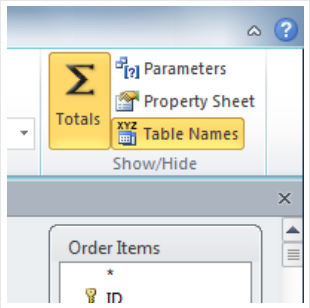
Access 2010

More Query Design Options

Introduction



Access 2010 offers many options that let you design and run queries that return exactly the information you're looking for. For instance, what if you need to find **how many** of something exists within your database? Or what if you would like your query results to automatically be sorted a certain way? If you know how to use Access's query options, you can design almost any query you want.

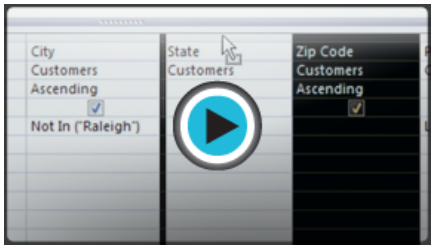
In this lesson, you'll learn how to **modify** and **sort** your queries within Query Design view. You'll also learn how to use the **Totals** function to create a query that can **perform calculations** with your data. You'll also learn about additional query-building options offered in Access.

We will be showing you how to design and run queries with examples from our sample database. If you would like to follow along, **download our example** and use it to follow the procedures demonstrated in this lesson.

Modifying queries

Access offers many options for making your queries work better for you. In addition to **modifying** your query criteria and joins after you build your queries, you can choose to **sort** or **hide** fields in your query results.

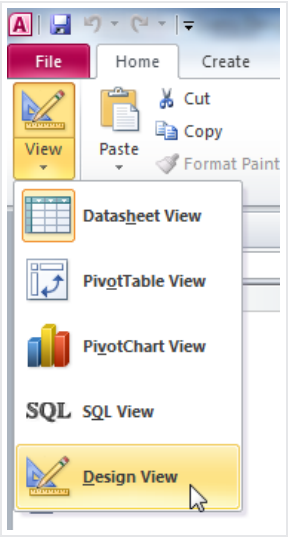
Video: Modifying Queries in Access 2010



To modify your query:

When you open an existing query in Access, it is displayed in **Datasheet View**, meaning you will see your query results in a table. To modify your query, you must enter **Design View**, the view you used when creating it. There are two ways to switch to Design View:

- On the **Home** tab of the Ribbon, click the **View** command. Select **Design View** from the drop-down menu that appears.



- In the bottom-right corner of your Access window, locate the small **view icons**. Click the **Design View** icon, which is the icon farthest to the right.

Once in **Design View**, make the desired changes, then select the **Run** command to view your updated results.

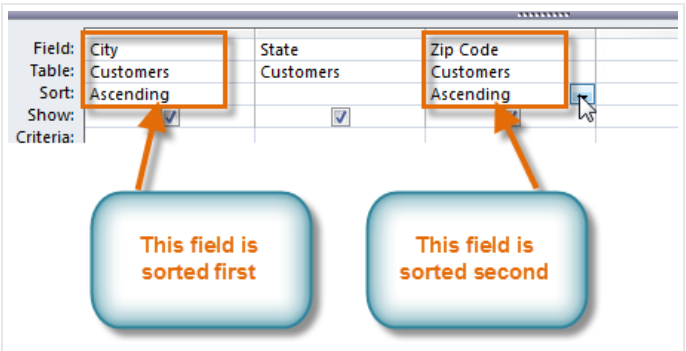
You may notice that Access offers other query views, like **Pivot Table View**, **Pivot Chart View**, and **SQL View**. You can ignore these—these views permit advanced functions that you will not need to use for this tutorial or for most Access functions.

Sorting queries

Access allows you to apply multiple sorts at once while you're designing your query. This allows you to view your data exactly the way you want, every single time you view it.

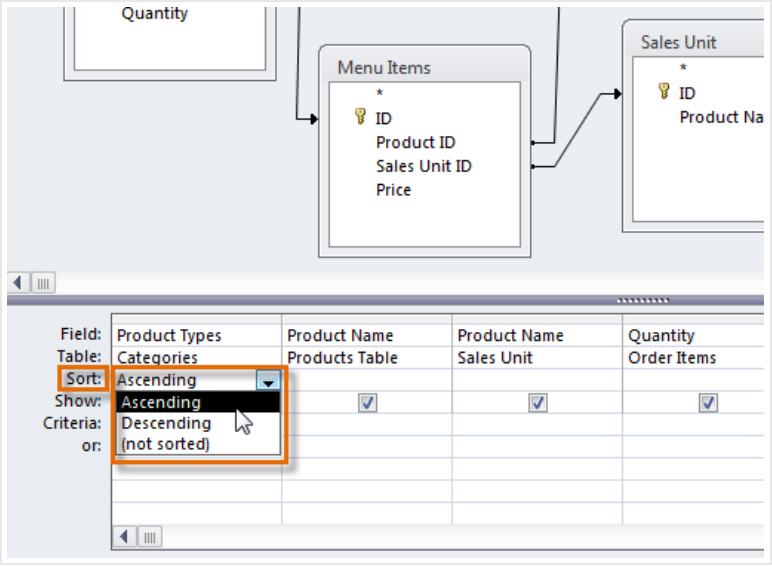
A sort that includes more than one sorted field is called a **multilevel sort**. A multilevel sort allows you to apply an initial sort, then further organize that data with additional sorts. For instance, if you had a table full of customers and their addresses, you might choose to first sort the records by city, then further sort them alphabetically by last name.

When more than one sort is included in a query, Access reads the sorts from **left to right**. This means the leftmost sort will be applied first. In the below example, then, customers will be sorted first by the **City** they live in and then by the **Zip Code** within that city.

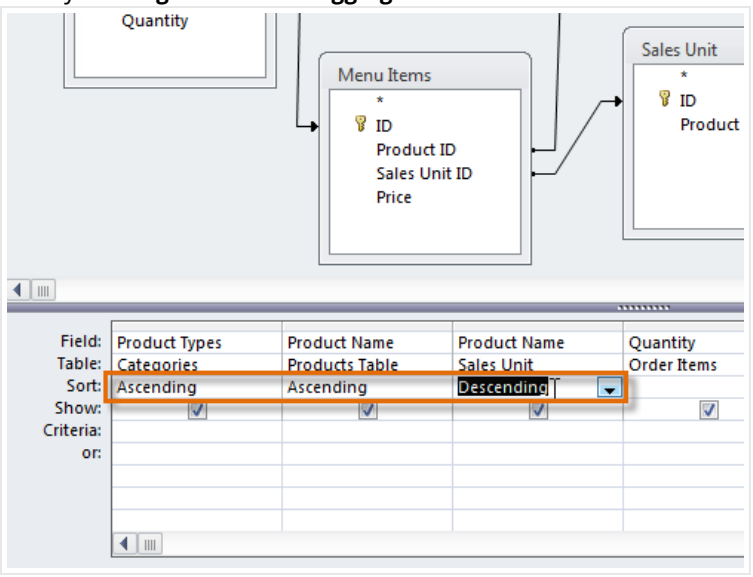


To apply a multilevel sort:

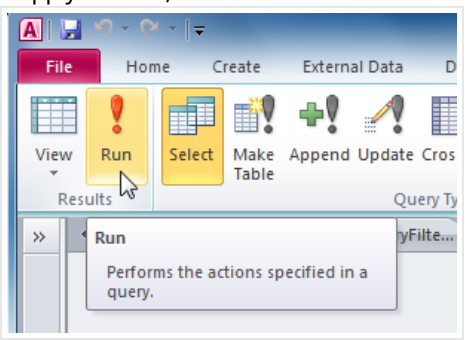
1. **Open** the query, and switch to **Design View**.
2. Locate the field you would like to sort first. In the **Sort:** row, click the drop-down arrow to select either an **ascending** or **descending** sort.



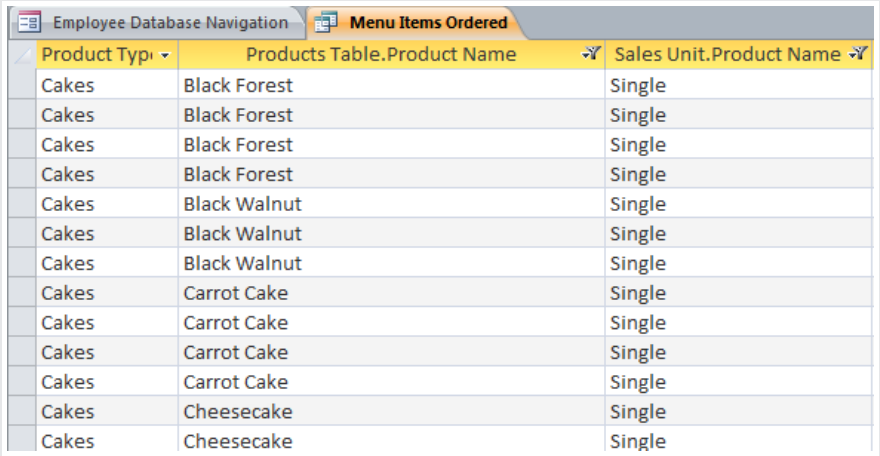
3. Repeat the process in the other fields to add additional sorts. Remember, the sorts are applied from left to right, so any additional sorts must be applied to fields located to the **right** of your primary sort. If necessary, you can **rearrange** the fields by **clicking** a field and **dragging** it to a new location.



4. To apply the sort, click the **Run** command.

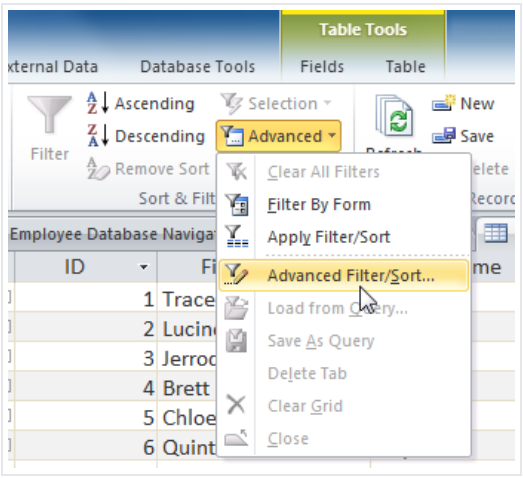


5. Your query results will appear with the desired sort.


Employee Database Navigation | Menu Items Ordered

Product Typ	Products Table.Product Name	Sales Unit.Product Name
Cakes	Black Forest	Single
Cakes	Black Forest	Single
Cakes	Black Forest	Single
Cakes	Black Forest	Single
Cakes	Black Walnut	Single
Cakes	Black Walnut	Single
Cakes	Black Walnut	Single
Cakes	Carrot Cake	Single
Cakes	Carrot Cake	Single
Cakes	Carrot Cake	Single
Cakes	Carrot Cake	Single
Cakes	Cheesecake	Single
Cakes	Cheesecake	Single

You can also apply multilevel sorts to tables that don't have queries applied to them. On the **Home** tab on the Ribbon, select the **Advanced** drop-down command in the **Sort & Filter** group. Select **Advanced Filter/Sort**, and create the multilevel sort as you normally would. When you're finished, click the **Toggle Filter** command to apply your sort.



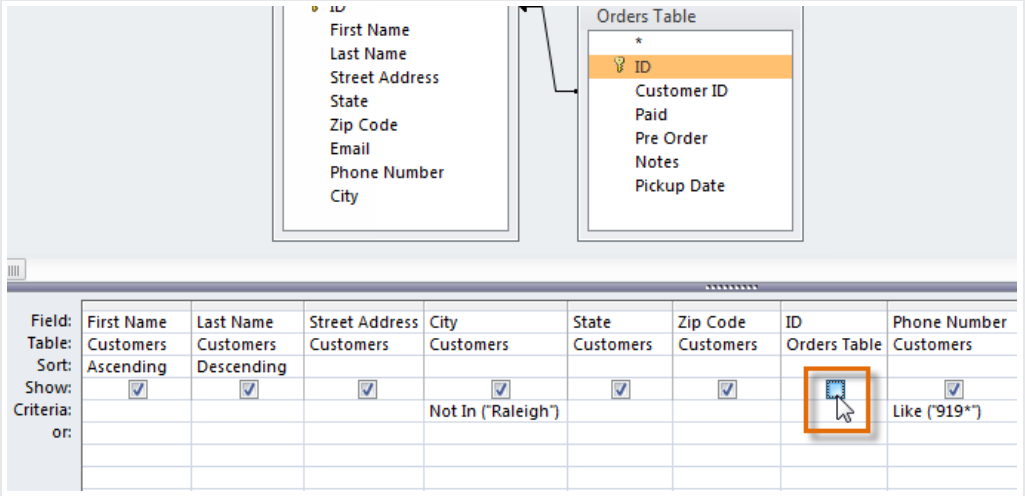
Hiding fields within queries

Sometimes you might have fields that contain important criteria, but you might not need to actually see the information from that field in the final results. For example, take one of the queries we built in our last lesson—a query to find the names and contact information of customers who had placed orders. We included Order ID numbers in our query, since we wanted to make sure that we only pulled customers who had placed orders.

However, we really didn't need to see that information in our final query results. In fact, if we were just looking for customer names and addresses, seeing the order number mixed in there too might have even been distracting. Fortunately, Access makes it easy to **hide** fields while still including any criteria they contain.

To hide a field within a query:

1. **Open** the query, and switch to **Design View**.
2. Locate the field you would like to hide.
3. Click the **check box** in the **Show**: row to uncheck it.



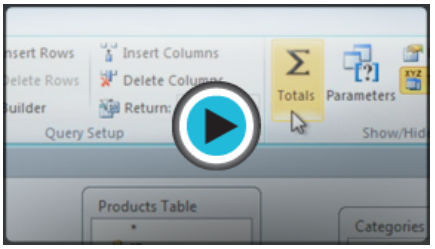
4. To see the updated query, select the **Run** command. The field will be hidden.

   To **unhide** a hidden field, simply return to Design View and click the check box in the field's **Show:** row again.

More types of queries

By this point, you should understand how to create a simple one- or multi-table query using multiple criteria. Additional queries offer you the ability to perform even more complex actions with your database. One of these is the **totals query**, which lets you perform calculations with your data.

Video: Creating a Totals Query in Access 2010



Totals queries

Sometimes setting simple criteria won't give you the results you need, especially when you're working with numbers. You may want to see your query results grouped or counted in some way. Access 2010 offers several options that make these functions possible. Perhaps the easiest of these is the **Totals** command.

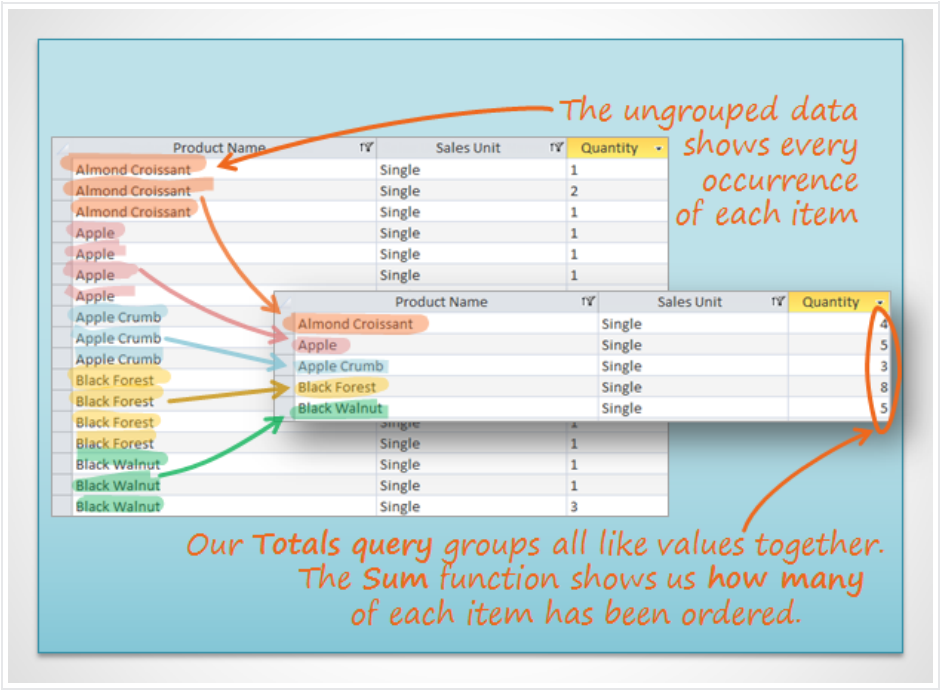
When you use the Totals function in your query, the data in your fields will be grouped by value, meaning all items of one type are listed together. For instance, in a totals query about the items sold at our bakery, each type of item sold would be listed on a single row, no matter how many times that item had been sold.

Once your records are grouped, you can perform calculations with them. These calculations include:

- **Count**, which counts the number of the same items in a field
- **Sum**, which adds the numbers in that field
- **Average**, which finds the average of the numbers that occur in that field
- **Maximum**, which returns the highest value that has been entered in that field
- **Minimum**, which returns the lowest value that has been entered in that field

- **First**, which returns the first, or earliest, value that has been entered in that field
- **Last**, which returns the last, or most recent, value that has been entered in that field

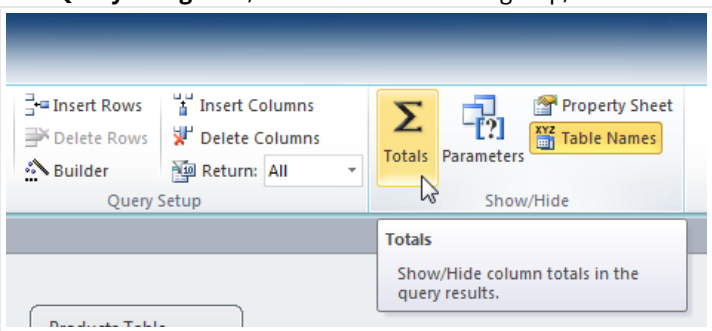
These calculations will apply to the rows containing your grouped items. For example, if you decided to use **Sum** to find out how many of each item on a menu has been ordered, you would get a **subtotal** for each item in your query, not a **grand total** of all of the items combined.



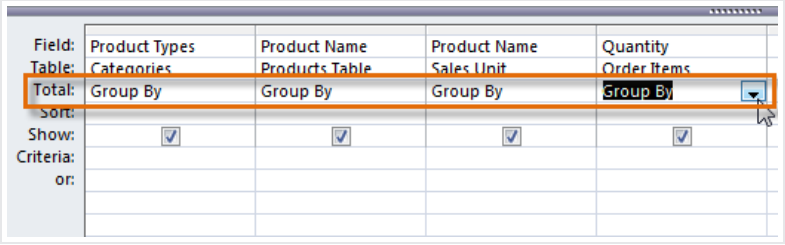
To add a calculation like a grand total to your query or table, review the instructions for **creating a Totals row** in our **Modifying Tables** lesson.

To create a totals query:

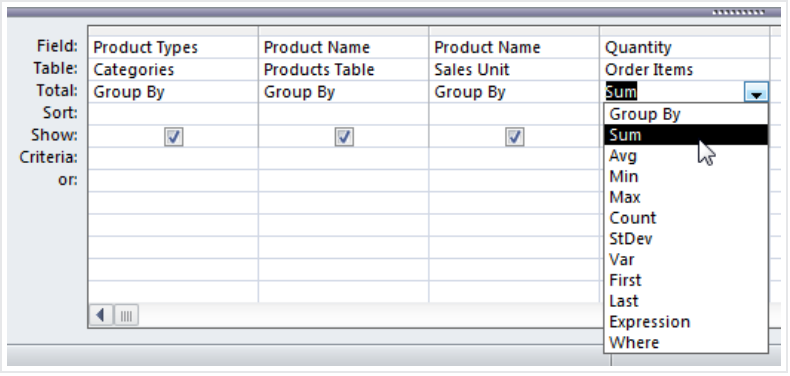
1. Create or open a query you would like to use as a **totals query**. For our example, we want to find the total number we've sold of each of our menu items, so we'll use a query showing us all of the menu items we've sold. If you want to follow along in our database, open the **Menu Items Ordered** query.
2. In the **Query Design** tab, locate the **Show/Hide** group, then select the **Totals** command.



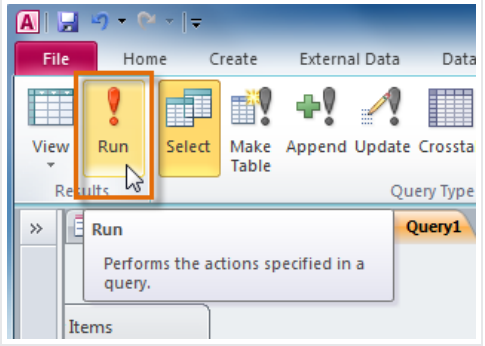
3. A row will be added to the table in the **Design Grid**, with all values in that row set to **Group By**. Select the cell in the **Total:** row of the field you would like to perform a calculation on, and click the drop-down arrow that appears.



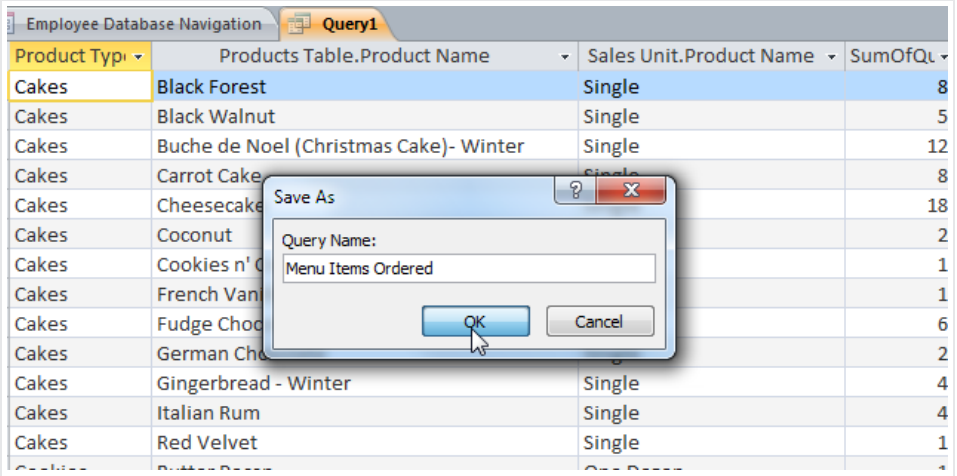
4. Select the calculation you would like to be performed in that field. In our example, we want to **add** the quantities of products we've sold, so we'll select the **Sum** option.



5. When you are satisfied with your query design, select the **Run** command on the **Query Tools Design** tab to **run** the query.



6. The query results will be displayed in the query's **Datasheet View**, which looks like a table. If desired, **save** your query by clicking the **Save** command in the Quick Access Toolbar. When prompted to name it, type in the desired name, then click **OK**.



More query options

We offer mini-lessons on creating additional types of queries in our **Extras** section. Below is a list of the queries we currently cover.

- **Parameter Query**
  A **parameter query** allows you to create a query that can be updated easily to reflect a new criterion, or **search term**. When you open a parameter query, Access will prompt you for a search term and then show you query results that reflect that search.
- **Find Duplicates Query**
  A **find duplicates query** lets you find all **duplicate records** in your database so you can **delete** them. Duplicate records can negatively affect the **integrity** of your database.

Other query-building resources

- Review our **Query Criteria Quick Reference Guide** for a list of criteria you can use in building queries. You can also download a **printable version** of the guide.

Challenge!

1. If you haven't already, download our **sample database** and **open** it.
2. Open the **Customers Who've Ordered from Nearby Towns** query, and switch to **Design View**.
3. Add a **Totals** row to the query.
4. Set the Totals row in the **Orders Table ID** field to **Count**. This will let us count how many orders each customer has placed.
5. In the **Customers** table in the **Object Relationship Pane**, double-click the word **City** to add another City field to the design grid below.
6. **Click** and **drag** the City field you just added so it is to the **left** of the **First Name** field. It should now be the **leftmost field** in the design grid.
7. Apply the following multilevel sort:
   - In the leftmost **City** field, apply an **ascending** sort.
   - In the **Last Name** field, apply an **ascending** sort.
8. **Hide** the leftmost **City** field.
9. **Run** the query. If you did it correctly, there should be 14 records in the query results. The first record should look like **this**.