Database Applications

Dr.MCR HRD Institute of Andhra Pradesh

Training Program

on

Database Applications

Dr. MCRHRD Institute of Andhra Pradesh

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This book has been specially designed for imparting ICT Education to Government officials working in various departments in the Government of Andhra Pradesh.

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INTRODUCTION TO ACCESS 2010

Access 2010 is a software program (relational database software) in the Microsoft 2010 Office Suite that allows users to create, manage, query and run reports on large amounts of data in any .

A database is a collection of data that is stored in a computer system. Databases allow their users to enter, access, and analyse their data quickly and easily. A database is a collection of tables

Why Use a Database?

- Excel is great at storing and organizing numbers, Access is far stronger at handling non-numerical data like names and descriptions. Non-numerical data plays a big role in almost any database, and it's important to be able to sort and analyse it.
- Access or any DBMS compared to other databases (like Excel) apart from storing data has connectivity among the objects.
- A relational database has lists and the objects within them relate to one another**.**
- Each Access database consists of multiple objects that let you interact with data. Databases can include forms for entering data, queries for searching within it, reports for analyzing it, and of course, tables for storing it.

1.1 Interface elements

The three main components of the Access 2010 user interface are:

- The Ribbon is the strip of tabs across the top of the program window that contains groups of commands.
- The Backstage view is the collection of commands that you see on the File tab on the ribbon.
- The Navigation Pane is the pane on the left side of the Access program window that lets you work with database objects.

These three elements provide the environment in which you create and use databases.

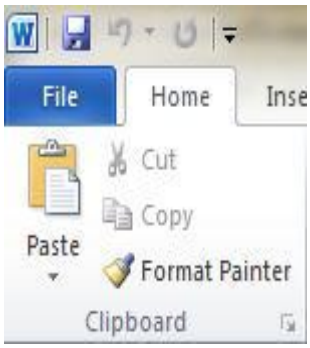
Ribbon

- The ribbon primarily consists of tabs that have groups of buttons.
- The ribbon has main tabs that group related commonly-used commands, contextual tabs that appear only when you can use them, and the Quick Access Toolbar, a small toolbar that you can customize with required commands.
- On the ribbon tabs, some of the buttons provide a gallery of choices, other options launch a command.

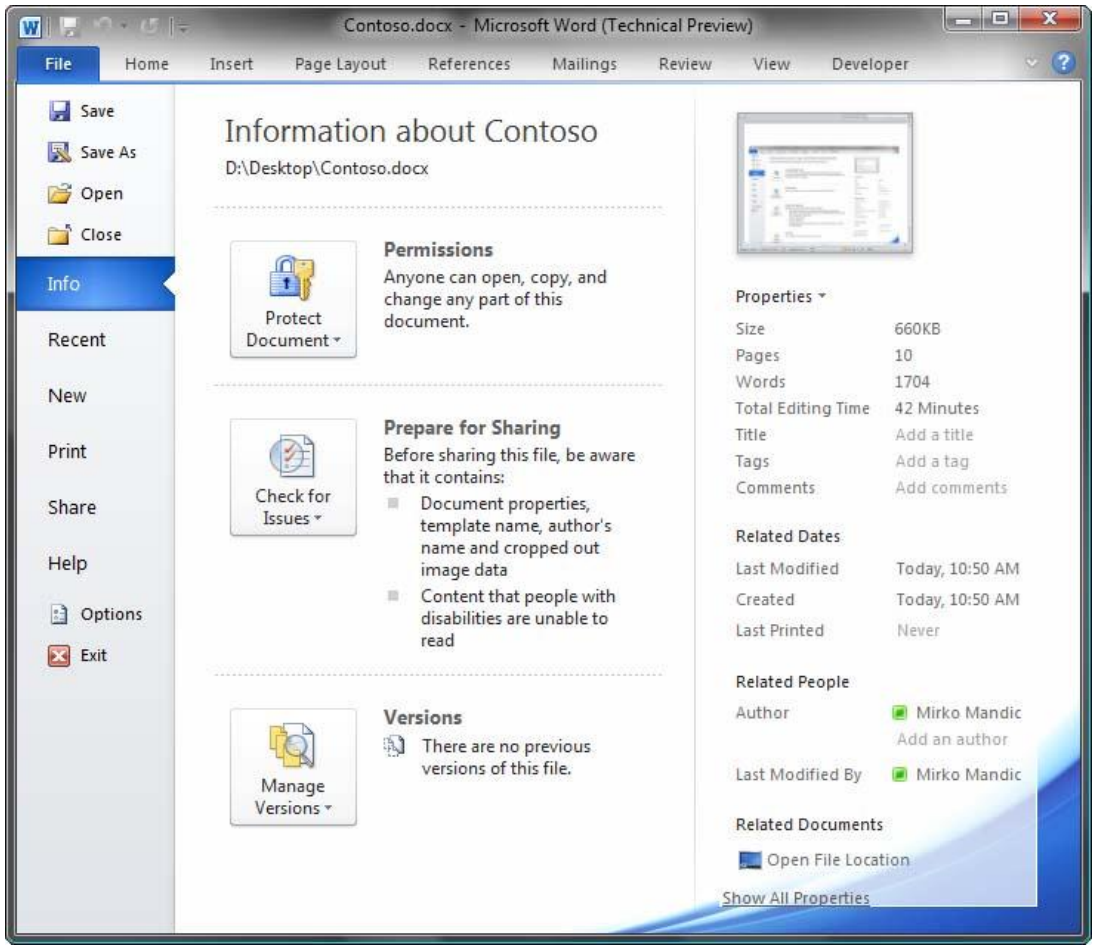
Backstage View

The Backstage view occupies the **File** tab on the ribbon and contains many commands. The Backstage view also contains other commands that apply to an entire database file. In Backstage view, you can create a new database, open an existing database, publish a database to the Web via SharePoint Server, and perform many file and database maintenance tasks.

1.2 File Tab



File Tab in Access 2010



Backstage View

Navigation Pane: The Navigation Pane helps you organize your database objects, has a variety of ways to view objects and is the main means of opening or changing the design of a database object.

The Navigation Pane is organized by categories and groups.

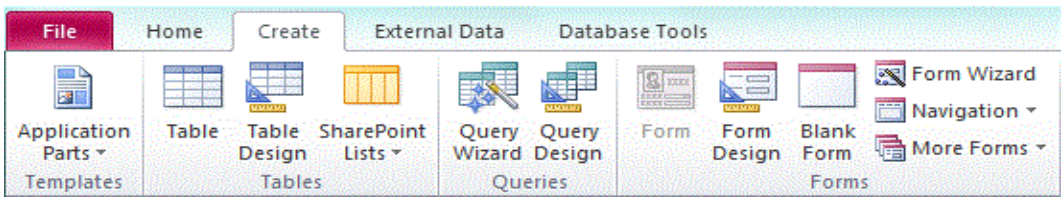
1.3 Objects In Access Database

Tables	In Access, data is stored in tables. A table is a set of columns and rows, with each column referred to as a field. Each value in a field represents a single type of data. Each row of a table is referred to as a record.
Queries	You use queries to retrieve specific data from your database and to answer questions about your data. For example, you can use a query to find the names of the employees in your database who live in a particular state.
Forms	Forms give you the ability to choose the format and arrangement of fields. You can use a form to enter, edit, and display data.
Reports	Reports organize or summarize your data so you can print it or view it onscreen. You often use reports when you want to analyze your data or present your data to others.
Macros	Macros give you the ability to automate tasks. You can use a macro to add functionality to a form, report, or control.
Modules	Like macros, modules give you the ability to automate tasks and add functionality to a form, report, or control. Macros are created by choosing from a list of macro actions, whereas modules are written in Visual Basic for Applications.

The Ribbon

The ribbon is the primary replacement for menus and toolbars and provides the main command interface in Access 2010. One of the main advantages of the ribbon is that it consolidates, in one place, those tasks or entry points that used to require menus, toolbars, task panes, and other UI components to display.

When you open a database, the ribbon appears at the top of the main Access window, where it displays the commands in the active command tab.



The ribbon contains a series of command tabs that contain commands. In Access 2010, the main command tabs are **File**, **Home**, **Create**, **External Data**, and **Database Tools**. Each tab contains groups of related commands, and these groups surface some of the additional new UI elements, such as the gallery, which is a new type of control that presents choices visually.

The commands that are available on the ribbon also reflect the currently active object. For example, the **Design** tab only appears when you have an object open in Design view.

A relational database has lists and the objects within them relate to one another**.**

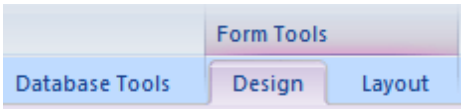
1.4 Tabs

Command Tab	*Options*
Home	• Select a different view. • Copy and paste from the clipboard. • Set the current font characteristics. • Set the current Font Alignment. • Apply rich text formatting to a memo field. • Work with records (Refresh, New, Save, Delete, Totals, Spelling, More). • Sort and filter records. • Find records. • Create a new blank table. • Create a new table using a table template. • Create a list on a SharePoint site and a table in the current database that links newly created list.
Create	• Create a new blank table in Design view. • Create a new form based on the active table or query. • Create a new pivot table or chart. • Create a new report based on the active table or query. • Create a new query, macro, module, or class module. • Import or Link to external data. • Export data.
External Data	• Collect and update data via e-mail. • Create saved imports and saved exports. • Run the Linked Table Manager. • Move some or all parts of a database to a new or existing SharePoint site. • Launch the Visual Basic editor or run a macro.

Database Tools	• Create and view table relationships. • Show/hide object dependencies. • Run the Database Documenter or analyze performance. • Move data to Microsoft SQL Server or to an Access (Tables only) data • Manage Access add-ins. • Create or edit a Visual Basic for Applications (VBA) module.

Contextual Command Tabs

In addition to the standard command tabs, Access 2010 also has contextual command tabs. Depending on the context (object working with), one or more contextual command tabs might appear next to the standard command tabs.

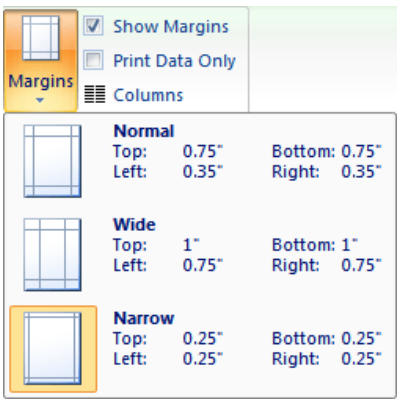


Activate a Contextual Command Tab

1. Click the contextual command tab.
2. The contextual command tabs contain commands and features that you need to work in a specific context.
3. For example, when you open a table in Design view, the contextual tabs contain commands that apply only when you are working with a table in that view.

Galleries

The ribbon also uses a kind of control called a gallery. The gallery control is designed to focus your attention on getting the results that you want.



Hide and Restore the Ribbon

1. Double-click the active command tab (the active tab is the highlighted tab).
2. Double-click the active command tab again to restore the Ribbon.

Quick Access Toolbar (QAT)

The Quick Access Toolbar is a toolbar adjacent to the ribbon that allows one-click access to commands. The default set of commands include **Save**, **Undo**, and **Redo**, and you can customize the Quick Access Toolbar to include other commands.

Customize the Quick Access Toolbar

1. Click the rightmost drop-down arrow in the toolbar.
2. Under **Customize Quick Access Toolbar**, click the command that you want to add, and you are done.

   Or, if the command is not listed, click **More Commands**, and proceed to the next step of this procedure.
3. In the **Access Options** dialog box, select the command or commands that you want to add, and then click **Add**.
4. To remove a command, highlight it in the list on the right, and then click **Remove**. Alternatively, double-click the command in the list.
5. Click **OK** when you are done.

Open a Database Object, Such As A Table, Form, Or Report

1. In the Navigation Pane, double-click the object.

   -or-
2. In the Navigation Pane, select the object, and then press ENTER.

   -or-
3. In the Navigation Pane, right-click an object, and then click Open.
4. Note that you can set an option to open objects with a single click in the **Navigation Options** dialog box.
5. The Navigation Pane divides your database objects into categories, and these categories contain groups.

To show or hide the Navigation Pane

Click the button in the upper-right corner of the Navigation Pane  or press F11.

The Navigation Pane from Appearing By Default

1. Click the **File** tab, and then click **Options**.

   The **Access Options** dialog box appears.

2. In the left pane, click **Current Database**.
3. Under **Navigation**, clear the **Display Navigation Pane** check box, and then click **OK**.

Status Bar

This standard UI element continues to be the place to look for status messages, property hints, progress indicators, and so on. With Access 2010, the status bar also takes on two standard functions that you will also see in the status bar of other Office 2010 programs: View/Window switching and Zoom.

The status bar can be enabled or disabled in the **Access Options** dialog box.

Show Or Hide The Status Bar

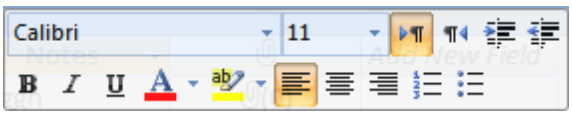
1. Click the **File** tab, and then click **Options**.

   The **Access Options** dialog box appears.

2. In the left pane, click **Current Database**.
3. Under **Application Options**, select or clear the **Display Status Bar** check box. Clearing the check box turns off the display of the status bar.
4. Click **OK**.

Mini Toolbar

Using Access 2010 you can format text more easily by using the mini toolbar. When you select text for formatting, the mini toolbar automatically appears above the selected text. If you move the mouse pointer closer to the mini toolbar, the mini toolbar fades in and you can use it to apply bold, italic, font size, color, and so on. As you move the pointer away from the mini toolbar, the mini toolbar fades away.



Format Text by Using The Mini Toolbar

1. Select the text to format.

   The mini toolbar transparently appears above the text.

2. Apply formatting by using the mini toolbar.

Getting Help

When you have a question, you can get help by pressing F1, by clicking the question mark icon on the right side of the ribbon.

- You can also find Help in Backstage view:
- Click the **File** tab, and then click **Help**.

WORKING WITH TABLES

While there are four types of database objects in Access 2010, **tables** are arguably the most important. Even when you're using forms, queries, and reports, you're still working with tables, since that's where all your **data** is stored. Tables are at the heart of any database, so it's important to understand how to use them.

Open A Recently Used Database

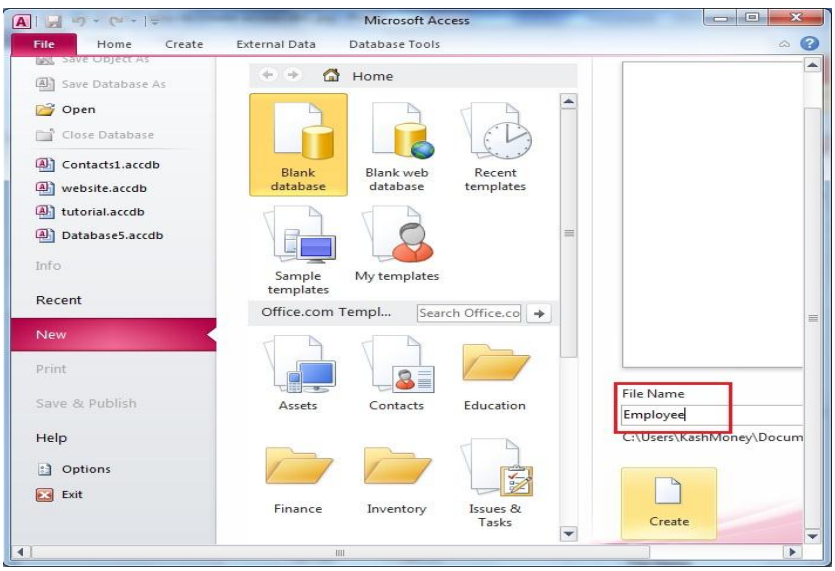
- In Backstage view, click **Recent**, and then click the database that you want to open.
- Access opens the database.

Open A Database From Backstage View

- Click the **File** tab, and then click **Open**. When the **Open** dialog box appears, browse and select a file, and then click **Open**.
- The database opens.

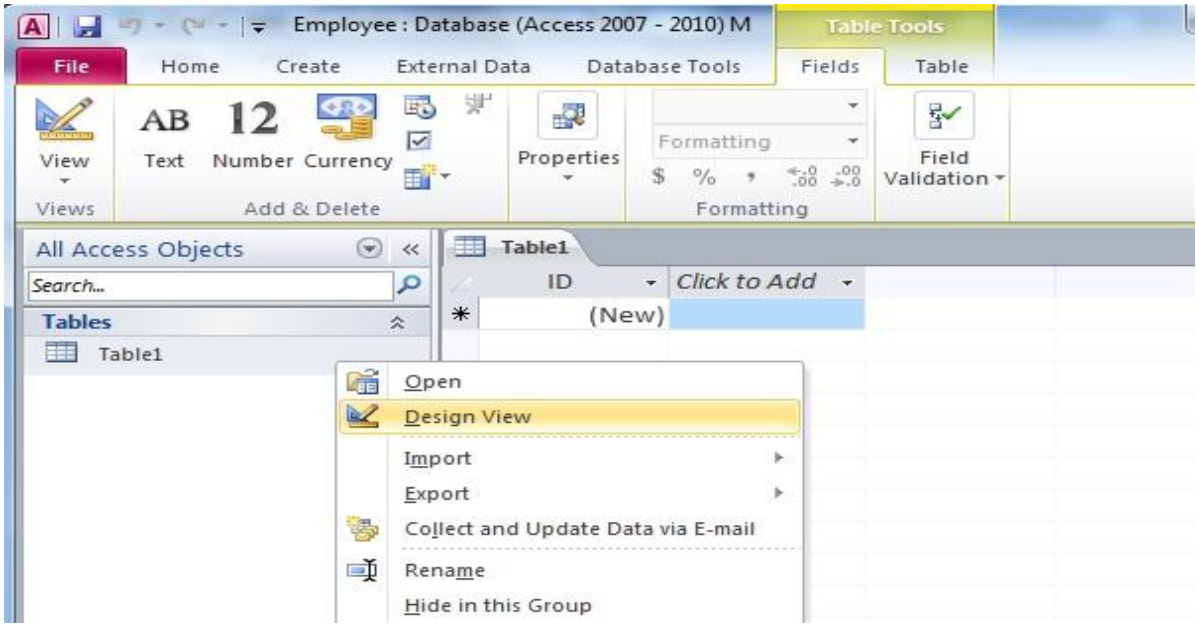
Create A New Blank Database

1. Start Access from the **Start** menu
2. **Start > Programs > Microsoft Office > Microsoft Access 2010**.
   The Backstage view appears.
   File Menu > New > Blank database
   Enter the name of the access database under File Name and click on Create button.



The new database is created, and a new table is opened named **Table1** as a starting point.

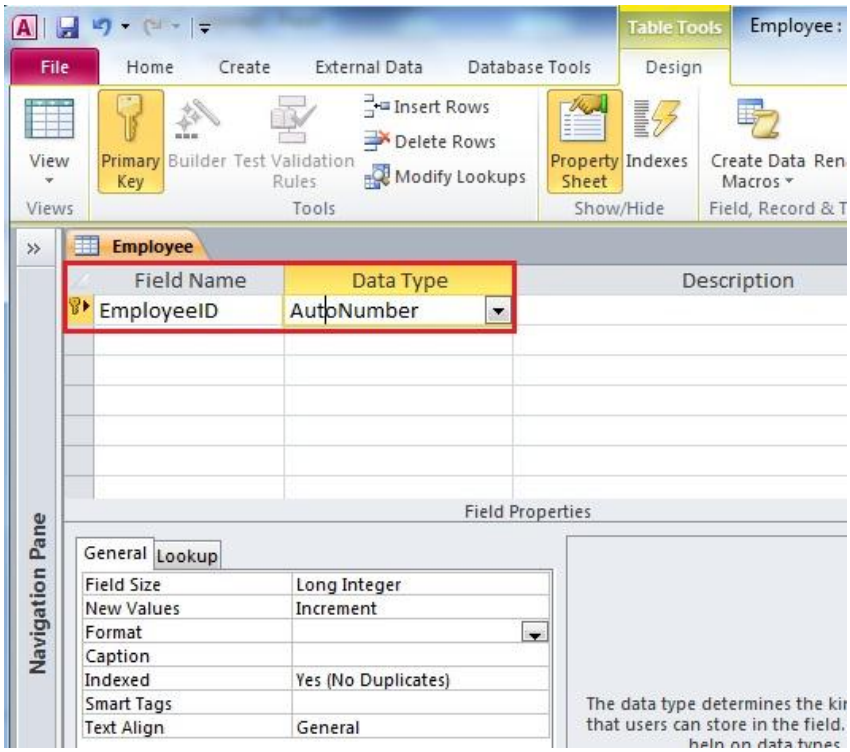
Table-1 (Default table created)



To create the fields in the table right click on the table and select Design View.

A dialog box titled **Save As** is displayed where the Table name can be modified.

Enter Field Name and Data Type information



Primary Key

A primary key is a unique identifier for a database record. When a table is created, one of the fields is typically assigned as the primary key. While the primary key is often a number, it may also be a text field or other data type.
The primary key also acts as a pointer to the record and provides a simple way for the DBMS to search, sort, and access the records. It also helps relate records across multiple tables. Each table can only have one primary key. The primary key field must also be defined for each record and not set to null.

Foreign Key

A foreign key (FK) is a column or combination of columns that is used to establish and enforce a link between the data in two tables. In a foreign key reference, a link is created between two tables when the column or columns that hold the primary key value for one table are referenced by the column or columns in another table. This column becomes a foreign key in the second table.

2.1 Data Types In Access 2010

Field Type	What It Holds
Text	Text up to 255 characters long (including spaces and punctuation). Use a Text field, not a Number field, for codes — such as phone numbers, ZIP codes, and other postcodes — even if they look like numbers.
Memo	Like a Text field, but more of them — up to 65,536 characters. A memo field can contain rich (formatted) text, and you can set it to Append Only, so that it can accumulate text notes, without allowing the user to delete what's already there.
Number	Only numbers. You may use + or – before the number, and a decimal point. If you plan to do math with a field, use a Number or Currency field.
Currency	Numbers with a currency sign in front of them ($, ¥, and so on).
AutoNumber	Numbers unique to each record and assigned by Access as you add records, starting at 1. Use an AutoNumber field as the primary key field for most tables.
Date/Time	Dates, times, or both.
OLE Object	Object Linking and Embedding. Don't use it when creating a new database; use the new Attachment type instead because it stores data more efficiently.
Hyperlink	This text string is formatted as a hyperlink. (If you click the link, it takes you to the page.) This is especially useful if there's related information on the Web.
Yes/No	Yes or no (a particular condition is, or isn't, in effect) — or other two-word sets, such as True/False, On/Off, or Male/Female. Use a Yes/No field if you want to display the field as a check box on forms.
Attachment	You can store one or more entire files — pictures, sound, Word documents, even video — in one Attachment field.

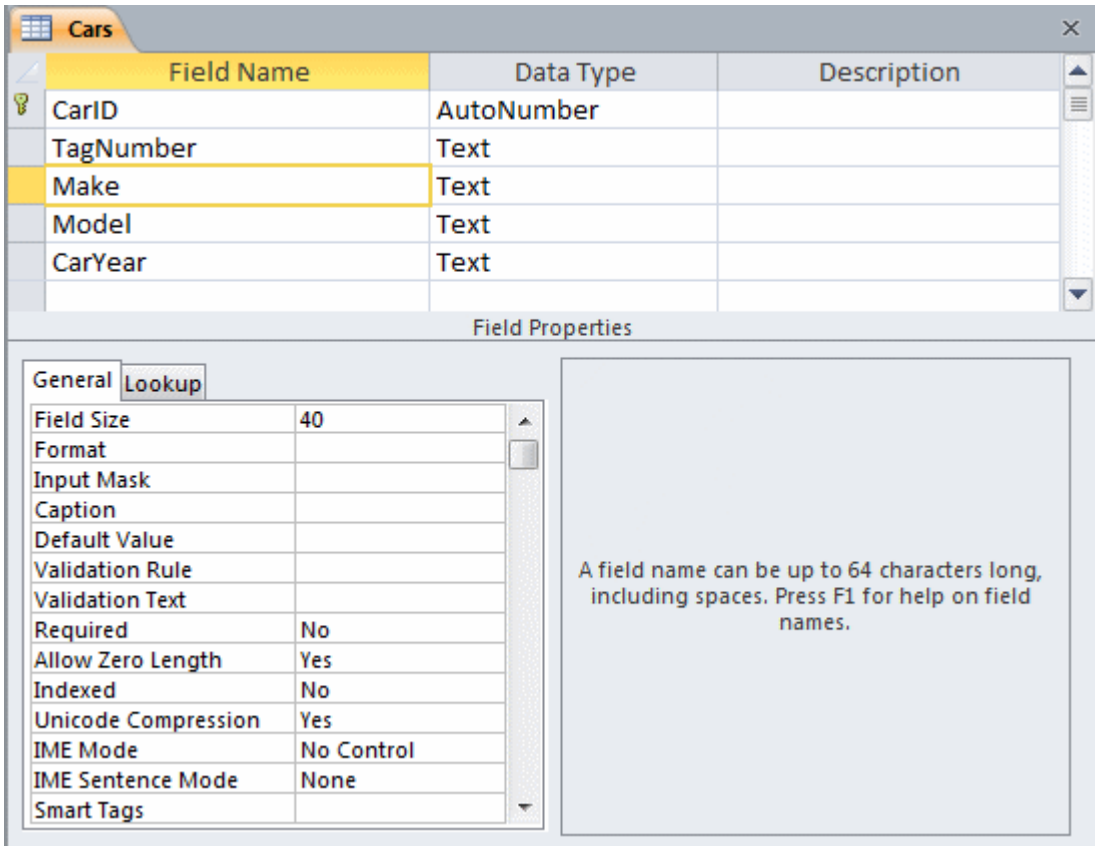
Calculated	You enter a formula that Access uses to calculate the value of this field based on other fields in the table. Use a Calculated field when a calculated value will be used in many queries, forms, and reports.

2.2 Table in Design View

- To start creating a table in Design View, on the Ribbon, click Create. In the Tables section, click the Table Design button

- To open an existing table in Design View, in the Navigation Pane, right-click it and Click Design View.
- If a table is already opened, to switch it to Design View, right-click its tab and click Design View
- If a table is currently opened, to switch it to Design View, on the right side of the status bar, click the Design View button 

A table in Design View is divided in two sections: one in the upper area and another in the bottom



- The top area is made of columns (named Field Name, Data Type, and Description) and rows.

- The lower portion of the window is made of two sections. To access the lower portion while the top section has focus, you can press F6 or click the lower item you want.

- The left section of the lower part is made of two tabs labelled General and Lookup.
- Each tab contains two columns and various rows.
- The number of rows and the contents of cells depend on what is selected in the upper section.

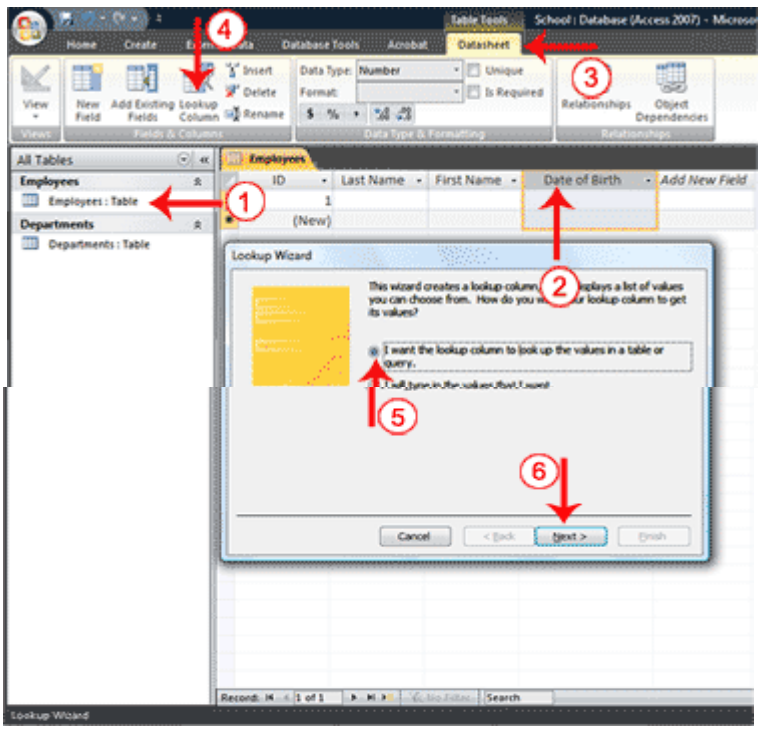
Create a Lookup Column

If a field can contain a finite list of values, you can create a Lookup Column and users can select the value they want from a list. For example, if the employees at a school can only work in one of the following departments: Administration, Computer Science, English, History, or Math. You can create a table Departments table that lists the departments and then use the list in the Employee table to assign each employee to a department.

Departments Table	
Department ID (Primary Key)	**Department**
1	Administration
2	Computer Science
3	English
4	History
5	Math

Access has a wizard to help you create lookup columns. Creating a Lookup column creates a relationship between two tables.

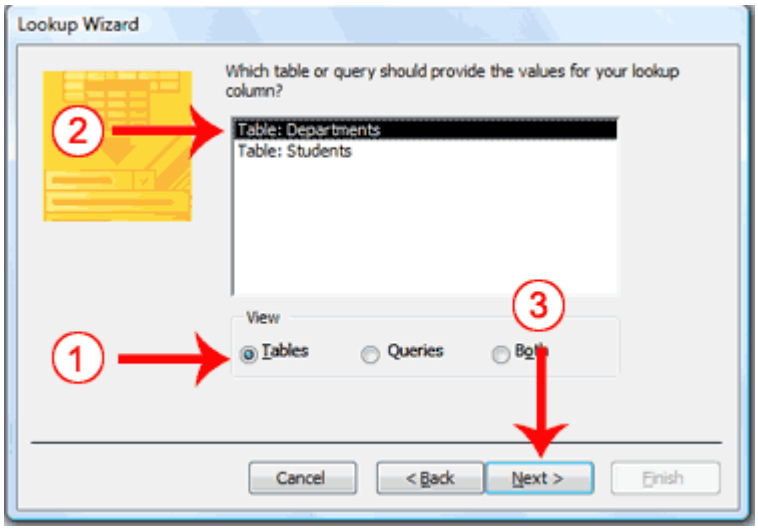
Lookup Wizard



1. Open the table to which you want to add a lookup column.
2. Click the field label for the field before which you want to add a lookup column.
3. Activate the Datasheet tab. (You must be in Datasheet view.)
4. Click the Lookup Column button in the Fields & Columns group. The Lookup Wizard appears.
5. Make sure the radio button next to “I want the lookup column to look up the values in a table or query.” is selected.
6. Click Next. The Lookup Wizard moves to the next page.

Select your table or query

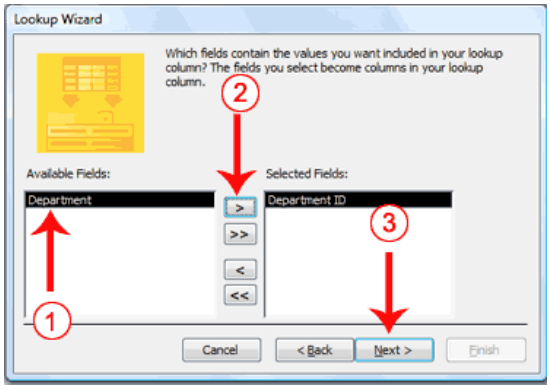
A lookup column can be based on a table, a query, or a list of values you type. If you base your lookup column on a table or query, you must create the table or query before creating the lookup column. A query is a list of rows and columns based on one or more tables. A query only displays the rows and columns you specify.



1. Click a radio button to select what you want to base your lookup column on. Choose from Tables, Queries, or Both.
2. Click to select the table or query you want.
3. Click Next. The Lookup Wizard moves to the next page.

Select fields

You choose the fields you want to appear in your lookup column. Be sure to include the primary key.



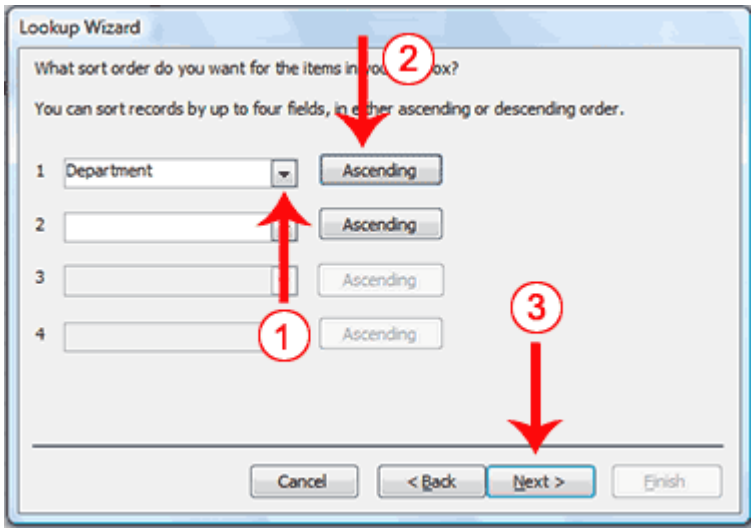
1. Click the field you want.
2. Click the single right-arrow button . Access places the field in the Selected Fields column. Repeat this process to select additional fields. If you want all the fields in the table, click the double right-arrow button .

   Note: Use the single left-arrow and the double left-arrows to deselect fields.

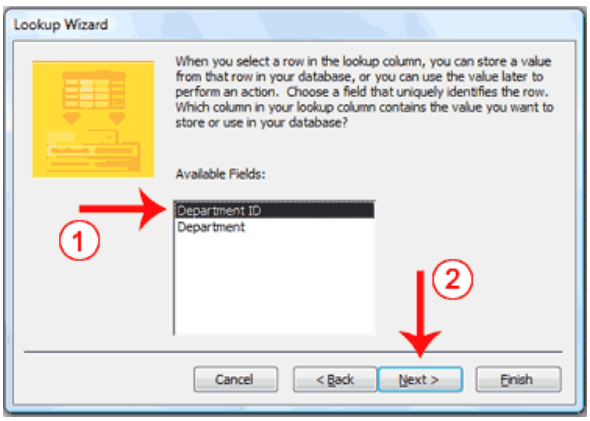
3. Click Next. The Lookup Wizard moves to the next page.

Sort fields

The Lookup Wizard allows you to sort the records in a lookup column. You can display records in order, either ascending (alphabetical from A to Z, lowest number to highest number, earliest date to latest date) or descending (alphabetical from Z to A, highest number to lowest number, latest date to earliest date). You can also sort within a sort. For example, you can sort by state and then within each state by city, and then within each city by street address. If you are creating a sort within a sort, create the highest level sort on line one, the next level sort on line two, and so on. In the state, city, and street address example, you create the state on line one, the city on line two, and the street address on line three.



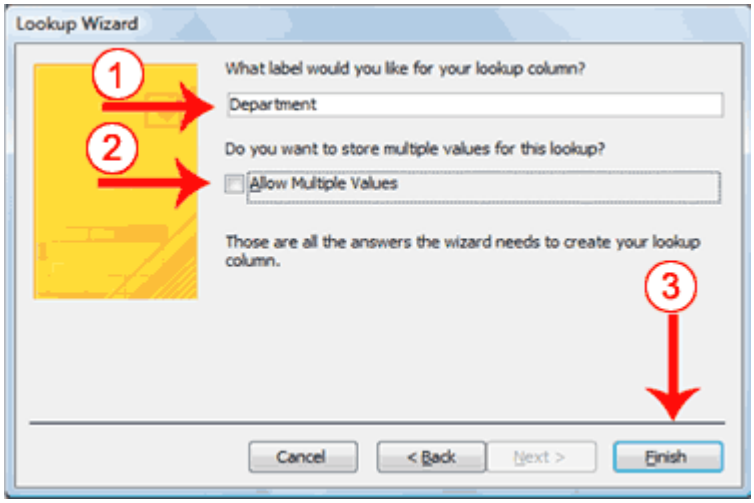
1. Click the down-arrow and then select the field you want to sort by.
2. Click to select a sort direction (the button toggles between ascending and descending). You can sort within a sort for up to four levels.
3. Click Next. The Lookup Wizard moves to the next page.



1. Click the key field.
2. Click Next. The Lookup Wizard moves to the next page.

Name the column

Field names appear at the top of each column. On this page of the Wizard you tell Access what you want to name your lookup column. In Access 2007, multiple values can appear in a field; click the Allow Multiple Values checkbox if you want to allow multiple values.



1. Type the name you want to give the column.
2. Click if you want to allow multiple values in the field.
3. Click Finish. Access creates the lookup column.

Tables Column Design

Name of a Field

In the Design View:

- To create a new column and give it a name, click an empty cell under Field Name and type the desired name
- To change the name of an existing column, double-click its name in the Field Name column to select it and type the desired name
- To edit the name of an existing column, click somewhere in the name to put it into edit, use the Delete, the Backspace, and the arrow keys to edit it.

Text on the Status Bar

To create a status bar text for a field when designing a table:

- If the table is displaying in the Datasheet View, click any cell under its header. On the Ribbon, click Fields, in the Properties section, click Name & Caption. Click **Description** and type the desired text
- If the table is displaying in the Design View, click the name of the column. Under Description, type the string you want

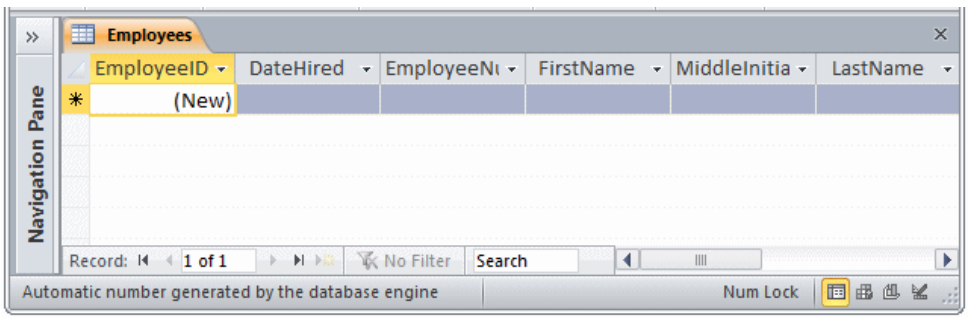
The string would appear when the field receives focus in the table in Datasheet View

The Caption of a Field

On a column of a table, a caption is the string that the user sees on the column header. The caption that a column displays is not necessarily the name of the column.

- To give a desired column header in the top section of the Design View, click the field under the Field Name column. In the lower section of the window, click **Caption** and type the desired word or group of words
- To change the caption of a column but keep its name, switch the table to Design View, under Field Name, click the field. In the lower section of the window, click **Caption**, press F2 and edit the string

Notice the words in the columns headers (the captions)

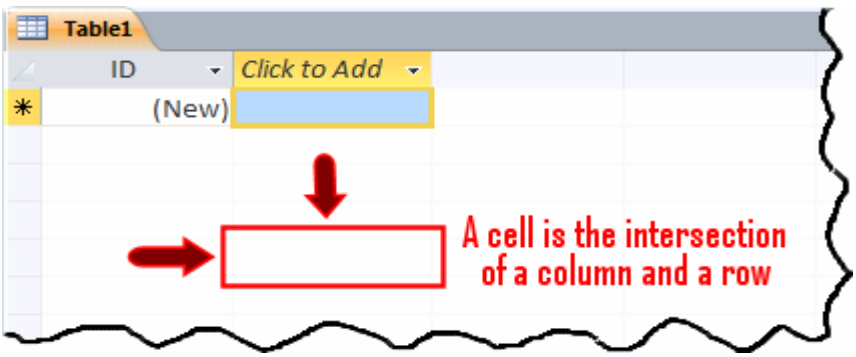


Change View

- After designing the Table Data can be entered through the Datasheet View.
- To open the table in DataSheet View, Right Click on the Table and Click open
- Activate the Home tab.
- Click the down-arrow under the View button. A menu appears.
- Click the view you want. Access changes to the view you chose.

2.3 Table In a Datasheet view

A table is primarily an arranged list of columns and rows, each column and each row intersect to create a rectangular box called a cell:



The cell is actually the object that holds data of a table. A cell holds only one piece of information.

Scroll Bars

The vertical scroll bar / horizontal scroll bar would allow you to move up and down or left to right on the datasheet.

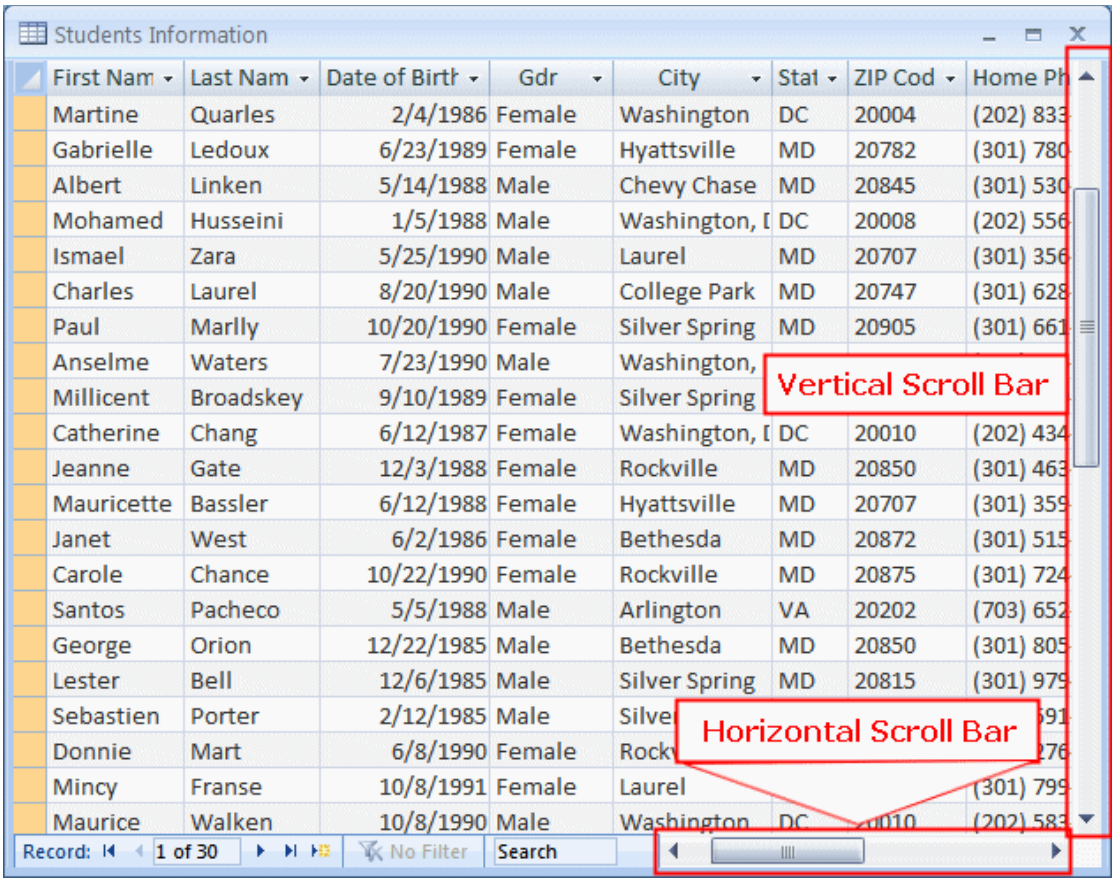
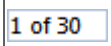


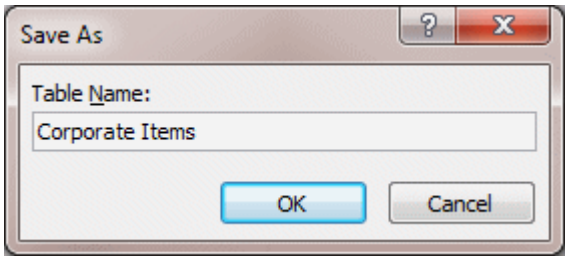
Table Navigation Buttons

The lower left side of the table is made of four buttons used to navigate the table, one button used to create a new record, and a text box. Each button plays a specific role:

Button	Name	Role
	First Record	Allows moving to the first record of the table
	Previous Record	Allows you to move one record back (if there is one) from the current record
	Current Record	Displays the number representing the current record out of the total number of records
	Next Record	Allows moving you one record ahead
	Last Record	Allows moving you to the last record of the table
	New (Blank) Record	Used to enter a new record on the table

Save the table

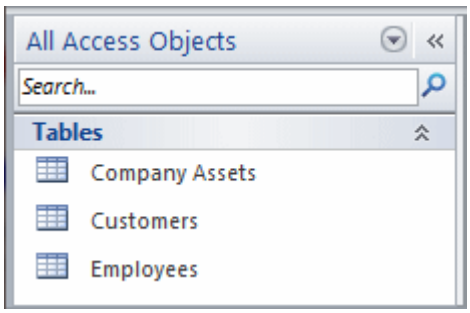
- To save the table, right-click and click Save
- Type the name of the table



- Click OK
- To close the table, click its Close button

2.4 Table management

Tables in the navigation pane: The table is the primary object of a database. When you create a table and save it by giving it a name, Microsoft Access creates a section labelled Tables in the Navigation Pane and displays the name of the new table in that section.



Opening a table

To open a table, first locate it in the Navigation Pane then:

- You can double-click the table
- You can right-click the table and click Open

Any of these actions causes the table to display in Datasheet View in the central area of the screen.

Closing a table

After using a table, you can close it. Before closing a table, first select its tab. Then, to close a table:

- You can click the close button on the right side of the tabs
- You can press Ctrl + Shift + F4

Selecting a Table

- To select a table in the Navigation Pane, simply click it
- If you had opened many tables and they are displaying in the main area of the screen, to select one, click its tab or its title bar
- If you have many tables displaying in the main area of the screen, you can press Ctrl + F6 continuously to switch from one table to the next until the desired one displays

Renaming a Table

If the name of a table is not appropriate, you can change it. To rename a table, in the Navigation Pane, you can right-click the name of the table and click Rename.

Deleting a Table

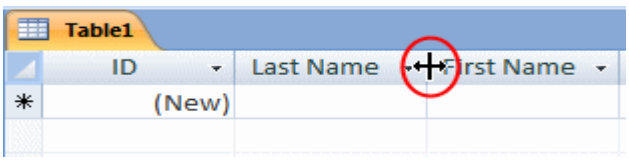
- In the Navigation Pane, right-click the table and click Delete
- In the Navigation Pane, click the table to select it. Then, on the Ribbon, click Home. In the Record section, click Delete
- In the Navigation Pane, click the table to select it and press Delete

Working on Columns in Tables

Changing the Width of a Column

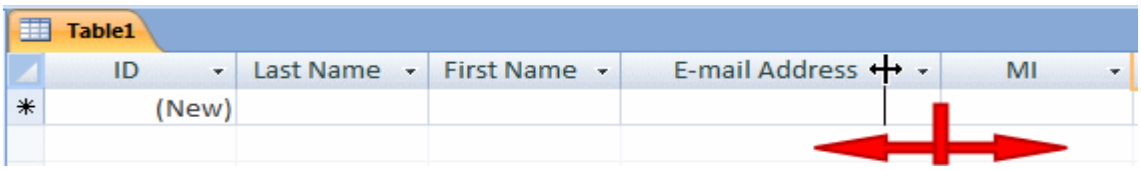
To change the width of a column:

- You can position the mouse on the right border of a column header. The mouse pointer would change into a horizontal double arrow crossed by a vertical line:

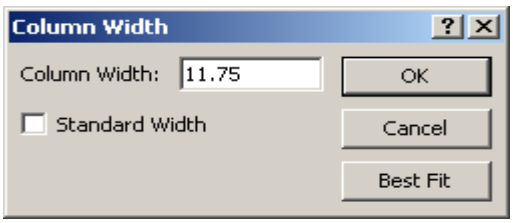


If you double-click, the column would be resized to the widest value of the column, provided the widest value is wider than the column header. If the widest value is narrower than the column header, the column width would be widened enough to display the name of the column.

- You can click the column's right border and drag in the desired direction, left or right until you get the desired width

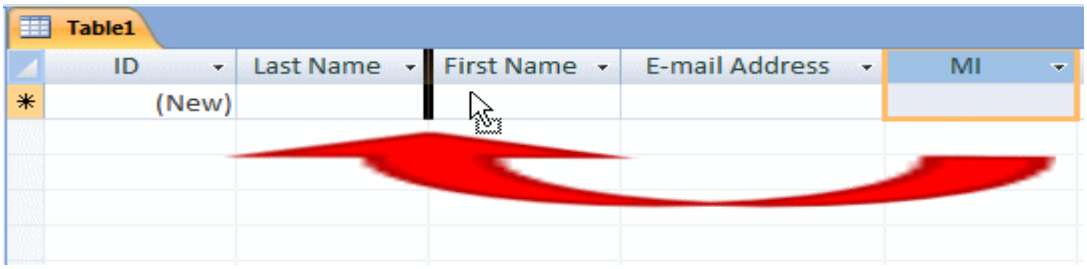


- You can right-click a column's name and click Column Width... This would open the Column Width dialog box where you can type the desired value and click OK



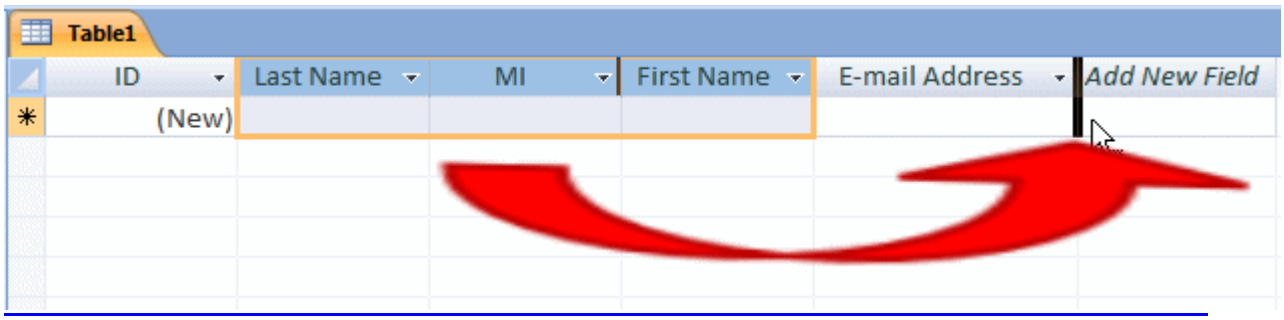
Move a Column

To move a column in Datasheet View, first select it. Click and hold your mouse on it. Then, start dragging left or right in the desired direction. While your mouse is moving, a thick vertical line will guide you. Once the vertical line is positioned to the desired location, release the mouse



Move a Group of Columns

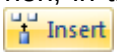
To move a group of columns, first select them as we reviewed earlier. Click and hold the mouse on one of the selected columns. Start dragging left or right in the desired direction until the thick vertical guiding line is positioned in the desired location, then release the mouse



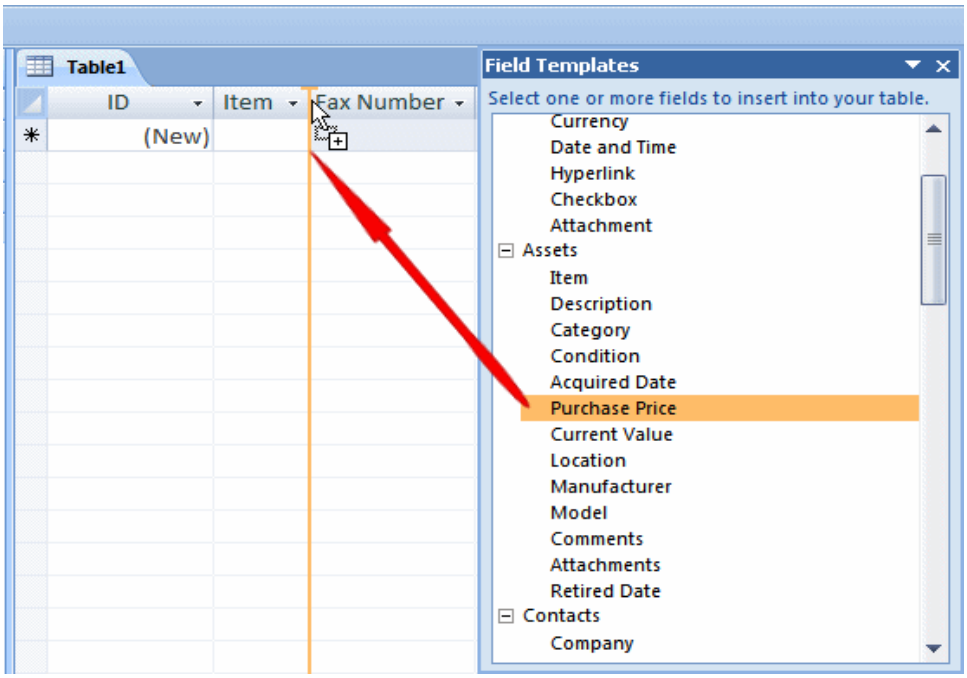
Inserting a Column

Inserting a column consists of adding one between two existing fields. To do this, right-click the column that will succeed it and click Insert Field

Or

- To insert a column using the ribbon, first click a cell under the column that will succeed it. Then, in the Fields & Columns section of the Datasheet tab, click the Insert button 

- To insert a column from the table, right-click the column that will succeed it and click Insert Column
- To insert a field from the Field Templates, click and drag it from the Field Templates and drop it to the left of the column that will succeed it



Rename Column

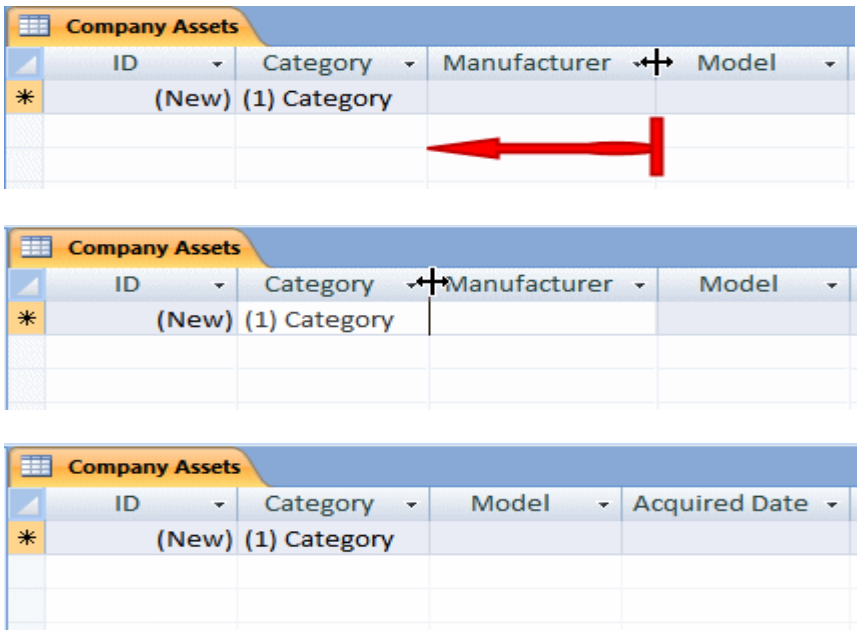
Before changing the name of a column:

- You can double-click its header
- You can right-click a column and click **Rename Column**
- When any cell under a column has focus, on the Ribbon, you can first click Datasheet. Then, in the Fields & Columns section, click Rename Column.

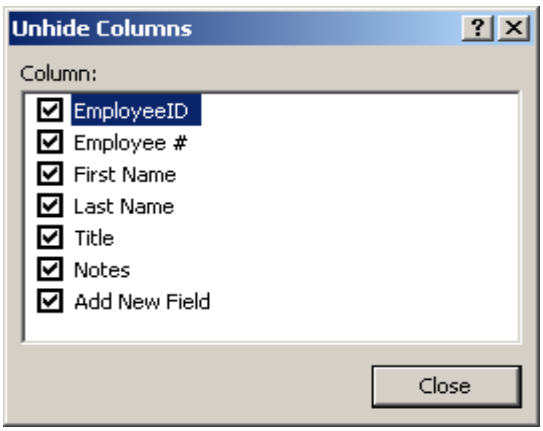
Any of these actions would put the name of the column into edit mode. You can then type the new desired name or change the existing name.

Hiding and Revealing a Hidden Column

To hide a column, you can drag the right border of its column header completely to its left border as we saw earlier to change the width of a column; when the vertical guiding line reaches the left border, release the mouse: the column would be hidden from the table.



To hide one or a group of columns, you can right-click and click Hide Fields. You can also right-click any column and click Unhide Fields. This would open the Unhide Columns dialog box.



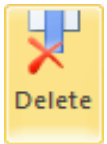
To hide a column, clear its check box.

To reveal a column or a group of columns previously hidden, right-click any column header on the table and click Unhide Column. In the Unhide Columns dialog box, put a check mark on each column you want to show.

Deleting a Column

To remove a column from a table:

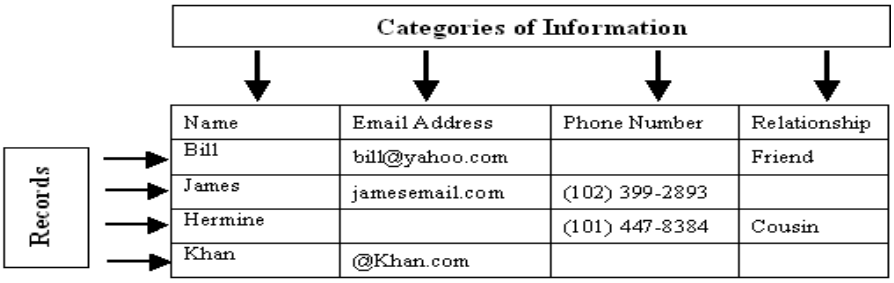
- Right-click the column's name and click Delete Field
- Select the column (or a group of columns), right-click anywhere in the table and click Delete Field
- Select a column (or a group of columns). Then, in the Add & Delete section of the Ribbon, click the Delete button



Any of these actions would present you a warning to confirm whether you still want to delete the column(s).

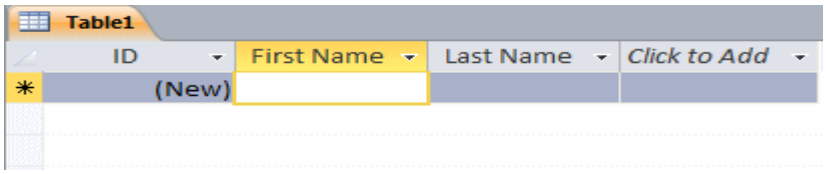
Data Entry Fundamentals

Data entry consists of entering values into the database and populating it with information. A table's cell holds one particular unit of data. All cells on the same (vertical) column belong to the same category of information.

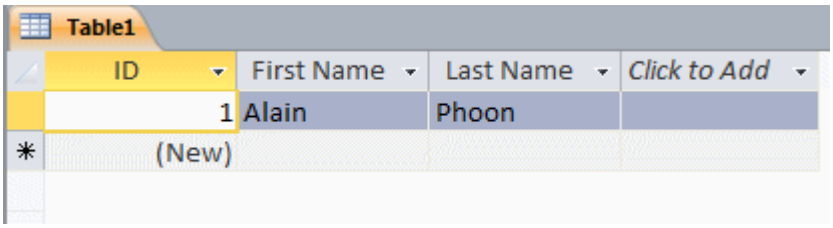


Data Entry on a Table

- To perform data entry on a table, you can click a cell under a column header and type a value.
- A table appears with many rows of cells, when a table is empty with no record, only the cells just under the column header are accessible. Those cells appear with a type of blue color.
- If you click one of those cells, its background becomes white and its borders are orange, indicating that it is ready.



- Another way to indicate an empty record, the field of the most left column is marked with (New) and its row of records uses the same light-blue color.
- After typing a value in a cell, you can press Enter or Tab to move the caret to the next cell.
- When a record has been completed, the background color of its cells changes. The next record under it has the first cell marked as (New) and its empty cells are in blue. The other cells remain white



- The white cells cannot receive data: if you click them (with the left mouse button), nothing happens. You can only right-click them to get a context-sensitive menu.

There are three kinds of fields or cells the user will face:

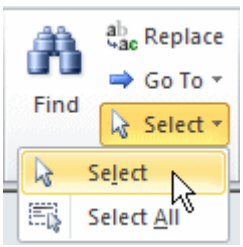
- A field in which the user can type data,
- A field that displays a list as a combo box the user has to select from,
- A field that does not receive input from the user.
- After setting the data in a particular field, you can click another cell and type the desired data.
- Press the right arrow key to move to the next field or the left arrow to move to the previous field or by pressing Enter.
- Press Enter at the end of a record, the caret would move to the beginning of the next record.

2.5 Record Management in Datasheet View

Record Selection

Record maintenance consists of copying, pasting, or deleting records, etc require that the record(s) be selected first:

- To select a row or record in Datasheet View, click the desired row header
- To select a record, click any cell on its row. On the Ribbon, click Home. In the Find section, click the Select button and click Select

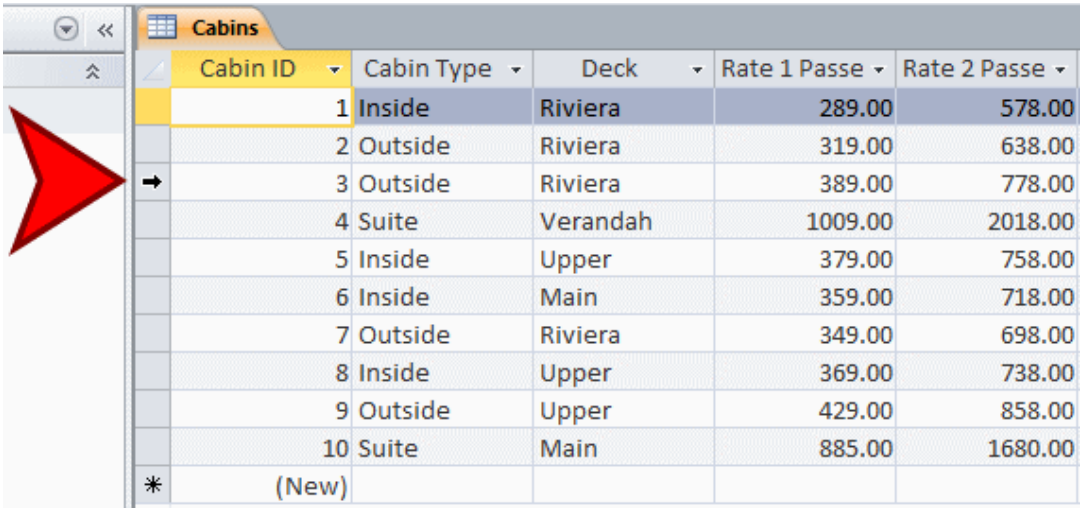


- To select more than one record, click and hold your mouse on one of their headers, then drag to cover the other desired row or rows's headers. When all desired rows are highlighted, release the mouse. Another technique used to select more than one row consists of clicking one row that will be at one end, pressing and holding Shift, and then clicking the row that will be at the other end.

To select all records of a table:

- Press Ctrl + A
- Click the button at the intersection of the column headers and the row headers

1. To select one record, position the mouse on the box to the left of the third record until the mouse turns into a right pointing arrow

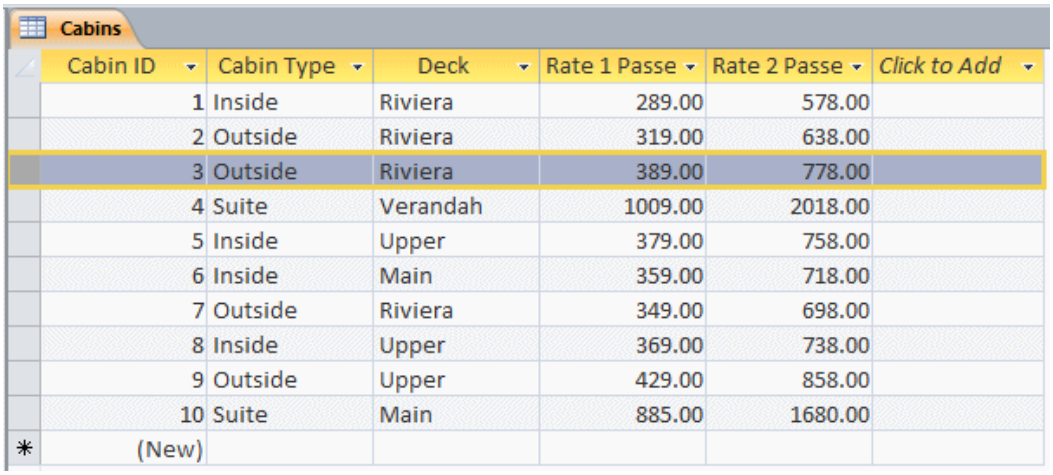


Cabins

Cabin ID	Cabin Type	Deck	Rate 1 Passe	Rate 2 Passe
1	Inside	Riviera	289.00	578.00
2	Outside	Riviera	319.00	638.00
3	Outside	Riviera	389.00	778.00
4	Suite	Verandah	1009.00	2018.00
5	Inside	Upper	379.00	758.00
6	Inside	Main	359.00	718.00
7	Outside	Riviera	349.00	698.00
8	Inside	Upper	369.00	738.00
9	Outside	Upper	429.00	858.00
10	Suite	Main	885.00	1680.00
(New)				

2. Then click.

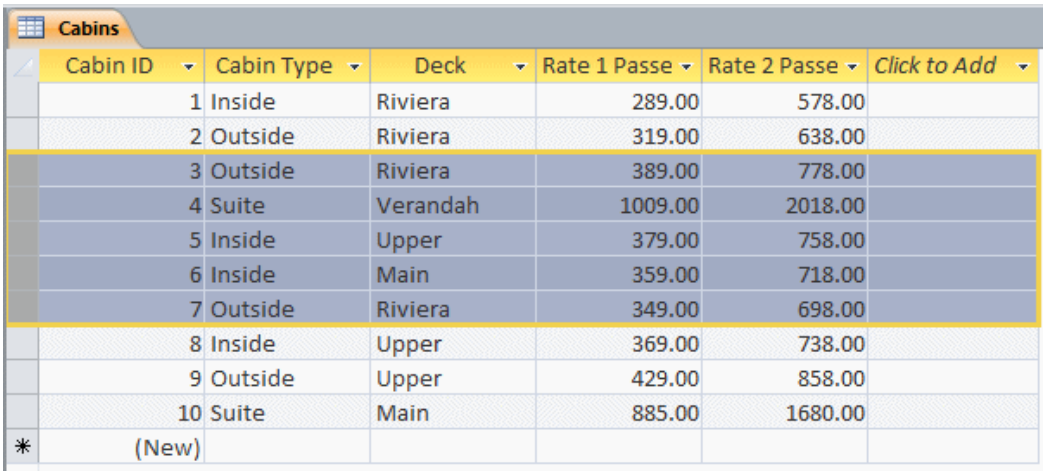
3. Notice that all cells of the second records are highlighted



Cabins

Cabin ID	Cabin Type	Deck	Rate 1 Passe	Rate 2 Passe	Click to Add
1	Inside	Riviera	289.00	578.00	
2	Outside	Riviera	319.00	638.00	
3	Outside	Riviera	389.00	778.00	
4	Suite	Verandah	1009.00	2018.00	
5	Inside	Upper	379.00	758.00	
6	Inside	Main	359.00	718.00	
7	Outside	Riviera	349.00	698.00	
8	Inside	Upper	369.00	738.00	
9	Outside	Upper	429.00	858.00	
10	Suite	Main	885.00	1680.00	
(New)					

4. Click the box to the left of the 7th record
5. Press and hold Shift
6. To select a range of records, click the box to the left of the 3rd record, and release Shift



Cabins

Cabin ID	Cabin Type	Deck	Rate 1 Passe	Rate 2 Passe	Click to Add
1	Inside	Riviera	289.00	578.00	
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3	Outside	Riviera	389.00	778.00	
4	Suite	Verandah	1009.00	2018.00	
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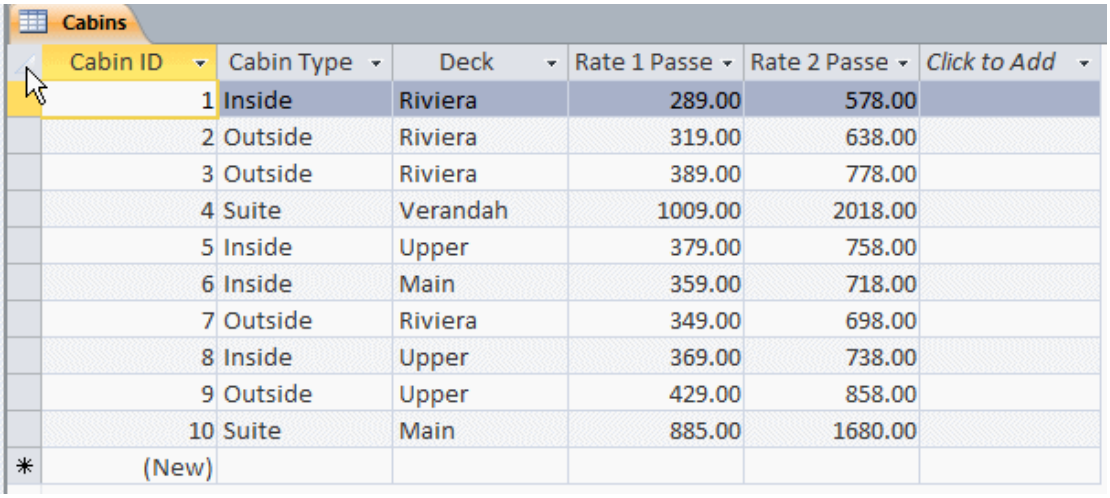
6	Inside	Main	359.00	718.00	
7	Outside	Riviera	349.00	698.00	
8	Inside	Upper	369.00	738.00	
9	Outside	Upper	429.00	858.00	
10	Suite	Main	885.00	1680.00	
(New)					

7. Notice that 5 records have been selected
8. To select all records, position the mouse on the button at the intersection of the column headers and the row headers



Cabins

Cabin ID	Cabin Type	Deck	Rate 1 Passe	Rate 2 Passe	Click to Add
1	Inside	Riviera	289.00	578.00	
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3	Outside	Riviera	389.00	778.00	
4	Suite	Verandah	1009.00	2018.00	
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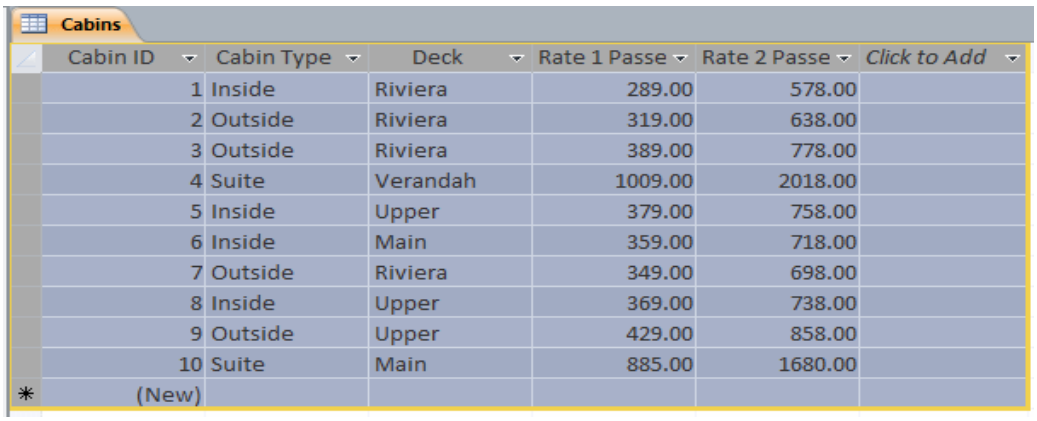
8	Inside	Upper	369.00	738.00	
9	Outside	Upper	429.00	858.00	
10	Suite	Main	885.00	1680.00	
(New)					

9. Click



Cabins

Cabin ID	Cabin Type	Deck	Rate 1 Passe	Rate 2 Passe	Click to Add
1	Inside	Riviera	289.00	578.00	
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3	Outside	Riviera	389.00	778.00	
4	Suite	Verandah	1009.00	2018.00	
5	Inside	Upper	379.00	758.00	
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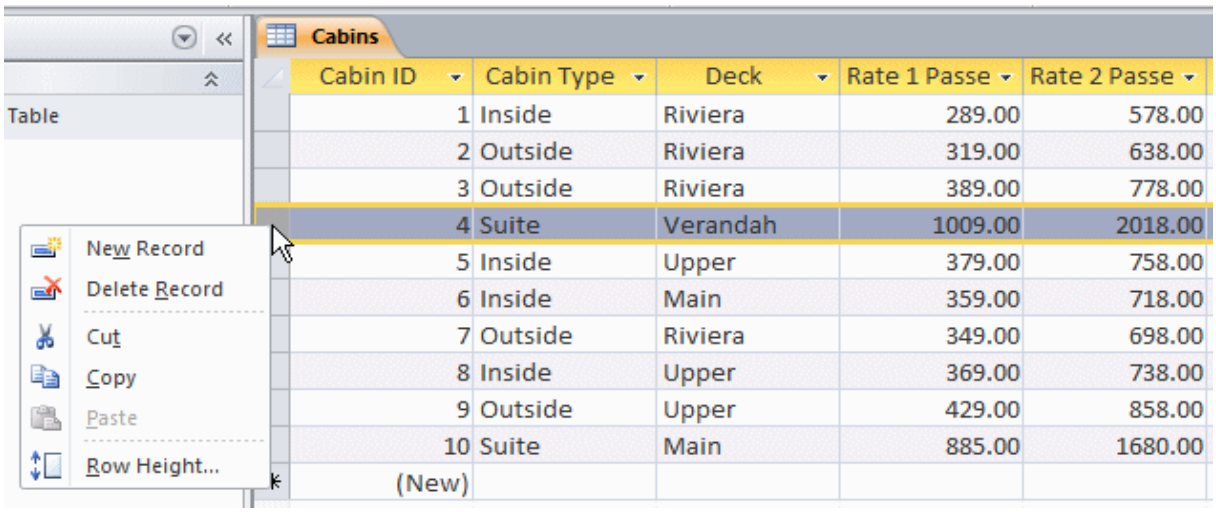
8	Inside	Upper	369.00	738.00	
9	Outside	Upper	429.00	858.00	
10	Suite	Main	885.00	1680.00	
(New)					

10. Notice that all records have been selected.
11. Click any cell in the table

Record Deletion

- You can click a row header and press Delete
- You can right-click a row header and click Delete Record



Cabin ID	Cabin Type	Deck	Rate 1 Passe	Rate 2 Passe
1	Inside	Riviera	289.00	578.00
2	Outside	Riviera	319.00	638.00
3	Outside	Riviera	389.00	778.00
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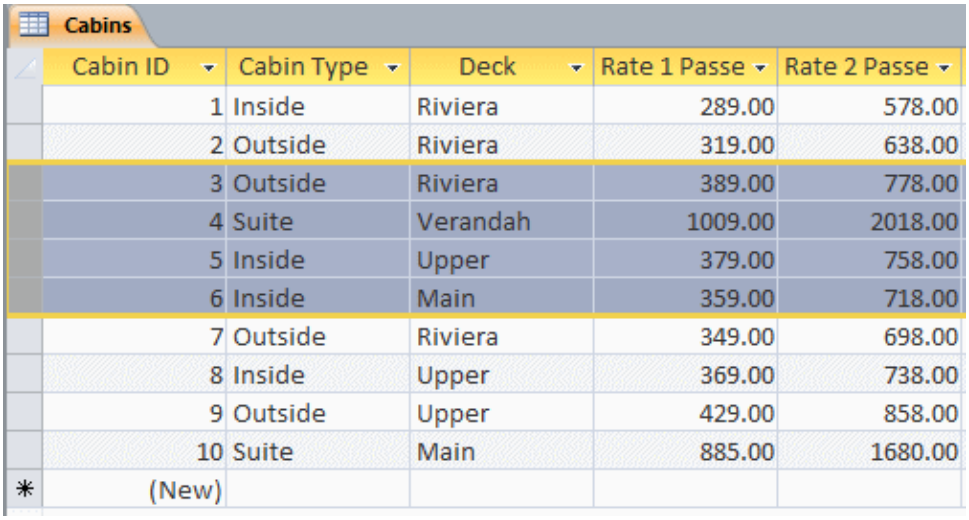
6	Inside	Main	359.00	718.00
7	Outside	Riviera	349.00	698.00
8	Inside	Upper	369.00	738.00
9	Outside	Upper	429.00	858.00
10	Suite	Main	885.00	1680.00
(New)				

1. Click Delete Record
2. A warning message box will appear. Read it and click Yes
3. To delete more than one record, click and hold the mouse on the box to the left of record number 5, then drag up to include record number 2 in the selection



Cabin ID	Cabin Type	Deck	Rate 1 Passe	Rate 2 Passe
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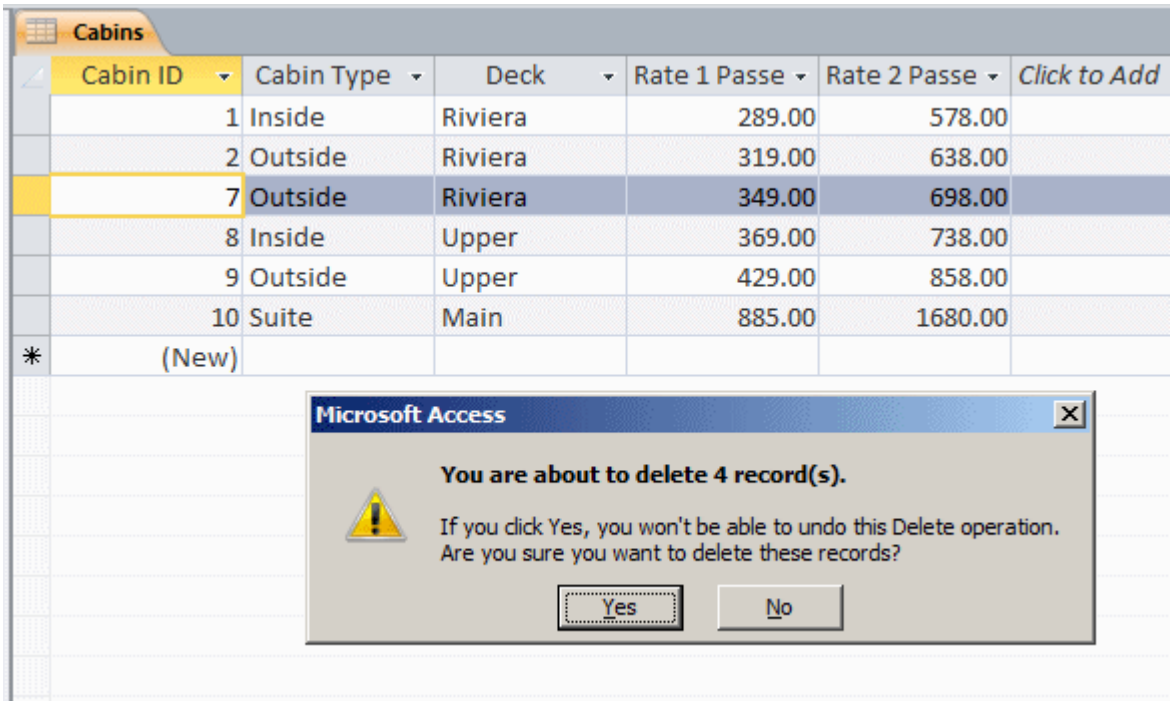
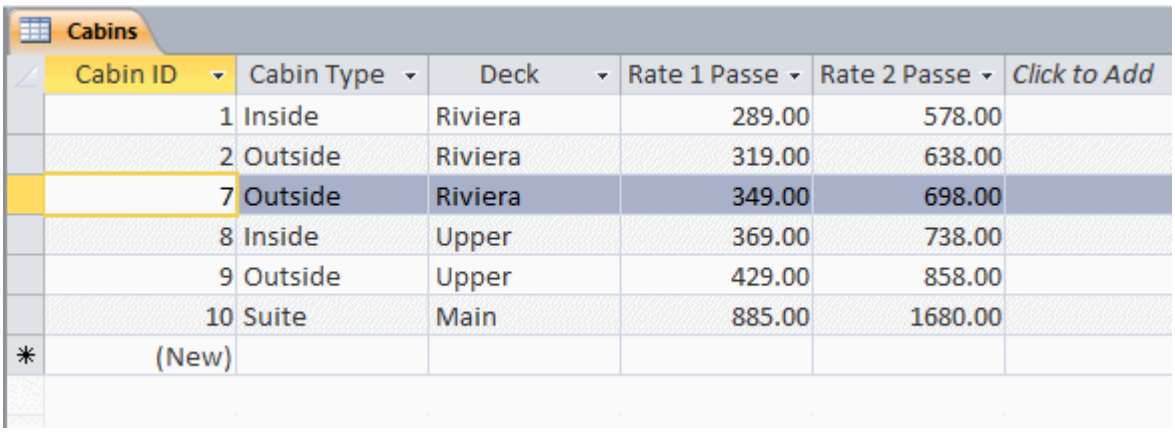
7	Outside	Riviera	349.00	698.00
8	Inside	Upper	369.00	738.00
9	Outside	Upper	429.00	858.00
10	Suite	Main	885.00	1680.00
(New)				

4. On your keyboard, press Delete



5. Read the warning message box and press Enter



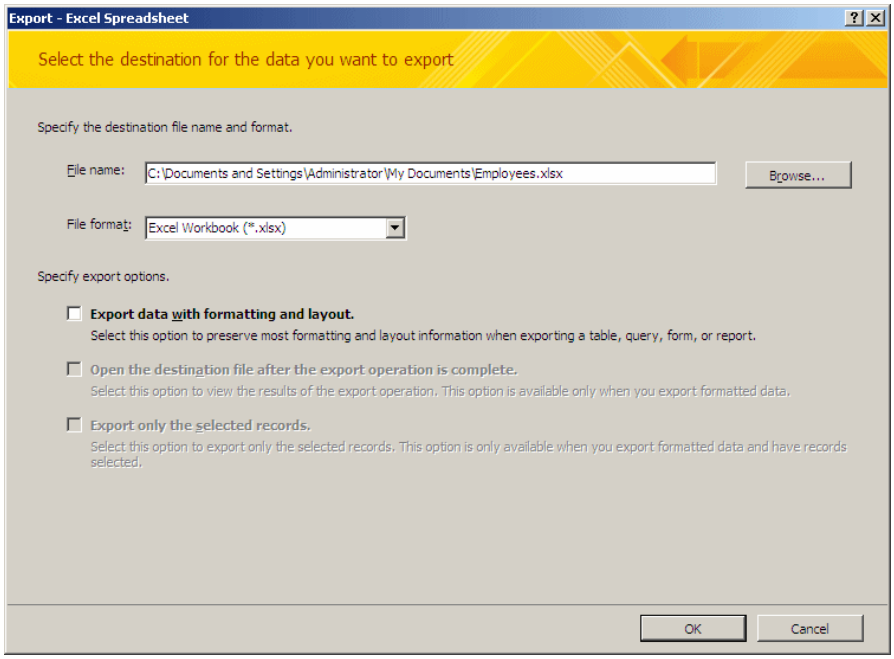
2.6 Data Import and Export (MS-Excel)

Exporting Data from MS-Access to MS-Excel

- Click the table. Then, on the Ribbon, click External Data.
- In the Export section, click the Excel button

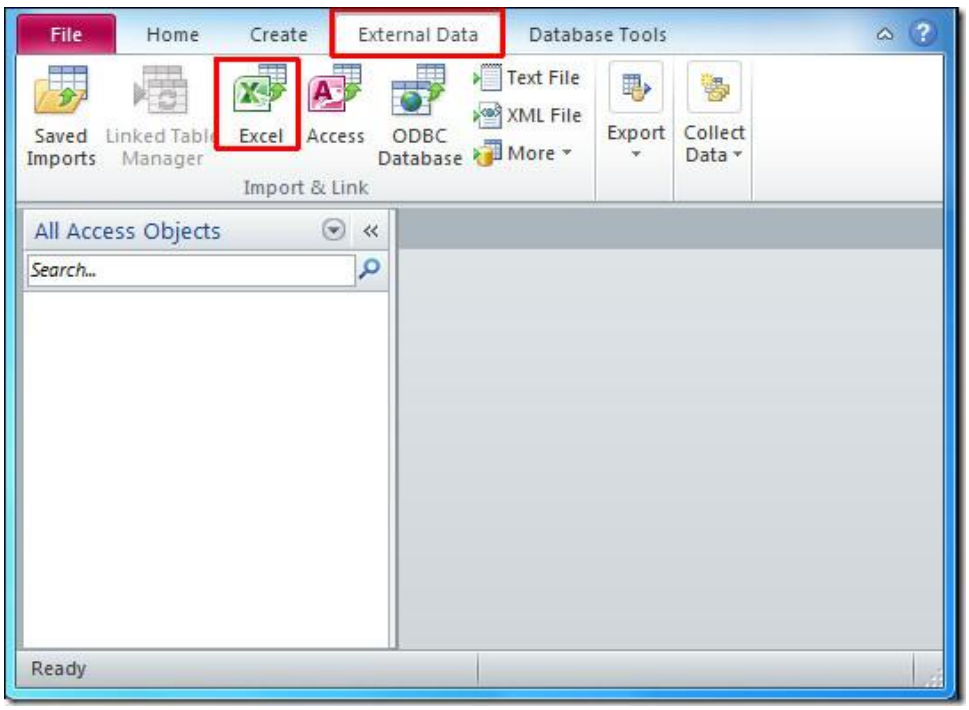
Or

- In the Navigation Pane, right-click the desired table, position the mouse on Export, and click Excel
- This would open the Export - Excel Spreadsheet dialog box with the path where the file will be saved.

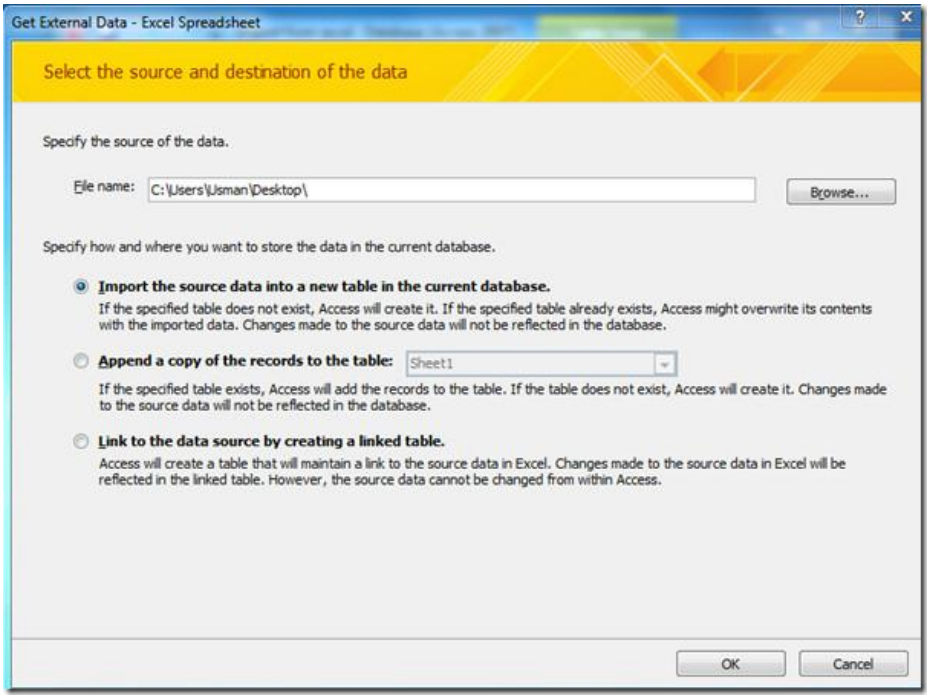


Importing a Microsoft Excel Spreadsheet

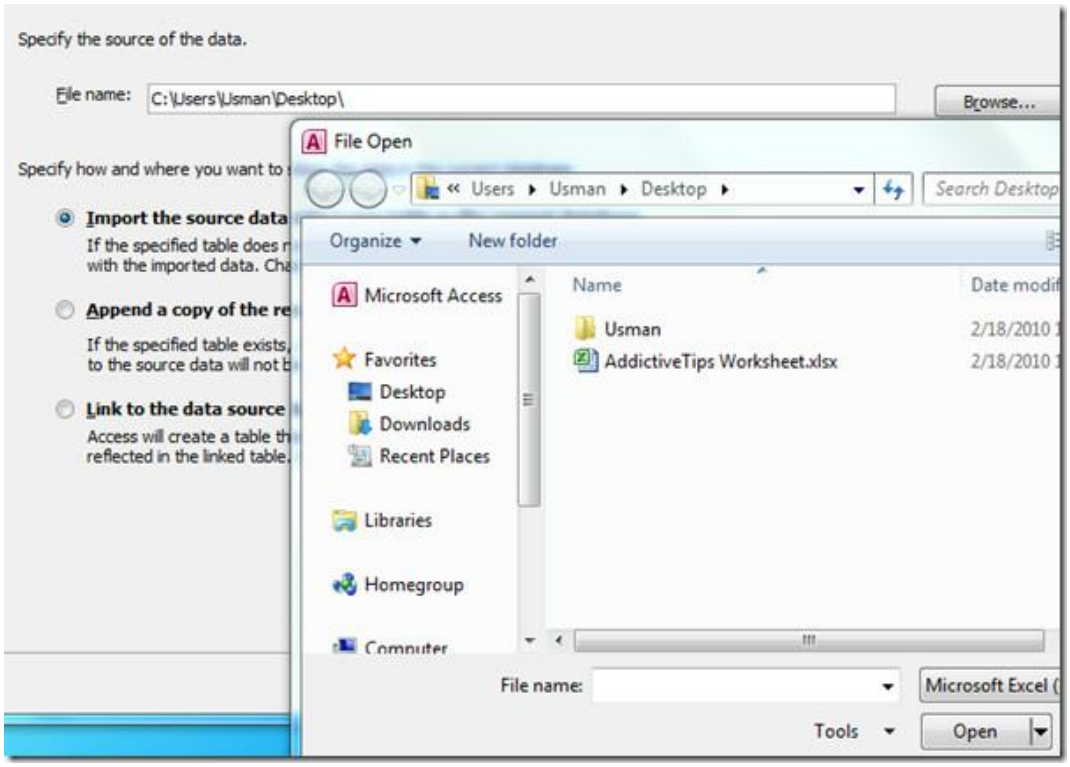
Microsoft Access allows you to import a spreadsheet from Microsoft Excel.



You will see *Get External Data* dialog box, it shows three different options of how and to where database will be stored.

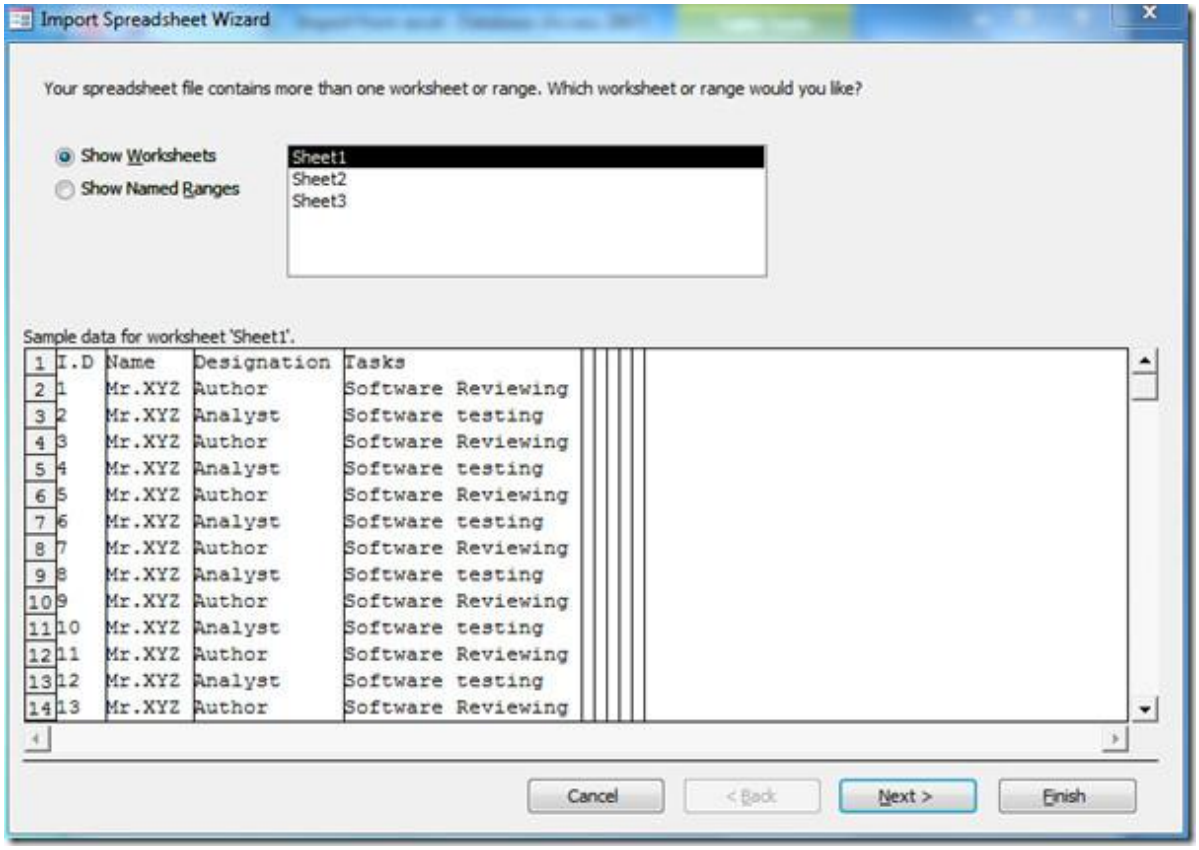


Click *Browse to* select Excel worksheet you want to import and click *Open.*

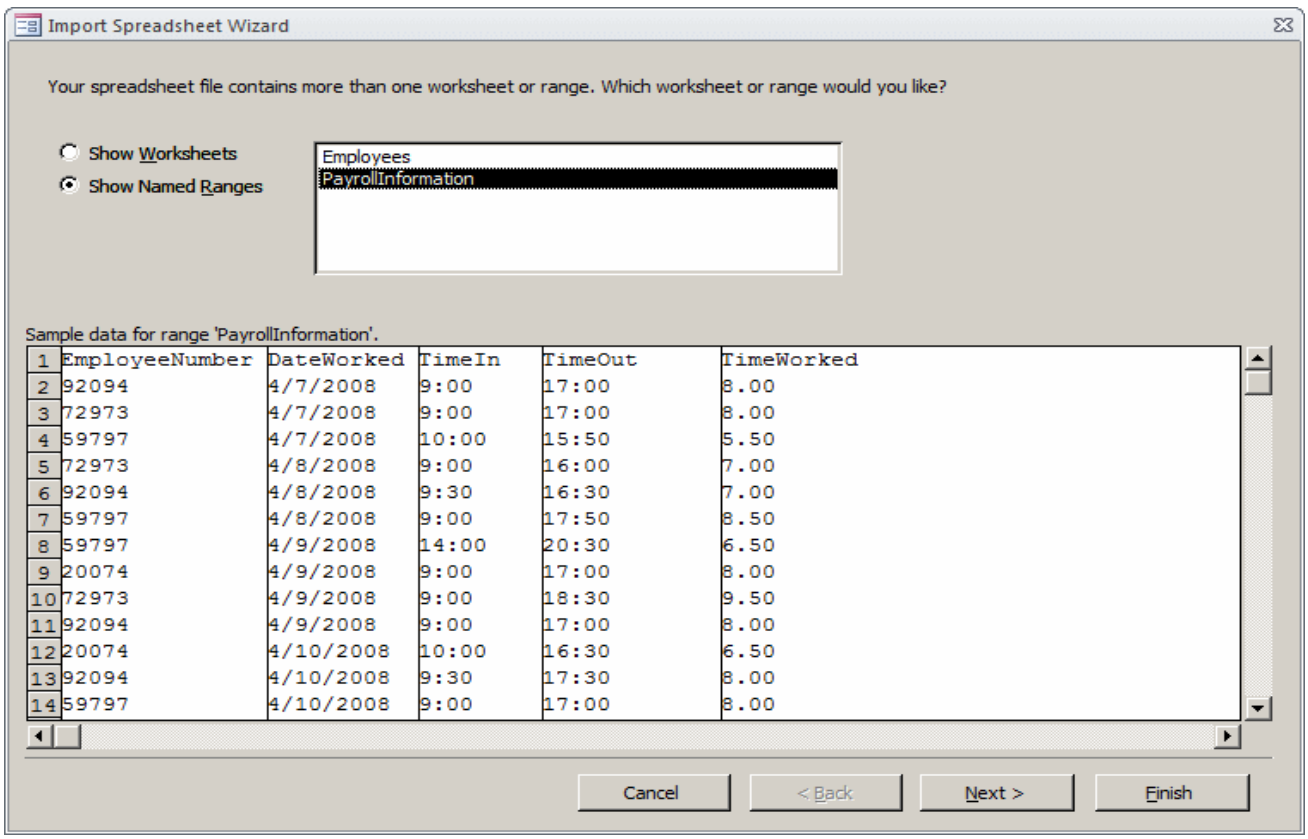


Now the *Import Worksheet Wizards* will open up where you can select the desired worksheet from the list you want to import and click *Next*.

Show Worksheets

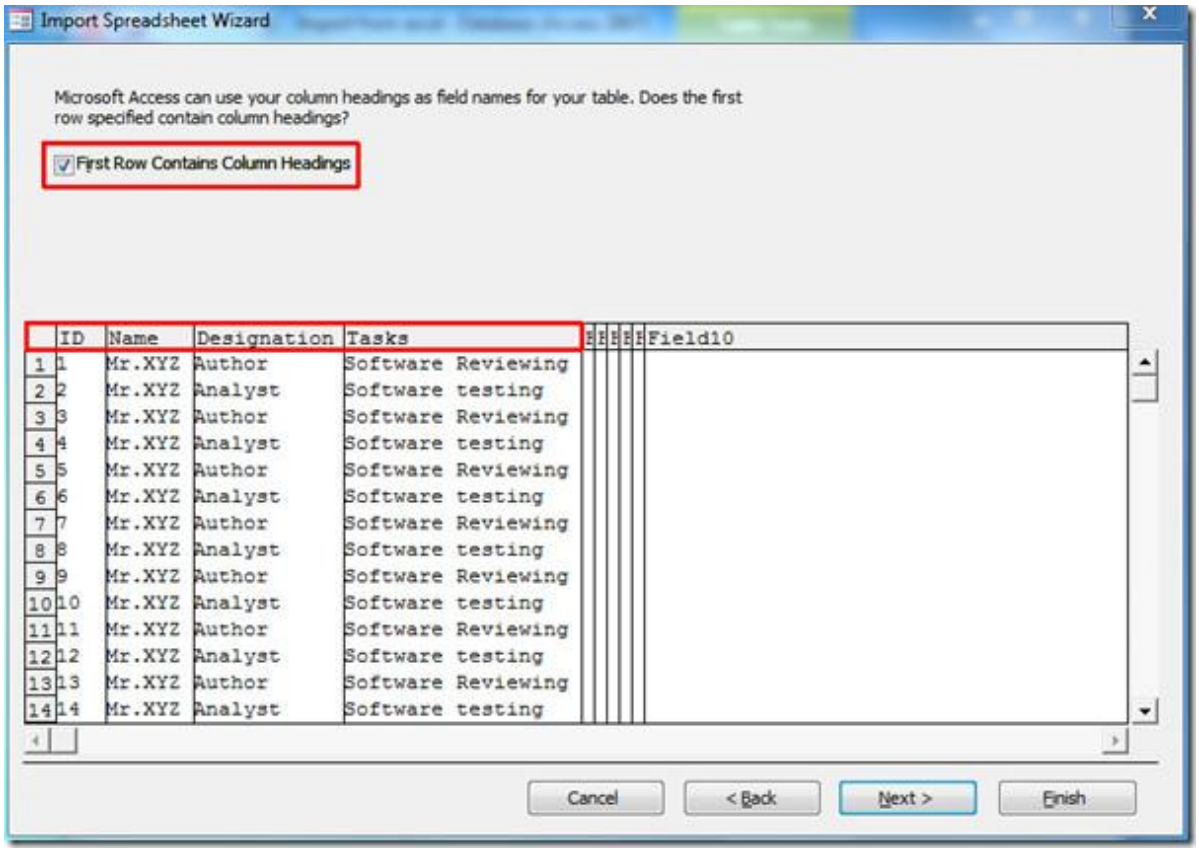


Show Named Ranges



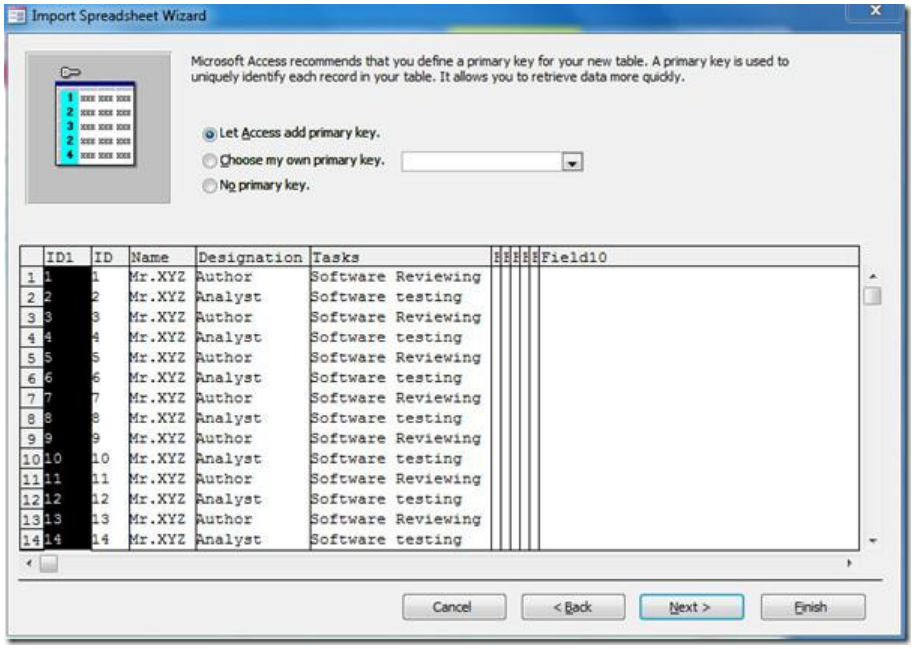
Click the **First Row Contains Column Headings** check box

Enable the *First row Contains Column Headings* checkbox. As mentioned earlier, your worksheet must have column's label in first row,

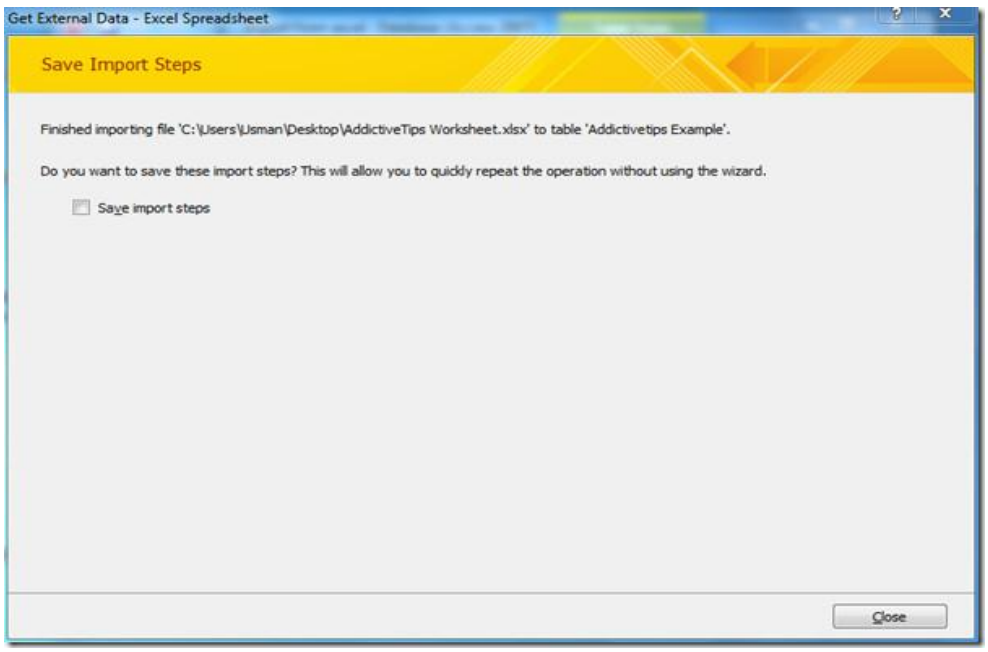


Specify information about each of the fields you are importing. Select field/column in the area below and specify corresponding *Field Options.*

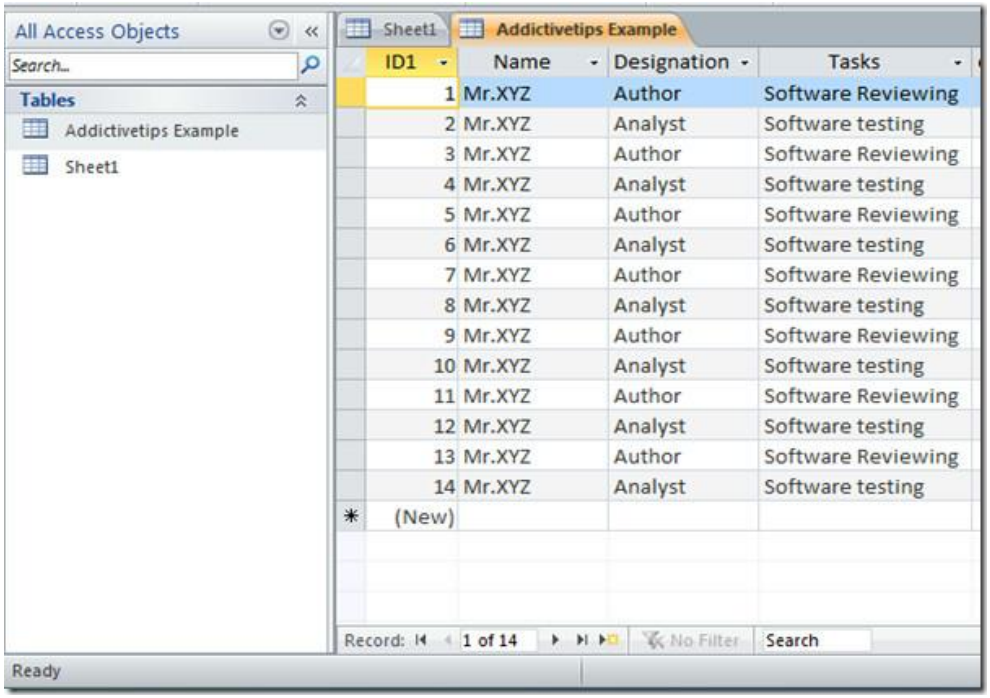
Next step provides different options of selecting primary key (Unique Identifier). You can enable *Let Access add primary key,* or choose your own primary key by selecting column/field label from drop-down box. We will select the default option, i.e., *Let Access add the primary key*. Click *Next.*



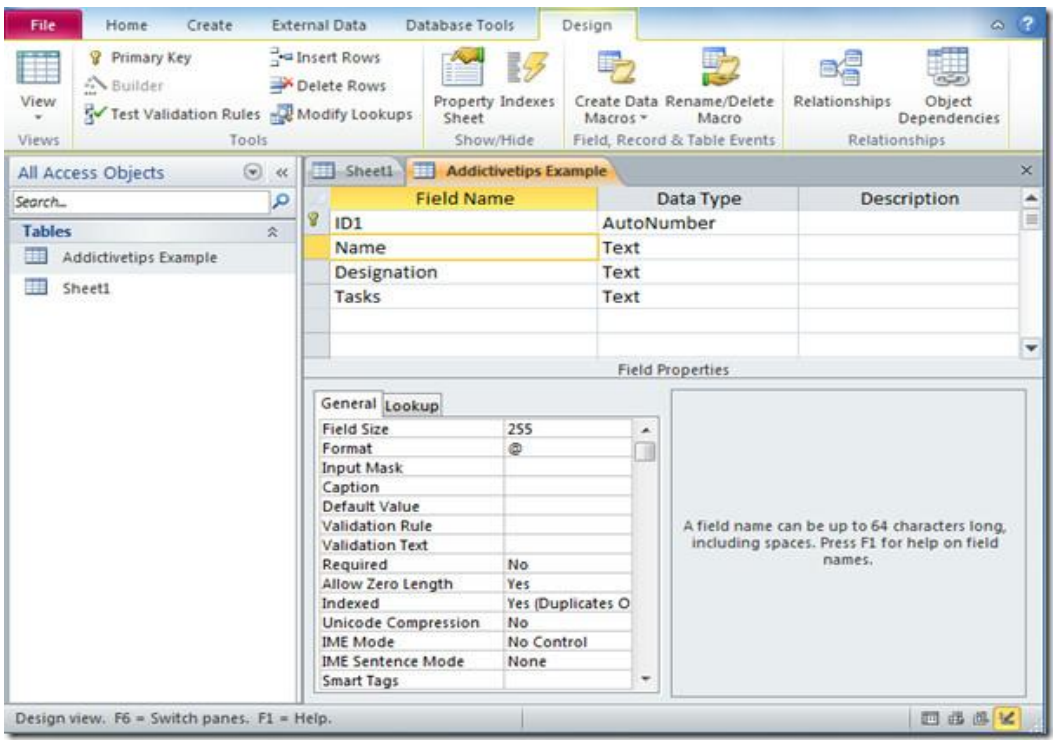
Enable *Save import steps* to save the import steps for later use and click close.



The following shows an Excel worksheet that has been imported in Access 2010.



Right-click on imported table and click Design View to check for the data types.



Note: In Excel Data is in a list format; each column has a title/label in first row and contains similar data types (similar facts), and there is no blank rows and columns. Access recognizes them as fields and records.

2.7 Table Relationships

In a relational database, relationships enable you to prevent redundant data. Relationships are essential because they bring the data in your tables together so you can extract meaningful information.
For example, if you are designing a database that will track information about books, you might have a table called Titles that stores information about each book. There is also information you might want to store about the publisher. If you were to store all of this information in the titles table, the publisher's phone number would be duplicated for each title that the publisher prints.

A better solution is to store the publisher information only once in a separate table, Publishers. You would then put a pointer in the Titles table that references an entry in the Publishers table.

Enforce referential integrity between the Titles and Publishers tables. Referential integrity relationships help ensure that information in one table matches information in another.

Types of Table Relationships

A relationship works by matching data in key columns, usually columns with the same name in both tables. In most cases, the relationship matches the primary key from one table, which provides a unique identifier for each row, with an entry in the foreign key in the other table.
There are three types of relationships between tables. The type of relationship that is created depends on how the related columns are defined.

- **One-To-Many Relationships -** A one-to-many relationship is the most common type of relationship. In this type of relationship, a row in table A (first table) can have many matching rows in table B(second table), but a row in table B can have only one matching row in table A. For example, the Publishers and Titles tables have a one-to-many relationship: each publisher produces many titles, but each title comes from only one publisher.
  A one-to-many relationship is created if only one of the related columns is a primary key or has a unique constraint.
  In Access, the primary key side of a one-to-many relationship is denoted by a key symbol. The foreign key side of a relationship is denoted by an infinity symbol.

- **Many-To-Many Relationships -** In a many-to-many relationship, a row in table A can have many matching rows in table B, and vice versa. You create such a relationship by defining a third table, called a junction table, whose primary key consists of the foreign keys from both table A and table B. For example, the Authors table and the Titles table have a many-to-many relationship that is defined by a one-to-many relationship from each of these tables to the TitleAuthors table. The primary key of the TitleAuthors table is the combination of the au_id column (the authors table's primary key) and the title_id column (the Titles table's primary key).

- **One-To-One Relationships -** In a one-to-one relationship, a row in table A can have no more than one matching row in table B, and vice versa. A one-to-one relationship is created if both of the related columns are primary keys or have unique constraints.

  This type of relationship is not common because most information related in this way would be all in one table. You might use a one-to-one relationship to:

  - ✓ Divide a table with many columns.
  - ✓ Isolate part of a table for security reasons.
  - ✓ Store data that is short-lived and could be easily deleted by simply deleting the table.
  - ✓ Store information that applies only to a subset of the main table.

In Access, the primary key side of a one-to-one relationship is denoted by a key symbol. The foreign key side is also denoted by a key symbol.

2.8 Referential Integrity

Referential integrity is a database concept that ensures that relationships between tables remain consistent. When one table has a foreign key to another table, the concept of referential integrity states that you may not add a record to the table that contains the foreign key unless there is a corresponding record in the linked table. It also includes the techniques known as cascading update and cascading delete, which ensure that changes made to the linked table are reflected in the primary table.

Consider the situation where we have two tables: Employees and Managers. The Employees table has a foreign key attribute entitled Managed By which points to the record for that employee's manager in the Managers table. Referential integrity enforces the following three rules:

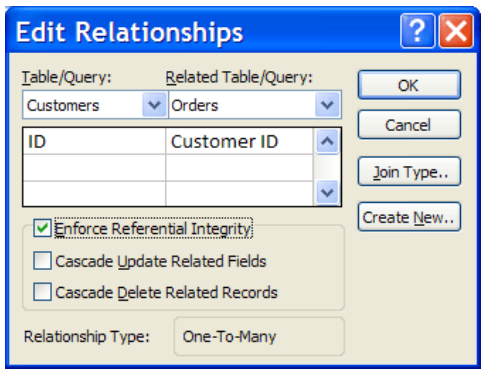
1. We may not add a record to the Employees table unless the Managed By attribute points to a valid record in the Managers table.
2. If the primary key for a record in the Managers table changes, all corresponding records in the Employees table must be modified using a cascading update.
3. If a record in the Managers table is deleted, all corresponding records in the Employees table must be deleted using a cascading delete.

2.9 Create Relationships with MS-Access Tables

1. On the **Database Tools** tab, in the **Relationships** group, click **Relationships**.
2. The **Show Table** dialog box automatically appears. If it does not appear, on the **Design** tab, in the **Relationships** group, click **Show Table**.
   The **Show Table** dialog box displays all of the tables and queries in the database. To see only tables, click **Tables**.

Drag a field (typically the primary key) from one table to the common field (the foreign key) in the other table

The **Edit Relationships** dialog box appears.

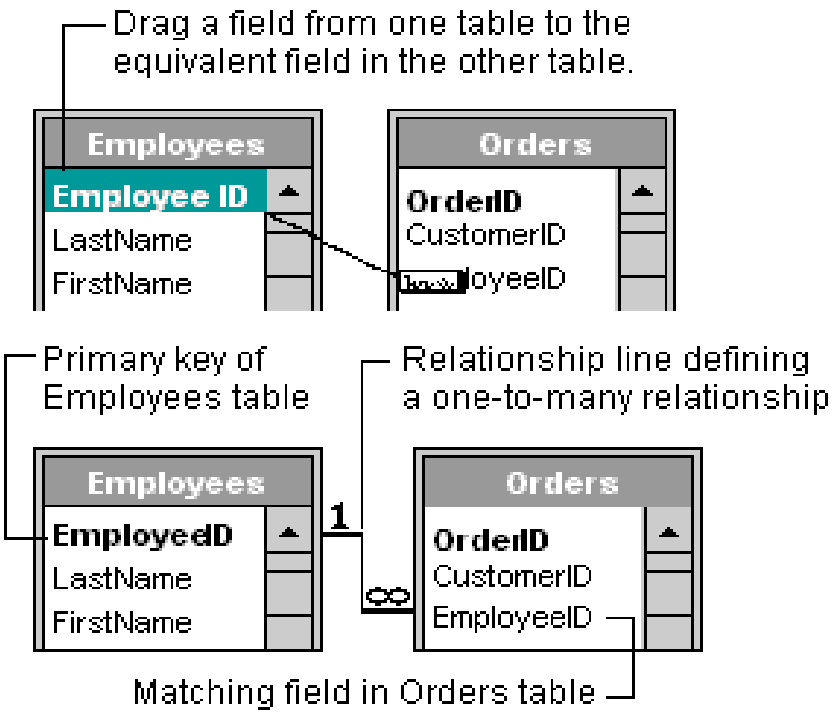


5. Verify that the field names shown are the common fields for the relationship. If a field name is incorrect, click on the field name and select the appropriate field from the list.

To enforce referential integrity for this relationship, select the **Enforce Referential Integrity** check box. For more information about referential integrity, see the section Enforce Referential Integrity

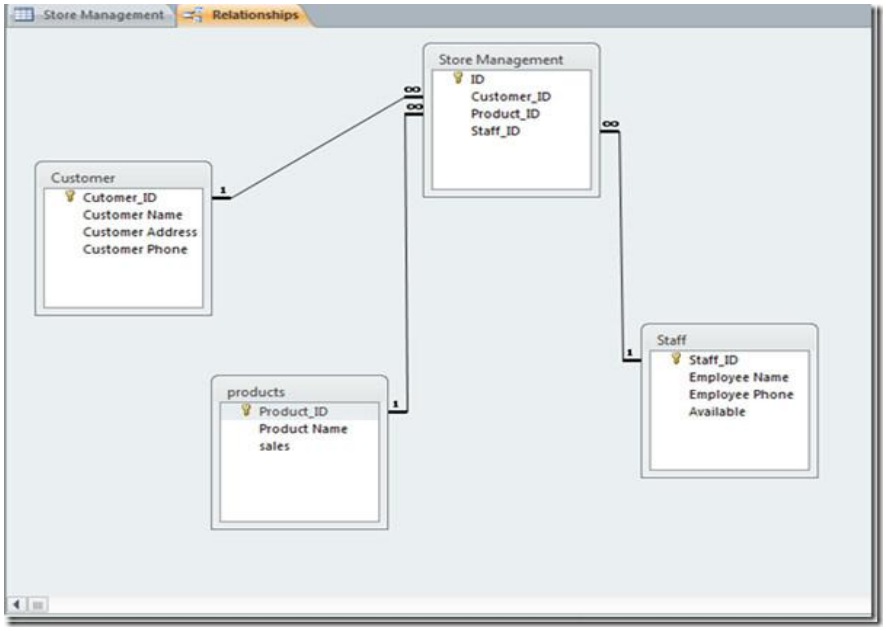
6. Click **Create**.

Access draws a relationship line between the two tables. If you selected the **Enforce Referential Integrity** check box, the line appears thicker at each end. In addition, again only if you selected the **Enforce Referential Integrity** check box, the number **1** appears over the thick portion on one side of the relationship line, and the infinity symbol (∞) appears over the thick portion on the on the other side of the line, as shown in the following figure.



- **To create a one-to-one relationship**: Both of the common fields (typically the primary key and foreign key fields) must have a unique index. This means that the **Indexed** property for these fields should be set to **Yes (No Duplicates)**. If both fields have a unique index, Access creates a one-to-one relationship.

- **To create a one-to-many relationship**: The field on the one side (typically the primary key) of the relationship must have a unique index. This means that the **Indexed** property for this field should be set to **Yes (No Duplicates)**. The field on the many side should *not* have a unique index. It can have an index, but it must allow duplicates. This means that the **Indexed** property for this field should be set to either **No** or **Yes (Duplicates OK)**. When one field has a unique index, and the other does not, Access creates a one-to-many relationship.



Tip: When you create a relationship, you can view the related table as a subdatasheet of the primary table. Open the primary table and click the plus (+) in the far left column. The plus sign turns into a minus (-) sign. If the Insert Subdatasheet dialog box opens, click the table you want to view as a subdatasheet and then click OK. Access displays the subdatasheet each time you click the plus sign in the far left column. Click the minus sign to hide the subdatasheet.

Tip: After a relationship has been created between two tables, you must delete the relationship before you can make modifications to the fields on which the relationship is based.

To delete a relationship:

1. Click the line that connects the tables.
2. Press the Delete key.

Tip: When you create a lookup column, Access creates a relationship between the tables but does not enforce integrity constraints.

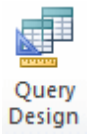
WORKING WITH QUERIES

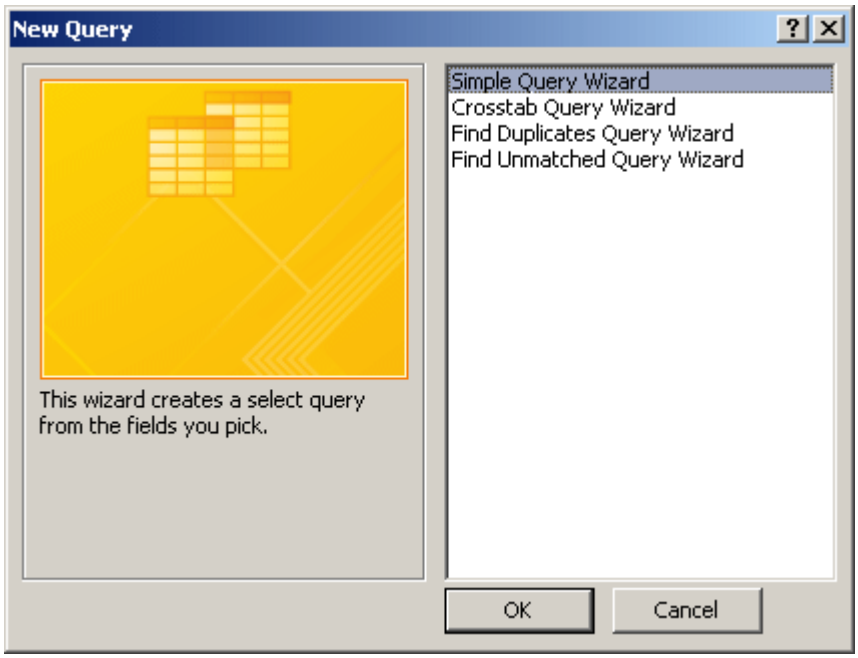
Queries are an essential part of any database. They extract meaningful information from your database and answer key business questions. Queries are a way of **searching** for and **compiling** data from one or more tables. The real power of a relational database is in the ability to quickly **retrieve** and **analyse** your data by running a query. **Queries** allow you to **pull information** from one or more tables based on a set of search conditions you define.

3.1 Query Wizard

The Query Wizard offers the simplest approach to creating a query where in step by step you specify the data that the query will make available. The wizard presents the tables that are part of the database and you select which fields you need. Such a query is called a **Select Query**.

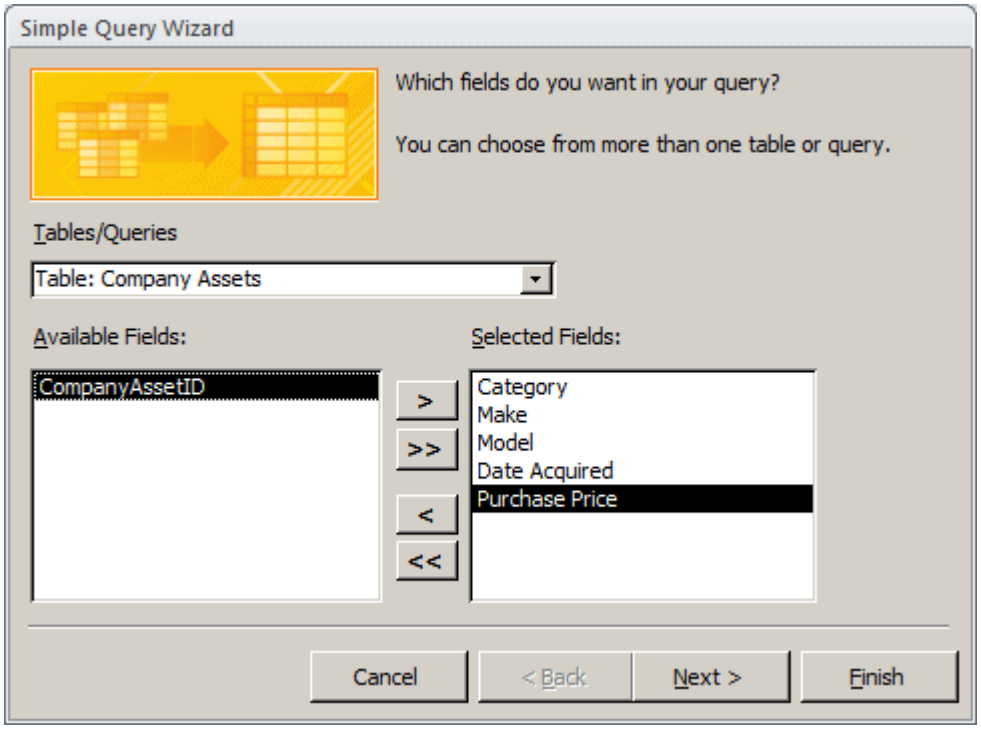
To use the Query Wizard, on the Ribbon, you can click the Create tab and, in the Queries section, click Query Wizard . This would display the New Query dialog box:



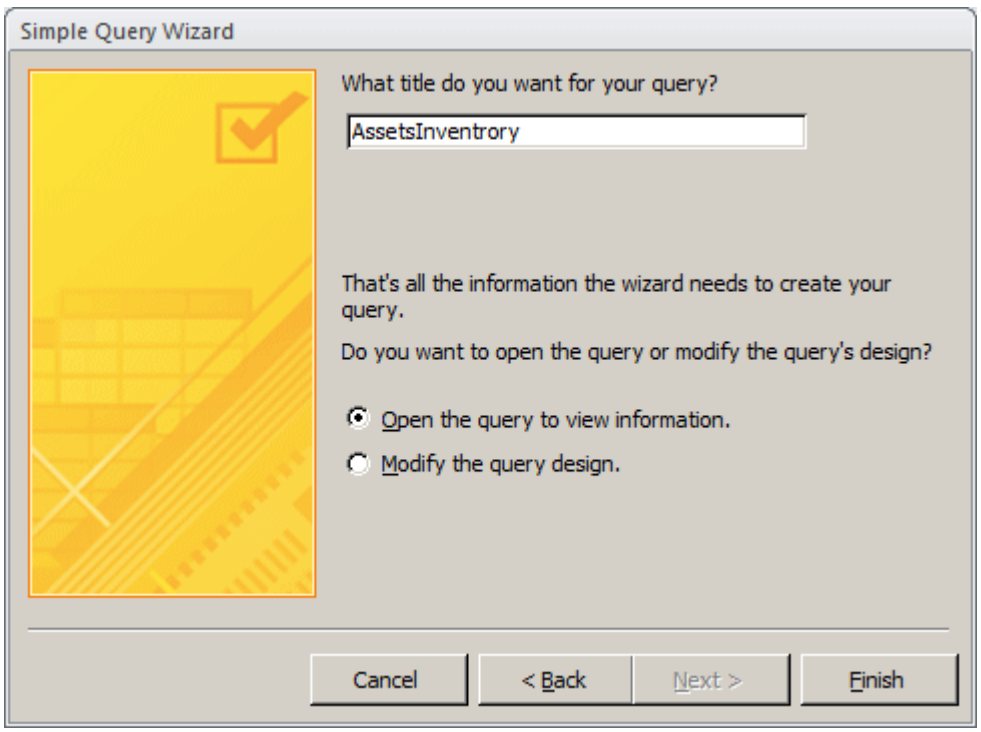


On the New Query dialog box, you can click Simple Query Wizard and click OK. The first page of the Simple Query Wizard expects you to choose the origin of the query as a table or an already created query.

Select the Available fields and place under Selected Fields by clicking the single arrow in case all the fields are required the double headed arrow can be clicked and click Next.



Give a desired name to store this query and click Finish.

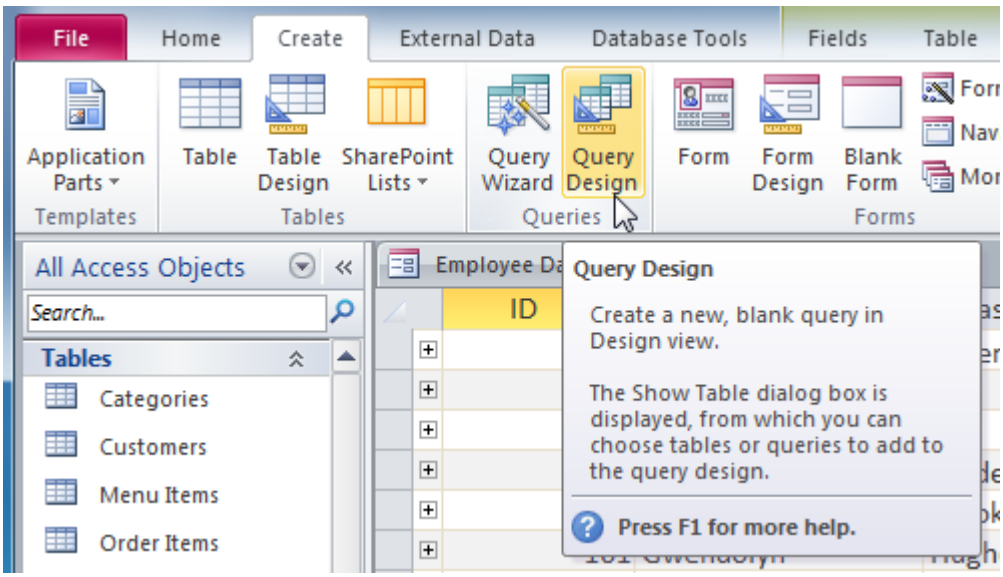


3.2 Query Design

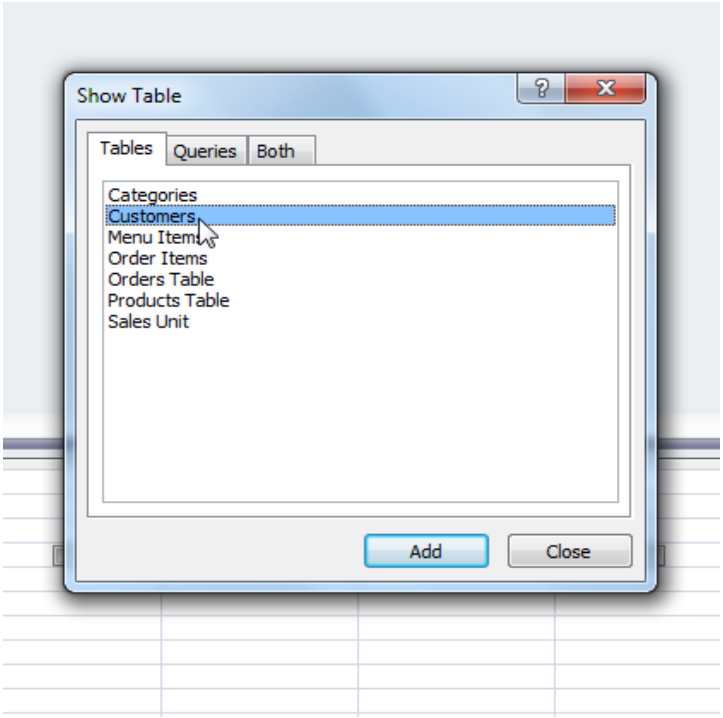
Query design consists of selecting the fields that would be part of a query. A query can be based on tables or on other queries. To create a query, you open the tables or queries on which you are going to base your query in Query Design view, and then use the options in Design view to create your query.

- To display a query in Design View, from the Navigation Pane, you can right-click a query and click Design View
- To start designing a new query, in the Queries section of the Create tab of the Ribbon, click Query Design

1. Select the Create tab on the Ribbon and locate the Queries group.
2. Select the Query Design command.

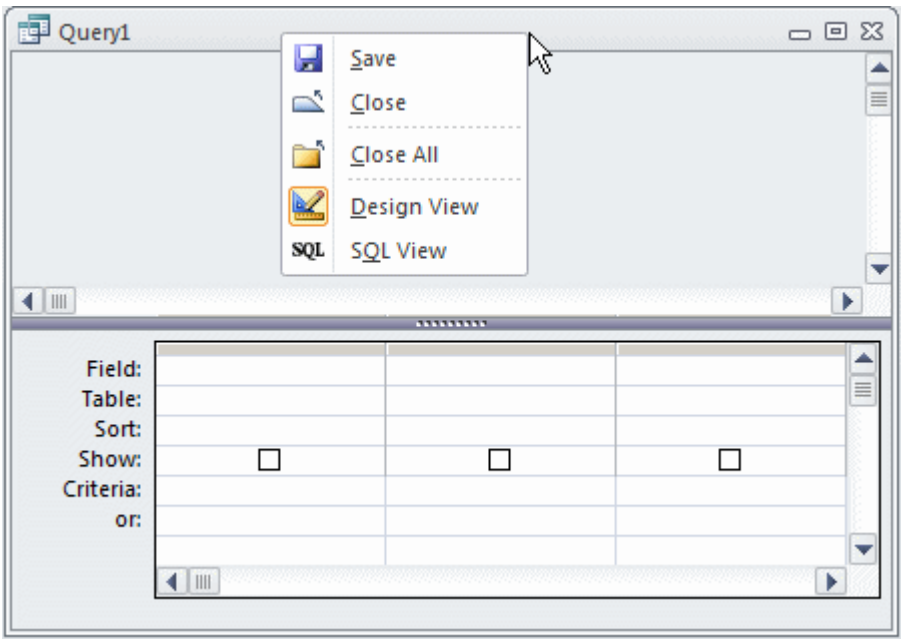


3. Access will switch to Query Design view. In the Show Table dialog box that appears, select the table you would like to run a query on. Click Add, then click Close



The Query Window

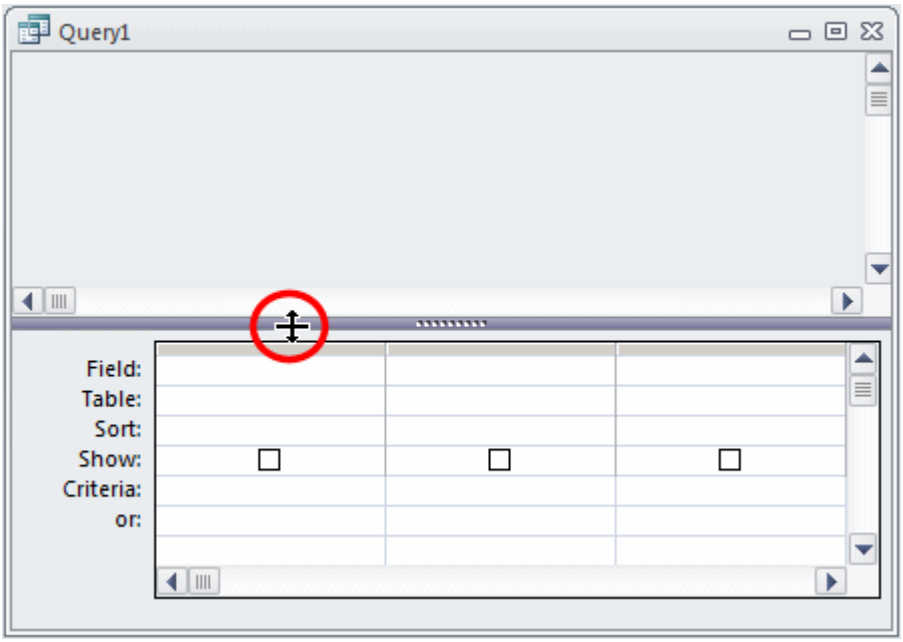
The Query window is presented like a regular window. If the database is set to show overlapped windows, its title bar displays its system button on the left section. This can be used to minimize, maximize, restore, move, resize, or close the window. Like all Microsoft Access window objects, the title bar displays a special menu when right-clicked:



The right section of the title bar displays the classic system buttons of a regular window.

In the top wide area of the Query window, the query displays an object (table(s), query (queries)) or a group of objects that was selected to create the query. The lower portion of the query displays boxes that would be used to perform various operations related to the query.

The upper and the lower sections of the query window are separated by a splitter bar that you can use to resize them by dragging the splitter bar up or down:



Selecting the Columns

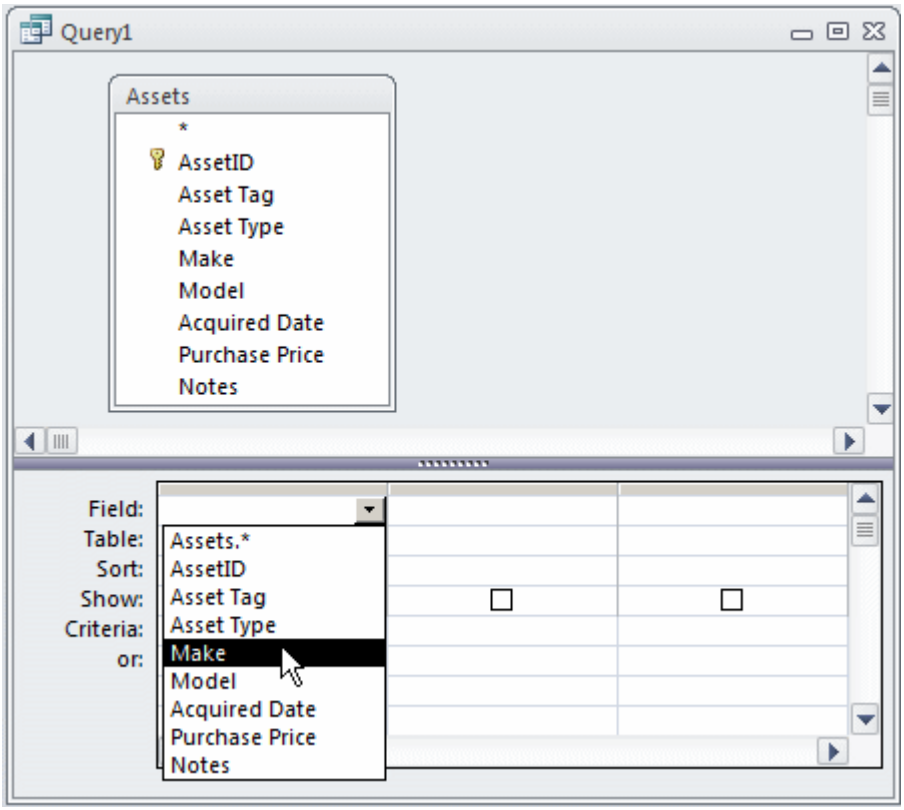
To create the fields for a query, you use the table(s) or query(queries) displayed in the upper section of the window. Once you have decided on the originating object(s), you can select which fields are relevant for your query:

- To select one field from the list, just click it
- To select many fields on the same range, you can click one of them, press and hold Shift. Then click one field on the other end of the desired range
- To select fields at random, click one of the desired fields, press and hold Ctrl; then click each one of the desired fields
- To select all fields, you can click the * line on the list of fields

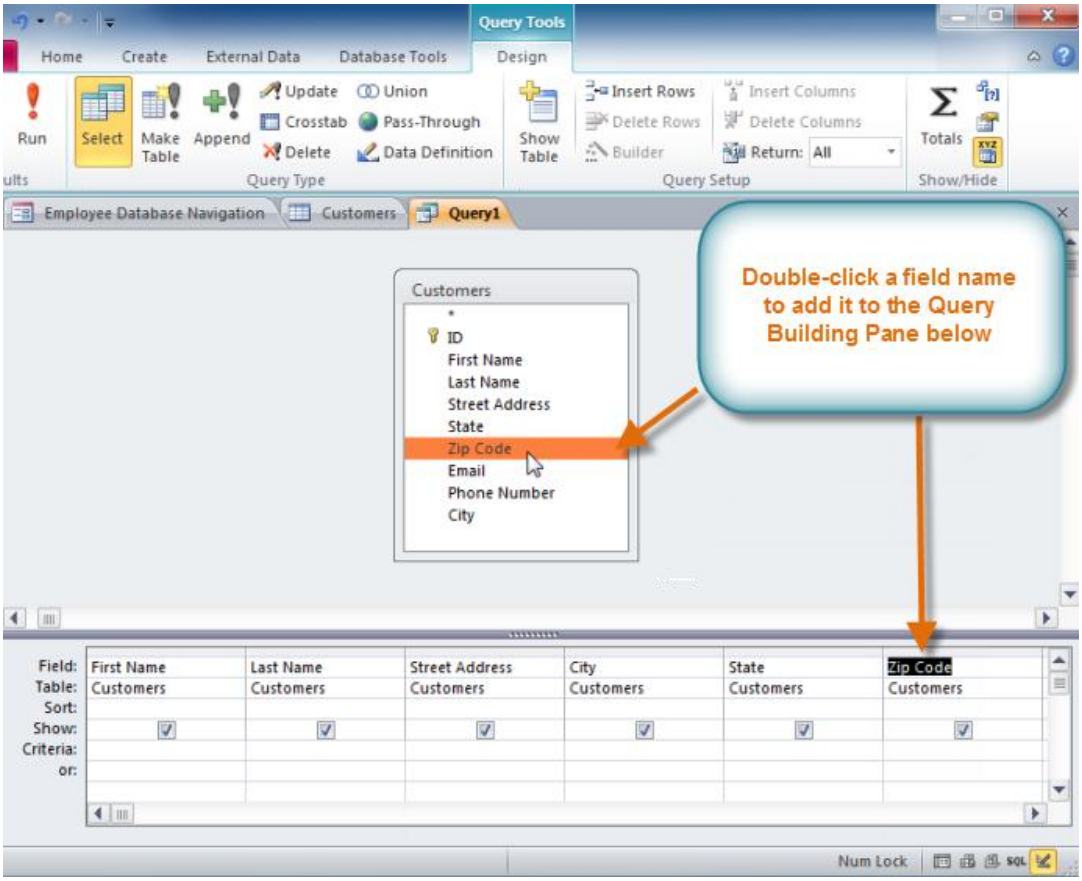
Add Columns

To make a field participate in a query, you have various options:

- Once you have made your selection on the list in the top part of the query window, you can drag it and drop it in the bottom section of the query window
- Instead of dragging a field or all fields, you can either double-click a field to add it to the query, or double-click the line with * to add all fields to the query
- In the bottom part of the query window, click an empty Field box to show a combo box. Then click the arrow of that combo box and select an item from the list:



4. The selected table will appear as a small window in the **Object Relationship Pane**. In the table window, double-click the **field names** you would like to include in your query. They will be added to the **Design Grid** in the bottom part of the screen.



Executing a Query

In the Navigation Pane, a query is represented by an icon and a name.

Executing a query consists of viewing its results but the action or outcome may depend on the type of query. You then click the Run button to display the results. You can save queries for later use.

To view the result of a query:

- If the query is currently closed, from the Navigation Pane:
  - ✓ You can double-click it
  - ✓ You can right-click it and click Open

- If the query is already opened and it is in Design View, on the Ribbon:

  - ✓ You can click the Run button 

  - ✓ You can click the View button or you can click the arrow of the View button and click Datasheet View

Display All Records and All Fields

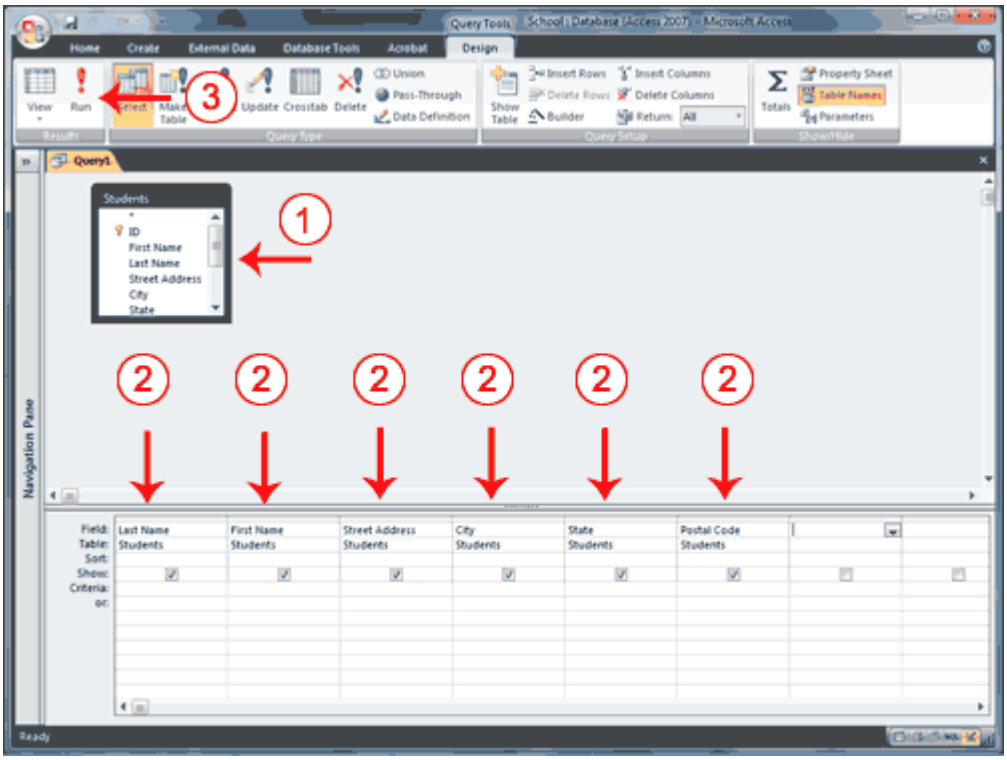
Each table has an option that allows you to display all of the fields and all of the records in a table. This option appears on the field line on the drop-down menu as the table name followed by a period and an asterisk (*tablename.*)*

1. Click the down-arrow in the first field on the Field row and then select the *tablename.** option. The table name appears on the table line.

Click the Run button. Access retrieves all of the fields and records for the table and displays them in Datasheet view.

Retrieve Columns

You can use an Access query to retrieve columns of data. On the Field line in Query Design view, choose the field name of each field you want to retrieve in the order you want to retrieve them.



1. Open a table or query in Query Design view.
2. Choose the field names you want to retrieve in the order you want to retrieve them.
3. Click the Run button. Access retrieves the columns you chose.

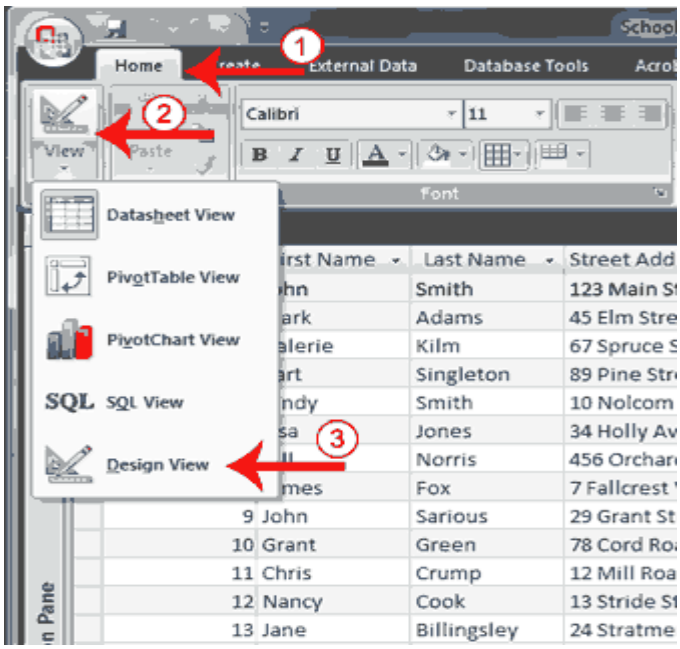
Query1

Last Name	First Name	Street Address	City	State	Postal Code
Smith	John	123 Main Street	Grand Rapid	PA	08971
Adams	Mark	45 Elm Street	Geno	DE	10777
Kilm	Valerie	67 Spruce Street	Holbrook	NJ	05589
Singleton	Bart	89 Pine Street	Morris	NJ	05645
Smith	Cindy	10 Nolcom Drive	Holbrook	NJ	05589
Jones	Lisa	34 Holly Avenue	Jackson	DE	10677
Norris	Bill	456 Orchard Ave	Menlo	PA	08577
Fox	James	7 Fallcrest Way	Falt	PA	08907
Sarious	John	29 Grant Street	Falt	PA	08907
Green	Grant	78 Cord Road	Notley	DE	10986
Crump	Chris	12 Mill Road	Newnez	NJ	05113
Cook	Nancy	13 Stride Street	Berry	PA	08045
Billingsley	Jane	24 Stratmere Lane	Grand Rapid	PA	08971
Harrison	George	967 Kingston Way	Boston	DE	10190
Morgan	Nancy	55 Echohill Road	London	PA	08892
Petro	Sally	9978 High Street	New Hanover	DE	10194
Lovelace	Jim	44 Andover Road	Kennedy	NJ	05260
Fine	Adam	923 Leon Road	Bradford	DE	10761
Kinkley	Grace	100 Warren Street	Holyyoke	NJ	05047
Richardson	Paul	21 Brown Street	Woodlane	PA	08397
Singleton	Mary	122 Berkshire Drive	Elberta	DE	10134

Change from Datasheet View to Query Design View

After you run a query, you can easily change back to Query Design view and make modifications to your query or create a new query.

Change to Query Design view

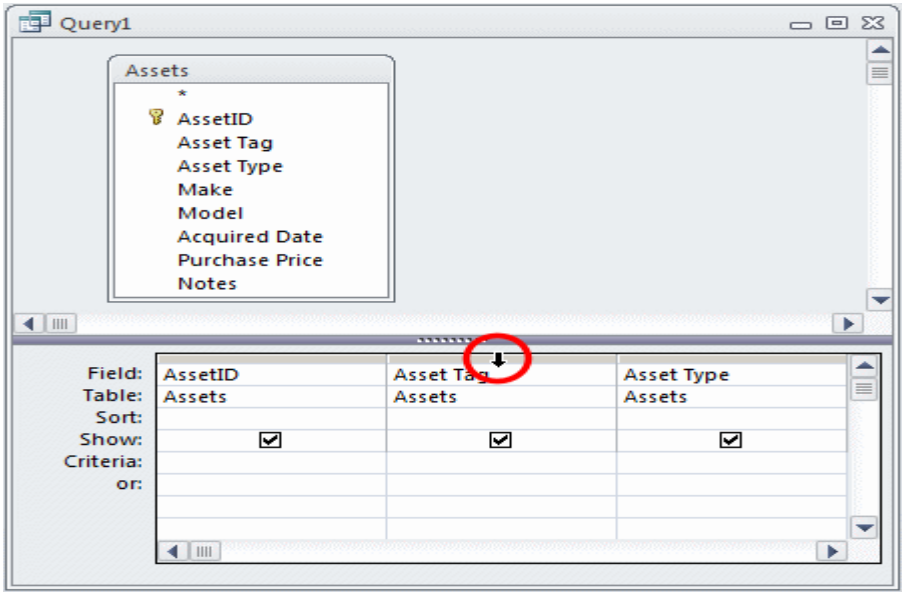


1. Activate the Home tab.
2. Click the down-arrow below View in the Views group. A menu appears.
3. Click Design View. Access changes to Query Design view. You can modify your query.

Tip: You can also click the Design button in the lower-right corner of the Access window to change to Design view.

Selecting a Column

- To select a field in the lower section of the view, click the tiny bar of the column header:



The whole column will be selected

- To select a range of columns, click the column header of one at one end, press and hold Shift, then click the column header at the other end

Removing a Column from a Query

- To delete a column:
  - ✓ Once it is selected, you can press Delete
  - ✓ Right-click the column header and click Cut
- To delete a group of columns, select them and press Delete

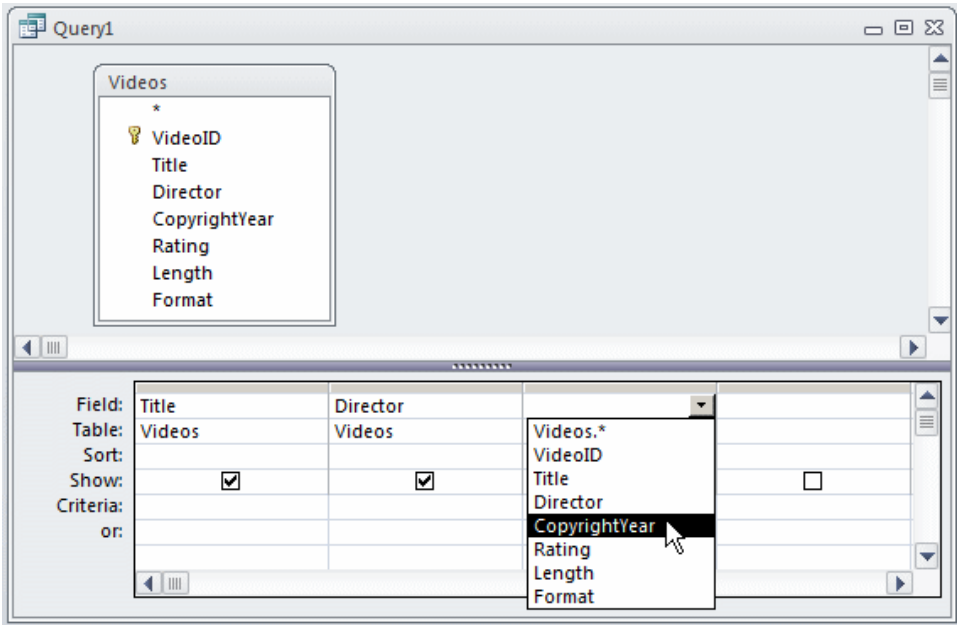
Using Operators on Queries

- When performing data analysis, to use the operators on a query enter the expression in the Criteria box(es) that correspond(s) to the column(s)

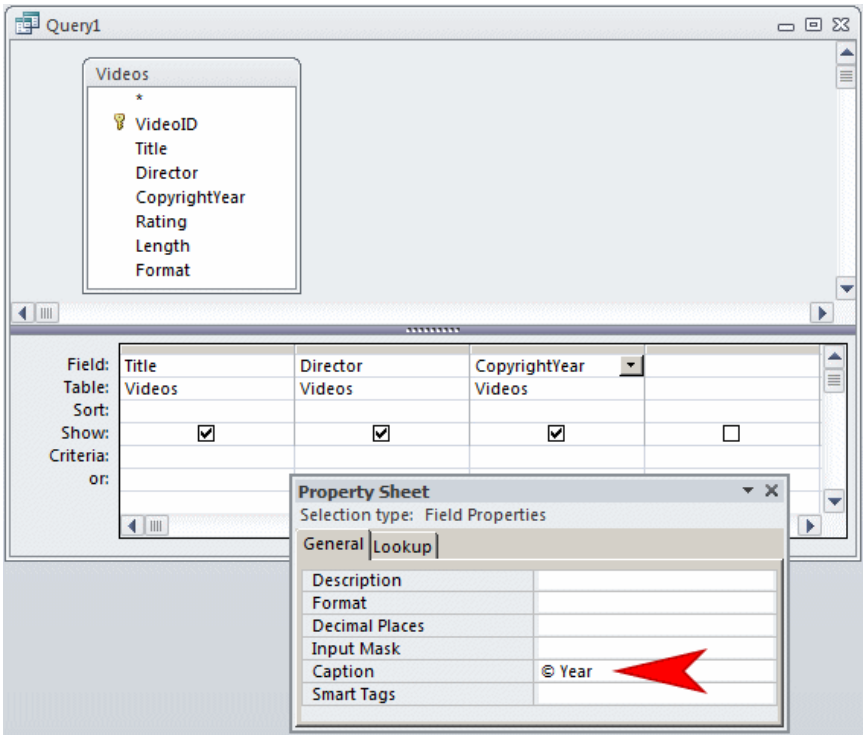
When writing the expression, there are a few rules you should observe:

- Each operator must be written as indicated
- To include a letter, a character, or a string, type it between double-quotes. An example is "M". Another example would be "El Salvador". In some cases, if you forget to use the double-quotes, Microsoft Access would add them. In some circumstances, if you forget to use the double-quotes, Microsoft Access would not add them and the expression may fail. Therefore, to be on the safe side, always add the quotes yourself
- If a date or time value is part of an expression, include it between two # symbols. An example would be #12/8/94#. Another example is #05/02/2004#. If you forget the # symbol, most of the time, Microsoft Access would not correct it and you may receive an error
- All built-in constants, True, False, NULL, etc, do not use quotes

Using an Alias Name for a Column



Right-click the column and click Properties. In the Property Sheet, click Caption and type the desired caption.



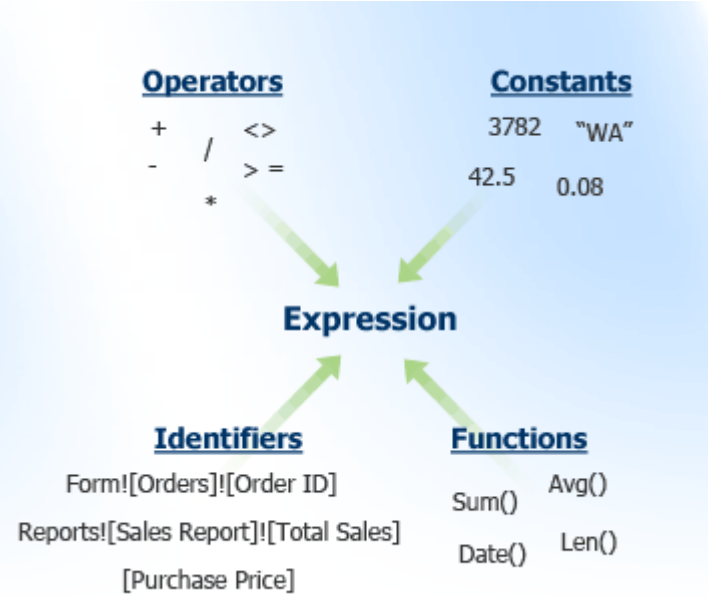
Query1

Title	Director	© Year	Minutes
General's Daughter (The)	Simon West	1999	116
Wedding Crashers	David Dobkin		128
Two for the Money	D. J. Caruso		123
Memoirs of a Geisha	Bob Marshall	2006	145
Her Alibi	Bruce Beresford		94
M:i:III	J. J. Abrams	2006	125
Godzilla	Roland Emmerich	1998	139
Just Cause	Arne Glimcher	1999	102
Wall Street		1987	126
Michael Jackson Live in Bucharest	Andy Morahan	1992	122
Outfoxed: Rupert Murdoch's War			
Sentinel (The)	Clark Johnson	2006	108
Last Castle (The)	Rod Lurie		126
Five Deadly Venoms			
Sneakers	Phil Alden Robinson	1992	133
The Bridge on the River Kwai	David Lean	1957	

Record: 1 of 16 | No Filter | Search

Overview of expressions

An expression is a combination of some or all of the following: built-in or user-defined functions, identifiers, operators, and constants. Each expression evaluates to a single value.



3.3 Operators in Access 2010

An operator is a sign or symbol that specifies the type of calculation to perform within an expression. There are mathematical, comparison, logical, and reference operators. Access supports a variety of operators, including arithmetic operators such as **+**, **-**, multiply (*****), and divide (**/**), in addition to comparison operators for comparing values, text operators for concatenating text, and logical operators for determining true or false values.

Arithmetic Operators

You use the arithmetic operators to calculate a value from two or more numbers or to change the sign of a number from positive to negative or vice versa.

OPERATOR	PURPOSE	EXAMPLE
+	Sum two numbers.	[Subtotal]+[SalesTax]
-	Find the difference between two numbers or indicate the negative value of a number.	[Price]-[Discount]
*****	Multiply two numbers.	[Quantity]*[Price]
/	Divide the first number by the second number.	[Total]/[ItemCount]
****	Round both numbers to integers, divide the first number by the second number, and then truncate the result to an integer.	[Registered]\[Rooms]
Mod	Divide the first number by the second number, and then return only the remainder.	[Registered] Mod [Rooms]
^	Raise a number to the power of an exponent.	Number ^ Exponent

Comparison Operators

You use the comparison operators to compare values and return a result that is True, False, or Null. The constants 1 and 2 are used in the examples, but those constants can be replaced with identifiers, functions, or expressions.

OPERATOR	PURPOSE	EXAMPLE	RESULT
<	Returns True if the first value is less than the second value.	1 < 2	True
<=	Returns True if the first value is less than or equal to the second value.	1 <= 2	True
>	Returns True if the first value is greater than the second value.	1 > 2	False
>=	Returns True if the first value is greater than or equal to the second value.	1 >= 2	False
=	Returns True if the first value is equal to the second value.	1 = 2	False
<>	Returns True if the first value is not equal to the second value.	1 <> 2	True

NOTE In all cases, if either the first value or the second value is null, the result is then also null. Because null represents an unknown value, the result of any comparison with a null value is also unknown.

Logical Operators

You use the logical operators to combine two Boolean values and return a true, false, or null result. Logical operators are also referred to as Boolean operators.

OPERATOR	PURPOSE	EXAMPLE	RESULT
And	Returns True when Expr1 and Expr2 are true.	1 < 2 And 3 < 4	True
Or	Returns True when either Expr1 or Expr2 is true.	1 < 2 Or 3 < 4	True
Eqv	Returns True when both Expr1 and Expr2 are true, or when both Expr1 and Expr2 are false.	1 < 2 Eqv 3 < 4	True

Not	Returns True when Expr is not true.	Not (1 < 2)	False
Xor	Returns True when either Expr1 is true or Expr2 is true, but not both.	1 < 2 Xor 3 < 4	False

Concatenation Operators

You use the concatenation operators to combine two text values into one.

OPERATOR	PURPOSE	EXAMPLE	RESULT
&	Combines two strings to form one string.	“road” & “map”	“roadmap”
		“road” & Null	“road”
+	Combines two strings to form one string and propagates null values (if one value is Null, the entire expression evaluates to Null).	“road” + “map”	“roadmap”
		“road” + Null	Null

Special Operators

You use the special operators to return a True or False result as described in the following table.

OPERATOR	**PURPOSE**	**EXAMPLE**
Is Null or **Is Not Null**	Determines whether a value is Null or Not Null.	Field1 Is Not Null
Like "pattern"	Matches string values by using the wildcard operators **?** and *****.	Field1 Like "instruct*"
Betweenval1 And val2	Determines whether a numeric or date value is found within a range.	Field1 Between 1 And 10 - OR - Field1 Between #07-01-07# And #12-31-07#
In(val1,val2...)	Determines whether a value is found within a set of values.	Field1 In ("red","green","blue") - OR - Field1 In (1,5,7,9)

Operators

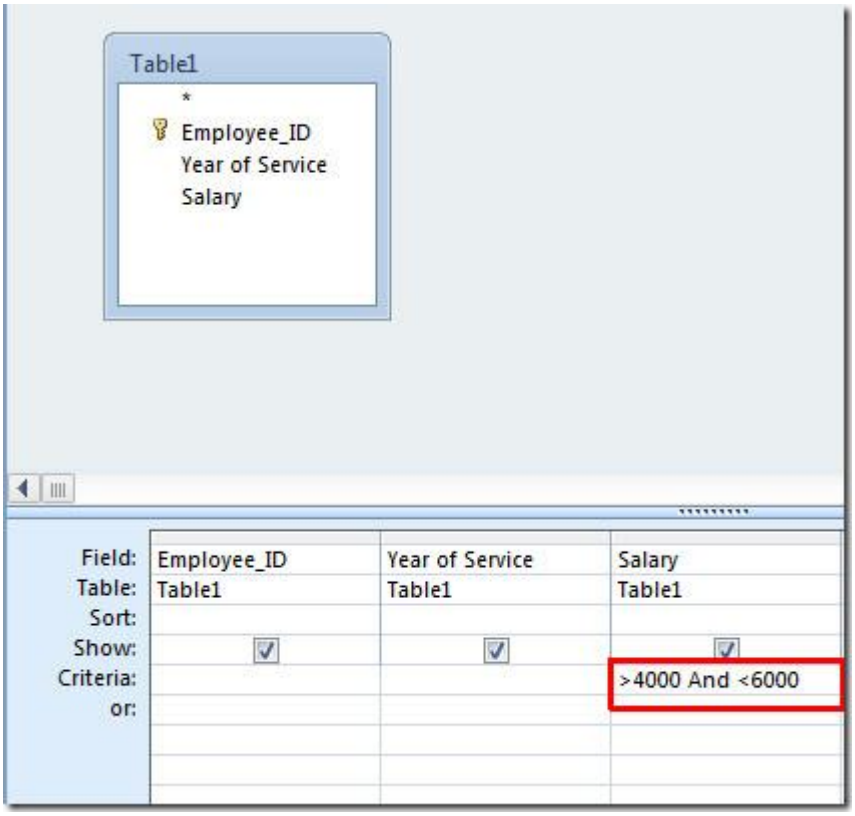
Operators such as = (equal), <> (not equal), > (greater than), or < (less than) restrict the records you retrieve.

List of operators			
Operator	**Meaning**	**Field Type**	**Entry Format**
=	Equal to	Character Number Date	="DE" =5 = #2/16/88#
<>	Not equal to	Character Number Date	<>"DE" <>5 <> #2/16/88#
>	Greater than	Character Number Date	>"DE" >5 > #2/16/88#
>=	Greater than or equal to	Character Number Date	>="DE" >=5 > = #2/16/88#
<	Less than	Character Number Date	<"DE" <5 < #2/16/88#
<=	Less than or equal to	Character Number Date	<="DE" <=5 <= #2/16/88#
In	Equal to any item in a list	Character Number Date	In("DE","NJ") In(5,9,17) In (#2/16/88#, #2/3/90#, #12/15/88#)
Not In	Not equal to any item in a list	Character Number Date	Not In("DE", "NJ") Not In(5, 9, 17) Not In (#2/16/88#, #2/3/90#, #12/15/88#)
Between	Between two values, greater than or equal to one and less than or equal to the other	Character Number Date	Between "C" And "F" Between 5 And 10 Between #1/1/88# And #12/31/88#
Not Between	Not between two values	Character Number Date	Not Between "C" And "F" Not Between 5 And 10 Not Between #1/1/88# And #12/31/88#
Is Null	The value is missing from the field	Character Number Date	Is Null Is Null Is Null
Is Not Null	The value is not missing from the field	Character Number Date	Is Not Null Is Not Null Is Not Null
Like	Like a specified pattern. * means any series of characters. ? means any single character.	Character Number Date	Like "S*" Like "1*" Not Applicable

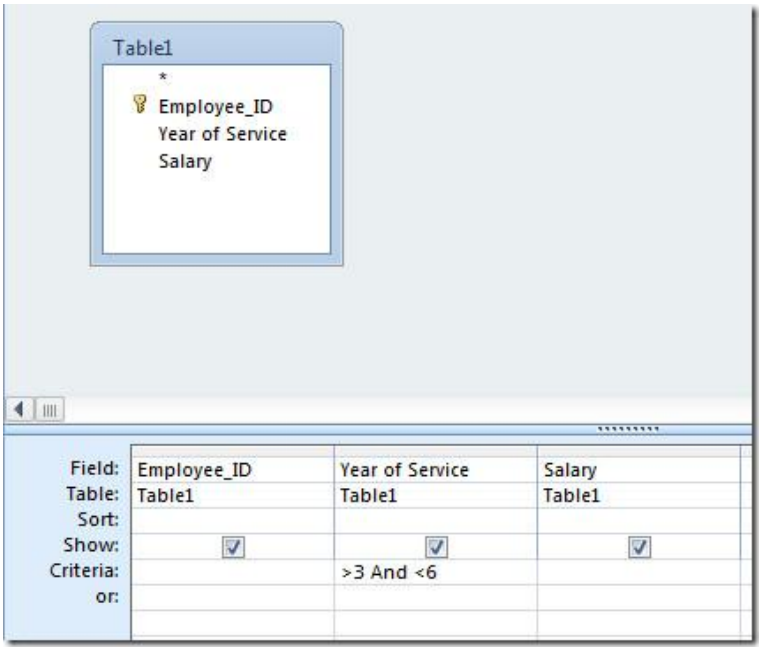
Not Like	Not like a specified pattern. * means any series of characters. ? means many single character.	Character Number Date	Like "S*" Like "1*" Not Applicable

Logical Operators

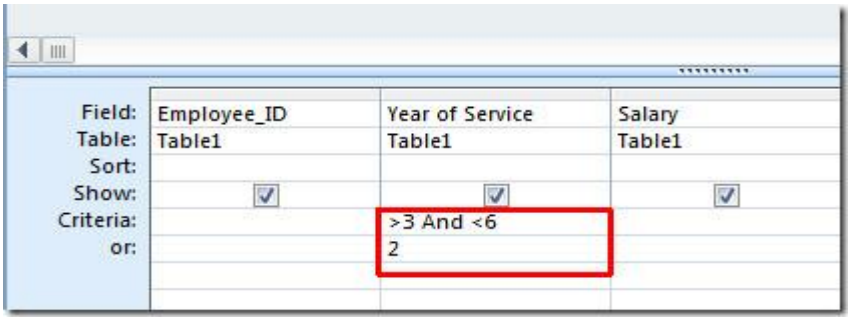
To get specific records from the tables with certain conditions,. In these example details of employees having salary ranges from **4000 to 6000**. For this condition, we will be using AND logical operator and write the criteria as;



For applying this condition like Year of Service criteria, more than 2 years And less than 6 of service, under Design Query window, we will write this condition under Year of Service field as;

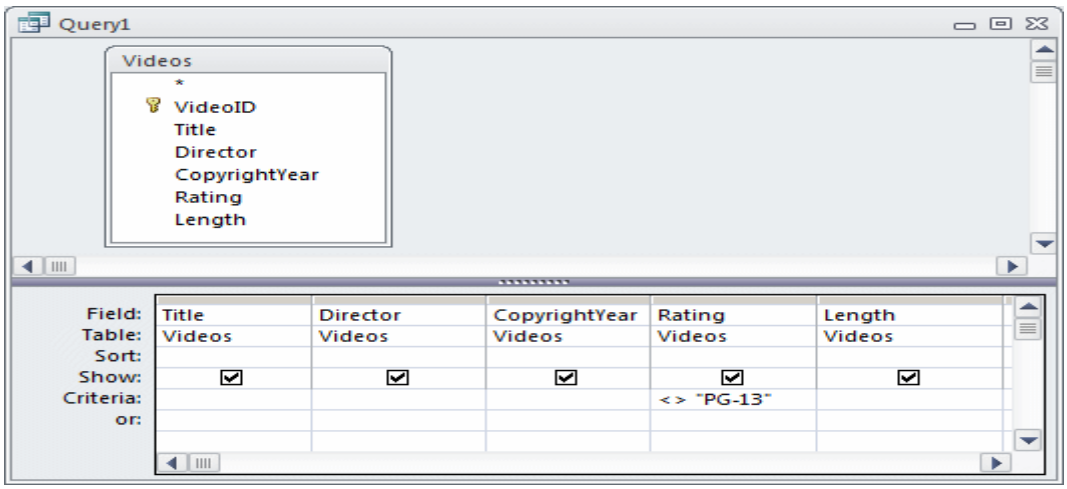


For inserting an *OR* condition, just enter number of Year in OR field. For instance we also want to show employees who worked for 2 years. For this, we will simply add 2 in OR field.



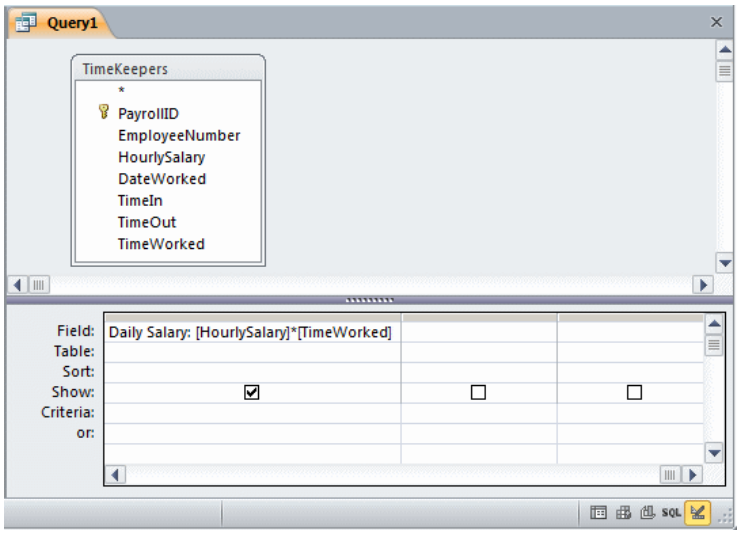
Negating an Expression

To negate you can precede the string with **NOT**
The result would include all records that do not include the value that was set on the right side of **NOT**.
You can also use <> instead of **NOT**.



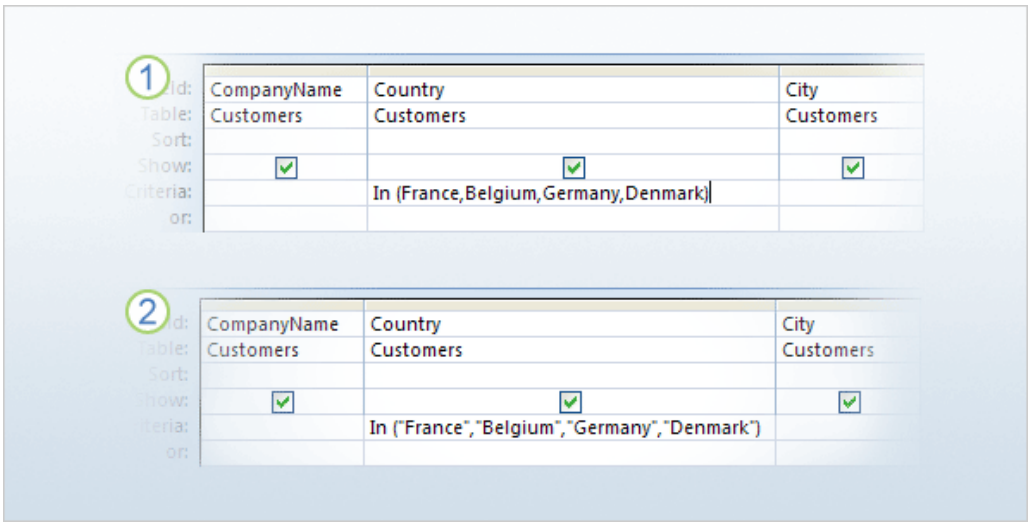
Using Arithmetic Operators

An arithmetic operator can be used to create an expression that results in a calculation.



IN Operator

- When several "Or" conditions that apply to the same field as an alternative to typing values in many cells, or typing **Or** between each value in the same cell, you can use the **In**operator.
- In the **Criteria** row of the field you want to query, type **In**, and then type your criteria values. Separate values with commas, and surround the whole set of values with parentheses.
- When you press ENTER or click another cell to commit your changes, Access surrounds each condition with quotation marks, as shown in the picture.

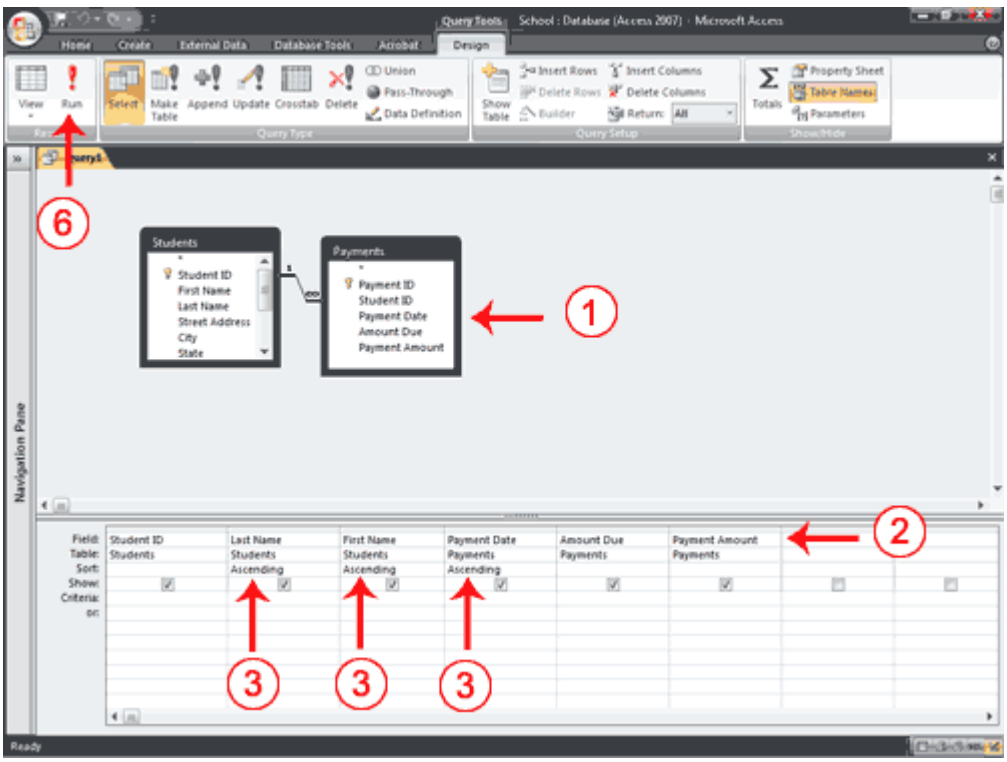


Like Operator

- In a list of people one of them is named "Moore" or some of them are named "Moore" and you want to find the record(s) with that name, you would use **LIKE "Moore"**.
- If the value you want to find is a date, include it between two # signs as in **LIKE #8/8/1993#**.
- The most regular use of the **LIKE** is with strings. Example Name Starting with S Like "S*"
- To specify that you want the strings that start with any character from o to r followed by anything, you would use **LIKE "[o-r]*"**:
- To find specific characters in a string, use the [] as the placeholder. Inside the square brackets, enter the characters separated by commas. An example would be **LIKE "[a, h, o, y]*"**:
- Instead of using a range of characters, you may want to exclude the characters of a specific range. To negate the filter of a range of characters, you can precede the **LIKE** operation with the **NOT** operator.
- The * character on a **LIKE** operation is used to find many characters. If you want to find only one character, use the? Wildcard. **LIKE "?i*"** This would search for a string starting with any character containing i in the second place followed by any other characters.

Create a Query That Uses Two or More Tables

If you want to view data from two or more tables or queries, you can create a query that pulls the data from multiple tables or queries. The tables and queries from which you pull your data should have a relationship.



1. Open the tables and/or queries you want to use in Query Design view.
2. Choose the field names you want to retrieve in the order you want to retrieve them.

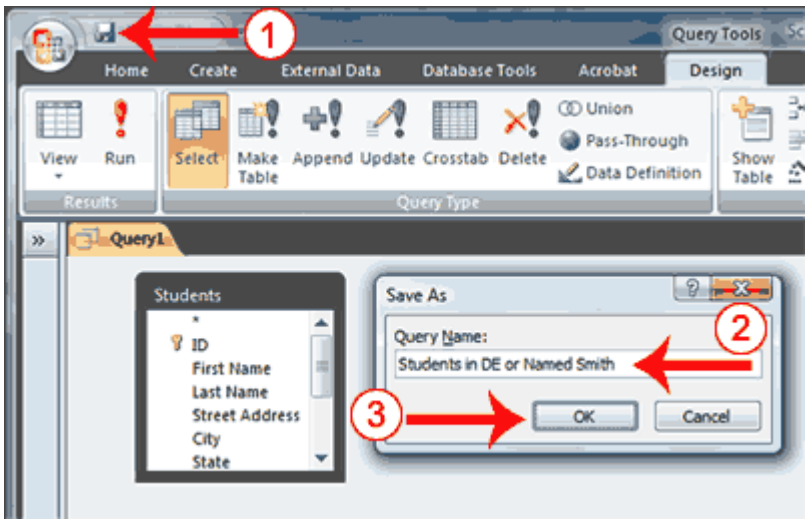
3. Choose the field names you want to sort by in the order you want to sort. Under the fields you want to sort by, choose Ascending or Descending.
4. Enter your selection criteria, if necessary (Not applicable in this example).
5. Deselect the Show button for columns you do not want to display (Not applicable in this example).
6. Click the Run button. Access retrieves the columns you chose and displays the rows in the order you specified.

Query1

Student ID	Last Name	First Name	Payment Date	Amount Due	Payment Amount
	Adams	Mark	1/20/2009	700	300
2	Adams	Mark	2/16/2009	400	300
3	Kilm	Valerie	1/13/2009	500	250
3	Kilm	Valerie	2/28/2009	250	250
1	Smith	John	2/15/2009	500	500
(New)					

Save a Query

After you create a query, you can save it. You can rerun a saved query at any time. If you change the data on which the saved query is based, you will see the changes when you rerun the query.



1. Click the Save button on the Quick Access toolbar. Access saves the query unless you are saving for the first time. If you are saving for the first time, the Save As dialog box appears.
2. Type the name you want to give your query.
3. Click OK. Access saves the query. You can now access the query by using the Navigation pane.

Tip: You can also save by right-clicking a query's tab and then selecting Save from the menu that appears. Access saves the query unless you are saving for the first time. If you are saving for the first time, the Save As dialog box appears. Type the name you want to give the query and then click OK. Access saves the query. You can now access the query by using the Navigation pane.

Tip: After you have saved a query, you can run it by opening the Navigation pane and then clicking the name of the query.

Modify a Query

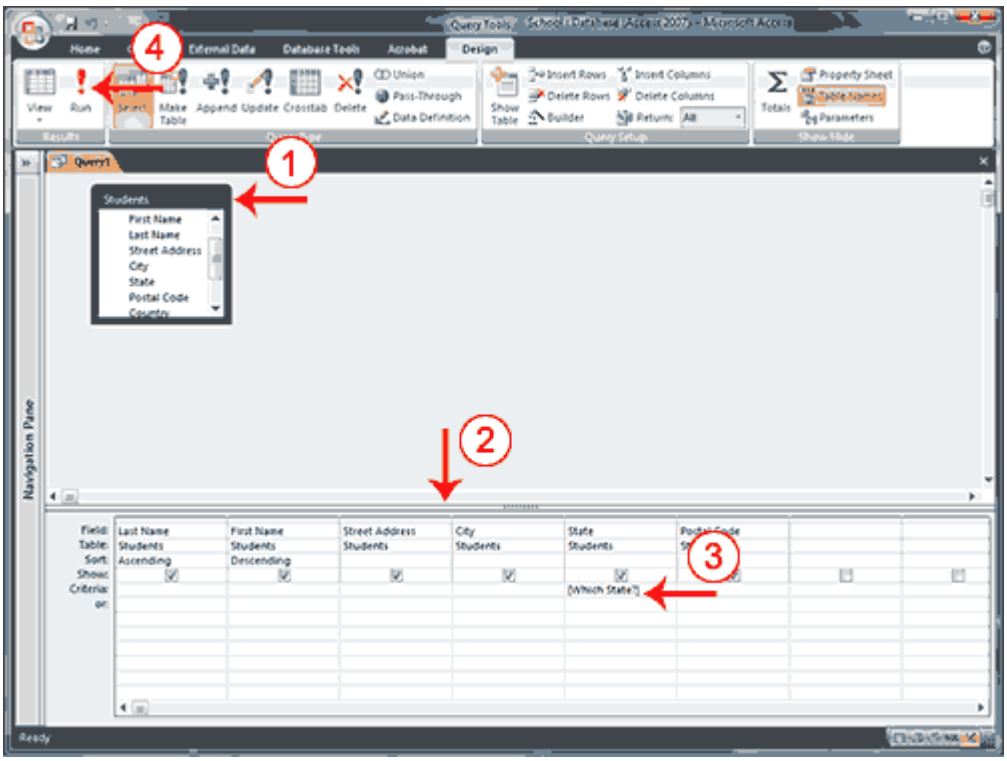
Once created, a query can be modified. Simply open the query in Query Design view and make the changes. You can add columns, change the sort order, change the criteria, and make other changes.

In Query Design view, the Query Setup group offers several options that can assist you. Use the Insert Rows button to insert a row in the criteria area. Click anywhere in the row before which you want to insert a new row and then click the Insert Rows button.

- Use the Insert Columns button to insert a column. Click anywhere in the column before which you want to insert a column and then click the Insert Column button .
- Use the Delete Rows button to delete a row in the criteria area. Click anywhere in the row you want to delete and then click the Delete Row button.
- Use the Delete Columns button to delete a column. Click anywhere in the column you want to delete and then click the Delete Column button .

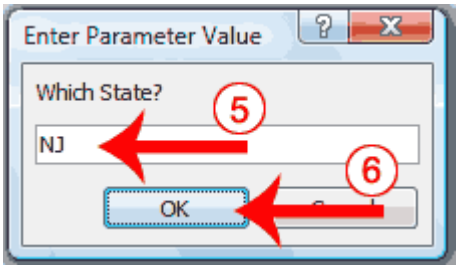
Parameter Query

To prompt users when a query runs, you can create a parameter query. You create a parameter query by enclosing a question in square brackets ([]). For example, if you want to create a parameter query that asks users which State they want to use from the Student's table, you would type [Which State?] on the Criteria line under the State column. When the query runs, Access will prompt the user for the answer to your question.



1. Open a table or query in Query Design view.
2. Create your query.
3. On the Criteria line, type the prompt within square brackets.

4. Click the Run button. Access prompts you.



5. Respond to the prompt.
6. Click OK. Access displays the results of your query in Datasheet view.

Query1

Last Name	First Name	Street Address	City	State	Postal Code
Crump	Chris	12 Mill Road	Newnez	NJ	05113
Kilm	Valerie	67 Spruce Street	Holbrook	NJ	05589
Kinkley	Grace	100 Warren Street	Holyyoke	NJ	05047
Lovelace	Jim	44 Andover Road	Kennedy	NJ	05260
Singleton	Bart	89 Pine Street	Morris	NJ	05645
Smith	Cindy	10 Nolcom Drive	Holbrook	NJ	05589

Note: If you want to make your user prompt more flexible, use one of the following formats.

Like "*" & [*Prompt*] & "*"	Returns all records that contain the value you enter. Example: If you enter **ad,** Access returns all records that include the sequence *ad* anywhere in the field.
Like "*" & [*Prompt*]	Returns all records that end with the value you enter. Example: If you enter **S,** Access returns all records that end with *S*.
Like [*Prompt*] & "*"	Returns all records that begin with the value you enter. Example: If you enter **S,** Access returns all records that begin with *S*.
> [Prompt] **Note:** You can also use < (less than) ,<= (less than or equal to) >=, >= (greater than or equal to), or <> (not equal)	Find all records with a value greater than the value you enter. Example: If you enter 5, Access returns all records that are greater than *5*.

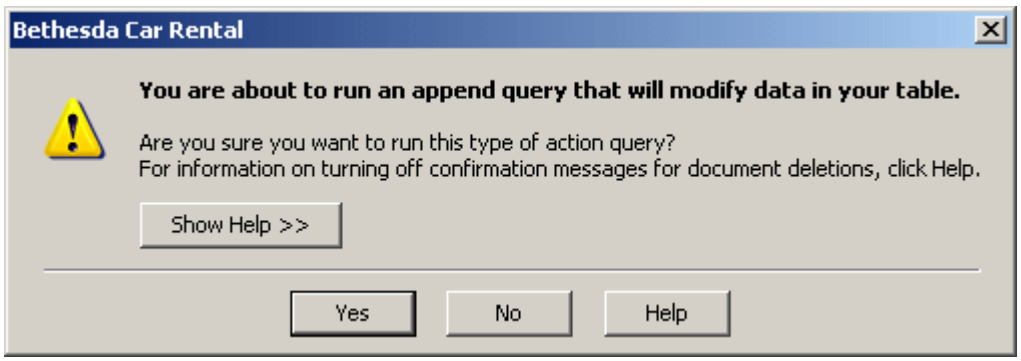
3.4 Action Queries

Append Query

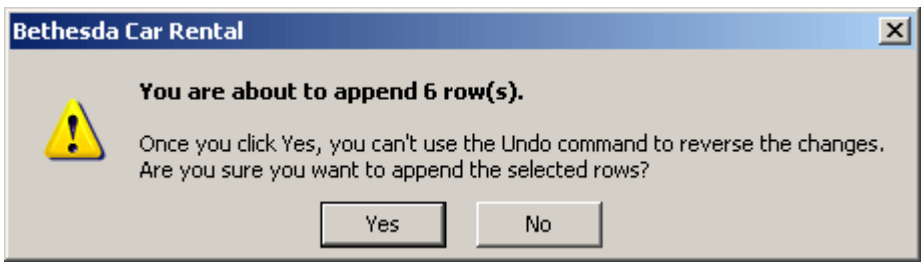
Appending a record consists of adding a record to a table. An Append Query allows you to add records to an existing table but you do not create the records. They must be retrieved from one table and transferred to another table.
To start an Append Query, start a query in the Design View. In the Query Type section of the Ribbon, click the Append button 

.
You will be presented with a dialog box that expects you to either select the table to which you will add the records, or to specify the name of a new table that would receive the records. If you want to add the records to an existing table, you can select it from the combo box.

1. To execute the query, In the Navigation Pane, double-click **Add New Cars to the Application**
2. Read the strings on the message box:



3. Then click Yes
4. Another message box will come up:



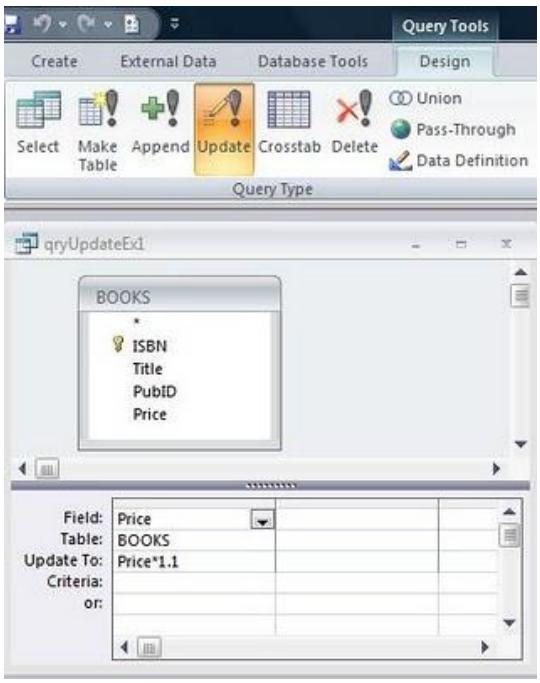
   Click Yes
5. Close the query window

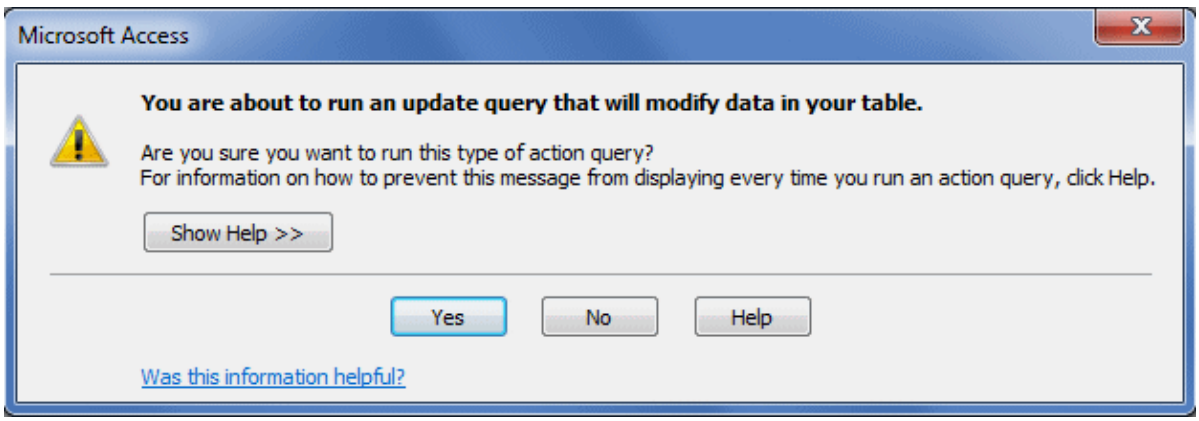
Update Query

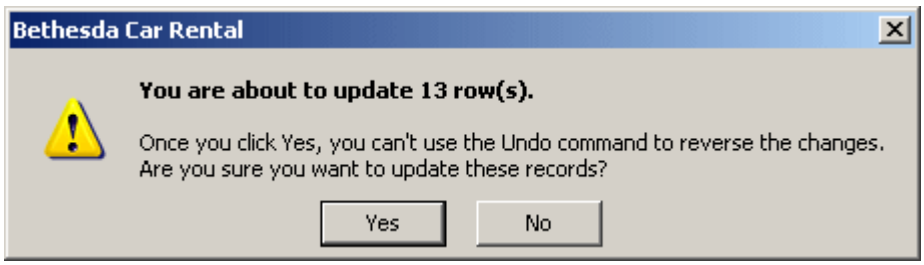
Microsoft Access provides an action query named Update Query. An Update Query allows you to change the existing values of one or more columns of a table. An Update Query will make bulk changes to records in the record source.

1. On the **Design** tab, in the **Query Type** group, click **Update**.

2. Access adds the **Update to** row in the query design grid. Locate the field that contains the data that you want to change, and then type your expression (your change criteria) in the **Update to** row for that field.
3. On the **Design** tab, in the **Results** group, click **Run**.
4. An alert message appears.
5. To run the query and update the data, click **Yes**.







Delete Queries

A Delete Query deletes records from a single database table or database tables. If a condition is specified only that set of records are deleted .The delete query will work with a group of records that meet a specified criteria that you apply. You can use the delete query to remove all records or only records that meet the defined criteria.

1. Click the **Create** tab.

a. In the Ribbon, click **Query Design**.

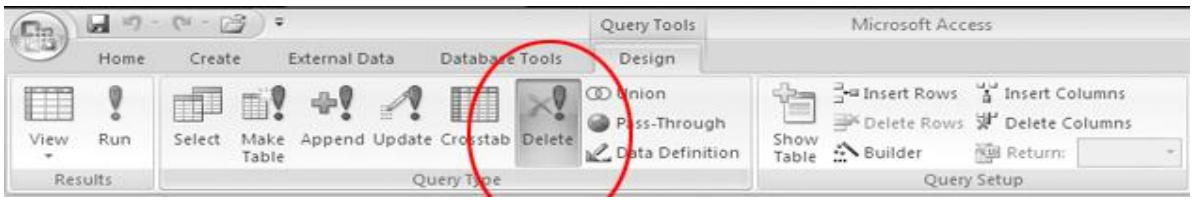
2. When the **Show Table** window appears, click the desired Table Name.

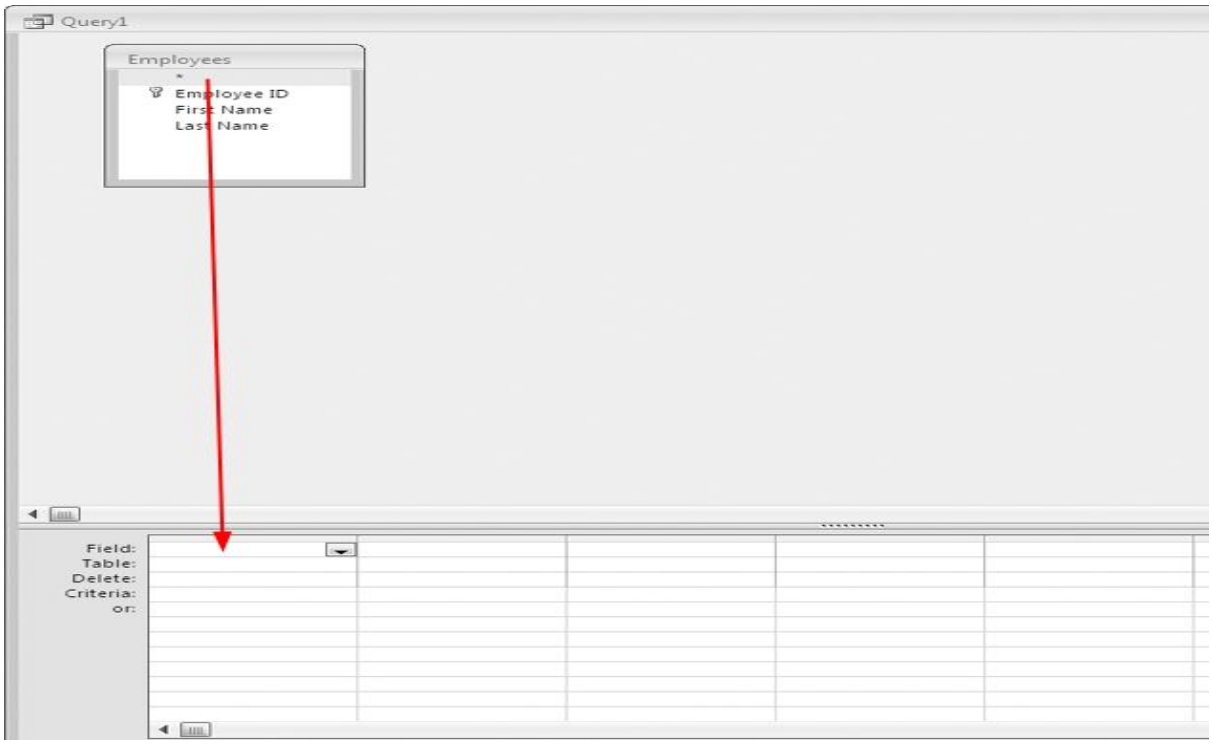
a. Then click the Add button.

3. Click the Close button.

4. In the Ribbon, click **Delete**.

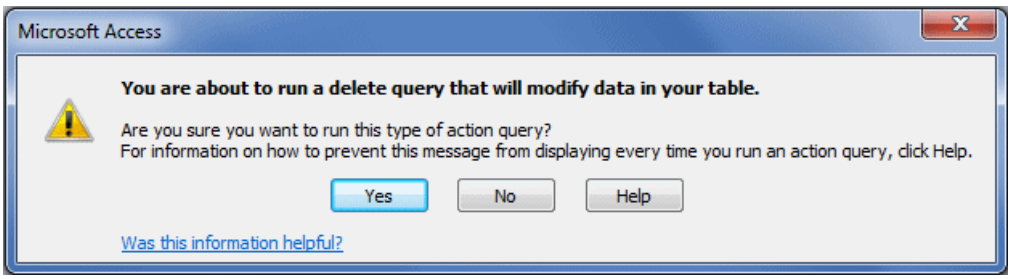
5. In the field list of the table, click-and-drag the ***** field to the first column of the design grid.

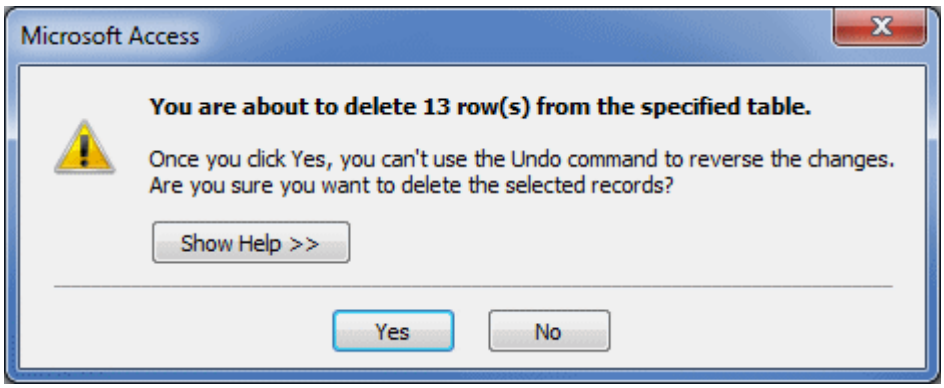




Add Criteria

1. In the column of the design grid, which needs to be conditioned click in the **Criteria** row.
2. Type: the conditional value
3. In the Ribbon, click **Run**.





Some More Examples on Queries

Open an existing query

If you are not familiar with the Navigation Pane, you may not know how to open a query that already exists. The Navigation Pane is a feature that replaces the Database Window from versions prior to Access 2007. You'll see the Navigation Pane along the left side of your screen.

To open any database object, including a query, you can double-click the object in the Navigation Pane.

Use the Northwind database to follow along with examples

Note Examples use a database that was created by using the Northwind 2010 database template.

1. Click the **File** tab, and then click **New**.
2. In the middle pane, under **Available Templates**, click **Sample Templates**, and then click **Northwind**.
3. In the right pane, review the name for the database file in the File Name box, and make any changes to the name. You can also browse for a different file location by clicking the folder icon.

4. Click **Create**.
5. Follow the directions on the **Northwind Traders** page (on the **Startup Screen** object tab) to open the database, and then close the Login Dialog window.

Look at a subset of the data in a table

Sometimes you may want to review all of the data from a table, but at other times, you may want to review only the data from certain fields, or you may want to review data only if certain fields meet certain criteria. To review some of the data in a table, you use a select query.

Suppose that you want to review a list of products and their prices. You can create a query that returns product and price information by using the following procedure:

1. Open the Northwind database that you previously set up by using these steps.
2. On the **Create** tab, in the **Query** group, click **Query Design**.
3. In the **Show Table** dialog box, on the **Tables** tab, double-click **Products**.
4. Close the **Show Table** dialog box.
5. In the Products table, double-click **Product Name** and **List Price** to add these fields to the query design grid.
6. On the **Design** tab, in the **Results** group, click **Run**.

The query runs, and then displays a list of products and their prices.

Review data from more than one table simultaneously

Tables in a well-designed database bear logical relationships to each other. These relationships exist on the basis of fields that the tables have in common. When you want to review data from related tables, you use a select query.

Suppose that you want to review orders for customers who live in a particular city. Data about orders and data about customers are stored in two tables in the same database. Each table has a Customer ID field, which forms the basis of a one-to-many relationship between the two tables. You can create a query that returns orders for customers in a particular city, for example, Las Vegas, by using the following procedure:

1. Open the Northwind database that you previously set up by using these steps.
2. On the **Create** tab, in the **Query** group, click **Query Design**.
3. In the **Show Table** dialog box, on the **Tables** tab, double-click **Customers** and **Orders**.
4. Close the **Show Table** dialog box.

Note the line, called a join, that connects the ID field in the Customers table and the Customer ID field in the Orders table. This line shows the relationship between the two tables.

5. In the Customers table, double-click **Company** and **City** to add these fields to the query design grid.
6. In the query design grid, in the **City** column, clear the check box in the **Show** row.
7. In the **Criteria** row of the **City** column, type **Las Vegas**.

Clearing the **Show** check box prevents the query from displaying the city in its results, and typing **Las Vegas** in the **Criteria** row specifies that you want to see only records where the value of the City field is Las Vegas. In this case, the query returns only the customers that are located in Las Vegas — Company L and Company AA.

Note that you do not have to display a field to use it with a criterion.

8. In the Orders table, double-click **Order ID** and **Order Date** to add these fields to the next two columns of the query design grid.
9. On the **Design** tab, in the **Results** group, click **Run**.

The query runs, and then displays a list of orders for customers in Las Vegas.

10. Press CTRL+S to save the query.

The **Save As** dialog box appears.

11. In the **Query Name** box, type **Orders by City**, and then click **OK**.

Ask variations of a question by using parameters

Sometimes you may want to run a query that is only slightly different from an existing query. You can change the original query to use your new criteria, but if you frequently want to run variations of a particular query, consider using a parameter query. When you run a parameter query, the query prompts you for field values, and then uses the values that you supply to create criteria for your query.

In the previous example, you created a query that returns orders for customers who are located in Las Vegas. You can modify the query to prompt you to specify the city each time that you run the query by using the following procedure:

1. Open the Northwind database that you previously set up by using these steps.
2. Press F11 to display the Navigation Pane.

Note This step is not necessary if the Navigation Pane is displayed.

3. In the Navigation Pane, right-click the query named **Orders by City** (that you created in the previous section), and then click **Design View** on the shortcut menu.
4. In the query design grid, in the **Criteria** row of the City column, delete **Las Vegas**, and then type **[For what city?]**.

The string **[For what city?]** is your parameter prompt. The square brackets indicate that you want the query to ask for input, and the text (in this case, **For what city?**) is the question that the parameter prompt displays.

Note Neither a period (**.**) nor an exclamation point (**!**) can be used as text in a parameter prompt.

5. Select the check box in the **Show** row of the City column, so that the query results will display the city.
6. On the **Design** tab, in the **Results** group, click **Run**.

The query prompts you to enter a value for City.

7. Type **New York**, and then press ENTER.

The query runs, and then displays orders for customers in New York.

But what if you don't know what values you can specify? To make your parameter more flexible, you can use wildcard characters as part of the prompt:

8. On the **Home** tab, in the **Views** group, click **View**, and then click **Design View**.
9. In the query design grid, in the **Criteria** row of the **City** column, type **Like [For what city?]&"*"**.

In this parameter prompt, the **Like** keyword, the ampersand (**&**), and the asterisk (*****) enclosed in quotation marks allow the user to type a combination of characters, including wildcard characters, to return a variety of results. For example, if the user types *****, the query returns all cities; if the user types **L**, the query returns all cities that start with the letter "L;" and if the user types ***s***, the query returns all cities that contain the letter "s."

10. On the **Design** tab, in the **Results** group, click **Run**.

At the query prompt, type **New**, and then press ENTER.

11. The query runs, and then displays orders for customers in New York.

Specify parameter data types

You can also specify what type of data a parameter should accept. You can set the data type for any parameter, but it is especially important to set the data type for numeric, currency, or date/time data. When you specify the data type that a parameter should accept, users see a more helpful error message if they enter the wrong type of data, such as entering text when currency is expected.

Note If a parameter is set to accept text data, any input is interpreted as text, and no error message is displayed.

To specify the data type for parameters in a query, use the following procedure:

1. With the query open in Design view, on the **Design** tab, in the **Show/Hide** group, click **Parameters**.
2. In the **Query Parameters** dialog box, in the **Parameter** column, type the prompt for each parameter for which you want to specify the data type. Make sure that each parameter matches the prompt that you use in the **Criteria** row of the query design grid.
3. In the **Data Type** column, select the data type for each parameter.

Make calculations based on your data

Most of the time, you do not use tables to store calculated values that are based on data in the same database. For example, the Order Details table in Northwind 2007 does not store product subtotals, because the subtotal for any given product is calculated by using data that is stored in the Quantity, Unit Price, and Discount fields of the Order Details table.

In some cases, calculated values can become out-of-date, because the values that they are based on change. For example, you would not want to store someone's age in a table, because every year you would have to update the value; instead, you store the person's date of birth, and then use an expression in a query to calculate the person's age.

Use the following procedure to create a query that calculates product subtotals based on data from the Order Details table.

1. Open the Northwind database that you previously set up by using these steps.
2. On the **Create** tab, in the **Query** group, click **Query Design**.
3. In the **Show Table** dialog box, on the **Tables** tab, double-click **Order Details**.
4. Close the **Show Table** dialog box.
5. In the Order Details table, double-click **Product ID** to add this field to the first column of the query design grid.
6. In the second column of the grid, right-click the **Field** row, and then click **Zoom** on the shortcut menu.
7. In the **Zoom** box, type or paste the following:

Subtotal: ([Quantity]*[Unit Price])-([Quantity]*[Unit Price]*[Discount])

Click **OK**.

This is the calculated field. The calculated field multiplies the quantity of each product by the unit price for that product, multiplies the quantity of each product by the unit price and discount for that product, and then subtracts the total discount from the total unit price.

8. On the **Design** tab, in the **Results** group, click **Run**.

The query runs, and then displays a list of products and subtotals, per order.

9. Press CTRL+S to save the query, and then name the query **Product Subtotals**.

Look at summarized or aggregate data

When you use tables to record transactions or store regularly occurring numeric data, it is useful to be able to review that data in aggregate, such as sums or averages.

Access allows you to review simple aggregate data in any datasheet by adding a Total row. A Total row is a row at the bottom of the datasheet that can display a running total or other aggregate value.

Note You cannot add a Total row to the datasheet of a Web query.

You can add a Total row to the Product Subtotals query that you created in the previous example by using the following procedure:

1. Run the Product Subtotals query, and leave the results open in Datasheet view.
2. On the **Home** tab, in the **Records** group, click **Totals**.

A new row appears at the bottom of the datasheet, with the word **Total** in the first column.

3. Click the cell in the last row of the datasheet named **Total**.

Note that an arrow appears in the cell.

4. Click the arrow to view the available aggregate functions.

Because the column contains text data, there are only two choices: **None** and **Count**.

5. Select **Count**.

The content of the cell changes from **Total** to a count of the column values.

6. Click the adjoining cell (the second column).

Note that an arrow appears in the cell.

7. Click the arrow, and then click **Sum**.

The field displays a sum of the column values.

8. Leave the query open in Datasheet view.

Create a totals query for more complex summaries

The Total row in a datasheet is very useful, but for more complex questions, you use a totals query. A totals query is a select query that allows you to group and summarize data. For example, suppose that you want to see total sales per product. In a totals query, you can use Sum, an aggregate function, to see total sales per product.

Note You cannot use aggregate functions in a Web query.

Use the following procedure to modify the Product Subtotals query to make it summarize product subtotals by product.

1. On the **Home** tab, in the **Views** group, click **View**, and then click **Design View**.

The Product Subtotals query opens in Design view.

2. On the **Design** tab, in the **Show/Hide** group, click **Totals**.

The **Totals** row is displayed in the query design grid.

Note Although they have similar names, the **Totals** row in the design grid and the **Total** row in a datasheet are not the same:

- You can group by field values by using the **Totals** row in the design grid.
- You can add a datasheet **Total** row to the results of a totals query.
- When you use the **Totals** row in the design grid, you must choose an aggregate function for each field. If you do not want to perform a calculation on a field, you can group by the field.

3. In the second column of the design grid, in the **Total** row, select **Sum** from the drop-down list.
4. On the **Design** tab, in the **Results** group, click **Run**.

The query runs, and then displays a list of products with subtotals.

5. Press CTRL+S to save the query. Leave the query open.

Create a crosstab query to add another level of grouping

Now suppose that you want to review product subtotals, but you also want to aggregate by month, so that each row shows subtotals for a product, and each column shows product

subtotals for a month. To show subtotals for a product and to show product subtotals for a month, use a crosstab query.

Note A crosstab query cannot be displayed in a web browser.

You can modify the Product Subtotals query again so that the query returns rows of product subtotals and columns of monthly subtotals.

1. On the **Home** tab, in the **Views** group, click **View**, and then click **Design View**.
2. In the **Query Setup** group, click **Show Table**.
3. In the **Show Table** dialog box, double-click **Orders**, and then click **Close**.
4. On the **Design** tab, in the **Query Type** group, click **Crosstab**.

In the design grid, the **Show** row is hidden, and the **Crosstab** row is displayed.

5. In the third column of the design grid, right-click the **Field** row, and then click **Zoom** on the shortcut menu. The **Zoom** box opens.
6. In the **Zoom** box, type or paste the following:

Month: "Month " & DatePart("m", [Order Date])

7. Click **OK**.
8. In the **Crosstab** row, select the following values from the drop-down list: **Row Heading**for the first column, **Value** for the second column, and **Column Heading** for the third column.
9. On the **Design** tab, in the **Results** group, click **Run**.

The query runs, and then displays product subtotals, aggregated by month.

10. Press CTRL+S to save the query.

Create a new table by using data from other tables

You can use a make-table query to create a new table from data that is stored in other tables.

Note A make-table query cannot be run in a web browser.

For example, suppose that you want to send data for Chicago orders to a Chicago business partner who uses Access to prepare reports. Instead of sending all your order data, you want to restrict the data that you send to data specific to Chicago orders.

You can build a select query that contains Chicago order data, and then use the select query to create the new table by using the following procedure:

1. Open the Northwind database that you previously set up by using these steps.
2. To run a make-table query, you may need to enable the database content by using the Message Bar, which appears beneath the Ribbon if the database is untrusted when you open it.

Note If your database is in a trusted location, the Message Bar does not appear and enabling the content is unnecessary.

3. Close the Login Dialog form.

4. On the **Create** tab, in the **Query** group, click **Query Design**.
5. In the **Show Table** dialog box, double-click **Order Details** and **Orders**.
6. Close the **Show Table** dialog box.
7. In the **Orders** table, double-click **Customer ID** and **Ship City** to add these fields to the design grid.
8. In the **Order Details** table, double-click **Order ID**, **Product ID**, **Quantity**, **Unit Price**, and **Discount** to add these fields to the design grid.
9. In the **Ship City** column of the design grid, clear the box in the **Show** row. In the **Criteria** row, type **'Chicago'** (include the single quotation marks).

Verify the query results before you use them to create the table.

10. On the **Design** tab, in the **Results** group, click **Run**.
11. Press CTRL+S to save the query.

The **Save As** dialog box appears.

12. In the **Query Name** box, type **Chicago Orders Query**, and then click **OK**.
13. On the **Home** tab, in the **Views** group, click **View**, and then click **Design View**.
14. On the **Design** tab, in the **Query Type** group, click **Make Table**.

The **Make Table** dialog box appears.

15. In the **Make Table** dialog box, in the **Table Name** box, type **Chicago Orders**, and then click **OK**.
16. On the **Design** tab, in the **Results** group, click **Run**.
17. In the confirmation dialog box, click **Yes** to confirm.

The new table is created, and the table appears in the Navigation Pane.

Note If there is already a table that has the name that you specified, that table is deleted before the query runs.

18. On the **Design** tab, in the **Results** group, click **Run**.

Because the Chicago Orders table exists, a warning dialog box appears.

19. Click **No** to cancel the action and to dismiss the dialog box.

Add data to a table by using data from other tables

You can use an append query to retrieve data from one or more tables and add that data to another table.

Note An append query cannot be run in a web browser.

Suppose that you created a table to share with a Chicago business associate, but you realize that the associate also works with clients in the Milwaukee area. You want to add rows that contain Milwaukee area data to the table before you share the table with your associate.

You can add Milwaukee area data to the Chicago Orders table that you created in the previous example by using the following procedure:

1. Open the query named "Chicago Orders Query" in Design view.
2. On the **Design** tab, in the **Query Type** group, click **Append**. The **Append** dialog box opens.

3. In the **Append** dialog box, click the arrow in the **Table Name** box, and then select **Chicago Orders** from the drop-down list.
4. Click **OK**.

The **Append** dialog box closes. In the design grid, the **Show** row disappears, and the **Append To** row appears.

5. In the design grid, in the **Criteria** row of the Ship City column, delete 'Chicago', and then type **'Milwaukee'**.
6. In the **Append To** row, select the appropriate field for each column.

In this example, the **Append To** row values should match the **Field** row values, but that is not required for append queries to work.

7. On the **Design** tab, in the **Results** group, click **Run**.

Note While running a query that returns a large amount of data you might get an error message indicating that you will not be able to undo the query. Try increasing the limit on the memory segment to 3MB to allow the query to go through.

Change data in an automated fashion

You can use an update query to change the data in your tables, and you can use an update query to enter criteria to specify which rows should be updated. An update query provides you an opportunity to review the updated data before you perform the update.

Important An action query cannot be undone. You should consider making a backup of any tables that you will update by using an update query.

Note An update query cannot be run in a web browser.

In the previous example, you appended rows to the Chicago Orders table. In the Chicago Orders table, the Product ID field shows the numeric Product ID. To make the data more useful for reports, you may want to replace the product IDs with product names. To replace the product IDs, you must first change the data type of the Product ID field of the Chicago Orders table from Number to Text, so that the Product ID field can accept product names.

You can update the values in the Chicago Orders table by using the following procedure:

1. Open the Chicago Orders table in Design view.
2. In the Product ID row, change the Data Type from **Number** to **Text**.
3. Save and close the Chicago Orders table.
4. On the **Create** tab, in the **Query** group, click **Query Design**.
5. In the **Show Table** dialog box, double-click **Chicago Orders** and **Products**.
6. Close the **Show Table** dialog box.
7. On the **Design** tab, in the **Query Type** group, click **Update**.

In the design grid, the **Sort** and **Show** rows disappear, and the **Update To** row appears.

8. In the **Chicago Orders** table, double-click **Product ID** to add this field to the design grid.
9. In the design grid, in the **Update To** row of the **Product ID** column, type or paste the following:

[Products].[Product Name]

Tip You can use an update query to delete field values by using an empty string (**""**) or NULL in the **Update To** row.

10. In the **Criteria** row, type or paste the following:

[Product ID] Like ([Products].[ID])

The **Like** keyword is necessary because the fields that you are comparing contain different data types (Product ID is text data, ID is numeric data).

11. You can review which values will be changed by an update query by viewing the query in Datasheet view.

On the **Design** tab, in the **Results** group, click **View**, and then click **Datasheet View**.

The query returns a list of Product IDs that will be updated.

12. On the **Design** tab, in the **Results** group, click **Run**.

When you open the Chicago Orders table, you will see that the numeric values in the Product ID field have been replaced by the product names from the Products table.

Delete data in an automated fashion

You can use a delete query to delete data from your tables, and you can use a delete query to enter criteria to specify which rows should be deleted. A delete query provides you an opportunity to review the rows that will be deleted before you perform the deletion.

Note A delete query cannot be run in a web browser.

Suppose that you are preparing to send the Chicago Orders table (updated in the previous example) to your Chicago business associate, and you notice that some of the rows contain a number of empty fields. You would like to remove these rows that contain empty fields before you send the table. You could just open the table and delete the rows manually, but you might find it helpful to use a delete query if there are more than a few rows that you want to delete and you have clear criteria for which rows should be deleted.

You can use a query to delete rows in the Chicago Orders table that do not have a value for Order ID by using the following procedure:

1. On the **Create** tab, in the **Query** group, click **Query Design**.
2. In the **Show Table** dialog box, double-click **Chicago Orders**.
3. Close the **Show Table** dialog box.
4. On the **Design** tab, in the **Query Type** group, click **Delete**.

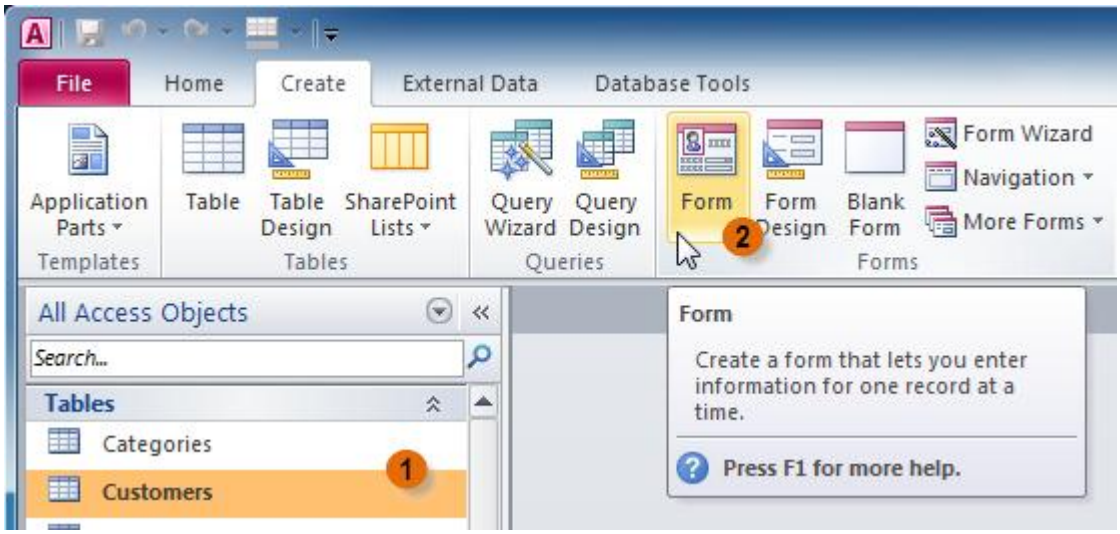
In the design grid, the **Sort** and **Show** rows disappear, and the **Delete** row appears.

5. In the **Chicago Orders** table, double-click **Order ID** to add it to the grid.
6. In the design grid, in the **Criteria** row of the Order ID column, type **Is Null**.
7. On the **Design** tab, in the **Results** group, click **Run**.

CREATING FORMS AND REPORTS

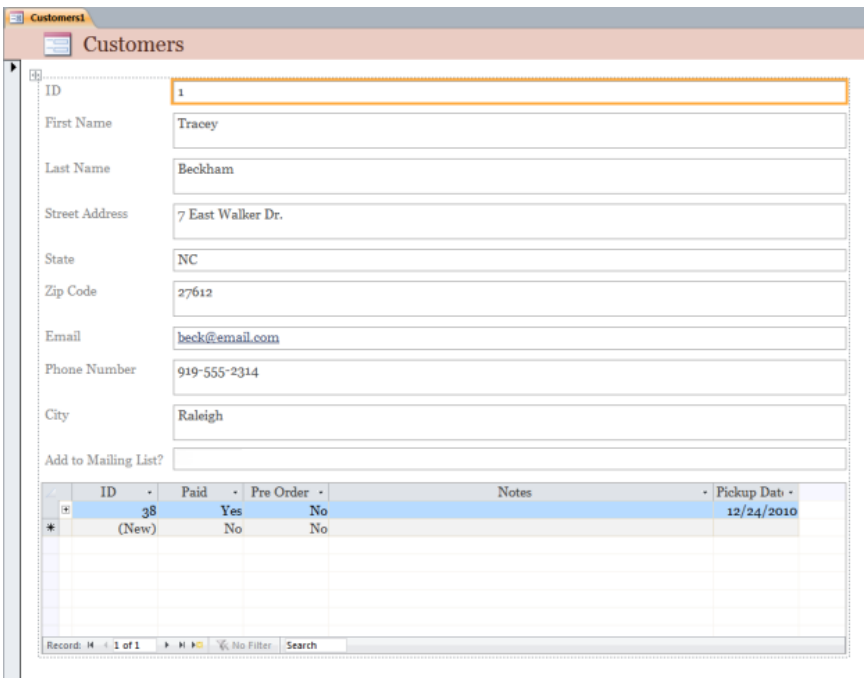
Access forms are much like paper forms: you can use them to enter, edit, or display data. They are based on tables. When using a form, you can choose the format, the arrangement, and which fields you want to display. This lesson teaches you how to create forms. A form in Microsoft Access is an object that allows users to easily add and view data in a table

1. In the **Navigation Pane**, **select** the table you would like to use to create a form
2. Select the **Create** tab on the Ribbon and locate the **Forms** group. Click the **Form** command.



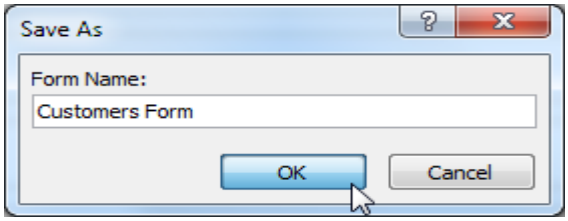
Using the Form command to create a form from the Customers table

3. Your form will be created and opened in **Layout View**.



The new form

4. To **save** the form, click the **Save** command on the **Quick Access Toolbar**. When prompted, type a **name** for the form and then click **OK**.



Naming and saving the form

You can use the Navigation bars to move through the records on a form.

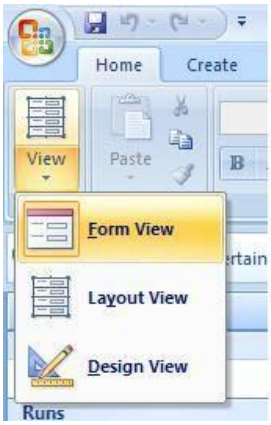
1	Go to First Record
2	Go to Previous Record
3	The Current Record
4	Go to Next Record
5	Go to Last Record
6	Create a New (Blank) Record

4.1 Form Views

A view is a way of looking at an Access object. Forms have three views: Form view, Layout view, and Design view. You can enter, edit, and view data in Form view. You can modify a form in Layout view or Design view. In Layout view, you can see your data, and the form you see closely resembles what your form will look like when you view it in Form view. You can make most, but not all, changes to your form in Layout view. Design view displays the structure of your form. In this view you cannot see the underlying data, but you can perform some tasks in Design view that you cannot perform in Layout view.

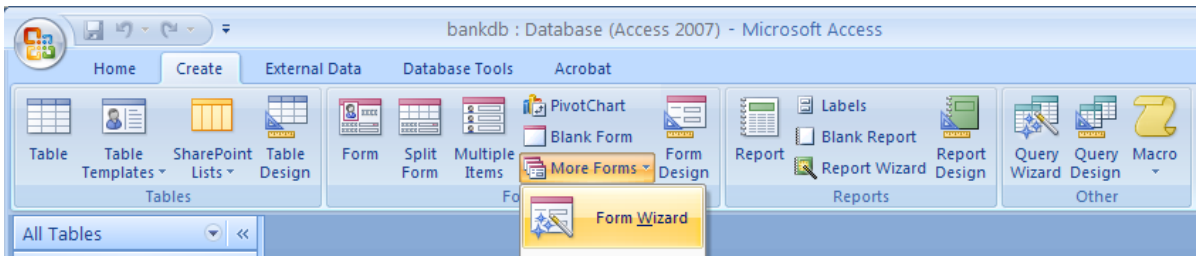
Change the view

1. Open the form.
2. Activate the Format tab.
3. Click the down-arrow under the View button. A menu appears.
4. Click the view you want.

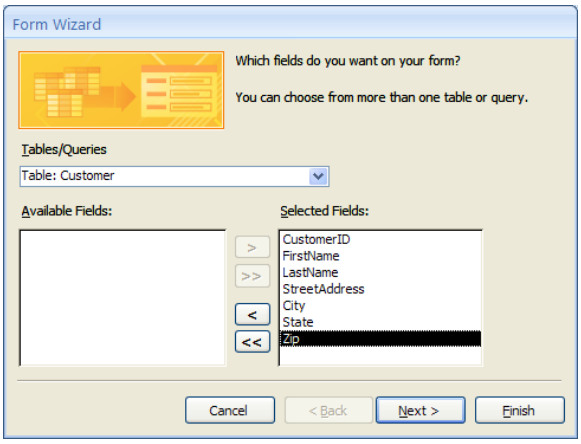


Create Form with a Wizard

The Form Wizard found in Microsoft Access makes basic form creation fast and simple. .



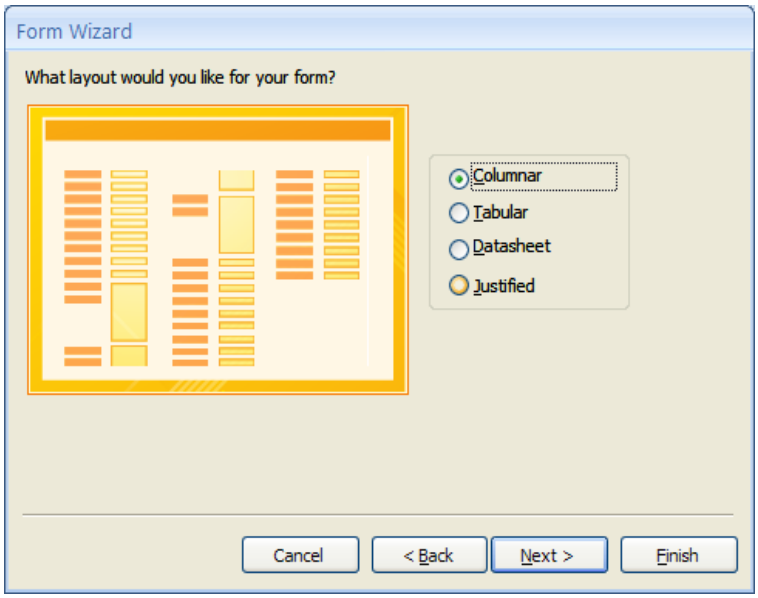
In the first step of the Form wizard, we need to specify the fields from the Customer table that will appear on the form. In this case, we want all of the fields to appear. Move each of the fields from the Available Fields side over to the Selected Fields side as in the following figure. Then click on the Next button.



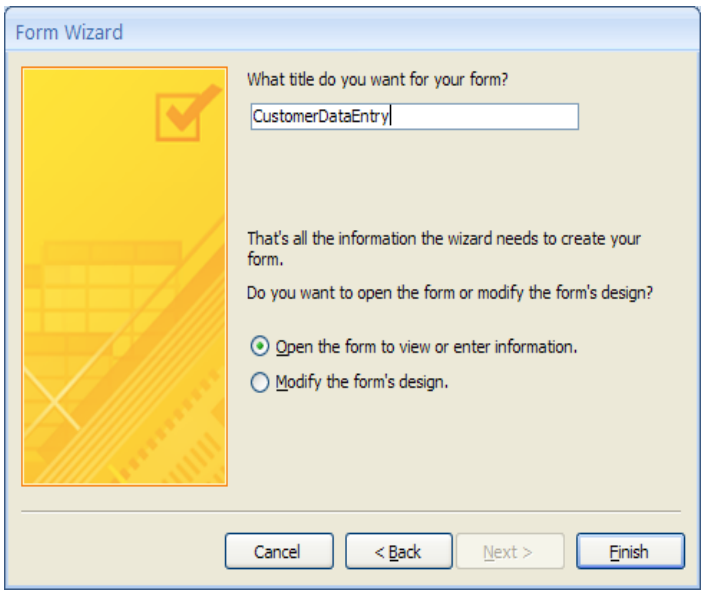
Forms can have several different layouts or arrangement of the labels and fields on the screen.

- Columnar - Places the labels to the left of each field. This is similar to a paper form. This layout is suitable for viewing data one record at a time.

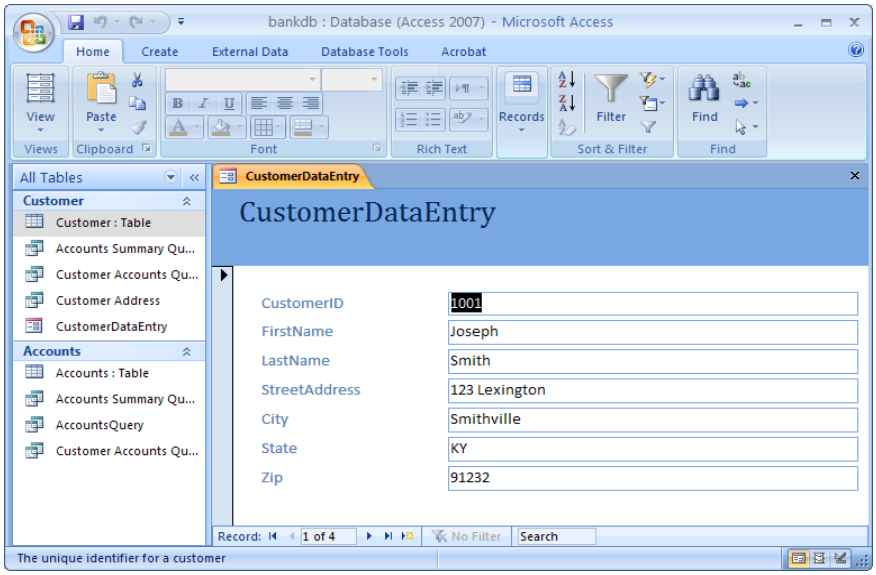
- Tabular - Places the field labels at the top of the screen and the records are displayed below. This is similar to how a spreadsheet would display the data and is suitable for displaying multiple records of data at a time.
- Datasheet - The data appears in the same fashion as when viewing or adding data to a table.
- Justified - Places the labels above each field with the fields spread out on the form. This is suitable for viewing a single record at a time as with the columnar layout..



As a final step, give this new form the name: CustomerDataEntry and then click on the Finish button as shown below:



The new form will be created by the wizard and then opened. It appears as in the figure below:



4.2 Creating Reports

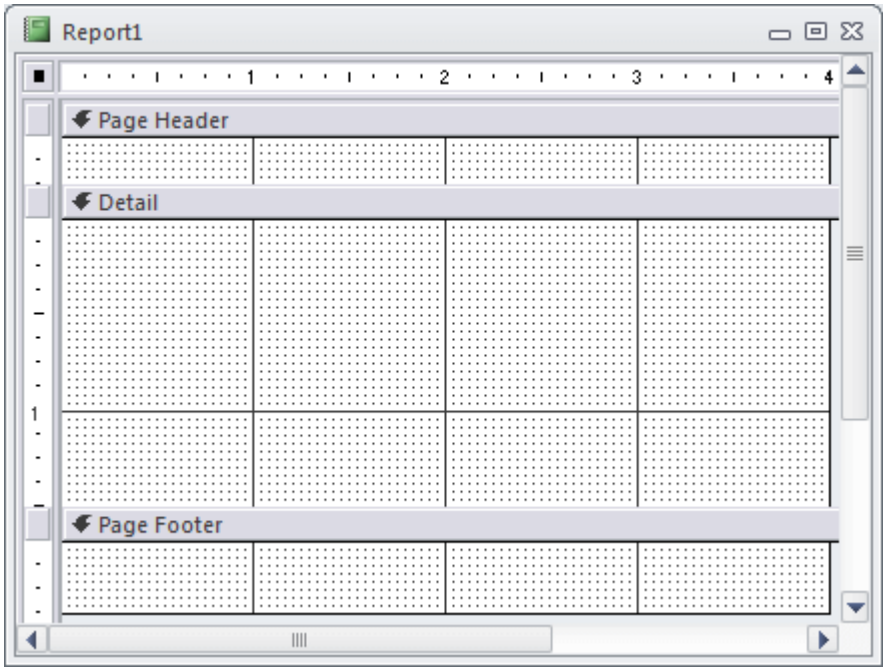
Reports organize and summarize data for viewing online or for printing. A detail report displays all of the selected records. You can include summary data such as totals, counts, and percentages in a detail report. A summary report does not list the selected records but instead summarizes the data and presents totals, counts, percentages, or other summary data only. Access has several report generation tools that you can use to create both detail and summary reports quickly.

Views of a Report

Design View

- From the Navigation Pane, you can right-click the report and click Design View
- If the report is already opened, in the Views section of the Ribbon, you can click the arrow button under View and click Design View
- If the report is already opened, you can right-click its tab or its title bar and click Design View

In the Design View of a report, you can add, position, format, configure, and manipulate the necessary controls. The Design View is equipped with one or more sections. The primary sections are the Page Header, the Detail, and the Page Footer:



When a report is in Design View, the Ribbon is equipped with a Controls section in its Design tab. You can use those controls to populate your report. You can also select objects from the Field List and add them to the report.

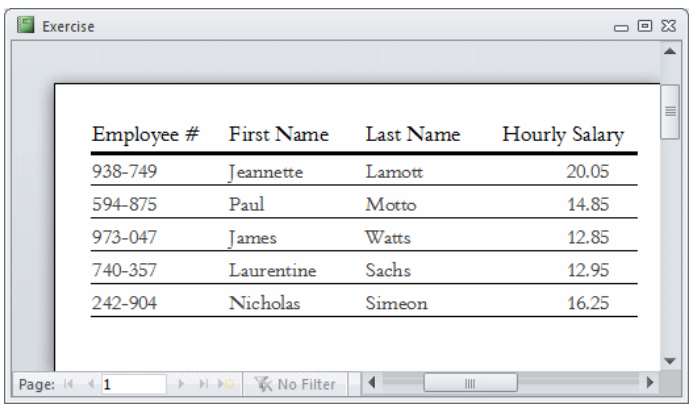
Print Preview

To have an idea of what a report would look like on a printed piece of paper, you can display it in what is referred to as Print Preview. To do this:

- If you have created a report using the Report Wizard, it would automatically display in Print Preview
- In the Navigation Pane, you can right-click a report and click Print Preview
- If the report is already opened, you can right-click its tab or its title bar and click Print Preview

When a report appears in Print Preview, the Ribbon is made of only one tab.

To appear realistic, a report in print preview appears as a piece of paper with margins. Its body is filled with the data that would be printed.

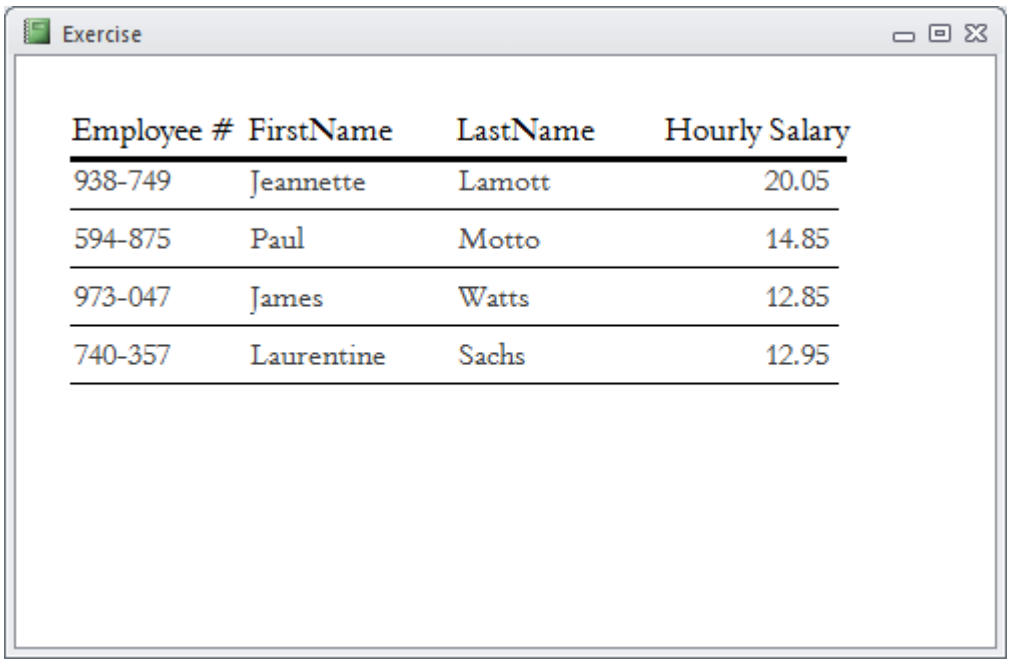


The right side and the bottom-right side display a scroll bar each.

After using the Print Preview, to close it, in the Close Preview section of the Ribbon, you can click the Close Print Preview button. This would display the report in the view it previously had.

Report View

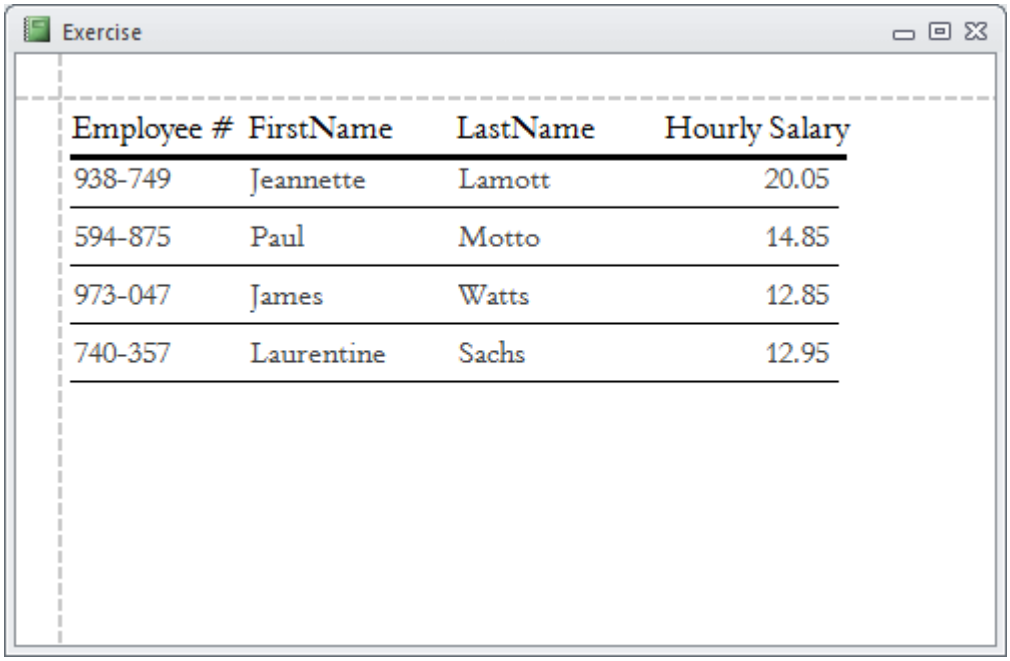
The Report View shows a report with its controls and the items in its sections but it does not show the margins:



Unlike the Print Preview, the Report View does not distinguish where a section starts and where it ends.

Layout View

The Layout View of a report appears as a drawing board. It shows its title bar and its system buttons. In its body, it displays three dotted lines that represent the top section and the margins:

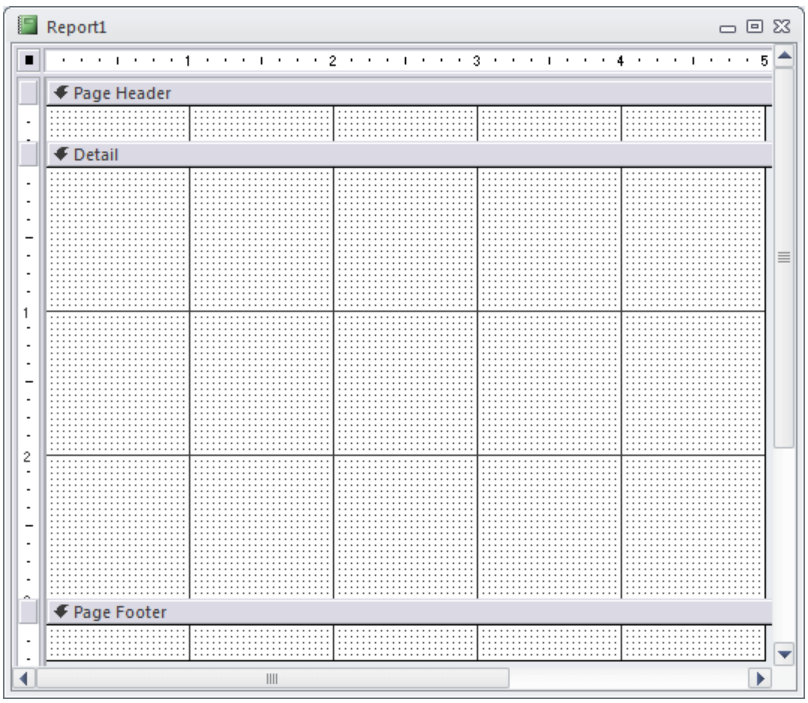


Sections of a Report

Page Header and the Page Footer Sections

When a piece of paper prints, it is made of a top section, a body, and a bottom section. To support this, a report can be equipped with a Page Header that represents the top part, a Detail section that represents the body of the report, and a Page Footer section that represents the bottom part.

If you create a report using either the Blank Report or the Report Design options of the Reports section of the Ribbon, the report would be equipped with a Page Header and a Page Footer sections:

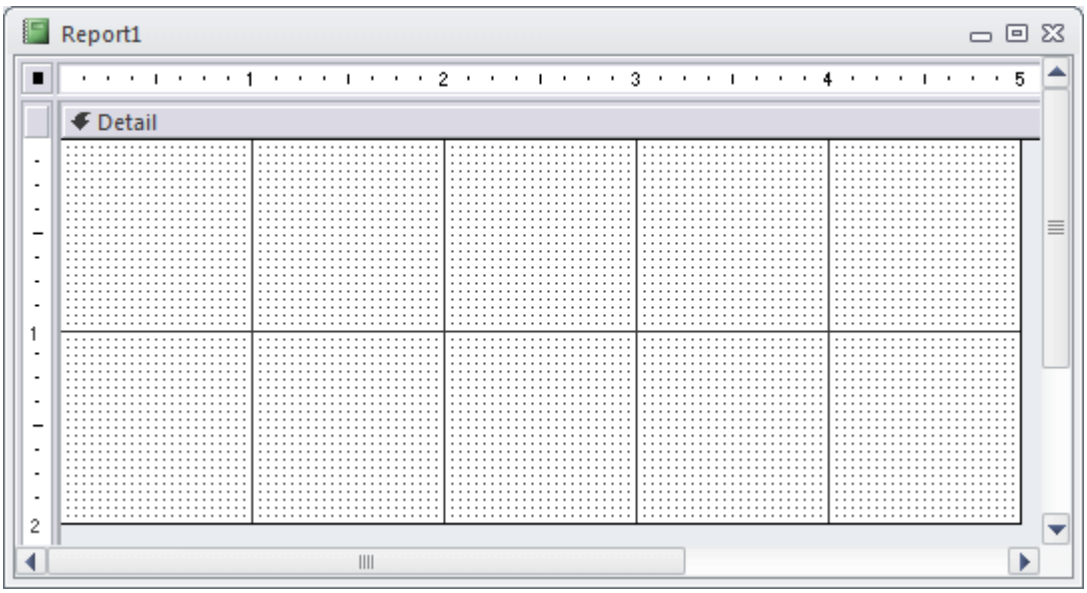


The Page Header represents the top section of the printed paper. Therefore, when designing a report, put in the Page Header the objects you want to display on each top part of the printed paper.

Because the Page Footer represents the bottom part of each printed page, you can put on it the object(s) that would display on each page. You can use it to display the date the report is being printed.

Detail Section

The most fundamental part of a report is the Detail section, which holds the most controls of a report. If you create a report using one of the options from the Reports section of the Create tab of the Ribbon, the report would come equipped with various sections. To have only the Detail section, you can right-click the report and click the option of those sections to remove them. You may end up with only the Detail section.

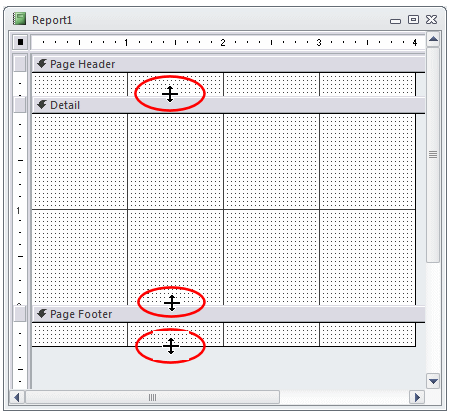


You can then equip it with the desired controls.

Size of a Report

A report has a size, which is the combination of its width and its height. When it comes to the height, each section has and controls its own vertical measure.

- You can drag up or down the bottom border of the bar of the next section

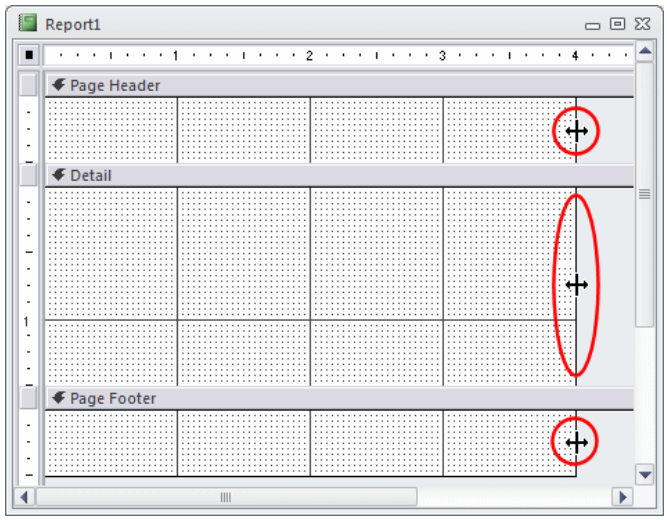


- You can access the Property Sheet of that section and change the value of the **Height** property

The height that a report displays in Design View is the total height of its sections.

When it comes to the width of a report, all sections use the same measure. The width that a report shows in Design View is the common width of its sections. Therefore, to specify the width of a report:

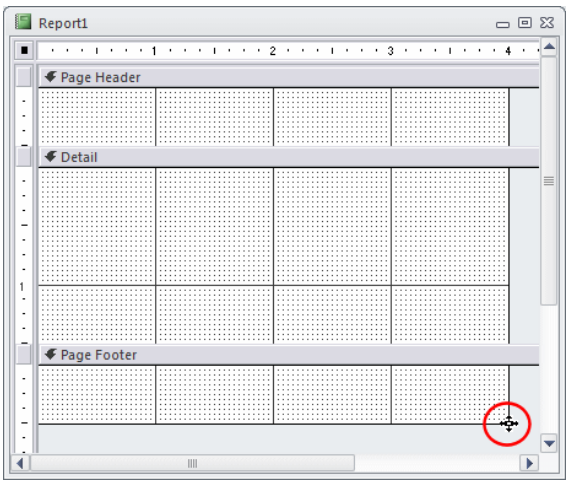
- You can drag left or right the right border of any section



- You can access the Property Sheet of the form and change the value of the **Width** property

To change both the height and the width of the report:

- You can drag left, up, right, or down the bottom-right corner of the lowest section

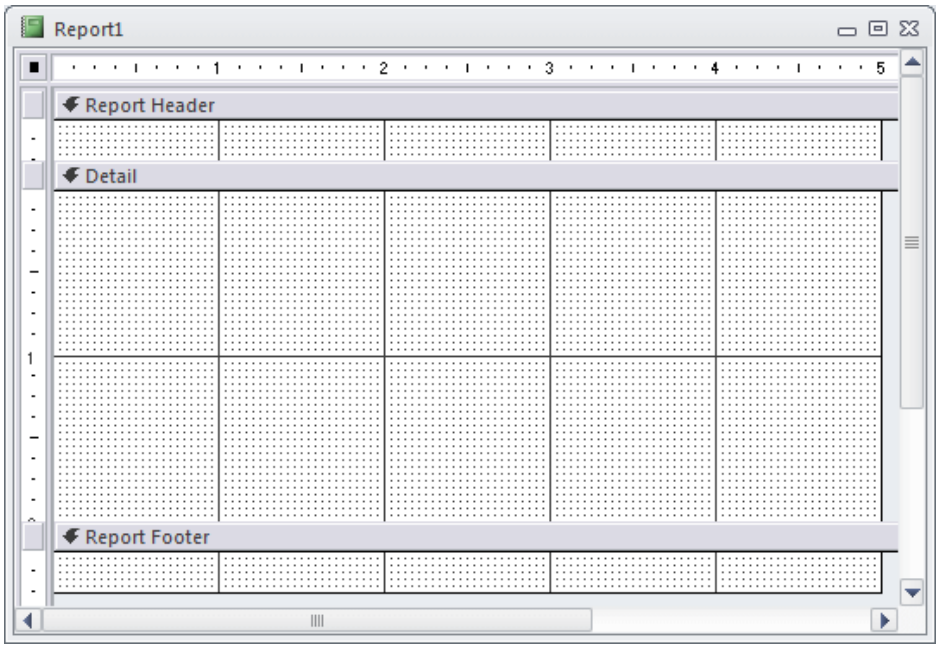


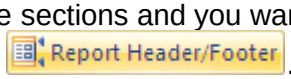
You can access the Property Sheet of the report then change the values of both the Height and the Width fields

Report Header and the Report Footer

The report is the primary object used to print the data of a database.

To support the cover and the back page, the report can be equipped with two other sections: The Report Header and the Report Footer sections



If you create a report using either the Report or the Report Wizard options of the Reports section of the Ribbon, the report would be equipped with a Report Header and a Report Footer sections. If you have a report that doesn't have these sections and you want to add them, right-click the report and click **Report Header/Footer** 

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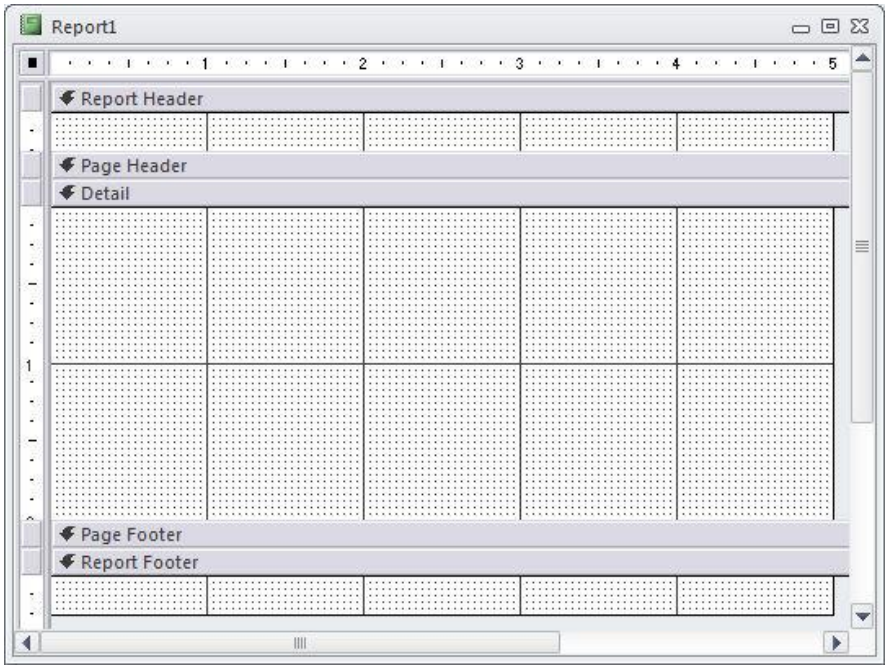
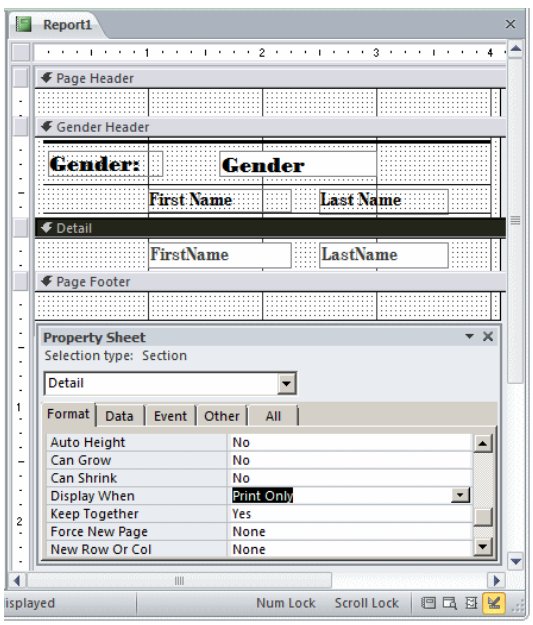


Display When Section

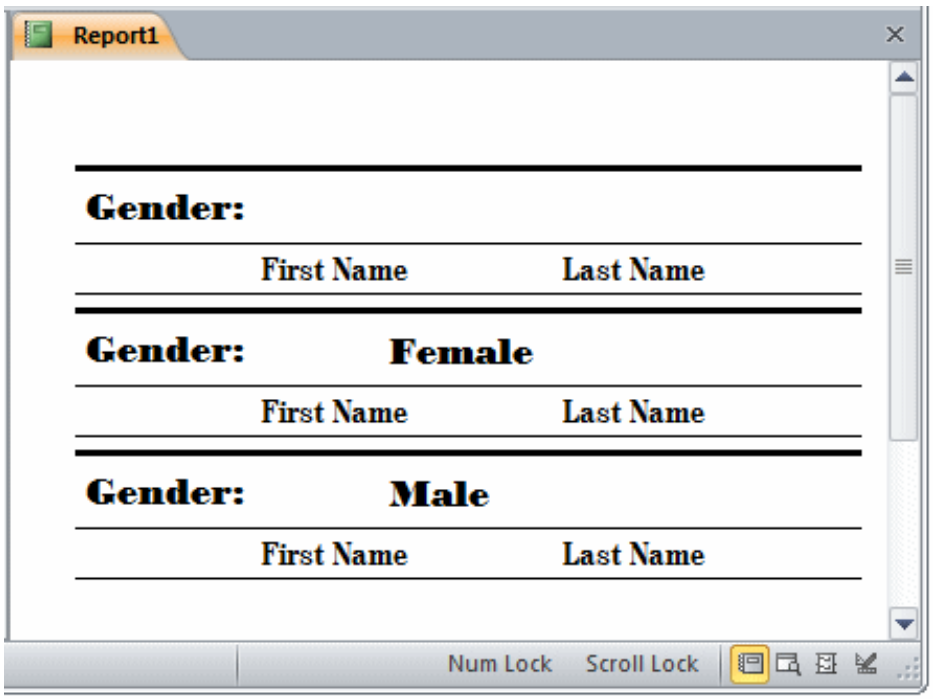
After adding a section to a report, the section would show in Design View and its contents would appear in the other views. If you want, you can hide the section in either the Design View or the other views. This characteristic is controlled by the **Display When** enumerated property. To apply it, display the report in Design View and access the Property Sheet of the section on which you want to control this characteristic. Click either the Format or the All tab.

The **Display When** property has three options:

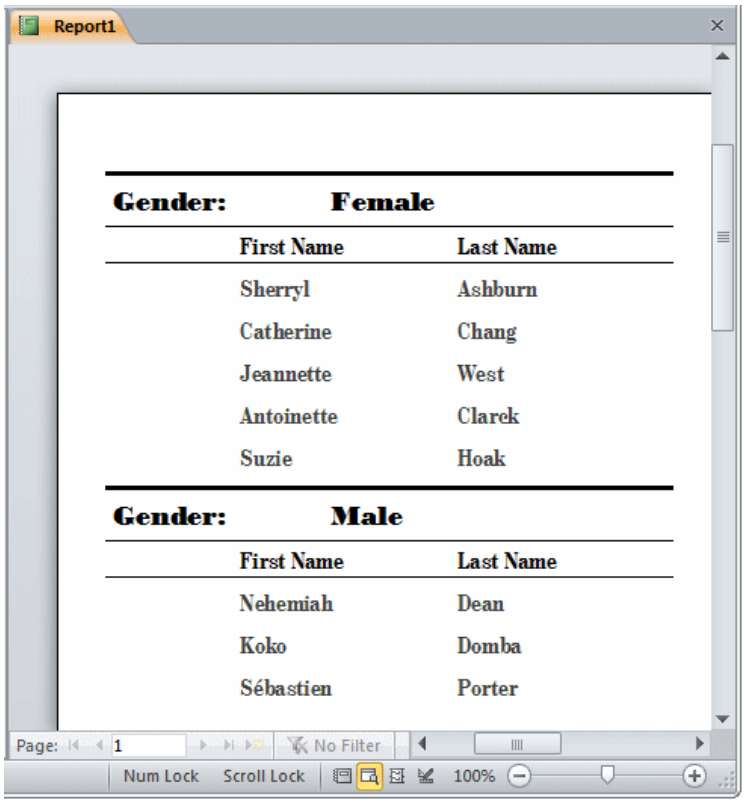
- **Always**: This is the default value of the property. It indicates that the section will display in Design View and its contents would appear in all views
- **Print Only**: The section will appear in Design View and Print Preview only, not in Report View or Layout View



Report View



Print Preview

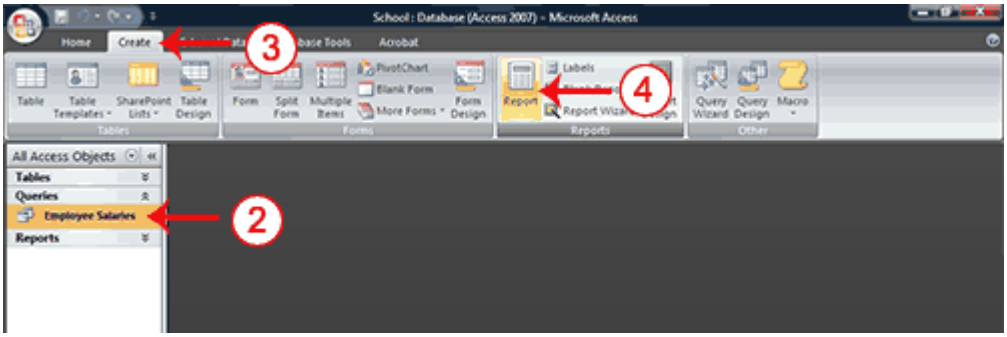


Screen Only: The section will appear in Design View, in Report View, and in Layout View, but not in Print Preview

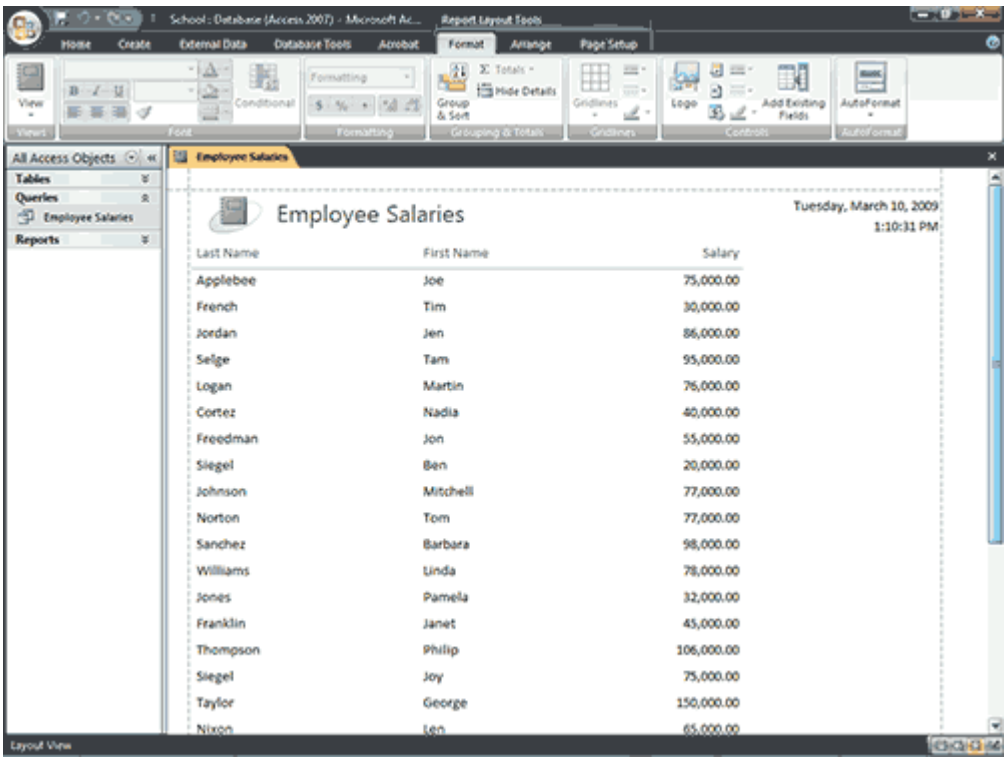
Use the Report Button

The Report button creates a simple report that lists the records in the selected table or query in a columnar format.

To use the Report button:



1. Open the Navigation pane.
2. Click the table or query on which you want to base your report.
3. Activate the Create tab.
4. Click the Report button in the Reports group. Access creates your report and displays your report in Layout view. You can modify the report.



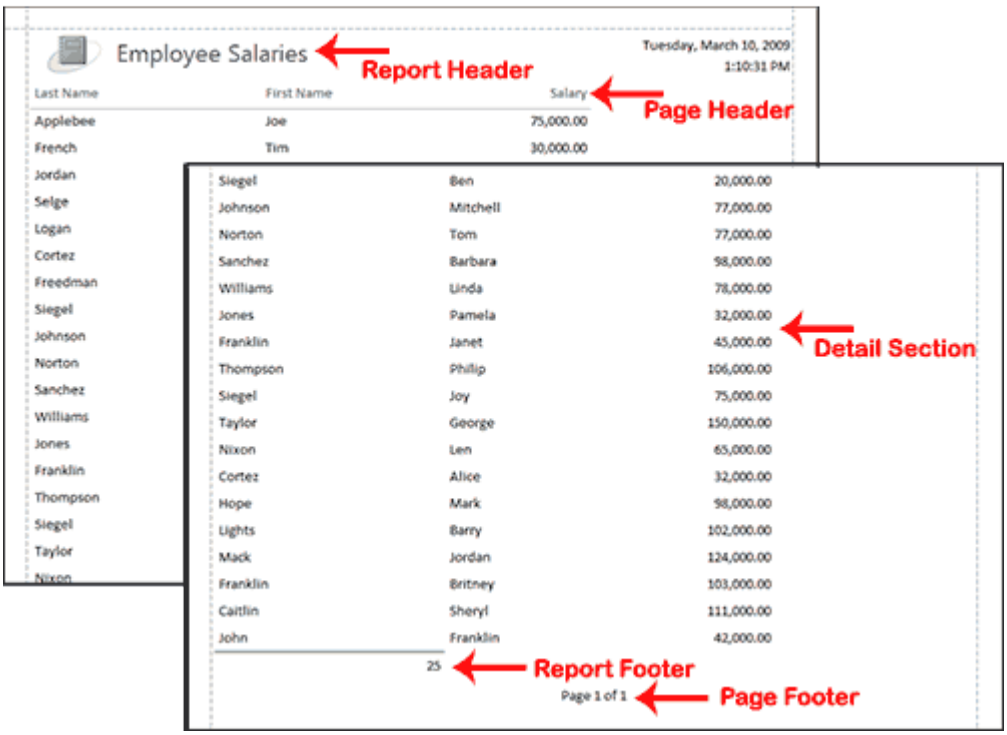
***Tip**:* After you create a report, you can save it.

1. Click the Save button on the Quick Access toolbar. Access saves the report unless you are saving for the first time. If you are saving for the first time, the Save As dialog box appears.
2. Type the name you want to give your report.
3. Click OK. Access saves the report. You can now access the report by using the Navigation pane.

As with other objects, you can also save a report by right-clicking the reports tab and selecting Save. Saved reports appear in the Navigation pane.

Tip: Reports created by using the Report button are plain and simple.

Sections of a Report	
Report Header	Appears at the top of the first page and displays the report title.
Page Header	Appears at the top of every page and displays the headings (field labels) for each column.
Page Footer	Appears at the bottom of every page and displays the page number and total number of pages.
Detail Section	Appears between the page header and page footer and displays the records from the table or query.
Report Footer	This section is optional. Appears on the last page of the report and displays summary information such as grand totals.

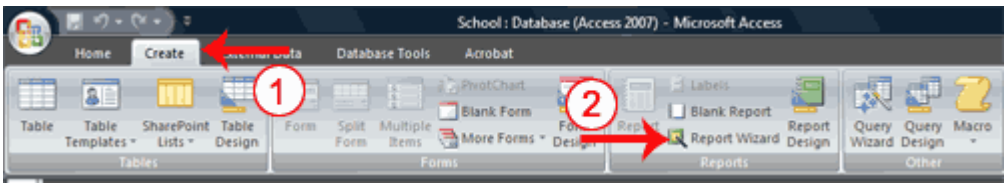


Use the Report Wizard

The Report Wizard provides you with more flexibility than you get by using the Report button. You can choose the tables and fields, group the data, sort the data, summarize the data, choose a layout and orientation, apply a style, and title your report.

Create a report by using the Report Wizard:

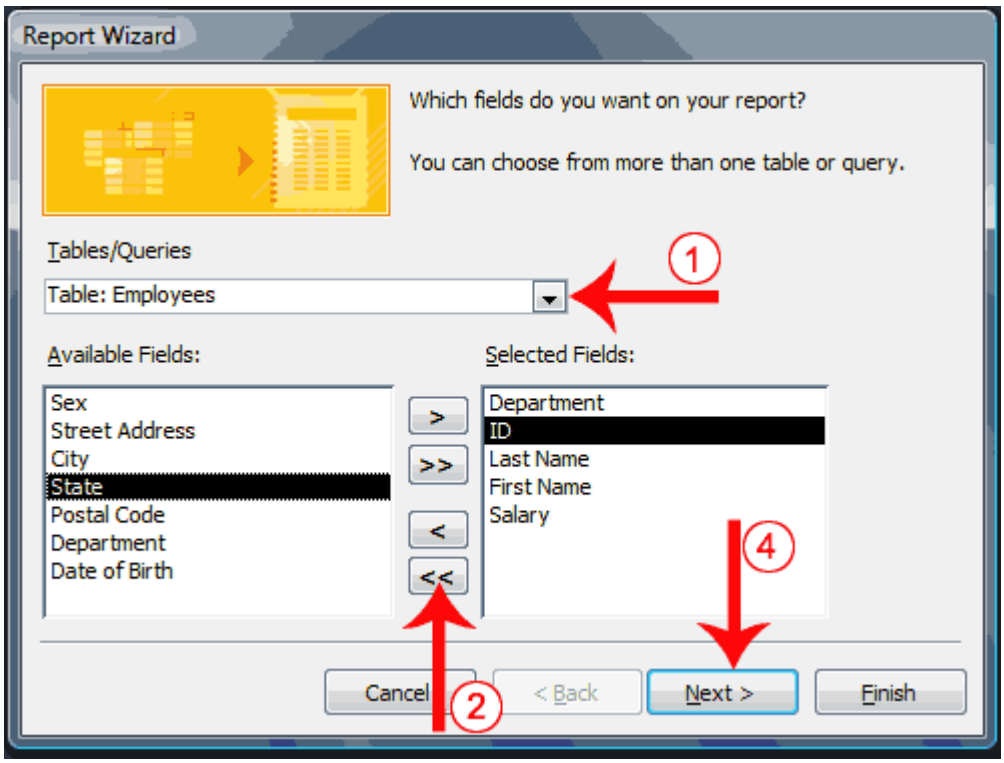
Open the Report Wizard



1. Activate the Create tab.
2. Click Report Wizard in the Reports group. The Report Wizard appears.

Select tables, queries and fields

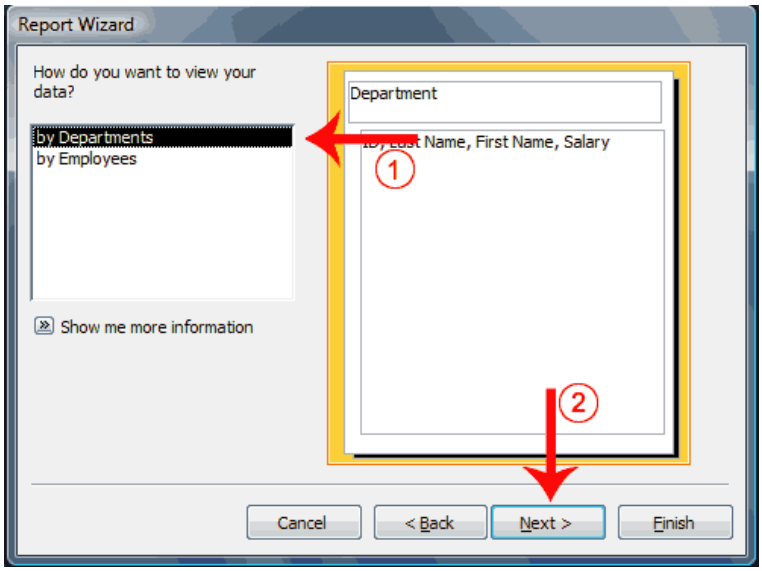
When using the Report Wizard, you can use fields from multiple tables and/or queries if the tables/queries have a relationship.



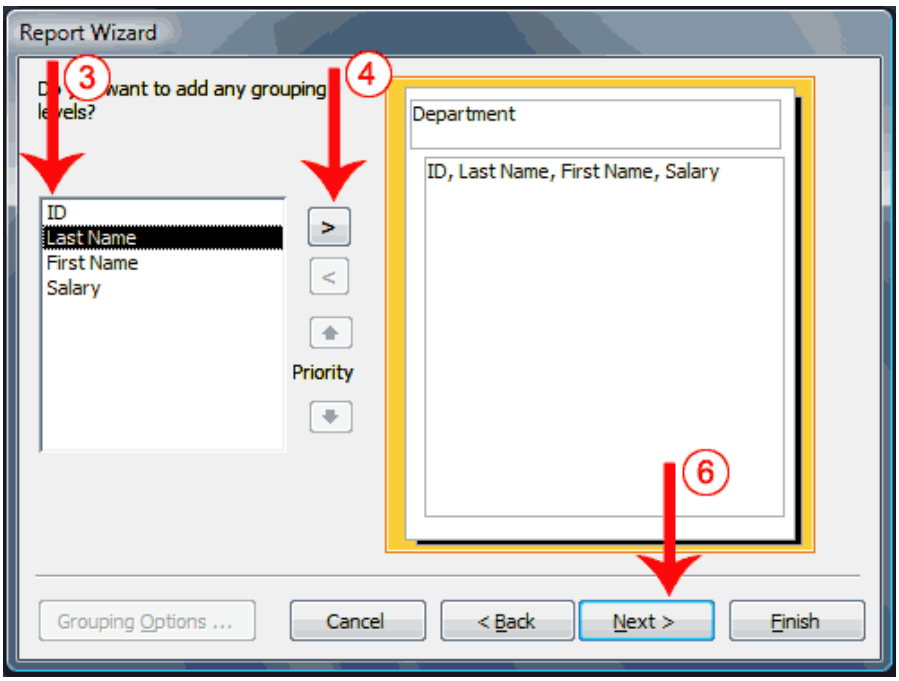
1. Click the down-arrow next to the Table/Queries field and then click the table from which you want to select fields.
2. Click a field and then click the single-right arrow to select a single field, click the double-right arrows to select all fields, click a field and then click the single-left arrow to deselect a single field, or click the double-left arrow to deselect all fields.
3. Repeat steps 1 and 2 for each table from which you want to select fields.
4. Click Next. The Report Wizard moves to the next page.

Group

When using the Report Wizard, you can group data. Grouping puts all of the values in a field into a group based on the field's value. For example, if your data is grouped by the Department field and the records in the Department field have values such as Administration, Computer Science, and English. Access will group all of the data for the Administration department together, all of the data for the Computer Science department together, and all of the data for the English department together.



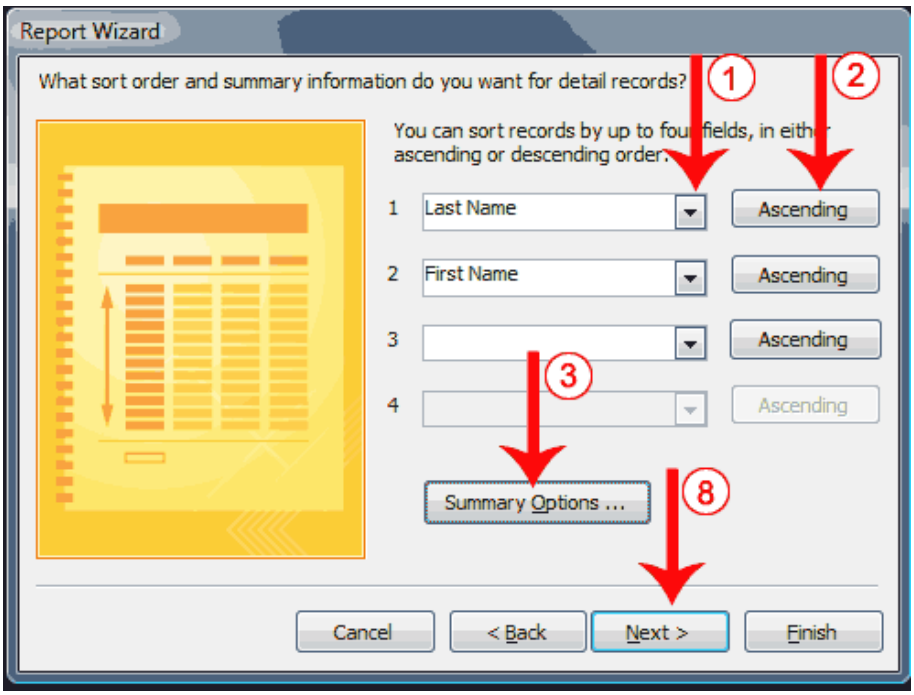
1. Click to select the field by which you want to group your data. You may not see this page of the wizard if you are selecting data from a single table.
2. Click Next. The Report Wizard moves to the next page.



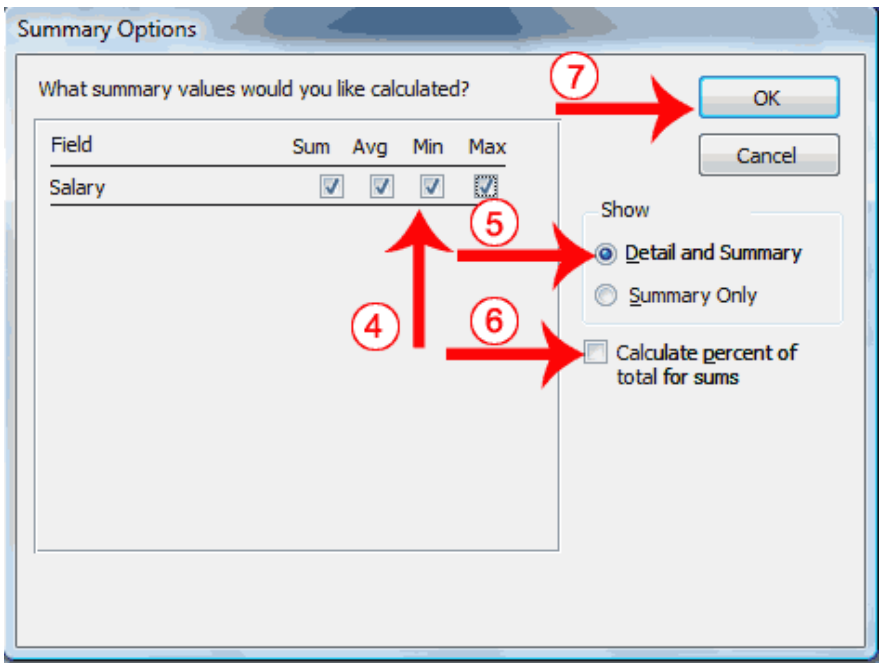
3. Click a field you want to group by.
4. Click the right-arrow to select a field; click a field and then click the left arrow to deselect a field. Use the up- and down-arrows to change the order of the groupings. If

you are only using one table, this may be your first opportunity to select a field to group by.

5. Repeat steps 3 and 4 for each field you want to group by.
6. Click Next. The Report Wizard moves to the next page.



1. Click the down-arrow and then select the field you want to sort by.
2. Click the button to choose ascending or descending order. Clicking the button toggles between Ascending and Descending. You can sort up to four levels.
3. Click the Summary Options button. The Summary Options window appears.



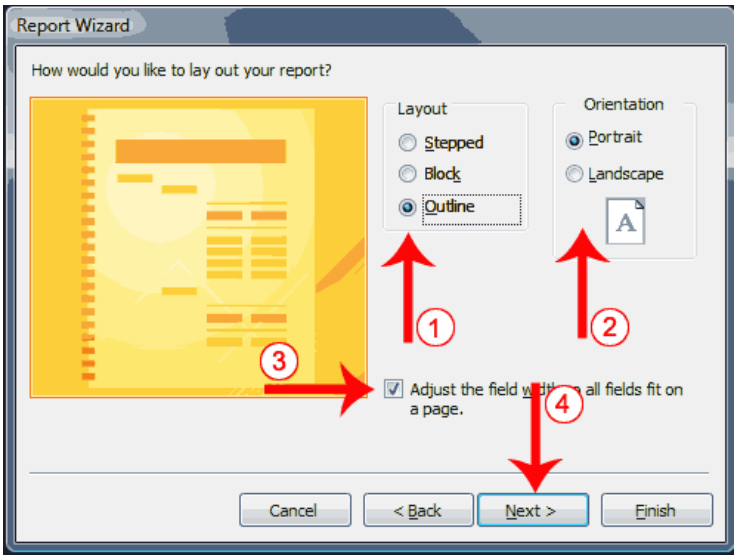
4. Click to select the summary data you want.
5. Click to select whether you want detail and summary data or if you want summary data only.

6. Click if you want to calculate the percent to the total for sums.
7. Click OK. The Summary Options window closes.
8. Click Next. The Report Wizard moves to the next page.

Layout and orientation

You can choose the layout and orientation of your report. The layout determines where each field appears on the page. Access provides three options to choose from: Stepped, Block, and Outline. When you choose an option, the left side of the window displays a graphic of the layout.

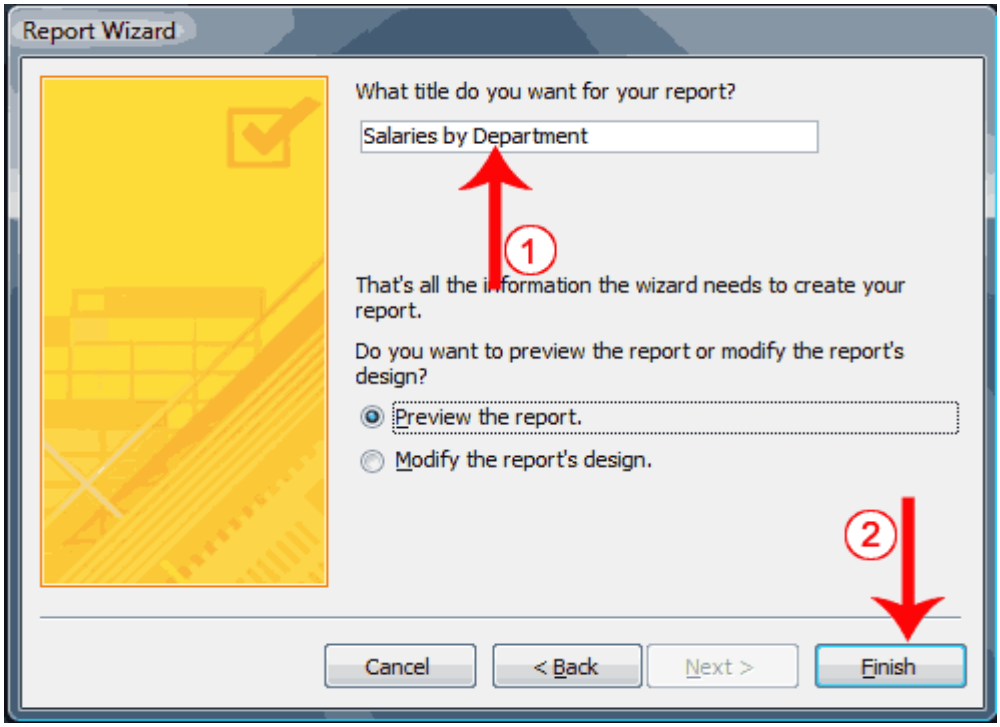
Orientation determines whether Access creates the report in portrait or landscape. Most paper, such as paper sized 8 1/2 by 11, is longer on one edge than it is on the other. If you print in Portrait, the shortest edge of the paper becomes the top of the page. Portrait is the default option. If you print Landscape, the longest edge of the paper becomes the top of the page.



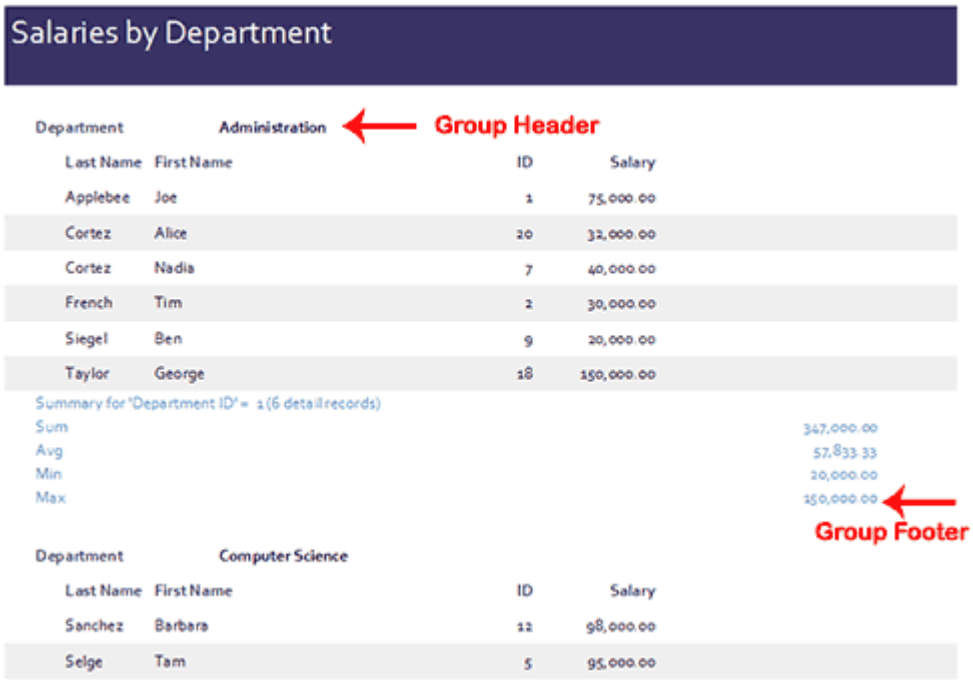
1. Click to select a layout.
2. Click to select a page orientation.
3. Choose the Adjust The Field Width So All Fields Fit On A Page option if you want all fields to fit on a single page.
4. Click Next. The Report Wizard moves to the next page.

Create a title

On the final page of the Report Wizard, you can title your report. The title appears at the top of the report and on the Navigation pane.



1. Type the title you want to give the report.
2. Click Finish. Access creates, saves, and opens your report in Layout view.



Tip: Reports created with the Report Wizard may have the following two sections in addition to the sections found in reports created by using the Report button.

Sections of a Report	
Group Header	Appears before a group and displays information about the group.
Group Footer	Appears after a group and summarizes the group data.

4.3 Modify a Report

After you create a report, you can modify it. You can add groups or sorts, add fields, change labels, and perform many other tasks.

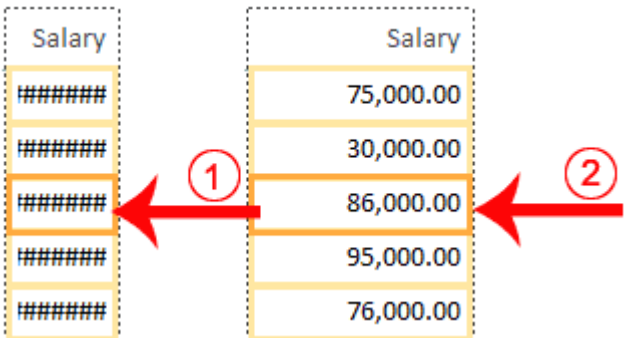
You can view a report in Report view, Layout view, Design view, and Print Preview. You can modify a report in Layout view or Design view. In Layout view, you can see your data, and the report you see closely resembles how your report will look when you print it. You can make most, but not all, changes to your report in Layout view. Design view displays the structure of your report. In this view you cannot see the underlying data, but you can perform some tasks in Design view that you cannot perform in Layout view. This tutorial focuses on Layout view.

To change to Layout view:

1. Open your report.
2. Activate the Home tab.
3. Click the View button. A menu appears.
4. Click Layout View. Access changes to Layout view.

Change the Size of a Field or Label

If the data in a field or label seems crowded, if some of the data in the field or label does not appear, or if the data appears as pound signs (#####), the field or label is too small.



To change the size of a field or label:

1. Click the field or label. A border appears around it.
2. Click a side of the border and drag outward to increase the width. Click a side of the border and drag inward to decrease the width.

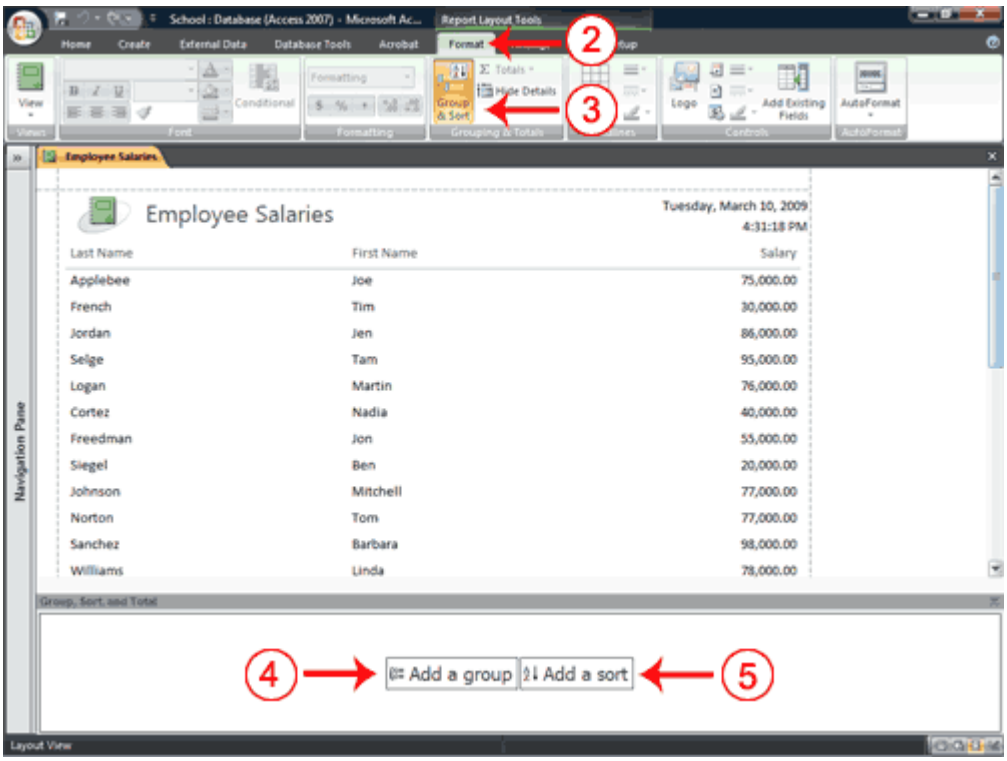
Tip: Incidentally, if you want to change the height of records, click the top or bottom of a field border and drag upward or downward.

Add a Group or Sort

When you create a report by clicking the Report button, you are not given options that enable you to group or sort. You can use the Group & Sort button on the Format tab to create a group or sort. When you create a report by using the Report Wizard, you can use the Group & Sort button to add or modify a group or sort.

To Group or Sort:

Open the Group, Sort, and Total pane

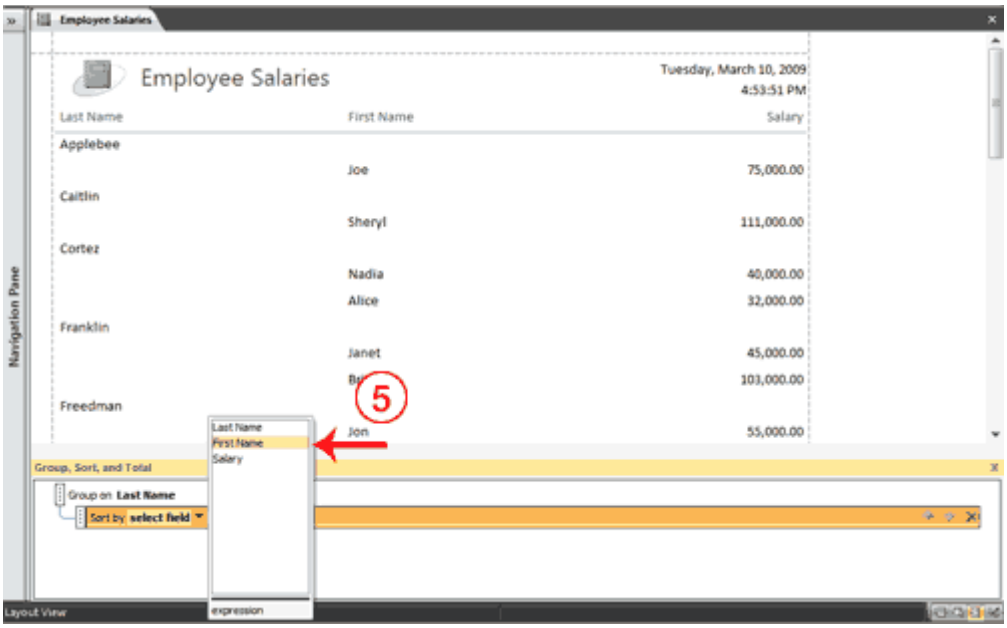


1. Open your report in Layout view.
2. Activate the Format tab.
3. Click Group & Sort in the Grouping and Totals group. The Group, Sort, and Total pane appears.

Add a group

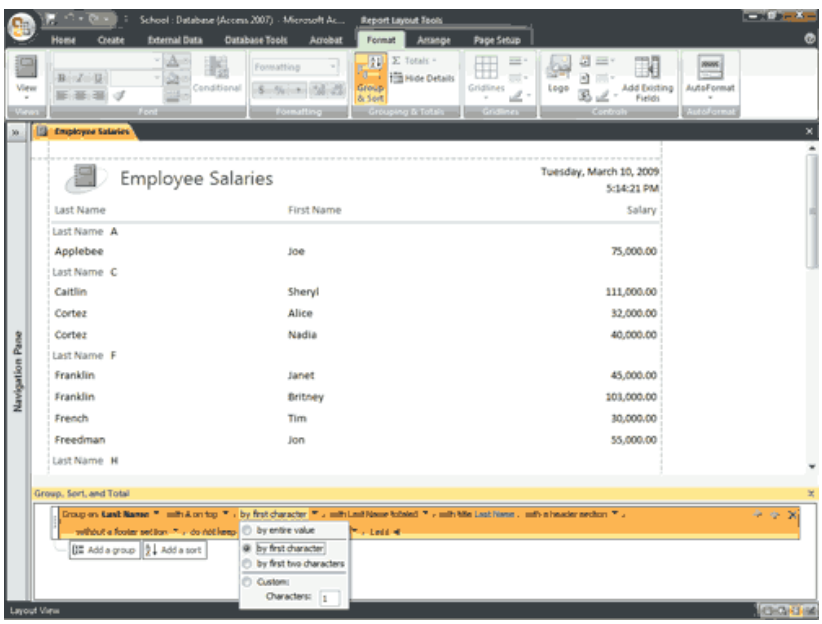
4. Click Add A Group and then select the field by which you want to group. Access groups and sorts the field.

Add a sort



5. Click Add A Sort and then select the field on which you want to sort. Access sorts the field.

Groups and sorts display in the Group, Sort, and Total pane in levels. Access performs the highest-level group or sort first, the second level next, and so on.



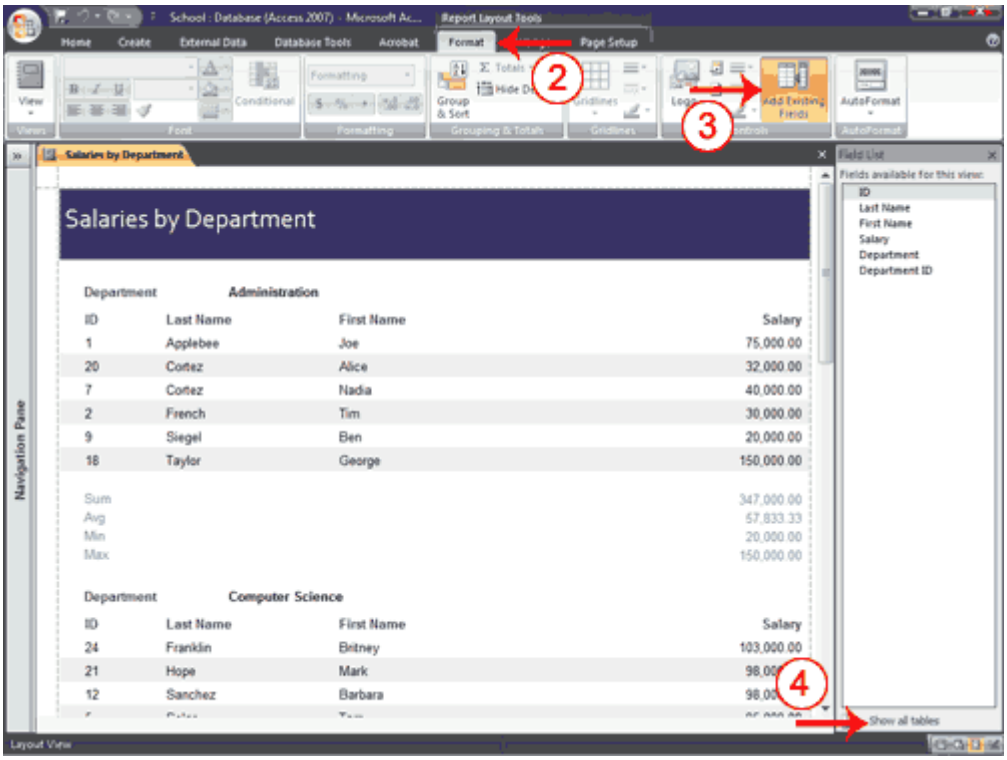
After you have added a group or sort, you can set several options by clicking the More button and then clicking the down-arrow next to each option and making your choices.

Group, Sort, and Total Pane Options	
Option	Description
Sort order With A on top From smallest to largest From oldest to newest	Use these options to choose from ascending or descending order.
Group interval	Set how you want to group. For example, if you want to group by the first letter of the last name so that all As are together, all Bs are together. etc., you can select By First Character.
Totals	Select the field you want to total on and the type of total you want. Your total can be a sum, average, count, etc. You can also choose whether you want to show a grand total, totals as a percentage of a grand total, display totals in the header, or display totals in the footer.
Title	Allows you to add or change the field label.
With or without a header section	Group headers precede each group. This option allows you to determine whether you want a header section.
With or without a footer section	Group footers are printed at the bottom of each group. This option allows you to determine whether you want a footer section.
Keep group together	Use these options to determine where a page break will occur when you print: **Do not keep group together on one page.** This option allows page breaks within a group. **Keep whole group together on one page.** This option prevents page breaks within a group. **Keep header and first record together on one page.** This option prevents a header from printing at the bottom of a page with no records.

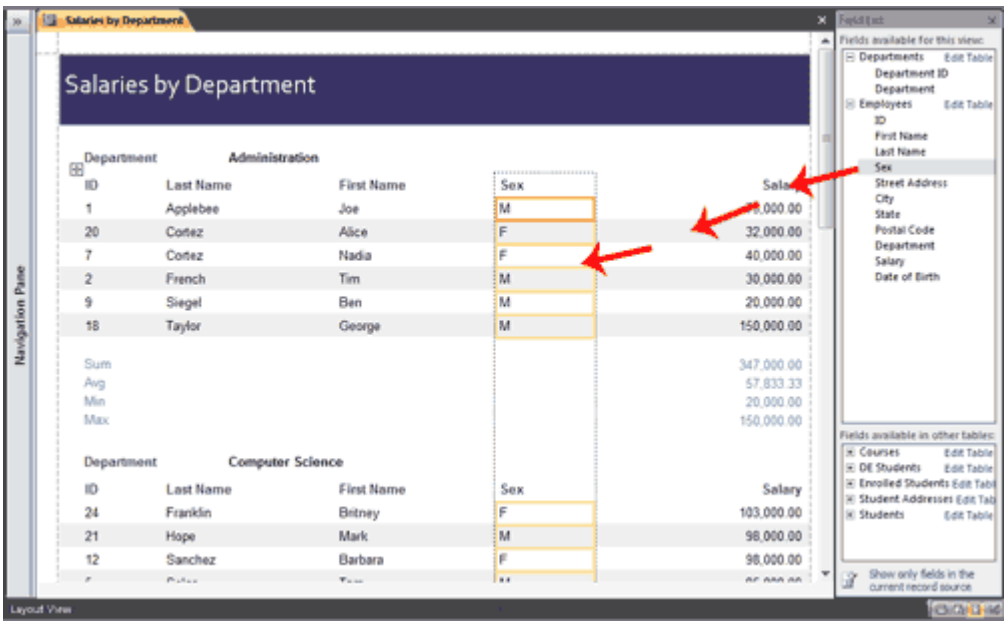
There are three buttons on the right side of the Group, Sort, and Total pane. If you want to delete a group or sort, click the group or sort you want to delete and then click the Delete button. Groups and sorts execute in the order they are listed in the Group, Sort, and Total pane. If you want to change the order of execution, click the group or sort you want to move up

or down and then click the Move Up or Move Down button to move a group or sort up or down a level.

To add a field:



1. Open your report in Layout view.
2. Activate the Format tab.
3. Click the Add Existing Fields button in the Controls group. The Field List pane appears.
4. Click Show All Tables if the field you want to add does not appear.



5. Click the field you want to add and drag it onto your report. A thick line appears on the report. Access places the field before the line. If you want the field to appear in the detail area, be sure to drag it to the detail area.

To delete a field:

1. Open your report in Layout view.
2. Click the field you want to delete.
3. Press the Delete key. Access deletes the field.

To move a column:

1. Open your report in Layout view.
2. Click the column label.
3. Drag the column to the new location. Access moves the column to the new location.

To change a title:

1. Open your report in Layout view.
2. Double-click in the Title field.
3. Click and drag to select the current title.
4. Type a new title.
5. Click anywhere outside the Title field. Access changes the title.

To change a field label:

1. Open your report in Layout view.
2. Double-click the field label.
3. Click and drag to select the label name.
4. Type the new label name.
5. Click anywhere outside the label. Access changes the field label.

To change the paper size:

1. Open your report in Layout view.
2. Activate the Page Setup tab.
3. Click the Size button in the Page Layout group. A menu appears.
4. Click the size of the paper you are going to print on.

To change paper orientation:

1. Open your report in Layout view.
2. Activate the Page Setup tab.
3. Click Portrait or Landscape to choose the orientation you want to use. Access changes the page orientation.

To change margins:

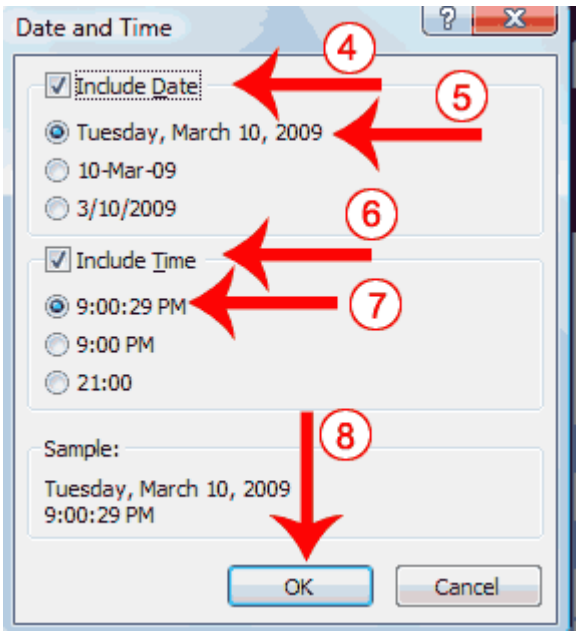
1. Open your report in Layout view.
2. Activate the Page Setup tab.
3. Click the Margins button in the Page Layout group. A menu appears.
4. Click the margin size you want. Access changes the page margin.

To add page numbers:

1. Open your report in Layout view.
2. Activate the Format tab.
3. Click the Insert Page Number button in the Controls group. The Page Numbers dialog box appears.
4. Click a radio button to choose a format.
5. Click a radio button to choose a position.
6. Click the down-arrow in the Alignment field and then choose an alignment.
7. Deselect Show Number On First Page if you do not want the page number to appear on the first page.
8. Click OK. Access places the page number in your report.

To add current date or time:

1. Open your report in Layout view.
2. Activate the Format tab.
3. Click the Date and Time button in the Controls group. The Date and Time dialog box appears.



4. Deselect the Include Date box if you do not wish to include the date.
5. Click to select a format if you are including the date.
6. Deselect the Include Time box if you do not wish to include the time.
7. Click to select a format if you are including the time.
8. Click OK. Access places the date and/or time in your report.

4.4 Apply an AutoFormat

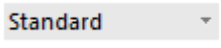
You can use the AutoFormat option on the Format tab to apply formats such as background colors, fonts, and font sizes quickly.

To apply an AutoFormat:

1. Activate the Format tab.
2. Click AutoFormat. The AutoFormat menu appears.
3. Click the format you want to apply.

Change Fonts and Formats

You can use options on the Format tab to manually apply formats to your report. You must select the field or field label by clicking it before you apply. To select multiple items, hold down the Shift key and then click each item you want to select. A box surrounds selected items.

Change Fonts and Formats		
Button	**Shortcut Key**	**Function**
Layout View—Format Tab, Font Group		
		Apply a font to the current selection.
		Set the size of the font for the current selection.
	Ctrl-b	Bold the current selection.
	Ctrl-i	Italicize the current selection.
	Ctrl-u	Underline the current selection.
	Ctrl-l	Left-align the selection.
	Ctrl-r	Right-align the selection.
	Ctrl-e	Center the selection.
		Change the font color.
		Change the background color.
		Change the alternating color. For example, you can have every other row in the detail area appear in alternating colors.
Layout View—Format Tab, Formatting Group		
		Apply a Number format.
		Use a currency symbol.
		Change to percent.
		Use thousand separators.

		Increase decimal places.
		Decrease decimal places.
Layout View—Format Tab, Gridlines Group		
		Add gridlines.
		Change the weight of gridlines.
		Change the style of gridlines.
		Change the color of gridlines.
Layout View—Format Tab, Controls Group		
		Add a logo.
		Add a title.
		Set line thickness.
		Set line style.
		Set line color.

Tip: After you modify your report, you must save it if you want to keep the changes. To save, click the Save button on the Quick Access toolbar or right-click the report's tab and then click Save.

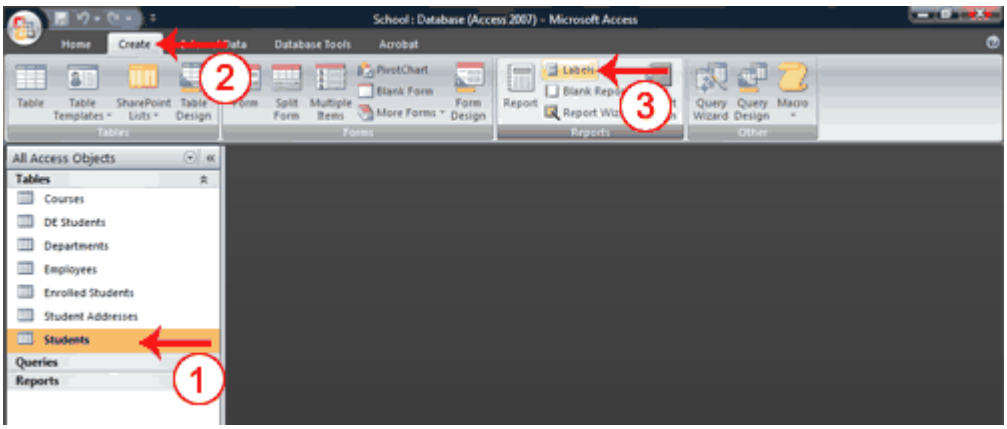
4.5 Create Mailing Labels

In Access, the easiest way to create a mailing label is to use the Label Wizard. The Label Wizard extracts name and address data from your database and formats it so you can print it on commercially available labels.

Each time you view or print labels, the data are extracted from the database, so as you update your database, Access updates your labels.

To create labels:

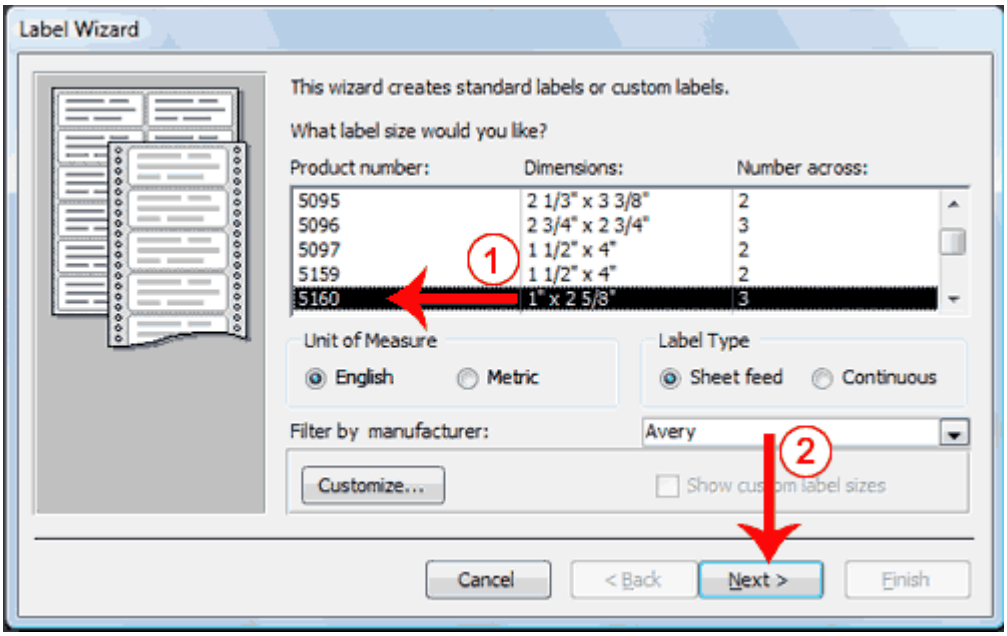
Open the Labels Wizard



1. Click the table or query you want to use to create a label.
2. Activate the Create tab.
3. Click Labels in the Reports group. The Labels Wizard appears.

Choose a product number

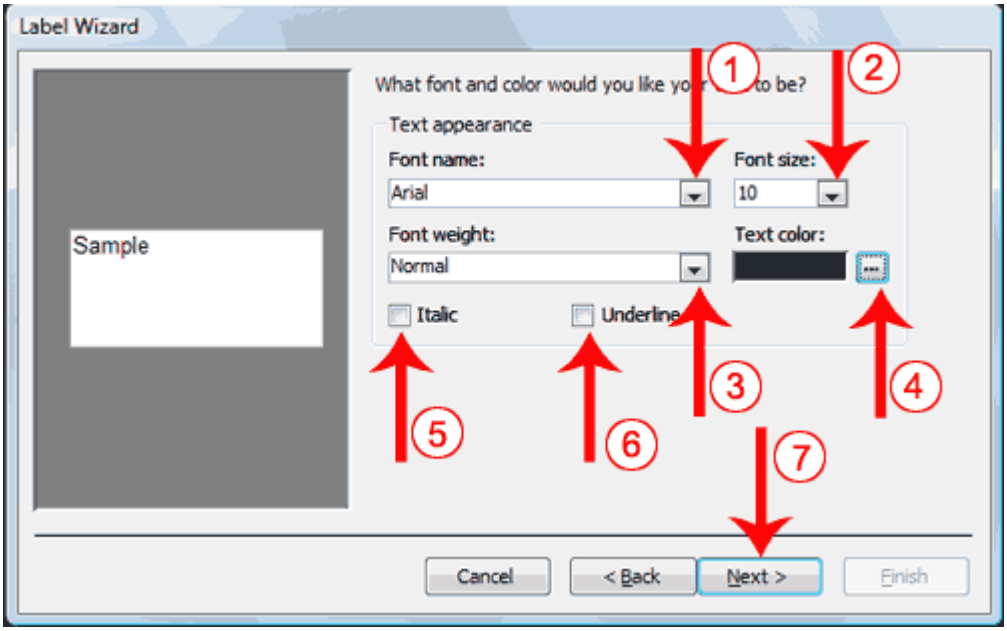
Most commercially available labels have a product number. You should be able to find the number on the box. You use the product number to tell Access the dimensions of your labels and the number of columns and rows that are on a page.



1. Click to select the Product Number in the Product Number field.
2. Click Next. The Label Wizard moves to the next page.

Choose a font, font size, font weight, and color

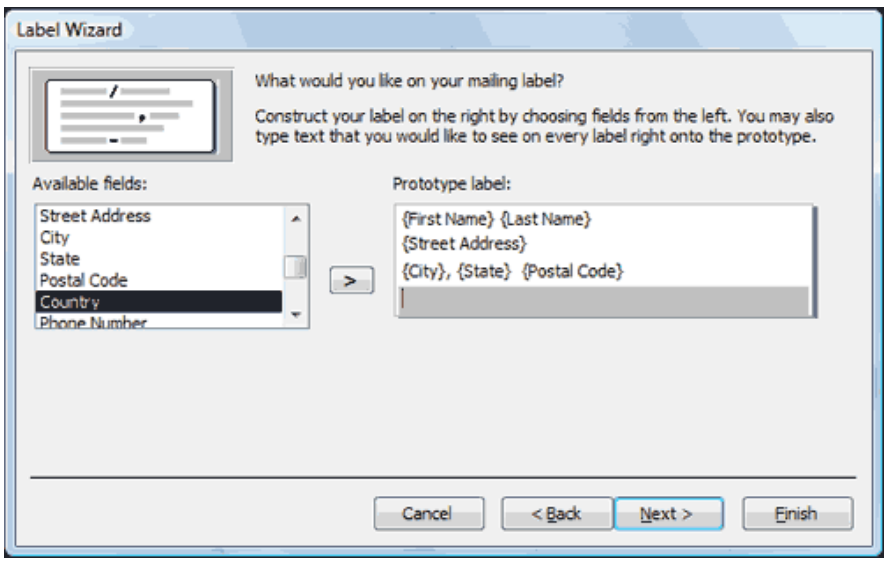
A font is a set of characters (text) represented in a single typeface. Each character within a font is created by using the same basic style. The Label Wizard has options that allow you to select a font, font size, weight, and color. You can also choose to italicize or underline the text in your labels.



1. Click the down-arrow next to the Font Name field and then select the font. A preview appears in the Sample box.
2. Click the down-arrow next to the Font Size field and then select the font size. A preview appears in the Sample box.
3. Click the down-arrow next to the Font Weight field and then select the font weight. A preview appears in the Sample box.
4. Click the button next to the Text Color field and then select a color you want your text to have. A preview appears in the Sample box.
5. Click the Italic box if you want to italicize. A preview appears in the Sample box.
6. Click the Underline box if you want to underline. A preview appears in the Sample box.
7. Click Next. The Label Wizard moves to the next page.

4.6 Create a layout

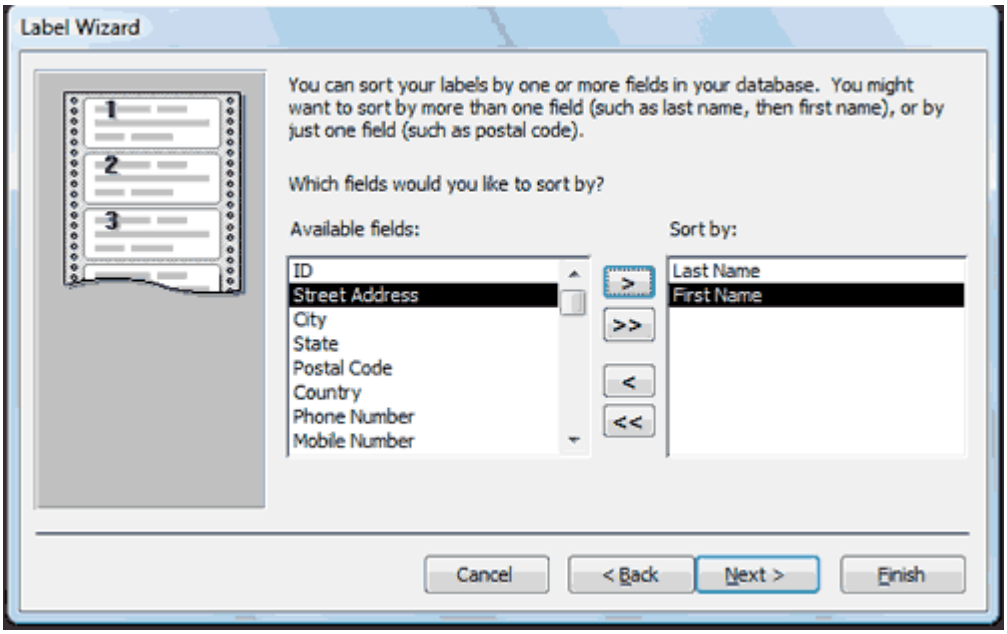
You create the layout of your labels by selecting fields and placing them in the Prototype Label box. You type any text or spaces that you want to appear on your label.



1. Click a field name and then click the right-arrow to place the field on the prototype label.
2. Press the spacebar to leave spaces.
3. Press the Enter key to move to a new line.
4. Type any text you want to appear on the label.
5. Click Next. The Label Wizard moves to the next page.

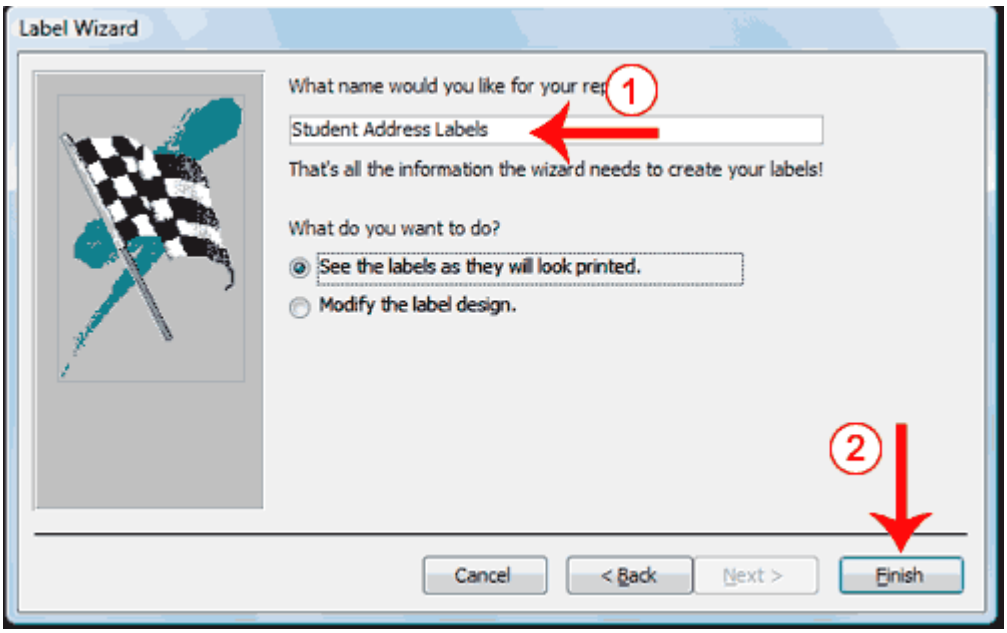
Sort

When creating labels, you can sort on any field and you can have multiple levels of sort. For example, you can sort by last name and then by first name.

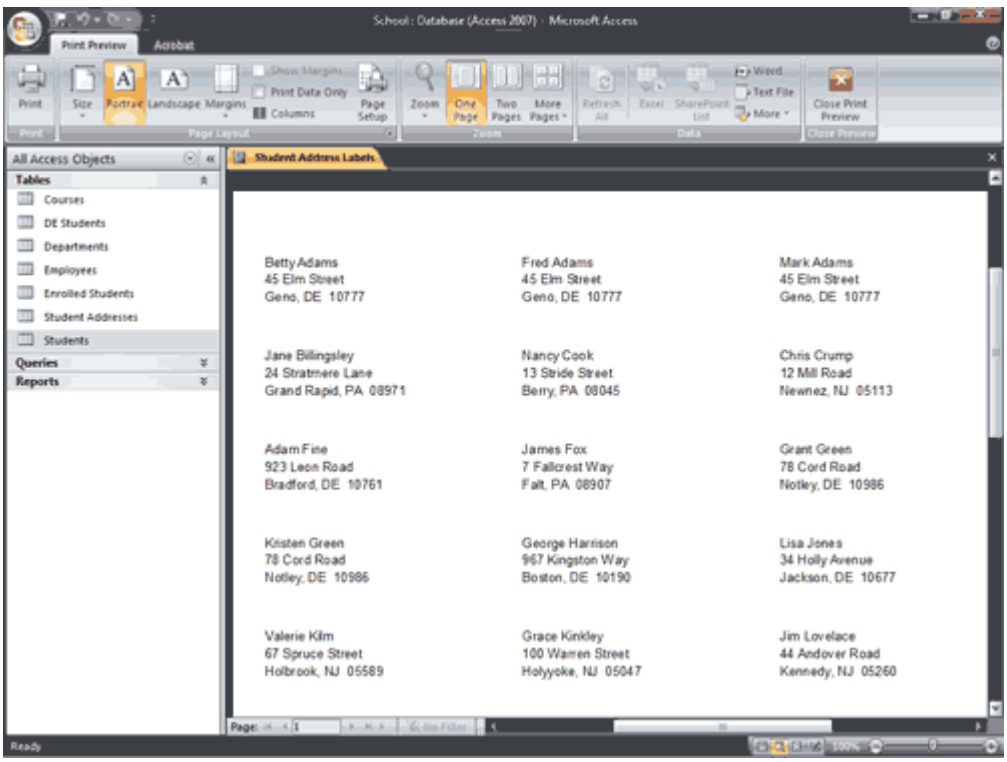


1. Click to choose the fields you want to sort by. Click the single right-arrow to select a single field, click the double right-arrow to select all fields, click the single left-arrow to deselect a single field, click the double left-arrow to deselect all fields.
2. Click Next. The Label Wizard moves to the next page.

Title the report



1. Type a title for your report. The title will appear in the Navigation pane.
2. Click Finish. Access displays the labels in Print Preview.



Tip: When you complete your labels you may get the following message.

When printing mailing labels, you can usually ignore this message. Click the Show Help button to read the following:

This message may be the result of using a report created with the Label Wizard. This error message is commonly encountered when printing to label pages that have three or more labels per row. Usually this message can be ignored.
If you do need to change the layout, try one or both of the following:

- Reduce the width of the controls on the report.
- Reduce the width of the report to make sure the report is not wider than the printable area of the page.

Note that page size is dependent on the printer and the physical size of the paper you are printing to. In some cases it is necessary to rotate the page orientation from portrait to landscape to accommodate the selected print width.

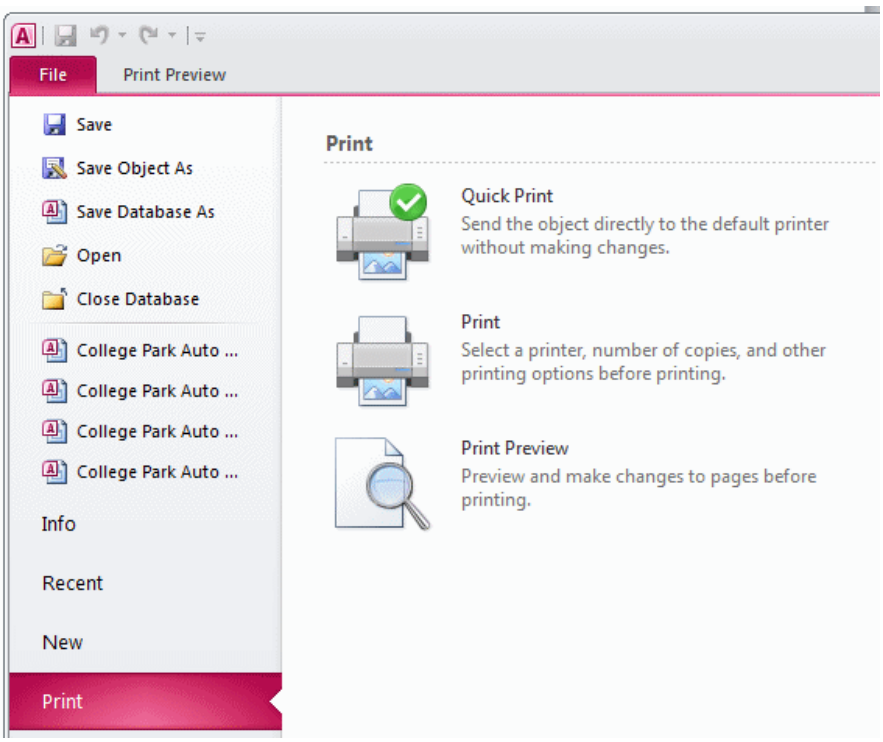
Tip: When you view labels in Report view, they may appear in a single column. To see how your labels will appear when printed, use Print Preview.

4.7 Print a Report

In Print Preview, you can see exactly how your report will look when printed, you can make changes to it, and you can print it. To print, click the Print button in the Print group. The Print dialog box opens and you can select your print options.

After creating a report, you have many options to print it. The fastest option consists of sending the report directly to the printer. To do this:

- In the Navigation Pane, right-click the report and click Print...
- Click File and click Print. This would display a window with three options:



To send the document directly to the printer, click Quick Print.

Change to Print Preview:

1. Open your report.
2. Activate the Home tab.
3. Click the down-arrow under the View button. A menu appears.
4. Click Print Preview. Access changes to Print Preview.

Several options are available to you in Print Preview.

Print Preview Options	
Print	Displays the Print dialog box. You can select such options as the printer, print range, and number of copies. Use this option to print your report.
Size	Click the Size button to set the size of the paper you are going to print on.
Portrait	Click the Portrait button to print with the shortest side of the paper as the top.
Landscape	Click the Landscape button to print with the longest side of the paper as the top.
Margins	Click the Margins button to select a margin size of Normal, Wide, or Narrow. Margins define the amount of white space that surrounds your report.
Print Data Only	Prints the report data without other elements such as titles, and labels.
Zoom	Changes the cursor to a magnifying glass. When the magnifying glass displays a minus sign (–), you can zoom out. When the magnifying glass displays a plus sign (+), you can zoom in. Click the down-arrow under the Zoom button to display a menu and choose a zoom level.
One Page	Displays one page of the report in the Access window.
Two Page	Displays two pages of the report in the Access window.
More Pages	Displays a menu from which you can choose the number of page you want to display.

Tip: To view a report online, use Report view. Open your report. Activate the Home tab. Click the down-arrow under the View button. Click Report view. Your report displays in Report view.

" Effective usage of ICT enables e-Governance which results in delivery of Good Governance "

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