

SECTION 4 ♦ USING QUERIES

What will I learn in this section?

Select Queries

Creating a Query

Adding a Table to Query

Adding Fields to Query

Single Criteria

Hiding column in a Query

Adding Multiple Tables

Sorting records in a Query

Query Comparison Operators

Using And or the Or condition

Date Criteria

Understanding a Select Query

A Select Query is a way to formulate a question to receive an answer from your database. You first pick the table(s) that you would like to see data from and then add the fields from the table to your query grid. The fields you pick are the fields for the information you would like to see after the query has been ran. Your database is a collection of information and using the criteria row is how you ask a question. By using the criteria row you create a dataset or recordset which is a group of records that match your criteria.

Example:

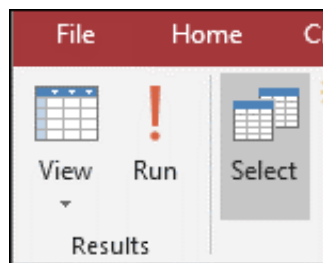
Field:	Emp ID	Last Name	First Name	Dept	E-mail	Phone Ext	Location	Hire Date	State
Table:	tblEmployees	tblEmployees	tblEmployees	tblEmployees	tblEmployees	tblEmployees	tblEmployees	tblEmployees	tblEmployees
Sort:									
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:									"WA"
or:									

Notice the WA is on the criteria row in the State column. The question is, "I want all the records that are from the state of WA. This is called Query By Example (QBE).

When you run this query (*by clicking on the red exclamation "RUN" button*) you will pull only the records that match what you typed. Upper or lower case is not an issue, because Access is looking for the letters and ignores the case.

The query grid has six basic rows that make up the grid.

Row Name	Description
FIELD	Place the field that you would like to add to your query.
TABLE	The name of the table the field comes from. When the field is added to the grid the table name is added automatically.
SORT	Allows you to select what the sort order should be for this column. By clicking in the cell a drop down arrow becomes
SHOW	Cancels changes in the current field or current record.
CRITERIA	Switches between editing mode and navigation mode.
OR	Opens a window for editing the contents of long fields.



The Query **Run** button.

Creating a New Query

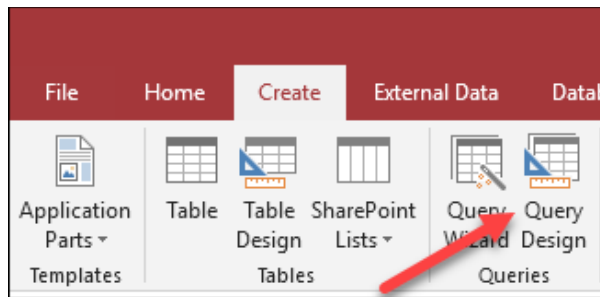
By adding the WA in the state column on the criteria row you are creating a Query By Example (QBE). **Query By Example** means that what you type in the criteria row is what Access will look for. When you run your query, the results will be displayed in Datasheet View.

Open a database and create a query in Design View

1. Click **Search** button *Win10* or click **Start** button *Win 7*.

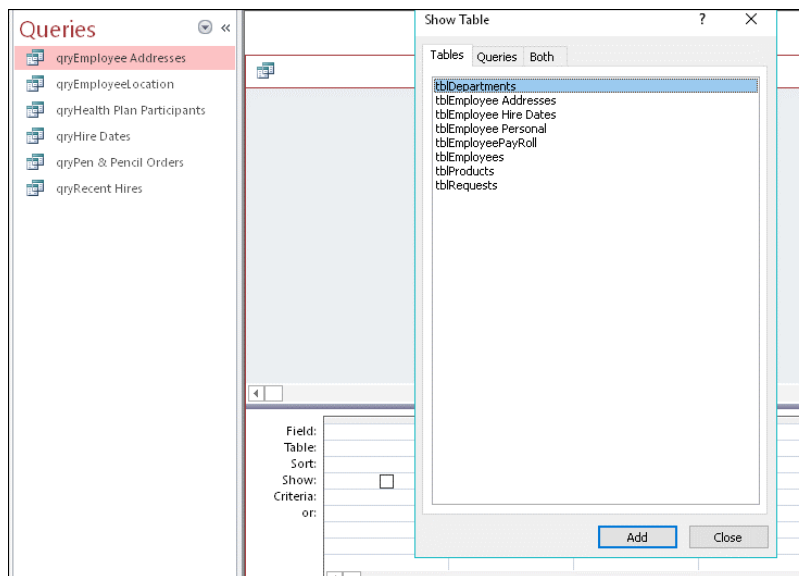


2. Type: **Access 2013 or 2016**.
3. Click **Access 201?** on the menu .
4. Press **Ctrl + F12** to open, verify that *Access Library Class* folder is selected.
5. Double-click **FourthQuery** database file.
6. Click the **Create** tab above the ribbon.



5. Click the **Query Design** button in the *Queries* group.

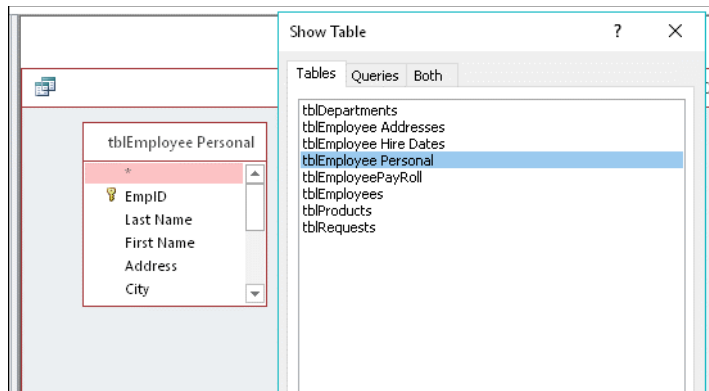
Your screen should look like this.



Adding a table to the query

1. Double-click the **tblEmployee Personal** table in the **Show Table** dialog box.

Your screen should look like this.

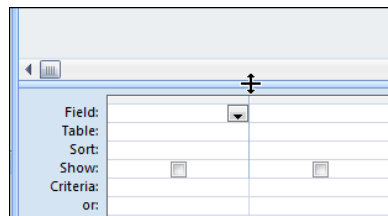


Tip: You can click on one table and then hold down the **[CTRL]** key and click to select other tables. Once you have your additional tables selected click the **ADD** button so all tables can be added to the query.

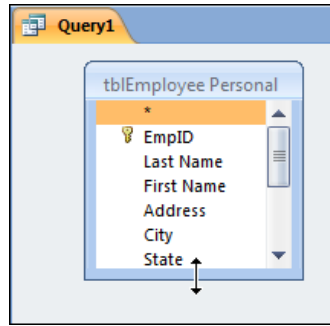
2. Click the **Close** button on the **Show Table** dialog box.

Adjusting the query window

1. **Maximize** Access window if needed.
2. Place the mouse on the **horizontal** dividing bar and **drag down** about 1 inch down.



3. Select the **bottom** of the table and **drag down** until you can see all fields.

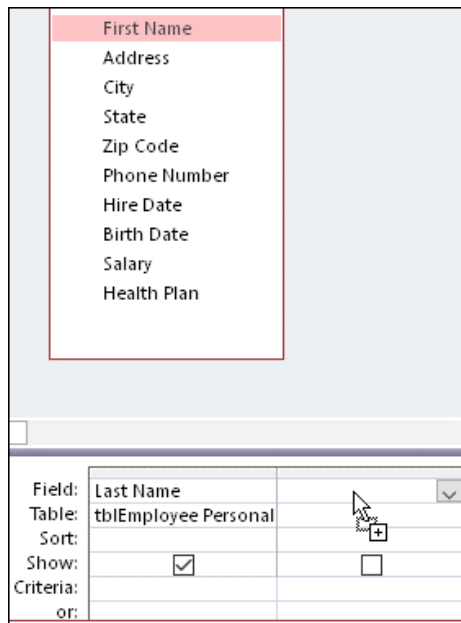


Tip: If you do not have enough room to see all fields in the table, drag the horizontal dividing bar down more. The **Health Plan** field is the last field in the table.

Adding fields to your query grid

1. Double-click the **Last Name** field in the *tblEmployee Personal* table.
The Last Name field is added to the first column in the grid.
2. Drag the **First Name** field in the *tblEmployee Personal* table to the second column in the grid.

Your screen should look like this.

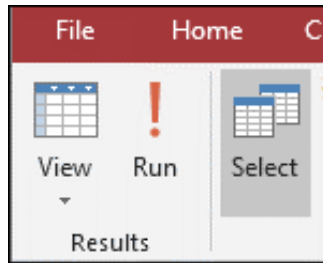


Tip: As you can see you can double-click a field to add it to the query grid or you can drag the field down to the grid.

3. **Release** the mouse button.
First Name field is copied to the second column.
4. Double-click the **Address** field in the *tblEmployee Personal* table.
5. Double-click the **City** field in the *tblEmployee Personal* table.
6. Double-click the **State** field in the *tblEmployee Personal* table.
7. Double-click the **Zip Code** field in the *tblEmployee Personal* table.

Run and save the query

1. Click the **Run** button in the *Results* group on the *Design* tab.

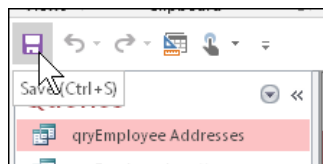


Your screen should look like this.

Last Nam	Address	City	Stat	Zip Cod
Gorton	729 Maple Ave.	Hillsboro	OR	97021
Smith	5525 Hamilton	Beaverton	OR	97005
Gonzales	227 NE 31st	West Banks	OR	97042
Scote	1928 N Yeller	Portland	OR	97101
Kane	22 NE 15th	West Banks	OR	97042
Hapsbuch	9019 Salamander NW	Talatin	OR	97038
Henders	23 NE 17	West Banks	OR	97042
Bensick	1943 Board St.	Beaverton Hill	OR	97019
Atherton	212 N Main	Beaverton	OR	97022
Bellwood	307 NE Parson	Portland	OR	97005
Cooper	717 Fir Dr.	Seattle	WA	98201
Cronwith	1422 Wainwright	Seattle	WA	98201
Simpson	412 169th NE	West Banks	OR	97005
Sindole	129 Oak St.	Hillsboro	OR	97035
Smith	3138 North Evergreen	Beaverton	OR	97110
Vuanuo	1552 NW Technical	Aloha	OR	97102
Szcznyck	755 Poplar Rd.	South Portland	OR	97035
Ygarre	132 Hilltop S	Portland	OR	97019
Morton	238 Mercantile NW	Aloha	OR	97021
Wu	1772 Paperswhite	Beaverton Hill	OR	97035
Lampstone	632 Spruce Way	Hillsboro	OR	97042

You should have a total of 50 records in your query.

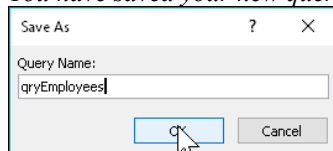
2. Click the **Save** button on the *Quick Access toolbar*.



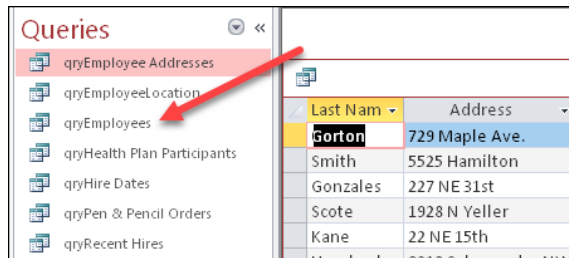
The *Save As* dialog box appears to save the query.

3. Type: **qryEmployees** and click **OK**.

You have saved your new query.

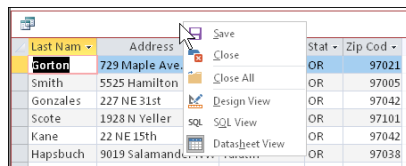


Your screen should look like this.



You have a new Query.

- Right-click the **qryEmployees** title bar and click **Close** on the query shortcut menu.

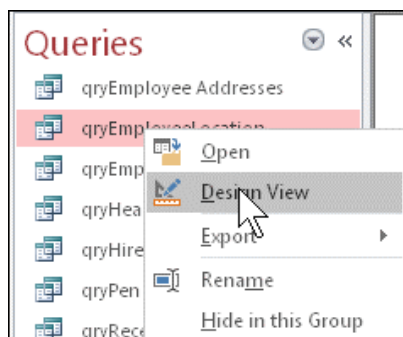


You have created a query, but you have not added any criteria to the query grid to select any specific records. Currently you query is only pulling the fields from the table that you selected. In the next section you will add the criteria that will ask a question of your database using the criteria row structure.

Selecting Records by Using a Single Criteria

By adding an item to the criteria row you can select records using the query by example (QBE).

- Right-click the **qryEmployeeLocation** query and select the **Design View** from the shortcut menu.



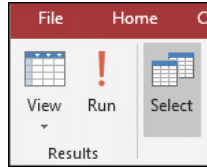
- Click in the **Criteria** row of the **Dept** column.

Field:	Emp ID	Last Name	First Name	Dept
Table:	tblEmployees	tblEmployees	tblEmployees	tblEmployees
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				
or:				

- Type: **SA** and press [**Tab**].

Tip: You do not need to add quotes around the SA, upper case or lower case is okay, or any item you type on the Criteria row. When you press the [ENTER] or [TAB] key quotes will be added automatically.

- Click the **Run** button in the *Results* group on the *Design* tab.



Your screen should look like this.

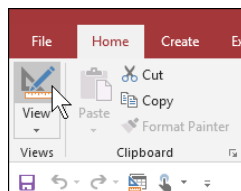
qryEmployeeLocation							
Emp I	Last Nam	First Nam	De	E-mail	Phone Ex	Location	Hire Dat
1011	Gorton	Hazel	SA	hazelg	109	DoveBarn 3	2/3/2002
1167	Berwick	Sam	SA	samb	119	DoveBarn 3	4/18/2003
1984	MacDonald	Bronwyn	SA	bronm	204	DoveBarn 3	12/1/1998
1982	Berwick	Elaine	SA	eberwick	202	DoveBarn 3	4/3/1997
1352	Ygarre	Lisa	SA	lisay	100	DoveBarn 3	9/18/2001
1359	Morton	Norman	SA	normanm	153	DoveBarn 3	8/9/2001
1426	Lampstone	Pete	SA	petel	128	DoveBarn 3	9/8/2001
1572	Tuppman	Lise-Anne	SA	lise-annt	116	DoveBarn 3	7/15/1997
1906	Bankler	Rowena	SA	rowenab	155	DoveBarn 3	9/28/2000
1922	Smith	Barbara	SA	barbaras	146	DoveBarn 3	12/5/2000
1949	Sampson	Carla	SA	carlas	147	DoveBarn 3	10/12/1999
1966	Cortlandt	Charles	SA	charlesc	159	DoveBarn 3	4/13/2002
1923	Jones	Betty	SA	bettyj	147	DoveBarn 3	12/5/2001
1950	Biggerton	Billy	SA	billyb	143	DoveBarn 3	10/12/1999
*					0		

Record: 1 of 14 No Filter Search

You should have a total of 14 records in your query and they are all in the SA department.

Change the criteria

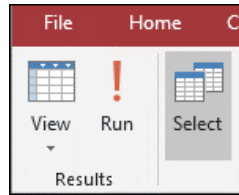
- Switch to **Design View** by clicking on the **Design View** button.



- Double-click **SA** in the Criteria row.
- Type: **MK**

Tip: You do not need to add the quotes around the **SA**, or any item you type on the Criteria row. When you press the [ENTER] or [TAB] key quotes will be added automatically.

- Click the **Run** button on the *Design* ribbon.



Your screen should look like this.

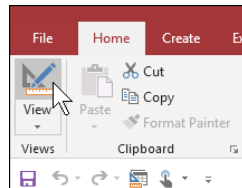
qryEmployeeLocation							
Emp I	Last Nam	First Nam	De	E-mail	Phone Ex	Location	Hire Dat
1284	Bellwood	Frank	MK	frankb		124 DoveBarn 1	1/4/2001
1302	Sindole	Randy	MK	randys		139 DoveBarn 1	8/6/2002
1529	Kellerman	Tommie	MK	tomk		129 DoveBarn 1	3/21/2003
1676	Miller	Janet	MK	janetm		115 DoveBarn 1	10/26/2001
1723	Sammler	Mark	MK	marks		145 DoveBarn 1	2/10/2002
*					0		

Record: 1 of 5 | No Filter | Search

You should have a total of 5 records in your query and they are all in the MK department.

Hiding a column in a query

- Switch to **Design View** by clicking on the **Design View** button.

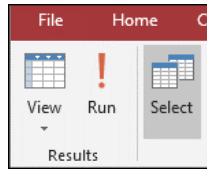


- Click on the **Check box** in the *Dept* field column.

First Name	Dept
tblEmployees	tblEmployees
<input checked="" type="checkbox"/>	<input type="checkbox"/>
	mk

This will remove the check mark and hides the column when the query is run.

- Click the **Run** button on the *Design* ribbon.



Your screen should look like this.

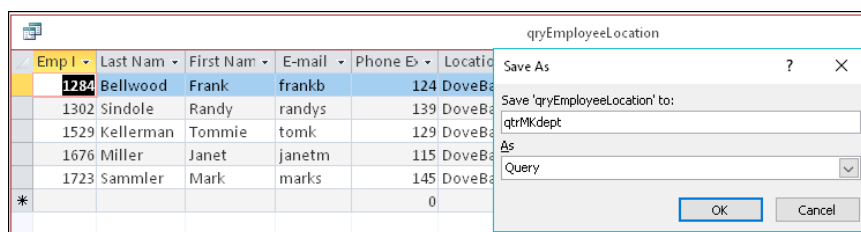
Emp I	Last Nam	First Nam	E-mail	Phone Ex	Location	Hire Dat
1284	Bellwood	Frank	frankb	124	DoveBarn 1	1/4/2001
1302	Sindole	Randy	randys	139	DoveBarn 1	8/6/2002
1529	Kellerman	Tommie	tomk	129	DoveBarn 1	3/21/2003
1676	Miller	Janet	janetm	115	DoveBarn 1	.0/26/2001
1723	Sammler	Mark	marks	145	DoveBarn 1	2/10/2002
*				0		

Record: 1 of 5

You should have a total of 5 records in your query and the MK department column is not showing.

- Press the **F12** key to open the *Save As* dialog box.
You can also click the **File** tab, point to **Save As** and click the **Save Object As** menu.
- In the *Save As* dialog box type: **qryMKdept**

Your screen should look like this.



- Click the **OK** button on the **Save As** dialog box.
- Close the **qryMKdept** query.

Creating a Select Query using more than one Table

When you first create a query the Show Table dialog box appears. To add more than one table you select more than one using the [CTRL] key or just double-click each table you would like to add.

The reason you add additional tables to the query pane is, so you can add additional fields from those tables. The question is what process is in place to make sure each record from each table is a match? The correct record is matched from one table to another because of the relationships between those tables. In Access there is a relationship window where you have the ability to setup relationships. You can open this window in any Access database to confirm relationships.

There are three different types of relationships between tables considered standard.

Relationship	Description
ONE TO ONE	A relationship between two tables in which, for each record in one table, there is only one record in the second table. The first table to receive data is called the Primary table and the second table is called the related table.
ONE TO MANY	A relationship in which a record in the primary table can repeat in the related table. The primary table has the primary key field and the related table has the field known as the Foreign key field.
MANY TO MANY	This book will not go into the many-to-many relationship or sometimes call a junction table. You can use Help to look up "Relational" to find information on this structure.

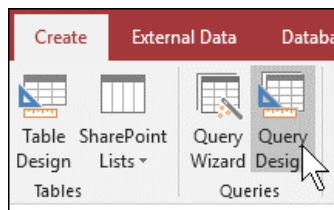
A relational database is designed to facilitate a relationship structure.

When you add a second table to your query pane a line automatically connects the two tables. This line is called a **join line**. The **join line** occurs because data type and field name are the same in the database, but in its self is not a relationship.

If a line is not drawn by Access automatically between two tables, you can connect the two tables as long as the field in each of the two tables has the same data type. The field name can be different, but the data type must be the same. You cannot just connect any two fields together; they must be the same stored data. Example would be the EmpID to EmpID field or Dept to Dept field.

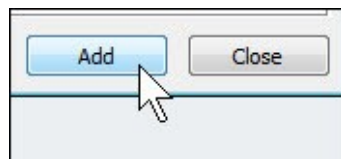
Adding multiple tables to a query

1. Click the **Query Design** button in the *Query* group on the *Create* tab ribbon.



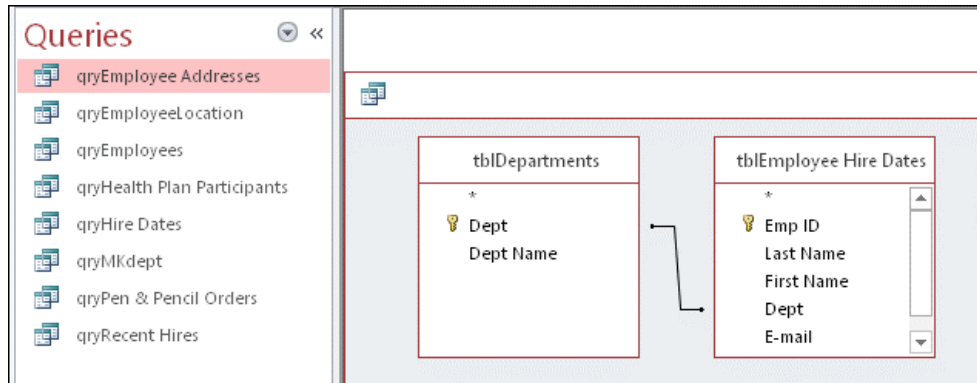
A new query is created and the Show Table dialog box appears.

2. With **tblDepartments** field highlighted, hold down the [**CTRL**] key and click on **tblEmployee Hire Dates** table.
3. Click the **Add** button on the **Show Table** dialog box.
Your two tables are added to the query pane.



4. Click the **Close** button on the **Show Table** dialog box.

Your screen should look like this.



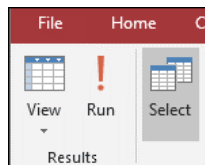
Notice the join line between the two tables. From the **tblDepartment** table (*the Primary table*) there is a join line going from the primary key field (*Dept*) to the Foreign key field (*Dept*) in the **tblEmployee Hire Dates** table (*the Related table*).

5. Double-click the **Dept Name** field in the **tblDepartment** table.
6. In the **tblEmployee Hire Dates** table double-click each field, **Last Name**, **First Name** and **Hire Date**.

Your screen should look like this.

Field:	Dept Name	Last Name	First Name	Hire Date	
Table:	tblDepartments	tblEmployee Hire Dates	tblEmployee Hire Dates	tblEmployee Hire Dates	
Sort:					
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Criteria:					
or:					

7. Click in the **Criteria** row of the **Dept Name** column.
8. Type: **Art** and press [**ENTER**].
9. Click the **Run** button on the *Design* ribbon.



Tip: You do not need to add the quotes around the **Art**, or any item you type on the Criteria row. When you press the [**ENTER**] or [**TAB**] key quotes will be added automatically.

Your screen should look like this.

Queries				
qryEmployee Addresses	Dept Name	Last Nam	First Nam	Hire Dat
qryEmployeeLocation	Art	Smith	Howard	2/14/1993
qryEmployees	Art	Scote	Gail	1/12/1994
qryHealth Plan Participants	Art	Kane	Sheryl	10/23/1994
qryHire Dates	Art	Nelson	Ed	6/26/1996
qryMKdept	Art	Barton	Eileen	12/12/1997
qryPen & Pencil Orders	Art	Corwick	Rob	3/25/2001
qryRecent Hires	Art	Corwick	Judy	6/28/2003
	Art	Mivelli	Maria	3/1/2004
	*			

Record: 14 of 8 No Filter Search

You should have a total of 8 records in your query for the Art department.

10. Press the **F12** key to open the *Save As* dialog box.

11. In the *Save As* dialog box type:
qryArtdeptHireDates

Tip: [F12] is the keyboard shortcut for Save As. You can press [F12] to bring up the Save As dialog box to give any new object a name.

Your screen should look like this.

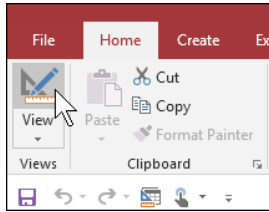
Save As				
Save 'Query1' to:	Dept Name	Last Nam	First Nam	Hire Dat
qryArtdeptHireDates	Art	Smith	Howard	2/14/1993
As	Art	Scote	Gail	1/12/1994
Query	Art	Kane	Sheryl	10/23/1994
	Art	Nelson	Ed	6/26/1996
	Art	Barton	Eileen	12/12/1997
	Art	Corwick	Rob	3/25/2001
	Art	Corwick	Judy	6/28/2003
	Art	Mivelli	Maria	3/1/2004
	*			

OK Cancel

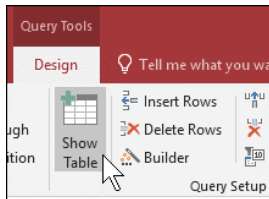
12. Click the **OK** button on the **Save As** dialog box.

Add a third table to a query

1. Switch to **Design View** by clicking on the *Design View* button.

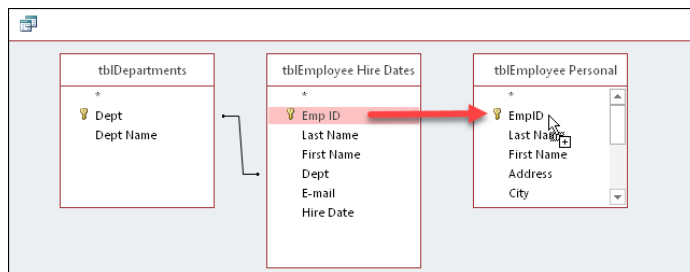


2. Click the **Show Table** button on the *Design* ribbon.



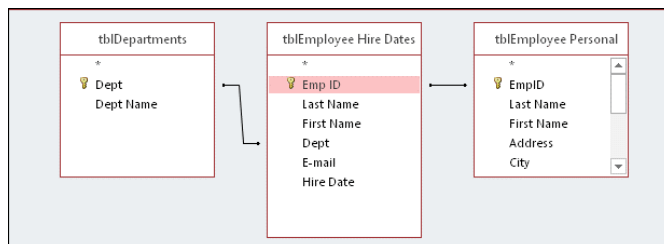
3. Double-click the **tblEmployee Personal** table.
4. Click the **Close** button on the *Show Table* dialog box.
5. From the **tblEmployee Hire Dates** table, drag **Emp ID** field to the **tblEmployee Personal** table, on to the **EmpID** field.

Your screen should look like this.



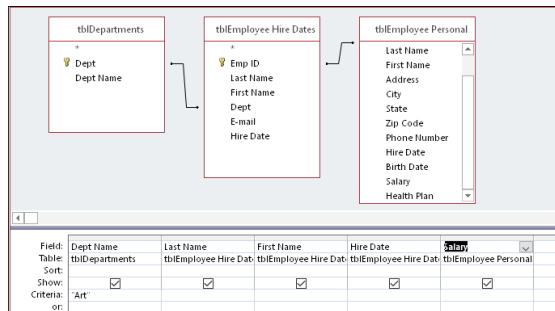
6. **Release** the mouse button.
You now have a join line.

Your screen should look like this.

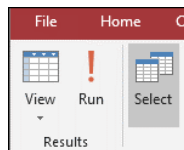


Adding fields from the third table to the query

1. In the **tblEmployee Personal** table, double-click the **Salary** field.
You may need to scroll down to see the Salary field.



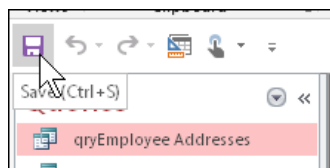
2. Click the **Run** button on the *Design* ribbon.



Your screen should look like this.

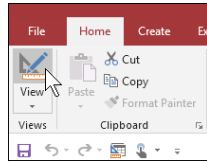
Dept Name	Last Nam	First Nam	Hire Dat	Salary
Art	Smith	Howard	2/14/1993	\$25,176.06
Art	Scote	Gail	1/12/1994	\$36,939.84
Art	Kane	Sheryl	.0/23/1994	\$23,239.44
Art	Barton	Eileen	.2/12/1997	\$28,859.25
Art	Corwick	Rob	3/25/2001	\$58,277.52
Art	Corwick	Judy	6/28/2003	\$58,900.97
Art	Mivelli	Maria	3/1/2004	\$46,583.85
*				

3. Click the **Save** button to save the query.



Sorting records in a query

1. Switch to **Design View** by clicking on the *Design View* button.



2. Click in the **Sort** row of the **Last Name** column.

Your screen should look like this.

Field:	Dept Name	Last Name	First Name	Hire Date	Salary
Table:	tblDepartments	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Personal
Sort:					
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	"Art"				
or:					

3. Click the **down arrow** on the sort row, on the right side of the **Last Name** column.

Your screen should look like this.

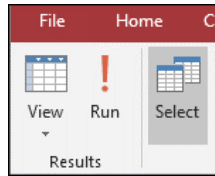
Field:	Dept Name	Last Name	First Name	Hire Date	Salary
Table:	tblDepartments	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Personal
Sort:					
Show:	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	"Art"				
or:					

4. Click on **Ascending** to sort the **Last Name** column in Ascending order.
5. Press the [**TAB**] key.
6. Click the **down arrow** on the sort row, on the right side of the **First Name** column.
7. Click on **Ascending** to sort the **First Name** column in Ascending order.

Your screen should look like this.

Field:	Dept Name	Last Name	First Name	Hire Date	Salary
Table:	tblDepartments	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Personal
Sort:		Ascending	Ascending		
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	"Art"				
or:					

8. Click the **Run** button on the *Design* ribbon.

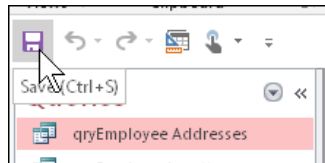


Your screen should look like this.

qryArtdeptHireDates				
Dept Name	Last Nam	First Nam	Hire Dat	Salary
Art	Barton	Eileen	#####	\$28,859.25
Art	Corwick	Judy	6/28/2003	\$58,900.97
Art	Corwick	Rob	3/25/2001	\$58,277.52
Art	Kane	Sheryl	#####	\$23,239.44
Art	Mivelli	Maria	3/1/2004	\$46,583.85
Art	Scote	Gail	1/12/1994	\$36,939.84
Art	Smith	Howard	2/14/1993	\$25,176.06
*				

Notice the Corwick's first names, you should have 7 records.

9. Click the **Save** button on the *Quick Access Toolbar*.



Query criteria with comparison operators

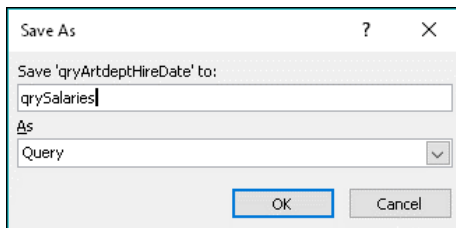
Comparison operators help you select records that meet a predefined value. The table below lists the operators and their description.

Comparison Operators	Description
<	Less than: Gives you all numbers less than the number you type in the criteria cell. Example: < 25 You will get all numbers that are less than 25.
>	Greater than: Gives you all numbers greater than the number you type in the criteria cell. Example: > 25 You will get all numbers that are greater than 25.
=	Equal to: If you type a number, Access will match the number you typed in the criteria cell. Example: = 14 You will get all numbers that are 14.
<=	Less than or equal to: Gives you all numbers less than the number you type and the number you type in the criteria cell. Example: <= 25
>=	Greater than or equal to: Gives you all numbers greater than the number you type and the number you type in the criteria cell. Example: >= 25
<>	Not equal to: Gives you all the records but the one you type.
ALL THE ABOVE	All of the operators can be used with the alphabet. Think of the A as being a 1, and the Z as being 26. Example: > M You get all the records from M - Z. Yes, it includes the M.

Using operators in a query

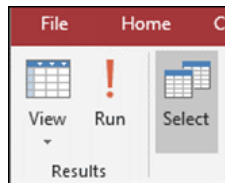
1. Verify that **qryArtDeptHireDates** query is in *Design View*.
2. **Delete** the text **"Art"** in the **Criteria** row in the first column.
Hint: Select the text with the mouse and press the Delete key.
3. Press **F12** to open the Save As... dialog box.
4. In the Save As dialog box type: **qrySalaries**

Your screen should look like this.



Tip: [F12] is the keyboard shortcut for Save As. You can press [F12] to bring up the Save As dialog box to give any new object a name.

5. Click the **OK** button on the **Save As** dialog box.
6. In the Criteria row under the **Salary** column type: **>30000**
This will give you all records greater than 30,000.
7. Press [**TAB**] and click the **Run** button on the *Design* ribbon.



Your screen should look like this.

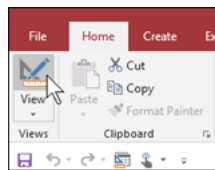
Queries	Dept Name	Last Name	First Name	Hire Date	Salary
qryArtdeptHireDate	Human Resources	Alstain	Isolde	12/7/1996	\$58,482.45
qryEmployeeAddresses	Human Resources	Atherly	Katherine	7/5/2002	\$35,500.00
qryEmployeeLocation	Human Resources	Atherton	Katie	4/1/2004	\$47,450.00
qryEmployees	Sales	Bankler	Rowena	8/27/1998	\$31,916.94
qryHealth Plan Participants	Marketing	Bellwood	Frank	8/2/1996	\$46,486.05
qryHire Dates	Marketing	Berwick	Sam	0/16/1995	\$31,913.88
qryMktdept	Accounting	Brwyne	Melia	9/12/1997	\$35,785.47
qryPen & Pencil Orders	Manufacturing	Chang	Jessica	2/14/2001	\$31,225.00
qryRecent Hires	Art	Corwick	Judy	6/28/2003	\$58,900.97
qrySalaries	Art	Corwick	Rob	3/25/2001	\$58,277.52
	Human Resources	Cronwith	Brent	7/29/1998	\$40,897.35
	Accounting	Franklin	Larry	3/1/2002	\$64,738.18
	Sales	Lampstone	Pete	9/25/1994	\$34,689.00
	Sales	MacDonald	Bronwyn	12/1/2003	\$56,177.30
	Art	Mivelli	Maria	3/1/2004	\$46,583.85
	Sales	Morton	Norman	10/9/1993	\$49,485.15
	Sales	Sampson	Carla	1/9/2000	\$62,981.10
	Art	Scote	Gail	1/12/1994	\$36,939.84
	Sales	Smith	Ellen	8/14/1991	\$30,410.85
	Sales	Tuppmann	Lise-Anne	2/14/1995	\$34,605.45
	Accounting	Vuanuo	Tuome	10/4/1992	\$30,410.85
	Administration	Wu	Tammy	9/5/2003	\$32,884.12
	Sales	Ygarre	Lisa	0/22/1993	\$31,067.75

Record: 14 of 23 No Filter Search

You have 23 records for individuals who make more than \$30,000.

Changing criteria in a query

1. Switch to **Design View** by clicking on the *Design View* button.

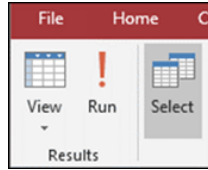


2. In the Criteria row under the **Salary** column delete the **>** symbol.
3. Replace it by adding the **<** symbol in front of the 30000 .
This will give you all records less than 30,000.
4. Press the [**TAB**] key.

Your screen should look like this.

Field:	Dept Name	Last Name	First Name	Hire Date	Salary
Table:	tblDepartments	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Personal
Sort:		Ascending	Ascending		
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:					<30000
or:					

5. Click the **Run** button on the *Design* ribbon.



Your screen should look like this.

Queries	Dept Name	Last Name	First Name	Hire Date	Salary
qryArtdeptHireDate	Human Resources	Al-Sabab	Daoud	4/2/1998	\$21,303.60
qryEmployeeAddresses	Art	Barton	Eileen	2/12/1997	\$28,859.25
qryEmployeeLocation	Accounting	Bell	Tom	3/15/1995	\$28,549.50
qryEmployees	Human Resources	Berwick	Elaine	4/3/2003	\$27,525.00
qryHealth Plan Participants	Administration	Cooper	Linda	8/31/1997	\$26,113.86
qryHire Dates	Manufacturing	Dixon-Walt	Sherrie	3/31/1995	\$27,597.85
qryHiredept	Manufacturing	Fontaine	Jean	4/18/2000	\$28,043.68
qryPen & Pencil Orders	Accounting	Gorton	Hazel	11/4/2002	\$29,505.00
qryRecent Hires	Sales	Hapsbuch	Kendrick	2/21/1994	\$29,982.58
qrySalaries	Administration	Henders	Mark	7/11/1995	\$26,646.20
	Art	Kane	Sheryl	0/23/1994	\$23,239.44
	Marketing	Kegler	Pam	1/14/1995	\$29,982.58
	Manufacturing	Kellerman	Tommie	2/12/1995	\$25,146.68
	Sales	Kourios	Theo	7/26/2002	\$29,015.40
	Accounting	Mueller	Ursula	7/9/2000	\$26,101.44
	Manufacturing	Simpson	Sandrae	9/19/1999	\$24,854.20
	Manufacturing	Smith	Barbara	2/2/1999	\$28,404.80
	Art	Smith	Howard	2/14/1993	\$25,176.06
	Human Resources	Szczyk	Tadeuz	7/2/1993	\$29,362.20

You have 19 records for individuals who make less than \$30,000.

Using AND or the OR condition

You can create complex queries by using the AND condition with your criteria row. The AND condition normally will give you less records. Where the OR condition normally give you more records.

With the AND condition criteria you are asking for two items from a single record that match. When these items match you will get the record.

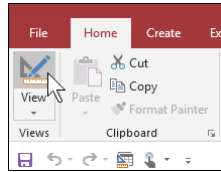
With the OR condition criteria, you will take one record based on a single criteria and a different record based on the second criteria. These two records do not need to match each other as they do in the AND condition.

Operators	Fields in Query	Example of Criteria placed in the field column	Description
AND	Dept Name Salary	Art <30000	By placing the word Art on the criteria row (<i>in the Dept Name column</i>) along with <30000 on the criteria row (<i>in the Salary column</i>) this creates an AND condition. Question: I want to know all the employees in the Art dept who make less than \$30,000.
OR	Dept Name	Art OR Accounting	By placing the word Art and Accounting in the same column on the criteria row, we can pull all the Art records and all of the Accounting records. Question: I want all the employees from both departments, Art and Accounting.
AND with OR	Dept Name Salary Dept Name	Art <30000 Accounting	This is just like the first example however; the Accounting text is placed on the OR row in the Dept Name column. Question: I want all the employees from the Art department who make less than 30,000 and plus all the employees from the Accounting department.
NOTE:	Looking at the query grid you will notice that you have a Criteria row and you have an OR row. If more than one criteria is placed in a different column on the same row you are creating an AND		

condition. If you place your second criteria or other criteria on the OR row you will create an OR condition.

Creating an AND condition

1. Switch to **Design View** by clicking on the *Design View* button.

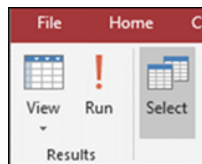


2. Type: **Art** in the Criteria row in the *Dept Name* column and press [**TAB**].

Your screen should look like this.

Field:	Dept Name	Last Name	First Name	Hire Date	Salary
Table:	tblDepartments	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Personal
Sort:		Ascending	Ascending		
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	"art"				<30000
or:					

3. Click **Run** button on the *Design* ribbon.



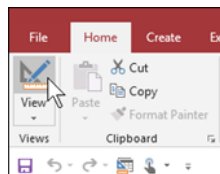
Your screen should look like this.

Dept Name	Last Nam	First Nam	Hire Dat	Salary
Art	Barton	Eileen	12/12/1997	\$28,859.25
Art	Kane	Sheryl	10/23/1994	\$23,239.44
Art	Smith	Howard	2/14/1993	\$25,176.06
*				

You have 3 records for individuals from the Art department who make less than \$30,000.

Creating an OR condition

1. Switch to **Design View** by clicking on the *Design View* button.

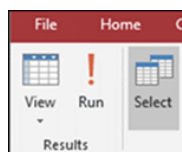


2. Delete the **<30000** from the Criteria row in the *Salary* column.
3. On the **OR** row in the Dept Name column type: **Accounting**
4. Press the [**TAB**] key.

Your screen should look like this.

Field:	Dept Name	Last Name	First Name	Hire Date	Salary
Table:	tblDepartments	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Personal
Sort:		Ascending	Ascending		
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	"art"				
or:	"accounting"				

5. Click the **Run** button on the *Design* ribbon.



Your screen should look like this.

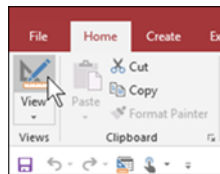
Dept Name	Last Nam	First Nam	Hire Dat	Salary
Art	Barton	Eileen	12/12/1997	\$28,859.25
Accounting	Bell	Tom	3/15/1995	\$28,549.50
Accounting	Brwyne	Melia	9/12/1997	\$35,785.47
Art	Corwick	Judy	6/28/2003	\$58,900.97
Art	Corwick	Rob	3/25/2001	\$58,277.52
Accounting	Franklin	Larry	3/1/2002	\$64,738.18
Accounting	Gorton	Hazel	11/4/2002	\$29,565.00
Art	Kane	Sheryl	10/23/1994	\$23,239.44
Art	Mivelli	Maria	3/1/2004	\$46,583.85
Accounting	Mueller	Ursula	7/9/2000	\$26,101.44
Art	Scote	Gail	1/12/1994	\$36,939.84
Art	Smith	Howard	2/14/1993	\$25,176.06
Accounting	Vuanuo	Tuome	10/4/1992	\$30,410.85

Record: 1 of 13 No Filter Search

You have 13 records for individuals from both Art and Accounting departments.

Mixing AND and the OR condition

1. Switch to **Design View** by clicking on the *Design View* button.



2. **Delete** the word "Accounting" from the **OR** row.
3. Click to the right of the word **Art** and press the [**SPACEBAR**] key.
4. Type: **Or** and press the [**SPACEBAR**] key.
5. Type: **Accounting** and press the [**TAB**] key.

Your screen should look like this.

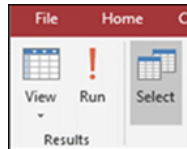
Field:	Dept Name	Last Name	First Name	Hire Date	Salary
Table:	tblDepartments	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Personal
Sort:		Ascending	Ascending		
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	"art" Or "accounting"				
or:					

6. Press the [**TAB**] key three times.
7. On the **Criteria** row in the **Salary** column type: **>30000**

Your screen should look like this.

Field:	Dept Name	Last Name	First Name	Hire Date	Salary
Table:	tblDepartments	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Personal
Sort:		Ascending	Ascending		
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	"art" Or "accounting"				>30000
or:					

8. Click the **Run** button on the *Design* ribbon.



Your screen should look like this.

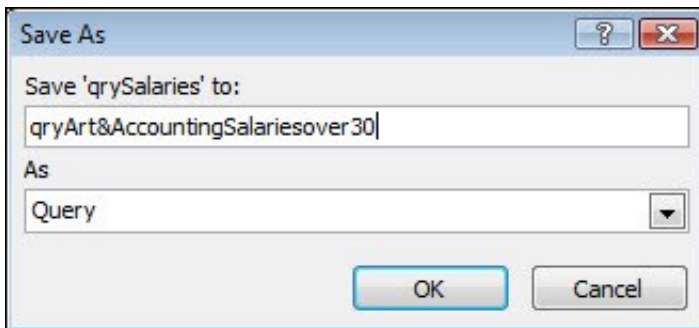
Dept Name	Last Nam	First Nam	Hire Dat	Salary
Accounting	Brwyne	Melia	9/12/1997	\$35,785.47
Art	Corwick	Judy	6/28/2003	\$58,900.97
Art	Corwick	Rob	3/25/2001	\$58,277.52
Accounting	Franklin	Larry	3/1/2002	\$64,738.18
Art	Mivelli	Maria	3/1/2004	\$46,583.85
Art	Scote	Gail	1/12/1994	\$36,939.84
Accounting	Vuanuo	Tuome	10/4/1992	\$30,410.85
*				

You have 7 records for individuals from both Art and Accounting departments who make more than \$30,000.

9. Click **F12** and the Save As dialog box appears.
10. In the Save As dialog box type:
qryArt&AccountingSalariesover30

Tip: [F12] is the keyboard shortcut for Save As. You can press [F12] to bring up the Save As dialog box to give any new object a name.

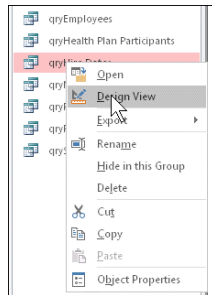
Your screen should look like this.



11. Click the **OK** button on the *Save As* dialog box.
12. Close the **qryArt&AccountingSalariesover30** query.

Working with Date criterion

1. Right-click the **qryHire Dates** query and select *Design View*.

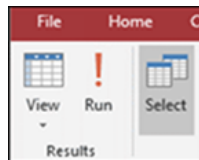


2. In the Criteria row under the **Hire Date** column, type: **> 12/31/1999**
3. Press the [**TAB**] key once.

Your screen should look like this.

Field:	Hire Date	Last Name	First Name	Dept
Table:	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Hire Dat
Sort:	Ascending			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	> #12/31/1999#			
or:				

4. Click the **Run** button on the *Design* ribbon.

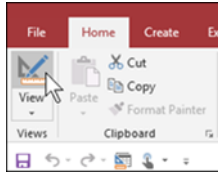


Your screen should look like this.

Hire Date	Last Name	First Name	De
1/9/2000	Rampson	Carla	SA
4/18/2000	Fontaine	Jean	MF
7/9/2000	Mueller	Ursula	AC
2/14/2001	Chang	Jessica	MF
3/25/2001	Corwick	Rob	AT
4/25/2001	Cortlandt	Charles	SA
3/1/2002	Franklin	Larry	AC
7/5/2002	Atherly	Katherine	HR
7/26/2002	Kourios	Theo	SA
11/4/2002	Gorton	Hazel	AC
4/3/2003	Berwick	Elaine	HR
6/28/2003	Corwick	Judy	AT
9/5/2003	Wu	Tammy	AD
12/1/2003	MacDonald	Bronwyn	SA
3/1/2004	Mivelli	Maria	AT
4/1/2004	Atherton	Katie	HR

You have 16 records for individuals who started with the company after 12/31/1999.

5. Switch to **Design View** by clicking on the *Design View* button.

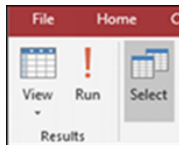


6. **Delete** the contents of the Criteria row in the Hire Date column.
Hint: Select the text with the mouse and press the Delete key.
7. In the Criteria row under the **Hire Date** column, type: **<= 12/31/1999**
8. Press the [**TAB**] key once.

Your screen should look like this.

Field:	Hire Date	Last Name	First Name	Dept
Table:	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Hire Dat	tblEmployee Hire Dat
Sort:	Ascending			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	<=#12/31/1999#			
OR:				

9. Click the **Run** button on the *Design* ribbon.



Your screen should look like this.

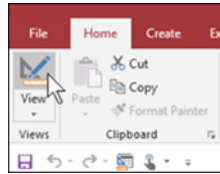
qryHire Dates				
Hire Date	Last Name	First Name	Dept	
10/10/1990	Adams	Randy	MK	
8/14/1991	Smith	Ellen	SA	
10/4/1992	Vuorio	Tuome	AC	
2/14/1993	Smith	Howard	AT	
7/2/1993	Szczynek	Tadeusz	HR	
10/9/1993	Morton	Norman	SA	
10/22/1993	Ygarre	Lisa	SA	
1/12/1994	Scote	Gail	AT	
9/25/1994	Lampstone	Pete	SA	
10/23/1994	Kane	Sheryl	AT	
12/21/1994	Hapsbuch	Kendrick	SA	
1/14/1995	Kegler	Pam	MK	
2/14/1995	Tupman	Lise-Anne	SA	
3/15/1995	Bell	Tom	AC	
3/31/1995	Dixon-Wait	Sherrie	MF	
4/26/1995	Boughton	Frank	AD	
5/1/1995	Miller	Janet	MK	

Record: 1 of 33 No Filter Search

You have 33 records for individuals who started with the company on or before 12/31/1999.

Working Between Dates

1. Switch to **Design View** by clicking on the *Design View* button.



2. **Delete** the contents of the Criteria row in the *Hire Date* column.

Hint: Select the text with the mouse and press the Delete key.

3. In the Criteria row under the **Hire Date** column.

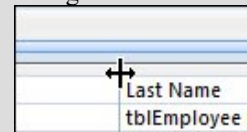
4. Type: **Between 1/1/1995 And 12/31/1999**

5. Press the [**TAB**] key once.

Your screen should look like this.

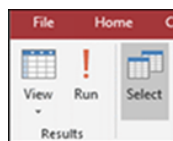
Field:	Hire Date	Last Name
Table:	tblEmployee Hire Dates	tblEmployee Hire Dates
Sort:	Ascending	
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	Between #1/1/1995# And #12/31/1999#	
or:		

Tip: You can see your date expression in the criteria row if you place the mouse pointer on the dividing line between the two columns press and drag to the right.



You can also press the [**SHIFT + F2**] key combination to open the Zoom window to

6. Click the **Run** button on the *Design* ribbon.



Your screen should look like this.

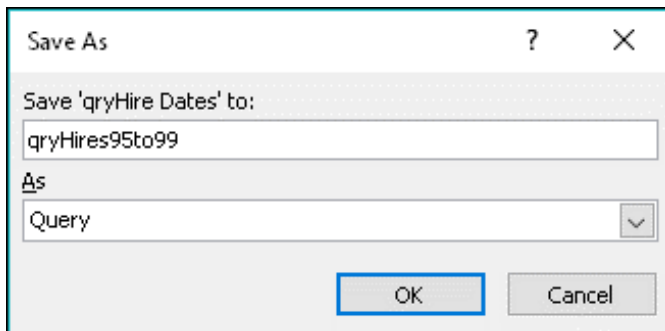
qryHire Dates			
Hire Date	Last Name	First Name	Department
1/14/1995	Gler	Pam	MK
2/14/1995	Tuppmann	Lise-Anne	SA
3/15/1995	Bell	Tom	AC
3/31/1995	Dixon-Wait	Sherrie	MF
4/26/1995	Boughton	Frank	AD
5/1/1995	Miller	Janet	MK
7/11/1995	Henders	Mark	AD
8/16/1995	Gonzales	Joe	SA
10/16/1995	Berwick	Sam	MK
12/12/1995	Kellerman	Tommie	MF
6/26/1996	Nelson	Ed	AT
8/2/1996	Bellwood	Frank	MK
12/7/1996	Alstain	Isolde	HR
2/14/1997	Sammner	Mark	MK
8/31/1997	Cooper	Linda	AD
9/12/1997	Brwyne	Melia	AC
12/12/1997	Barton	Eileen	AT

Records: 1 of 22 No Filter Search

You have 22 records for individuals who were hired between 1/1/1995 to 12/31/1999.

7. Click **F12** and the *Save As* dialog box appears.
8. In the Save As dialog box type: **qryHires95to99**

Your screen should look like this.



Tip: [F12] is the keyboard shortcut for Save As. You can press [F12] to bring up the Save As dialog box to give any new object a name.

10. Click the **OK** button on the **Save As** dialog box.
11. Close the **qryHires95to99** query.

Close the database and exit Access

1. Click on the **File** tab and click **Close** from the *Backstage* menu.
The database closes.
2. Click on the **X** in the top right corner to **Exit Access**.
MS Access closes.

Tip: You can use the keyboard key combination of [**CTRL + F4**] to quickly close your database. You can use the [**ALT + F4**] to quickly close Access.



Section 4 – Exercise

Scenario

You need to pull records by using queries.

What to Do: Build queries to pull the records you need by using criteria.

A place to start

1. Use the **Start** button on the taskbar to open **Microsoft Access**.
For an example, refer to page **Error! Bookmark not defined.**
2. Click the **Open** button, verify that **Classwork** folder is selected.
3. Double-click **FourthQuery_Exercise** database file.
4. Open the **qryEmployee Addresses** query. How many records to you have?
For an example, refer to page Error! Bookmark not defined..
5. Create a new query based on the **tblEmployee Personal** table. Add the Last Name, First Name, Address, City, State and Zip Code fields to your grid.
For an example, refer to page 5.
6. Run the query to see all the records.
7. Add a criteria of “**OR**” to the state column.
For an example, refer to page 7.
8. Save your query as **qryOR_State**.
For an example, refer to page 18.
9. In design view sort the **City** column in **Ascending** order and save the query.
For an example, refer to page 16.
10. Click on the **File** tab and click **Close** from the *Backstage* menu.
The database closes.
11. Click on the **X** in the top right corner to **Exit Access**.
MS Access closes.

Section 4 – Review

You must be able to answer the following questions on your own. As you review the questions below, write in your answer below each one.

1. How do you create a query?
2. How do you add fields to the query grid?
3. How do you sort a column in a query grid?
4. Access uses Query By Example in the query grid, what does this mean?
5. What happens when you remove the check mark in a column on the Show row?
6. What does One-to-One mean when describing the relationship between two tables?
7. What is the Save As keyboard shortcut key?

Additional Study

Use the Microsoft Access help features to look up the key words from this section for additional information. Example: Query, Select Query, and Criteria

My Notes: