

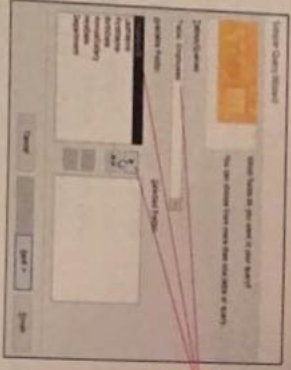
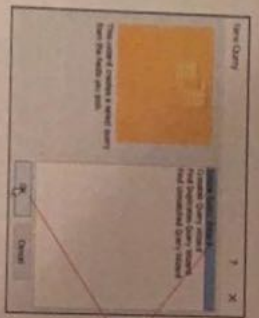


Activity 3.1 Creating a Query Using the Simple Query Wizard

A query is an Access object designed to extract data from one or more tables. Usually a query is created to select records that answer a question. For example, a question such as *Which employees are enrolled in the Pension Plan?* could be answered with a query. The query would be designed to select records for those employees with a *Yes* in the *PensionPlan* field. Query results display in a datasheet that pulls the data from existing tables. A query can be created to serve a variety of purposes, from very simple field selections to complex conditional statements or calculations. In its simplest form, a query may be used to display or print selected fields from two tables. Access includes the Simple Query Wizard to facilitate creating a query.

What You Will Do Using the Simple Query Wizard, you will generate a list of each employee's first and last names and benefit selections. This will allow you to print a list by selecting fields from two tables.

- 1 Open **3-WEmployees.accdb** and enable the contents, if necessary.
- 2 Click **Employees** in the Tables group in the Navigation pane and then click the **Create tab**.
- 3 Click the **Query Wizard** button  in the Queries group.
- 4 At the **New Query Wizard** dialog box, with **Simple Query Wizard** already selected in the list box, click **OK**.
- 5 At the first **Simple Query Wizard** dialog box, with **Table: Employees** selected in the **Table/Queries** option box and **EmployeeID** selected in the **Available Fields** list box, click the **One Field** button  to move **EmployeeID** to the **Selected Fields** list box.
- 6 With **LastName** now selected in the **Available Fields** list box, click the **One Field** button to move **LastName** to the **Selected Fields** list box.
- 7 Click the **One Field** button to move **FirstName** to the **Selected Fields** list box.
- 8 Click the **Table/Queries** option box arrow and then click **Table: Benefits** at the drop-down list.



- In Brief**
- 1 Create Query Using Simple Query Wizard
 - 2 Click Create tab
 - 3 Click Query Wizard button
 - 4 Choose Table and Selected Fields to include in query
 - 5 Click Next
 - 6 Choose Detail or Summary query
 - 7 Click Next
 - 8 Type title for query
 - 9 Click Finish

- 10 Double-click the following fields in the **Available Fields** list box to move them to the **Selected Fields** list box:
DentalPlan
HealthPlan
Vacation
- 11 Click the **Next** button.
- 12 Click the **Next** button at the second **Simple Query Wizard** dialog box to accept **Detail (shows every field of every record)** in the **Would you like a detail or summary query?** section.
- 13 At the third **Simple Query Wizard** dialog box, select the current text in the **What title do you want for your query?** text box, type **BenefitPlans**, and then click the **Finish** button.

View the query results datasheet shown in Figure 3.1. A query results datasheet can be sorted, edited, or formatted in a manner similar to a table. Data displayed in query results is not stored as a separate entity—the query is simply another interface for viewing and editing data in the associated table(s). Each time a saved query is opened, Access dynamically updates the query results by running the query.
- 14 Display the query in **Print Preview**, change to landscape orientation, and then print the query.
- 15 Close the **Print Preview** window and then close the **BenefitPlans** query.

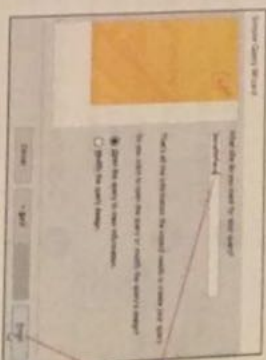
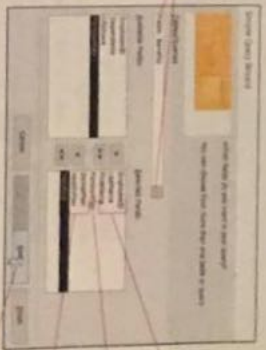


Figure 3.1 BenefitPlans Query Results Datasheet


EmployeeID	LastName	FirstName	DentalPlan	HealthPlan	Vacation
1000	Adams	John	Yes	Yes	10
1001	Baker	Jane	No	No	5
1002	Chen	Michael	Yes	Yes	15
1003	Cook	Emily	No	No	8
1004	DeVries	Robert	Yes	Yes	12
1005	Evans	Sarah	No	No	6
1006	Foster	David	Yes	Yes	11
1007	Garcia	Laura	No	No	7
1008	Harris	James	Yes	Yes	14
1009	Hughes	Michelle	No	No	9
1010	Ivanov	Mark	Yes	Yes	13
1011	Jones	Anna	No	No	6
1012	Kim	Steven	Yes	Yes	16
1013	King	Christina	No	No	5
1014	Lee	Thomas	Yes	Yes	10
1015	Nguyen	Patricia	No	No	7
1016	Nguyen	John	Yes	Yes	12
1017	Nguyen	Michelle	No	No	8
1018	Nguyen	Robert	Yes	Yes	11
1019	Nguyen	Sarah	No	No	6
1020	Nguyen	Thomas	Yes	Yes	14
1021	Nguyen	Victoria	No	No	9
1022	Nguyen	William	Yes	Yes	13
1023	Nguyen	Xavier	No	No	7
1024	Nguyen	Yvonne	Yes	Yes	10
1025	Nguyen	Zoe	No	No	5
1026	Nguyen	Adam	Yes	Yes	12
1027	Nguyen	Benjamin	No	No	8
1028	Nguyen	Charlotte	Yes	Yes	11
1029	Nguyen	Christopher	No	No	6
1030	Nguyen	Daniel	Yes	Yes	14
1031	Nguyen	Ethan	No	No	9
1032	Nguyen	Fiona	Yes	Yes	13
1033	Nguyen	George	No	No	7
1034	Nguyen	Hannah	Yes	Yes	10
1035	Nguyen	Ian	No	No	5
1036	Nguyen	Jessica	Yes	Yes	12
1037	Nguyen	Jonathan	No	No	8
1038	Nguyen	Karen	Yes	Yes	11
1039	Nguyen	Liam	No	No	6
1040	Nguyen	Mia	Yes	Yes	14
1041	Nguyen	Noah	No	No	9
1042	Nguyen	Olivia	Yes	Yes	13
1043	Nguyen	Peter	No	No	7
1044	Nguyen	Quinn	Yes	Yes	10
1045	Nguyen	Rachel	No	No	5
1046	Nguyen	Samuel	Yes	Yes	12
1047	Nguyen	Tina	No	No	8
1048	Nguyen	Umar	Yes	Yes	11
1049	Nguyen	Vanessa	No	No	6
1050	Nguyen	Walter	Yes	Yes	14
1051	Nguyen	Xavier	No	No	9
1052	Nguyen	Yvonne	Yes	Yes	13
1053	Nguyen	Zoe	No	No	7
1054	Nguyen	Adam	Yes	Yes	10
1055	Nguyen	Benjamin	No	No	5
1056	Nguyen	Charlotte	Yes	Yes	12
1057	Nguyen	Christopher	No	No	8
1058	Nguyen	Daniel	Yes	Yes	11
1059	Nguyen	Ethan	No	No	6
1060	Nguyen	Fiona	Yes	Yes	14
1061	Nguyen	George	No	No	9
1062	Nguyen	Hannah	Yes	Yes	13
1063	Nguyen	Ian	No	No	7
1064	Nguyen	Jessica	Yes	Yes	10
1065	Nguyen	Jonathan	No	No	5
1066	Nguyen	Karen	Yes	Yes	12
1067	Nguyen	Liam	No	No	8
1068	Nguyen	Mia	Yes	Yes	11
1069	Nguyen	Noah	No	No	6
1070	Nguyen	Olivia	Yes	Yes	14
1071	Nguyen	Peter	No	No	9
1072	Nguyen	Quinn	Yes	Yes	13
1073	Nguyen	Rachel	No	No	7
1074	Nguyen	Samuel	Yes	Yes	10
1075	Nguyen	Tina	No	No	5
1076	Nguyen	Umar	Yes	Yes	12
1077	Nguyen	Vanessa	No	No	8
1078	Nguyen	Walter	Yes	Yes	11
1079	Nguyen	Xavier	No	No	6
1080	Nguyen	Yvonne	Yes	Yes	14
1081	Nguyen	Zoe	No	No	9
1082	Nguyen	Adam	Yes	Yes	13
1083	Nguyen	Benjamin	No	No	7
1084	Nguyen	Charlotte	Yes	Yes	10
1085	Nguyen	Christopher	No	No	5
1086	Nguyen	Daniel	Yes	Yes	12
1087	Nguyen	Ethan	No	No	8
1088	Nguyen	Fiona	Yes	Yes	11
1089	Nguyen	George	No	No	6
1090	Nguyen	Hannah	Yes	Yes	14
1091	Nguyen	Ian	No	No	9
1092	Nguyen	Jessica	Yes	Yes	13
1093	Nguyen	Jonathan	No	No	7
1094	Nguyen	Karen	Yes	Yes	10
1095	Nguyen	Liam	No	No	5
1096	Nguyen	Mia	Yes	Yes	12
1097	Nguyen	Noah	No	No	8
1098	Nguyen	Olivia	Yes	Yes	11
1099	Nguyen	Peter	No	No	6
1100	Nguyen	Quinn	Yes	Yes	14

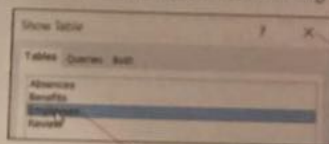
Check Your Work Compare your work to the model answer to ensure you have designed a query correctly.

Activity 3.2 Creating a Query in Design View Using a Single Table

In Section 2, you learned to work with tables in Design view to define or modify the table structure. Similarly, you can use Design view to create a query for which you define the structure. In Design view, you begin by choosing the table from which you wish to select records. You use the table field list box to select the fields to display in the query results datasheet. When you have finished selecting fields, you instruct Access to display the records by switching to Datasheet view or by clicking the Run button.

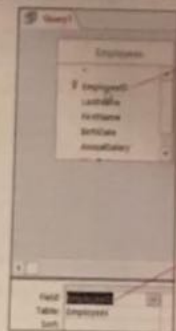
What You Will Do Rhonda Trask, human resources manager, has asked for a list of employees with their annual salaries and hire dates. You will produce the list by creating a query to obtain the required fields from the Employees table.

- 1 With **3-WEmployees.accdb** open and the **Create** tab active, click the **Query Design** button  in the **Queries** group.
- 2 At the **Show Table** dialog box with the **Tables** tab selected, double-click **Employees**.
A table field list box for the **Employees** table is added to the query. The first step in building a query in Design view is to add a table field list box for each table from which records will be selected.
- 3 Click the **Close** button to close the **Show Table** dialog box.



- 4 Double-click the **EmployeeID** field in the **Employees** table field list box.

The blank columns at the bottom represent the columns in the query results datasheet and are referred to as the *query design grid*. You place the field names in the columns in the order in which you want the fields displayed in the query results datasheet. Double-clicking a field name adds the field to the next available column. In Steps 5 and 6, you will practice two other methods of adding fields to the query design grid.

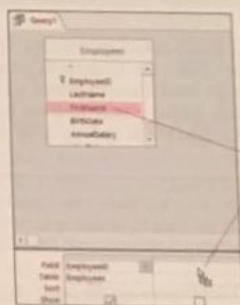



The **EmployeeID** field is added here after you double-click the field name in the table field list box.

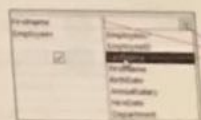
In Brief


- Create Query in Design View with Single Table
1. Click **Create** tab.
 2. Click **Query Design** button.
 3. Double-click table in **Show Table** dialog box.
 4. Close **Show Table** dialog box.
 5. Add field names from table field list box to columns in query design grid.
 6. Click **Save** button.
 7. Type query name and click **OK**.
 8. Click **Run** button.

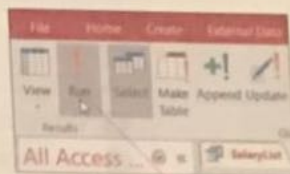
- 5 Position the mouse pointer on the **FirstName** field in the **Employees** table field list box, click and hold down the left mouse button, drag to the second field in the **Field** row of the query design grid, and then release the mouse button.



- 6 Click in the third field in the **Field** row of the query design grid, click the arrow that appears, and then click **LastName** at the drop-down list.
- 7 Using any of the three methods in Steps 4–6, add the **AnnualSalary** and **HireDate** fields from the **Employees** table field list box to the query design grid.
- 8 Click the **Save** button  on the **Quick Access Toolbar**.



- 9 At the **Save As** dialog box, type **SalaryList** in the **Query Name** text box and then press the **Enter** key or click **OK**.
- 10 Click the **Run** button  in the **Results** group on the **Query Tools Design** tab.
A query stores instructions on how to select data. The **Run** command instructs Access to carry out the instructions and display the results.
- 11 Print the query.
- 12 Close the **SalaryList** query.



Check Your Work

Compare your work to the model answer to ensure that you have completed the activity correctly.

In Addition

Understanding Action Queries

In the last activity and in this activity, you created select queries that displayed selected fields from tables. Another type of query, called an action query, makes changes to a group of records. Four types of action queries are available in Access: delete, update, append, and make-table. A **delete** query deletes

records. An **update** query makes global changes to a field. An **append** query adds a group of records from one table to the end of another table. A **make-table** query creates a new table from either part of the data in existing tables.

Activity 3.3 Creating a Query in Design View Using Multiple Tables

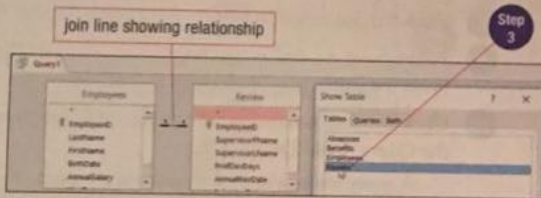
Often a query is used to select records from more than one table. In Activity 3.1, you were able to view records from the Employees table and the Benefits table in a query results datasheet. In Design view, multiple tables are added to the query at the Show Table dialog box. Once you have added a table field list box for each table, you can then add the fields to the query design grid in the desired order using any one of the three methods learned in the last activity.

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What You Will Do Rhonda Trask has asked for a list of employees, along with their hire and review dates. This data is stored in two different tables. You will produce the list by creating a query to obtain the required fields from each table to generate the list.

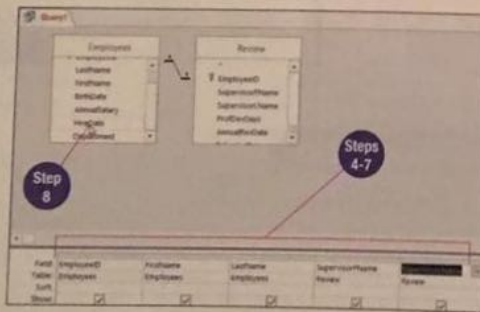
- 1 With **3-WEmployees.accdb** open and the Create tab active, click the Query Design button.
- 2 At the Show Table dialog box with the Tables tab selected, double-click *Employees*.
- 3 Double-click *Review* and then click the Close button to close the Show Table dialog box.

A black join line with 1 at each end of the line between the Employees table field list box and the Review table field list box illustrates the one-to-one relationship that has been defined between the two tables.



- 4 Double-click the *EmployeeID* field in the Employees table field list box.
- 5 Double-click the *FirstName* field in the Employees table field list box.
- 6 Double-click the *LastName* field in the Employees table field list box.
- 7 Double-click the *SupervisorFName* field and then double-click the *SupervisorLName* field in the Review table field list box to add the fields from the second table to the query design grid.
- 8 Double-click the *HireDate* field in the Employees table field list box.

You can add fields in any order from either table to the query design grid.

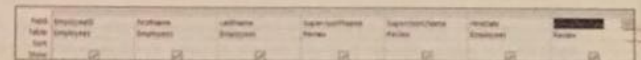


In Brief

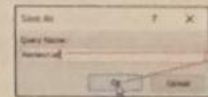
Create Query in Design View with Multiple Tables

1. Click Create tab.
2. Click Query Design button.
3. Double-click tables in Show Table dialog box.
4. Close Show Table dialog box.
5. Add field names from table field list boxes to columns in query design grid.
6. Click Save button.
7. Type query name and click OK.
8. Click Run button.

- 9 Double-click the *AnnualRevDate* field in the Review table field list box.
- 10 Look at the table names in the *Table* row in the query design grid. The table with which each field is associated is displayed.



- 11 Click the Save button on the Quick Access Toolbar.
- 12 At the Save As dialog box, type *ReviewList* in the *Query Name* text box and then press the Enter key or click OK.
- 13 Click the Run button in the Results group on the Query Tools Design tab.



- 14 View the query results in Figure 3.2.
- 15 Display the datasheet in Print Preview, change to landscape orientation, and then print the datasheet.
- 16 Close the Print Preview window and then close the ReviewList query.

Figure 3.2 ReviewList Query Results Datasheet

EmployeeID	FirstName	LastName	SupervisorFName	SupervisorLName	HireDate	AnnualRevDate
1073	Luigi	Bonasso	Sam	Whitmore	5/23/2010	20-Feb-11
1020	Angela	Osbourne	Colinda	Ray	6/15/2010	10-Aug-10
1023	Alonso	Bonifazi	Sam	Whitmore	6/20/2010	25-Oct-10
1027	George	Wolfe	Robert	Osbourne	10/1/2010	05-Dec-10
1030	Thomas	Wells	Robert	Osbourne	1/14/2011	12-Jun-10
1111	Oliver	Chen	Robert	Osbourne	1/19/2011	05-Jan-11
1068	Steph	Labrecque	Colinda	Ray	3/10/2010	10-Mar-11
1043	Travis	Alvarado	Aracely	Osbourne	8/10/2010	08-Jun-10
1045	Derry	Wu	Colinda	Ray	1/10/2010	08-Jun-10
1039	Carl	Osborne	Sam	Whitmore	1/11/2010	04-Jul-10
1054	Shawna	O'Connor	Sam	Whitmore	1/13/2010	15-Aug-11
1000	Georgi	Murphy	Robert	Osbourne	1/13/2010	25-Jun-11
1063	Charlette	McClure	Colinda	Ray	1/16/2010	09-Jun-11
1065	Heena	Lundberg	Sam	Whitmore	1/22/2010	17-Jun-11
1075	Martha	Stam	Robert	Osbourne	1/22/2010	29-Jun-11
1080	Luis	Castro	Whitmore	Osbourne	1/23/2010	11-Jul-11
1082	Shelley	Amadio	Colinda	Ray	1/23/2010	11-Jul-11
1085	Tinaut	Amico	Colinda	Ray	1/24/2010	14-Jul-11
1090	Mary	Stevens	Sam	Whitmore	1/24/2010	14-Jul-11
1093	Leif	Hederson	Sam	Whitmore	1/24/2010	24-Jul-11
1088	Ruth	King	Colinda	Ray	1/24/2010	12-Jul-11

Check Your Work

Compare your work to the model answer to ensure that you have completed the activity correctly.

In Addition

Learning More about Adding Tables to the Query Design Grid

If you have closed the Show Table dialog box and then realize you need to add another table field list box to the query design grid, you do not need to start over again. The Show Table button in the Query Setup group on the Query Tools Design tab will redisplay the Show Table dialog box, from which you can add more tables to the query design grid.




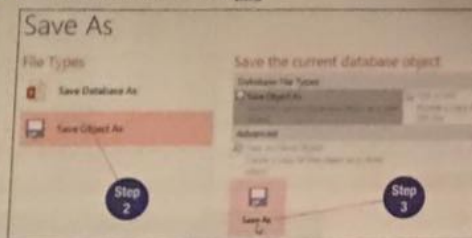
Click the Show Table button to add a table field list box to the query design grid.

Activity 3.4 Adding a Criteria Statement to a Query; Sorting and Hiding Columns

In the previous queries, all records from the tables were displayed. Adding a criterion statement to the query design grid will cause Access to display only those records that meet the criterion. For example, you could generate a list of employees who are entitled to four weeks of vacation. Extracting specific records from tables is where the true power in creating queries is found, since you are able to separate out only those records that serve your purpose. Use the *Sort* row in the design grid to specify the field by which records should be sorted. By default, each check box in the *Show* row in the query design grid contains a check mark, meaning the column will be displayed in the query results datasheet. Clear the check mark from a field's *Show* row to hide the column in the query results datasheet.

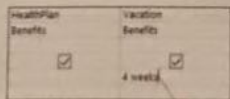
What You Will Do Rhonda Trask has requested a list of employees who receive four weeks of vacation. Since you already have the employee names and vacation fields set up in an existing query, you decide to modify the query by adding the vacation criteria and then save the query using a new name.

- 1 With **3-WEmployees.accdb** open, right-click **BenefitPlans** in the Queries group in the Navigation pane and then click **Design View** at the shortcut menu.
- 2 Click the **File** tab, click the **Save As** option, and then click the **Save Object As** option in the **File Types** section of the **Save As** backstage area.
- 3 Click the **Save As** button .



- 4 Type **4WksVac** in the **Save 'BenefitPlans' to** text box at the **Save As** dialog box and then click **OK**.
- 5 With the **Query Tools Design** tab active, click in the field in the **Criteria** row in the **Vacation** column in the query design grid (the blank field below the check box).
Before you type a criteria statement, make sure you have placed the insertion point in the **Criteria** row for the field by which you will be selecting records.
- 6 Type **4 weeks** and then press the **Enter** key.

The insertion point moves to the field in the **Criteria** row in the next column and Access inserts quotation marks around **4 weeks** in the field in the **Vacation** column. Since quotation marks are required in criteria statements for text fields, Access automatically inserts them if they are not typed into the field in the **Criteria** row.



In Brief

Add Criteria Statement to Query

1. Open query in Design view.
2. Click in Criteria row in column in which you want to write criterion statement.
3. Type criterion statement.
4. Save revised query.
5. Run query.

Sort Query Results

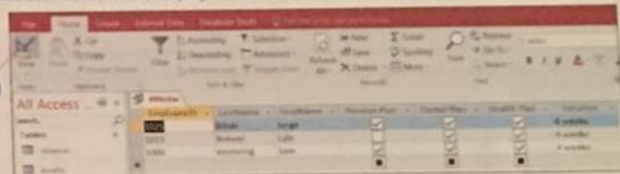
1. Open query in Design view.
2. Click in Sort row in field by which to sort.
3. Click arrow.
4. Click Ascending or Descending.
5. Save query.
6. Run query.

Hide Column in Query Results

1. Open query in Design view.
2. Click check box in Show row in field to be hidden.
3. Save query.
4. Run query.

- 7 Click in the field in the **Sort** row in the **LastName** column, click the down arrow, and then click **Ascending** at the drop-down list.
- 8 Click the **Run** button in the **Results** group on the **Query Tools Design** tab.
- 9 View the query results in the datasheet (the results are sorted in alphabetic order by last name) and then click the **View** button in the **Views** group on the **Home** tab to switch to **Design** view. (Do not click the **View** button arrow.)

Since Rhonda Trask is interested only in the employee names and vacation, you will instruct Access not to display the other fields in the query results datasheet.



- 10 Click the check box in the **Show** row in the **PensionPlan** column to remove the check mark.
Removing the check mark instructs Access to hide the column in the query results datasheet.
- 11 Remove the check marks from the **Show** check box in the **DentalPlan** and **HealthPlan** columns in the query design grid.
- 12 Click the **View** button to switch to **Datasheet** view.
The columns for which you removed the check mark from the **Show** check box do not display in the query results. Notice that you displayed the query results datasheet by switching views. Clicking the **Run** button or switching views achieves the same result.
- 13 Print the query results datasheet.
- 14 Close the **4WksVac** query. Click **Yes** to save changes to the design of the query.

Check Your Work Compare your work to the model answer to ensure that you have completed the activity correctly.

In Addition

Learning More about Criteria Statement

The following are examples of criteria statements for text, number, and date fields showing the proper syntax required by Access. Access inserts the quotation

marks (") automatically for text fields and the pound symbols (#) automatically for date fields when you type a valid entry in a field in the **Criteria** row.

Criteria Statement	Records That Would Be Extracted
"Finance Department"	those with Finance Department in the field
Not "Finance Department"	all except those with Finance Department in the field
"Fin"	those that begin with Fin and end with any other characters in the field
>15000	those with a value greater than 15,000 in the field
#5/1/15#	those that contain the date May 1, 2015 in the field
>#5/1/15#	those that contain dates after May 1, 2015 in the field

Activity 3.5 Designing a Query with an And Criteria Statement

You may need to select records by using more than one criterion. For example, you may wish to view records of those employees who have enrolled in more than one benefit plan. More than one column in the query design grid can have an entry in the *Criteria* row. Multiple criteria all entered in the same *Criteria* row becomes an *And* statement wherein each criterion must be met for the record to be selected. For example, the word *Yes* in the *PensionPlan* column and the *DentalPlan* column in the *Criteria* row would mean a record would need to have a check mark in both check boxes in order for Access to display the record in the query results datasheet.

What You Will Do Rhonda Trask is reviewing salaries and has requested a list of employees who work in the North American Distribution Department and earn over \$45,000. You will create a new query in Design view to produce the list.

- With **3-WEmployees.accdb** open, click the **Create** tab and then click the **Query Design** button.
- At the **Show Table** dialog box, double-click *Employees* and then click the **Close** button.
- Double-click the following fields to add them to the query design grid. *Note: You may have to scroll down the table field list box to see all of the fields.*
FirstName
LastName
Department
HireDate
AnnualSalary
- Click in the field in the *Criteria* row in the *Department* column in the query design grid, type **North American Distribution**, and then press the **Enter** key.
- Position the mouse pointer on the right column boundary line for the *Department* field in the gray header row at the top of the query design grid until the pointer changes to a left-and-right-pointing arrow with a vertical line in the middle and then double-click the left mouse button to best fit the column width.

Field Table:	FirstName Employees	LastName Employees	Department Employees	HireDate Employees	AnnualSalary Employees
Sort:					
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			North American Distrib		
or:					

In Brief

Designing a Query with an And Statement

- Start new query in Design view.
- Add tables and fields to query design grid.
- Click in *Criteria* row in column in which you want to write criterion statement.
- Type criterion statement.
- Repeat Steps 3–4 for the remaining criterion fields.
- Save query.
- Run query.

- Click in the field in the *Criteria* row in the *AnnualSalary* column, type **>45000**, and then press the **Enter** key.

Placing multiple criterion statements on the same row in the query design grid means that each criterion must be satisfied in order for Access to select the record.

Department	HireDate	AnnualSalary
Employees	Employees	Employees
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
North American Distribution		>45000

- Click the **Run** button.
- Review the records selected in the query results datasheet.

The field value for each record in the *Department* column is *North American Distribution* and the field values in the *AnnualSalary* column are all greater than \$45,000.

Employee	Department	HireDate	AnnualSalary
Trask, Rhonda	North American Distribution	1/15/2009	\$48,725.00
Lytle, Steven	North American Distribution	5/17/2002	\$45,000.00
Nguyen, Donald	North American Distribution	6/19/2010	\$45,000.00
Shaw, Steve	North American Distribution	1/10/2011	\$45,000.00
Chen, Murray	North American Distribution	6/19/2012	\$48,725.00

- Click the **Save** button, type **NAHighSalary** in the *Query Name* text box, and then press the **Enter** key or click **OK**.
- Print the query results datasheet.
- Close the **NAHighSalary** query.

Check Your Work

Compare your work to the model answer to ensure that you have completed the activity correctly.

In Addition

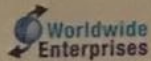
Learning More about And Criteria Statements

The following are additional examples of *And* criteria statements.

Criterion Statement in PensionPlan Column	Criterion Statement in HireDate Column	Criterion Statement in AnnualSalary Column	Result: A Valid or Extended
Yes	>#1/1/2018#	>40000 And <50000	employees hired after January 1, 2018 with annual salaries between \$40,000 and \$50,000
No	<#1/1/2018#	<45000	employees hired before January 1, 2018 and the annual salary is less than \$45,000
No	Between #1/1/2018# And #12/31/2018#	<50000	employees hired between January 1, 2018 and December 31, 2018 with annual salaries less than \$50,000

Activity 3.6 Designing a Query with an Or Criteria Statement

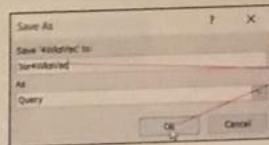
Multiple criterion statements on different rows in the query design grid become an *Or* statement in which any of the criteria can be met in order for Access to select the record. For example, in this activity, you will generate a list of employees who are entitled to either three or four weeks of vacation. Creating select queries with *Or* statements is often done to generate mailing lists. For example, if a business wants to create mailing labels for customers who live in either Texas or Nevada, the query to select the records needs to be an *Or* statement since the *State* field in a customer table would have a value of *Texas* or *Nevada*. (It would not be possible to have both state names in the same record.)



What You Will Do Rhonda Trask has requested a list of employees who receive either three or four weeks of vacation. Since you already have a query created that selected the records of employees with four weeks of vacation, you decide to modify the existing query by adding the second vacation criteria.

Tutorial
Designing a Query with an Or Criteria Statement

- 1 With **3-WEEmployees.accdb** open, right-click **4WksVac** in the Queries group in the Navigation pane and then click **Design View** at the shortcut menu.
- 2 Click the File tab, click the **Save As** option, and then click the **Save Object As** option in the **File Types** section of the Save As backstage area.
- 3 Click the **Save As** button.
- 4 Type **3or4WksVac** in the **Save '4WksVac' to** text box at the Save As dialog box and then click **OK**.



- 5 With the Query Tools Design tab active, click in the field in the *or* row in the **Vacation** column in the query design grid (the blank row below "4 weeks"), type **3 weeks**, and then press the Enter key.

Including a second criterion below the first one instructs Access to display records that meet either of the two criteria.

Field	EmployeeID	Lastname	Firstname	Vacation
Table:	Employees	Employees	Employees	Benefits
Sort:		Ascending		
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				"4 weeks"
or				"3 weeks"

- 6 Click the **Run** button.

In Brief

Extract Records Using Or Criteria

- 1 Start new query in Design view.
- 2 Add tables and fields to query design grid.
- 3 Click in Criteria row in column in which you want to write criterion statement.
- 4 Type criterion statement.
- 5 Click in or row in column below the Criteria row in the column containing the first criterion statement.
- 6 Type criterion statement.
- 7 Repeat Steps 5-6 as necessary, moving down one field in Criteria row for each new criterion.
- 8 Save query.
- 9 Run query.

- 7 View the query results datasheet.

The records that have been selected contain either 4 weeks or 3 weeks in the **Vacation** field column.

EmployeeID	Lastname	Firstname	Vacation
1000	Blak	Jorge	4 weeks
1015	Brewer	Lyle	4 weeks
1017	Kulickski	Abby	3 weeks
1023	Chippewa	Gregg	3 weeks
1005	Deputado	Roman	3 weeks
1020	Doctehar	Angela	3 weeks
1040	Lafreniere	Guy	3 weeks
1060	Miknight	Donald	3 weeks
1043	Morano	Ezra	3 weeks
1054	O'Connor	Sharon	3 weeks
1003	Ruby	Colena	3 weeks
1033	Thaw	Dina	3 weeks
1000	Westering	Sam	4 weeks

- 8 Print the query results datasheet.
- 9 Click the **Save** button to save the revised query.
- 10 Close the **3or4WksVac** query.

Check Your Work

Compare your work to the model answer to ensure that you have completed the activity correctly.

In Addition

Combining And and Or Criteria Statements

Assume that Rhonda Trask wants to further explore the vacation entitlements for the North American Distribution employees only. Rhonda wants a list of employees who work in the North American Distribution Department and have four weeks of vacation or who work in the

North American Distribution Department and have three weeks of vacation. To perform this query, you would use two rows in the query design grid to enter the criteria as shown below. Note that the **Department** column has been added to the query design grid.

Field	EmployeeID	Lastname	Firstname	Vacation	Department
Table:	Employees	Employees	Employees	Benefits	Employees
Sort:		Ascending			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				"4 weeks"	"North American Distribution"
or				"3 weeks"	"North American Distribution"

query results datasheet

EmployeeID	Lastname	Firstname	Vacation	Department
1000	Blak	Jorge	4 weeks	North American Distribution
1015	Brewer	Lyle	4 weeks	North American Distribution
1017	Kulickski	Abby	3 weeks	North American Distribution
1023	Chippewa	Gregg	3 weeks	North American Distribution
1005	Deputado	Roman	3 weeks	North American Distribution
1020	Doctehar	Angela	3 weeks	North American Distribution
1040	Lafreniere	Guy	3 weeks	North American Distribution
1060	Miknight	Donald	3 weeks	North American Distribution
1043	Morano	Ezra	3 weeks	North American Distribution
1054	O'Connor	Sharon	3 weeks	North American Distribution
1003	Ruby	Colena	3 weeks	North American Distribution
1033	Thaw	Dina	3 weeks	North American Distribution
1000	Westering	Sam	4 weeks	North American Distribution

Activity 3.7 Performing Calculations in a Query

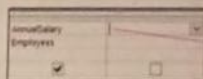
Calculations involving mathematical operations such as adding or multiplying a field value can be included in a query. In a blank field in the *Field* row in Query Design view, type the text you want to appear as the column heading, followed by a colon (:) and then the mathematical expression for the calculated values. Field names in the mathematical expression are enclosed in square brackets. For example, the entry `TotalSalary:[BaseSalary]+[Commission]` would add the value in the field named `BaseSalary` to the value in the field named `Commission`. The result would be placed in a new column in the query datasheet with the column heading `TotalSalary`. Calculated columns do not exist in the associated table; the values are calculated dynamically each time the query is run. Numeric format and the number of digits after the decimal point for calculated columns are set using the *Format* property box in the Property Sheet task pane in Design view.

What You Will Do Worldwide Enterprises contributes 3% of each employee's annual salary to a registered pension plan. You will create a new query to calculate the employer's annual pension contributions.

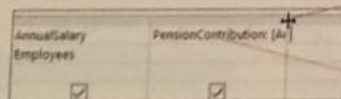
- With `3-WEEmployees.accdB` open, click the *Create* tab and then click the *Query Design* button.
- At the *Show Table* dialog box, double-click *Employees* and then click the *Close* button.
- Double-click the following fields in the order shown to add them to the query design grid:

EmployeeID
FirstName
LastName
AnnualSalary

- Click in the field in the *Field* row to the right of the *AnnualSalary* column in the query design grid.
- Type `PensionContribution:[AnnualSalary]*.03` and then press the *Enter* key.
- Position the mouse pointer on the right column boundary line for the *PensionContribution* field in the gray header row at the top of the query design grid until the pointer changes to a left-and-right-pointing arrow with a vertical line in the middle and then double-click the left mouse button to best fit the column width.



Step 4



Step 6

Step 5


In Brief

Create Calculated Field in Query

- Open query in Design view.
- Click in first available blank field row in query design grid.
- Type column heading for calculated field.
- Type colon.
- Type the mathematical expression.
- Press *Enter* or click in another field.
- Click *Save* button.
- Click *Run* button.

Format Calculated Field

- Open query in Design view.
- Click in field containing calculated expression.
- Click *Query Tools Design* tab.
- Click *Property Sheet* button.
- Click in *Format* property box.
- Click arrow.
- Click format at drop-down list.
- Close *Property Sheet* task pane.
- Save query.
- Run query.

- Click the *Save* button. At the *Save As* dialog box, type `PensionCont` in the *Query Name* text box and then press the *Enter* key or click *OK*.
- Click the *Run* button.
- In the query results datasheet, adjust the column width to best fit the entries in the *PensionContribution* column.
The values in the calculated column need to be formatted to display a consistent number of decimal places.
- Switch to Design view.
- Click anywhere within the first field in the *PensionContribution* column in the query design grid.
- Click the *Property Sheet* button  in the *Show/Hide* group on the *Query Tools Design* tab.


Available properties for the active field display in the *Property Sheet* task pane at the right side of the work area.

- Click in the *Format* property box in the *Property Sheet* task pane, click the down arrow that appears, and then click *Currency* at the drop-down list.
- Click the *Close* button in the top right corner of the *Property Sheet* task pane.
- Click the *Save* button and then click the *Run* button.



Step 14

Step 13

- Click the *Totals* button  in the *Records* group to add a total row to the bottom of the datasheet and then add a *Sum* function to the bottom of the *AnnualSalary* and *PensionContribution* field columns. *Note: Refer to Activity 2.7 if you need assistance with this step.*
- Print the query results datasheet.
- Close the *PensionCont* query. Click *Yes* when prompted to save changes to the query.

EmployeeID	Name	Position	AnnualSalary	PensionContribution
1001	Selena	HR	\$25,000.00	\$7,500.00
1002	Barbara	HR	\$12,740.00	\$3,822.00
1012	Greg	Operations	\$48,000.00	\$14,400.00
1013	John	HR	\$42,000.00	\$12,600.00
1020	Angela	Operations	\$62,000.00	\$18,600.00
1021	Arthur	HR	\$52,000.00	\$15,600.00
1022	Greg	HR	\$44,000.00	\$13,200.00
1023	David	HR	\$42,000.00	\$12,600.00
1024	Steve	HR	\$12,000.00	\$3,600.00
1025	John	HR	\$12,000.00	\$3,600.00
1026	John	HR	\$12,000.00	\$3,600.00
1027	John	HR	\$12,000.00	\$3,600.00
1028	John	HR	\$12,000.00	\$3,600.00
1029	John	HR	\$12,000.00	\$3,600.00
1030	John	HR	\$12,000.00	\$3,600.00
1031	John	HR	\$12,000.00	\$3,600.00
1032	John	HR	\$12,000.00	\$3,600.00
1033	John	HR	\$12,000.00	\$3,600.00
1034	John	HR	\$12,000.00	\$3,600.00
1035	John	HR	\$12,000.00	\$3,600.00
1036	John	HR	\$12,000.00	\$3,600.00
1037	John	HR	\$12,000.00	\$3,600.00
1038	John	HR	\$12,000.00	\$3,600.00
1039	John	HR	\$12,000.00	\$3,600.00
1040	John	HR	\$12,000.00	\$3,600.00
1041	John	HR	\$12,000.00	\$3,600.00
1042	John	HR	\$12,000.00	\$3,600.00
1043	John	HR	\$12,000.00	\$3,600.00
1044	John	HR	\$12,000.00	\$3,600.00
1045	John	HR	\$12,000.00	\$3,600.00
1046	John	HR	\$12,000.00	\$3,600.00
1047	John	HR	\$12,000.00	\$3,600.00
1048	John	HR	\$12,000.00	\$3,600.00
1049	John	HR	\$12,000.00	\$3,600.00
1050	John	HR	\$12,000.00	\$3,600.00
1051	John	HR	\$12,000.00	\$3,600.00
1052	John	HR	\$12,000.00	\$3,600.00
1053	John	HR	\$12,000.00	\$3,600.00
1054	John	HR	\$12,000.00	\$3,600.00
1055	John	HR	\$12,000.00	\$3,600.00
1056	John	HR	\$12,000.00	\$3,600.00
1057	John	HR	\$12,000.00	\$3,600.00
1058	John	HR	\$12,000.00	\$3,600.00
1059	John	HR	\$12,000.00	\$3,600.00
1060	John	HR	\$12,000.00	\$3,600.00
1061	John	HR	\$12,000.00	\$3,600.00
1062	John	HR	\$12,000.00	\$3,600.00
1063	John	HR	\$12,000.00	\$3,600.00
1064	John	HR	\$12,000.00	\$3,600.00
1065	John	HR	\$12,000.00	\$3,600.00
1066	John	HR	\$12,000.00	\$3,600.00
1067	John	HR	\$12,000.00	\$3,600.00
1068	John	HR	\$12,000.00	\$3,600.00
1069	John	HR	\$12,000.00	\$3,600.00
1070	John	HR	\$12,000.00	\$3,600.00
1071	John	HR	\$12,000.00	\$3,600.00
1072	John	HR	\$12,000.00	\$3,600.00
1073	John	HR	\$12,000.00	\$3,600.00
1074	John	HR	\$12,000.00	\$3,600.00
1075	John	HR	\$12,000.00	\$3,600.00
1076	John	HR	\$12,000.00	\$3,600.00
1077	John	HR	\$12,000.00	\$3,600.00
1078	John	HR	\$12,000.00	\$3,600.00
1079	John	HR	\$12,000.00	\$3,600.00
1080	John	HR	\$12,000.00	\$3,600.00
1081	John	HR	\$12,000.00	\$3,600.00
1082	John	HR	\$12,000.00	\$3,600.00
1083	John	HR	\$12,000.00	\$3,600.00
1084	John	HR	\$12,000.00	\$3,600.00
1085	John	HR	\$12,000.00	\$3,600.00
1086	John	HR	\$12,000.00	\$3,600.00
1087	John	HR	\$12,000.00	\$3,600.00
1088	John	HR	\$12,000.00	\$3,600.00
1089	John	HR	\$12,000.00	\$3,600.00
1090	John	HR	\$12,000.00	\$3,600.00
1091	John	HR	\$12,000.00	\$3,600.00
1092	John	HR	\$12,000.00	\$3,600.00
1093	John	HR	\$12,000.00	\$3,600.00
1094	John	HR	\$12,000.00	\$3,600.00
1095	John	HR	\$12,000.00	\$3,600.00
1096	John	HR	\$12,000.00	\$3,600.00
1097	John	HR	\$12,000.00	\$3,600.00
1098	John	HR	\$12,000.00	\$3,600.00
1099	John	HR	\$12,000.00	\$3,600.00
1100	John	HR	\$12,000.00	\$3,600.00
1101	John	HR	\$12,000.00	\$3,600.00
1102	John	HR	\$12,000.00	\$3,600.00
1103	John	HR	\$12,000.00	\$3,600.00
1104	John	HR	\$12,000.00	\$3,600.00
1105	John	HR	\$12,000.00	\$3,600.00
1106	John	HR	\$12,000.00	\$3,600.00
1107	John	HR	\$12,000.00	\$3,600.00
1108	John	HR	\$12,000.00	\$3,600.00
1109	John	HR	\$12,000.00	\$3,600.00
1110	John	HR	\$12,000.00	\$3,600.00
1111	John	HR	\$12,000.00	\$3,600.00
1112	John	HR	\$12,000.00	\$3,600.00
1113	John	HR	\$12,000.00	\$3,600.00
1114	John	HR	\$12,000.00	\$3,600.00
1115	John	HR	\$12,000.00	\$3,600.00
1116	John	HR	\$12,000.00	\$3,600.00
1117	John	HR	\$12,000.00	\$3,600.00
1118	John	HR	\$12,000.00	\$3,600.00
1119	John	HR	\$12,000.00	\$3,600.00
1120	John	HR	\$12,000.00	\$3,600.00
1121	John	HR	\$12,000.00	\$3,600.00
1122	John	HR	\$12,000.00	\$3,600.00
1123	John	HR	\$12,000.00	\$3,600.00
1124	John	HR	\$12,000.00	\$3,600.00
1125	John	HR	\$12,000.00	\$3,600.00
1126	John	HR	\$12,000.00	\$3,600.00
1127	John	HR	\$12,000.00	\$3,600.00
1128	John	HR	\$12,000.00	\$3,600.00
1129	John	HR	\$12,000.00	\$3,600.00
1130	John	HR	\$12,000.00	\$3,600.00
1131	John	HR	\$12,000.00	\$3,600.00
1132	John	HR	\$12,000.00	\$3,600.00
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1139	John	HR	\$12,000.00	\$3,600.00
1140	John	HR	\$12,000.00	\$3,600.00
1141	John	HR	\$12,000.00	\$3,600.00
1142	John	HR	\$12,000.00	\$3,600.00
1143	John	HR	\$12,000.00	\$3,600.00
1144	John	HR	\$12,000.00	\$3,600.00
1145	John	HR	\$12,000.00	\$3,600.00
1146	John	HR	\$12,000.00	\$3,600.00
1147	John	HR	\$12,000.00	\$3,600.00
1148	John	HR	\$12,000.00	\$3,600.00
1149	John	HR	\$12,000.00	\$3,600.00
1150	John	HR	\$12,000.00	\$3,600.00
1151	John	HR	\$12,000.00	\$3,600.00
1152	John	HR	\$12,000.00	\$3,600.00
1153	John	HR	\$12,000.00	\$3,600.00
1154	John	HR	\$12,000.00	\$3,600.00
1155	John	HR	\$12,000.00	\$3,600.00
1156	John	HR	\$12,000.00	\$3,600.00
1157	John	HR	\$12,000.00	\$3,600.00
1158	John	HR	\$12,000.00	\$3,600.00
1159	John	HR	\$12,000.00	\$3,600.00
1160	John	HR	\$12,000.00	\$3,600.00
1161	John	HR	\$12,000.00	\$3,600.00
1162	John	HR	\$12,000.00	\$3,600.00
1163	John	HR	\$12,000.00	\$3,600.00
1164	John	HR	\$12,000.00	\$3,600.00
1165	John	HR	\$12,000.00	\$3,600.00
1166	John	HR	\$12,000.00	\$3,600.00
1167	John	HR	\$12,000.00	\$3,600.00
1168	John	HR	\$12,000.00	\$3,600.00
1169	John	HR	\$12,000.00	\$3,600.00
1170	John	HR	\$12,000.00	\$3,600.00
1171	John	HR	\$12,000.00	\$3,600.00
1172	John	HR	\$12,000.00	\$3,600.00
1173	John	HR	\$12,000.00	\$3,600.00
1174	John	HR	\$12,000.00	\$3,600.00
1175	John	HR	\$12,000.00	\$3,600.00
1176	John	HR	\$12,000.00	\$3,600.00
1177	John	HR	\$12,000.00	\$3,600.00
1178	John	HR	\$12,000.00	\$3,600.00
1179	John	HR	\$12,000.00	\$3,600.00
1180	John	HR	\$12,000.00	\$3,600.00
1181	John	HR</		