## Concepts Review

### True/False Questions

**Each of the following statements is either true or false. Indicate your choice by circling T or F.**

T   F     1. You cannot add records in a dynaset.

T   F     2. You can build criteria by using logical and relational operators.

T   F     3. You cannot use a query as the source of records for another query.

T   F     4. You can add a field to a query in Design View by double-clicking the field name in the Field List window.

T   F     5. Count and Sum are types of aggregate functions.

T   F     6. Before using the Top Values property, you must sort a dynaset by its primary key.

T   F     7. In the design grid, OR criteria are entered in the same row.

T   F     8. The criteria "is not null" finds records with a blank or empty field.

### Short Answer Questions

**Write the correct answer in the space provided.**

1. What is the grid name of the lower pane of a query in which you sort data and enter criteria?

   _____

2. In what view do you see the dynaset of a query?

   _____

3. What property displays the highest or lowest values?

   _____

4. What type of criteria do you use when you want two conditions to be true at the same time?

   _____

5. In the Design View of a query, what row displays "Group By" or "Count"?

   _____

6. In Access, what keyword(s) means is "blank" or is "empty"?

   _____

7.  When you key a wildcard in a query, what operator does Access use to compare your criteria with each record?

8.  What symbol represents "not equal?"

## Critical Thinking

**Answer these questions on a separate page. There are no right or wrong answers. Support your answers with examples from your own experience, if possible.**

1.  When an expression has two or more math operators, the Expression Builder follows the mathematical order of operations rules. List these rules, as well as all symbols used with each of them, and give examples of their use.

2.  AND and OR criteria are common to databases, programming, and spreadsheets. You can build a logic table to help you visualize what happens with two criteria in these situations. Complete this table (on a separate sheet of paper) to show if the result is True or False (a match or no match).

**Figure 6-23**
Logic table

| AND | | | Answer ? (T/F) |
|---|---|---|---|
| First Criterion | Second Criterion | | |
| T | AND | T | = |
| T | AND | F | = |
| F | AND | T | = |
| F | AND | F | = |

| OR | | | Answer ? (T/F) |
|---|---|---|---|
| First Criterion | Second Criterion | | |
| T | OR | T | = |
| T | OR | F | = |
| F | OR | T | = |
| F | OR | F | = |

## Skills Review

## Exercise 6-21

**Create a select query. Add and remove fields to a query. Add a calculation. Sort a query. Print/Save a query's dynaset and Documenter report.**

1.  Open a database by following these steps:
    a.  Locate and open the **Lesson 06** folder.
    b.  Make a copy of CC06 and rename it to *[your initials]*-**CC06**.
    c.  Open and enable content for *[your initials]*-**CC06**.
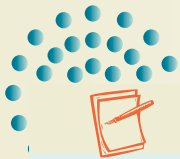
2. Create the query by following these steps:

    a. From the **Create** tab, in the **Other** group, click the Query Design command ▦.

    b. In the **Show Table** dialog box, double-click **tblEmployees** and click **Close**.

    c. Resize the Field List so all fields can be seen.

    d. From the **tblEmployees** Field List, double-click **EmployeeID**, **LastName** and **FirstName**.

    e. From the Quick Access toolbar, click Save 💾. Name the query **06-21-*[your initials]*** .

3. Add a calculation to a query by following these steps:

    a. In the design grid, click in the forth column.

    b. From the **Design** tab, in the **Query Setup** group, click the Builder command ▨ .

    c. In the middle panel, double-click **LastName**.

    d. In the expression box, after "[LastName]" key **&", "&** (ampersand, double quote, comma, space, double quote, amperstand.)

    e. In the middle panel, double-click **FirstName**.

    f. Click **OK**.

    g. Replace "Expr1" with **FullName**. Be certain to leave the colon after the field name.

> **NOTE**
>
> Make sure that you add a space after the comma in the quotes.

4. Sort and delete fields by following these steps:

    a. In the **Sort** row for **FullName**, click the drop-down arrow and choose **Ascending**.

    b. In the design grid, select both the **LastName** and the **FirstName** fields. Press ⌑Delete⌑ to remove the fields from the design grid.

    c. From the Quick Access toolbar, click Save 💾.

    d. From the **Design** tab, in the **Results** group, click the View command ▧ to switch to Datasheet View.

    e. Size columns appropriately.

5. Print/Save a query's dynaset and Documenter report by following these steps:

    a. Click the Office Button 🗗. From the **Print** option, choose Print Preview 🔍.

    b. Print/Save the query.

    c. Close **Print Preview** and the query.

    d. From the **Database Tools** tab, in the **Analyze** group, click the Database Documenter command 🗎 .

    e. From the **Documenter** dialog box, click the query **06-21-*[your initials]*** checkbox and click **Options**.

    f. Only include **Properties** and **SQL** for the query and nothing else. Click **OK**.

    g. Click **OK** to go to **Print Preview**.

h. From the **Print Preview** tab, in the **Page Layout** group, click **Margins** and choose the Wide command ▥ from the menu.

i. Print/Save the report.

j. Close **Print Preview**.

## Exercise 6-22

**Create a query with a wizard. Add criteria to a query. Sort and hide a field. Print/Save a dynaset.**

1. Use the Simple Query Wizard by following these steps:

   a. Open and enable content for *[your initials]*-**CC06.**

   b. From the **Create** tab, in the **Other** group, click the Query Wizard command 🖳 .

   c. In the **New Query** dialog box, double-click **Simple Query Wizard**.

   d. From the **Tables/Queries** list box, choose **Table: tblEmployees**.

   e. In the **Available Fields** list, double-click **LastName**, **FirstName**, and **JobCode**.

   f. From the **Tables/Queries** list box, choose **Table: tblJobCodes**.

   g. In the **Available Fields** list, double-click **JobTitle**.

   h. From the **Tables/Queries** list box, choose **Table: tblPay**.

   i. In the **Available Fields** list, double-click **EmpPay** and **PayClass**.

   j. Click **Next**. The default type of select query is **Detail**. Click **Next**.

   k. Delete the suggested title and key **06-22-***[your initials]*. Click **Finish**.

2. Add criteria to fields by following these steps:

   a. Switch to Design View. Resize and move each Field List.

   b. In the **Criteria** row for **JobCode**, key **mf03**, press ⬇, and key **mf04**.

   c. In the **Criteria** row for **PayClass**, key **2**, and press ⬇, and key **2**. Pay class 2 represents hourly employees.

3. Sort and hide a field by following these steps:

   a. In the **Sort** row for **JobTitle**, click the drop-down arrow and choose **Ascending**.

   b. In the **Show** row for **PayClass**, remove the checkmark. This field is only needed for criteria, so there is no need to include it in the final dynaset.

   c. Switch to Datasheet View. Resize each field appropriately.

4. Print/Save a query's dynaset by following these steps:

   a. Click the Office Button 🔘. From the **Print** option, choose Print Preview 🔍 .

   b. Print/Save the query.

   c. Close **Print Preview** and the query.

## Exercise 6-23

**Create a query in Design View. Add a criterion to a query. Sort and show the top 5% of records. Print/Save a dynaset and Database Documenter report.**

1. Create a query in Design View by following these steps:
   a. Open and enable content for *[your initials]*-**CC06**.
   b. From the **Create** tab, in the **Other** group, click the Query Design command.
   c. In the **Show Table** dialog box, double-click **tblInvoices**, **tblInvoiceLineItems**, and **tblStuffedAnimals**. Click **Close**.
   d. Resize the Field List so all fields can be seen.
   e. From the **tblInvoices** Field List, double-click **InvoiceID**, **ShipDate**, and **CustomerID**.
   f. From the **tblStuffedAnimals** Field List, double-click **ProductName**.
   g. From the **tblInvoiceLineItems** Field List, double-click **Qty**.
   h. From the Quick Access toolbar, click Save 💾. Name the query **06-23-***[your initials]*.

2. Add a criterion to a field by following these steps:
   a. In the **Criteria** row for **ShipDate**, key **between 10/1/2006 and 1/1/2007**.

3. Sort and show the top 5% of records by following these steps:
   a. In the **Sort** row for **Qty**, click the drop-down arrow and choose **Descending**.
   b. From the **Design** tab, in the **Query Setup** group, click the Return list box 📋 (Top Value) and choose **5%**.
   c. Switch to Datasheet View. Resize columns appropriately.

4. Print/Save a query's dynaset and Documenter report by following these steps:
   a. Click the Office Button 🔘. From the **Print** option, choose Print Preview 🔍.
   b. Print/Save the query.
   c. Close **Print Preview** and the query.
   d. From the **Database Tools** tab, in the **Analyze** group, click the Database Documenter command 📑.
   e. From the **Documenter** dialog box, click the **06-23-***[your initials]* check box and click **Options**.
   f. Only include **Properties** and **SQL** for the query and nothing else. Click **OK**.
   g. Click **OK** to go to **Print Preview**.

h. From the **Print Preview** tab, in the **Page Layout** group, click **Margins** and choose the Wide command ⊞ from the menu.

i. Print/Save the report.

j. Close **Print Preview**.

## Exercise 6-24

**Create a query in Design View. Add a criterion to a field. Modify a query PivotChart view. Print a PivotChart and Database Documenter report.**

1. Create a query in Design View by following these steps:

   a. Open and enable content for *[your initials]*-**CC06**.

   b. From the **Create** tab, in the **Other** group, click the Query Design command ⊞.

   c. In the **Show Table** dialog box, double-click **tblEmployees** and **tblLeaveDays**. Click **Close**.

   d. Resize the Field List so all fields can be seen.

   e. From the **tblEmployees** Field List, double-click **JobCode**.

   f. From the **tblLeaveDays** Field List, double-click **LeaveDate** and **LeaveCategory**.

   g. From the Quick Access toolbar, click Save 💾. Name the query **06-24-***[your initials]*.

2. Add a criterion by following these steps:

   a. In the **Criteria** row for **JobCode**, key **m\***.

3. Modify a PivotChart view by following these steps:

   a. Switch to PivotChart View. From the Chart Field List, click the Expand button ⊞ for **LeaveDate By Month**. Drag the **Months** into the **Drop Category Fields Here** zone (bottom of the chart) of the PivotChart.

   b. From the Chart Field List, drag the **LeaveCategory** into the **Drop Series Fields Here** zone (right of the chart) of the PivotChart.

   c. From the Chart Field List, drag the **LeaveCategory** into the **Drop Data Fields Here** zone (middle of the chart) of the PivotChart. The default function for this data type is Count.

   d. Close the Chart Field List. From the **Design** tab, in the **Tools** group, click the Property Sheet command 📄.

   e. On the PivotChart, click the Value Axis (left of the chart). In the **Properties** dialog box, click the **Format** tab. Change the **Caption** property to **Number of days**.

   f. On the PivotChart, click the Category Axis (bottom of the chart). In the **Properties** dialog box, change the **Caption** property to **Year to date**. Close the **Properties** dialog box.

   g. From the **Design** tab, in the **Show/Hide** group, click the Drop Zone command ⊞ to remove the zone markers.

h. From the **Design** tab, in the **Show/Hide** group, click the Legend command 🔲 to add the Legend to the PivotChart.

i. Save the query.

4. Print/Save a query's dynaset and Database Documenter report by following these steps:

a. Click the Office Button 🔵. From the **Print** option, choose Print Preview 🔍.

b. From the **Print Preview** tab, in the **Page Layout** group, click the Landscape command 🅰 from the menu.

c. Print/Save the query's PivotChart View.

d. Close **Print Preview** and the query.

e. From the **Database Tools** tab, in the **Analyze** group, click the Database Documenter command 📑.

f. From the **Documenter** dialog box, click the **06-24-[your initials]** check box and click **Options**.

g. Only include **Properties** and **SQL** for the query and nothing else. Click **OK**.

h. Click **OK** to go to **Print Preview**.

i. From the **Print Preview** tab, in the **Page Layout** group, click **Margins** and choose the Wide command 🔲 from the menu.

j. Print/Save the report.

k. Close **Print Preview**.

## Lesson Applications

### Exercise 6-25

**Create a query using a Simple Query Wizard.**

1. Open *[your initials]*-**CC06**.

2. Launch the Simple Query Wizard.

3. From **tblEmployee**, use the fields **LastName** and **FirstName**. From **tblRegions**, add **RegionName**.

4. Save the query as **06-25-***[your initials]*.

5. Sort the dynaset in ascending order by **LastName**.

6. Print/Save the Datasheet View of the query.

### Exercise 6-26

**Create query in Design View.**

1. Using *[your initials]*-**CC06**, create a new query in Design View.

2. From **tblEmployees**, add the fields **LastName** and **FirstName**.

3. From **tblEmployeeDates**, add the field **HireDate** and remove the **Show** checkmark.

4. Create a calculated field using the function **DateDiff("yyyy",[HireDate], now())**. Set the format to **0" years"** and the alias to **Tenure**.

5. For the field **Tenure**, sort in descending order.

6. From **tblEmployeeDates**, add the field **EndDate**.

7. For the field **EndDate**, set the criterion to **Is Null** and remove the **Show** checkmark.

8. Set **Top Value** to **5**.

9. Name the query **06-26-***[your initials]*.

10. Print/Save the Datasheet View of the query.

11. Print/Save a Database Documenter report displaying only the **Properties** and **SQL** options for the query.

## Exercise 6-27

**Create a query in Design View.**

1. Using *[your initials]*-**CC06**, create a new query in Design View.

2. Include **tblCustomers**, **tblInvoices**, **tblInvoiceLineItems**, and **tblStuffedAnimals**.

3. From **tblCustomers**, add **CompanyName**.

4. From **tblInvoiceLineItems,** add the field **Qty** field and remove the **Show** checkmark.

5. From **tblStuffedAnimals**, add the field **UnitPrice** and remove the **Show** checkmark.

6. Create a calculated field by multiplying the field **Qty** by the field **UnitPrice**. Set the format to currency with two decimal places and the alias to **Revenue**.

7. In PivotChart View, perform the following actions:

   - Add **CompanyName** to the X-axis.

   - Add **Revenue** to the **Data** area with a default function of **SUM**.

   - Rename the X-axis to **Customers-***[your full name]*.

   - Rename the Y-axis to **Total Sales**.

   - Remove the drop zones.

8. Save the query as **06-27-***[your initials]*.

9. Print/Save PivotChart View in Landscape layout.

10. Print/Save a Database Documenter report displaying only the **Properties** and **SQL** options for the query.

## Exercise 6-28 ◆ Challenge Yourself

**Create a query in Design View.**

1. Using *[your initials]*-**CC06**, create a new query in Design View.

2. Include **tblEmployees**, **tblPayrollHistory**, **tblPayrollRates**, and **tblPay**.

3. From **tblEmployees**, add **LastName**, **FirstName**, and **JobCode**.

4. From **tblPayrollHistory,** add **PayNum** and **OvHr**.

5. From **tblPayrollRates**, add **OverTime**.

6. From **tblPay**, add **EmpPay**.

7. Create a calculated field using the expression **OvHr** multiplied by **EmpPay** multiplied by **OverTime**. Set the format to currency with two decimal places and the alias to **Over Time Cost**.
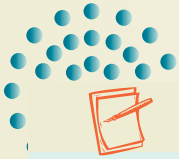
**NOTE**

Only eight records will appear in the dynaset when the criteria are properly applied.

8. Using a single **Criteria** row, perform the following:
   - For the field **JobCode**, set the criterion to **m\***.
   - For the field **PayNum**, set the criterion to **>=23**.
   - For the field **OvHr**, set the criterion to **Is Not Null**.

9. Name the query **06-28-[your initials]**.

10. Print/Save the Datasheet View of the query in Landscape orientation.

11. Print/Save a Database Documenter report displaying only the **Properties** and **SQL** options for the query.

# On Your Own

**In these exercises, you work on your own, as you would in a real-life work environment. Use the skills you've learned to accomplish the task—and be creative.**

## Exercise 6-29

Review the design of the database that you modified in Exercise 5-28. On a sheet of paper, list information that a user of your database might need. Design three queries that might provide the information needed. Use a variety of query types. Write your name and Exercise 6-29. Before proceeding to the next exercise, have your instructor approve your database design and intentions. Continue to the next exercise.

## Exercise 6-30

Create the queries you designed in Exercise 6-29. Enter at least five additional records into each table of the database. Print the tables. Review the design of the database. On a sheet of paper, design a dynaset that incorporates data from two or more tables. Identify the type of query needed to create the dynaset. On the same sheet of paper, list all fields to be used in the query. For each field, include the name of the table from which the field originates. Identify the key fields and any foreign fields. Write down the criteria that would be required for the query. Name the query appropriately. Write your name and "Exercise 6-30" on each sketch. Continue to the next exercise.

## Exercise 6-31

Based on the designs that you created in Exercises 6-29 and 6-30, create the queries. Print the definitions for each query. Print a copy of the dynaset for each query. Submit to your instructor your designs and the printouts that you created for Exercises 6-29 through 6-31. Keep a copy of the database you modified in this exercise. You will use it for the On Your Own exercises in subsequent lessons.