Database Programming with SQL
1-3: Anatomy of a SQL Statement
Practice Activities

Objectives

- Match projection, selection, and join with their correct functions capabilities
- Create a basic SELECT statement
- Use the correct syntax to display all rows in a table
- Use the correct syntax to select specific columns in a table, modify the way data is displayed, and perform calculations using arithmetic expressions and operators
- Formulate queries using correct operator precedence to display desired results
- Define a null value
- Demonstrate the effect null values create in arithmetic expressions
- Construct a query using a column alias

Vocabulary

Identify the vocabulary word for each definition below.

	Display data from two or more related tables.
	A symbol used to perform an operation on some values.
	An implementation of an attribute or relationship in a table.
	The capability in SQL to choose the columns in a table that you want returned from a query.
	A value that is unavailable, unassigned, unknown, or inapplicable.
	Renames a column heading.
	A mathematical equation.
	The capability in SQL to choose the rows in a table returned from a query.
	Retrieves information from the database
	Specifies the columns to be displayed
	Specifies the table containing the column listed in the select clause
	An individual SQL command

	Part of a SQL statement
	A combination of the two clauses

Try It / Solve It

Now you know the basics of a SELECT statement, It's time to practice what you've learned.

1. Write a SQL statement that demonstrates projection.

2. Write a query that displays the last_name and email addresses for all the people in the DJs on Demand d_client table. The column headings should appear as “Client” and “Email Address.”

3. The manager of Global Fast Foods decided to give all employees at 5%/hour raise + a $.50 bonus/hour. However, when he looked at the results, he couldn't figure out why the new raises were not as he predicted. Ms. Doe should have a new salary of $7.59, Mr. Miller's salary should be $11.00, and Monique Tuttle should be $63.50. He used the following query. What should he have done?

   ```
   SELECT last_name, salary *.05 +.50
   FROM f_staffs;
   ```

4. Which of the following would be the easiest way to see all rows in the d_songs table?
   a. SELECT id, title, duration, artist, type_code
   b. SELECT columns
   c. SELECT *
   d. SELECT all

5. If tax = 8.5% * car_cost and license = car_cost * .01%, which value will produce the largest car payment?
   a. Payment = (car_cost * 1.25) + 5.00 - (tax) - (license)
   b. Payment = car_cost * 1.25 + 5.00 - (tax - license)

6. In the example below, identify the keywords, the clause(s), and the statement(s):

   ```
   SELECT employee_id, last_name
   FROM employees
   ```

7. Label each example as SELECTION or PROJECTION.
   a. Please give me Mary Adam's email address.
   b. I would like only the manager_id column, and none of the other columns.

8. Which of the following statements are true?
   a. null * 25 = 0;
   b. null * 6.00 = 6.00
   c. null * .05 = null
   d. (null + 1.00) + 5.00 = 5.00

9. How will the column headings be labeled in the following example?

   SELECT bear_id bears, color AS Color, age “age”
   FROM animals;

   a. bears, color, age
   b. BEARS, COLOR, AGE
   c. BEARS, COLOR, age
   d. Bears, Color, Age

10. Which of the following words must be in a SELECT statement in order to return all rows?
    a. SELECT only
    b. SELECT and FROM
    c. FROM only
    d. SELECT * only