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.

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

clause	Part of a SQL statement
SELECT–FROM 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.

   SELECT first_name, last_name FROM employees;

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."

   SELECT last_name AS Client, email AS "Email Address" FROM d_client;

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;

   SELECT last_name, salary * 1.05 + 0.50 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 *   c
   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)   a
   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

   Keywords: SELECT, FROMClauses: SELECT clause, FROM clauseStatement: SELECT statement
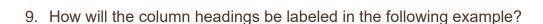
7. Label each example as SELECTION or PROJECTION.
   a. Please give me Mary Adam's email address.   selection
   b. I would like only the manager_id column, and none of the other columns.   PROJECTION

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

c

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

a

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

c