

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. |
| **Arithmetic 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. |
| **column alias** | Renames a column heading. |
| **Arithmetic expression** | A mathematical equation. |
| **selection** | The capability in SQL to choose the rows in a table returned from a query. |
| **SELECT** | 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 |
| **SQL command**. (SELECT and FROM are keywords.) | An individual SQL command |

|  |  |
| --- | --- |
| **clause** | Part of a SQL statement |
| statement | A combination of the two clauses |

# Try It / Solve It

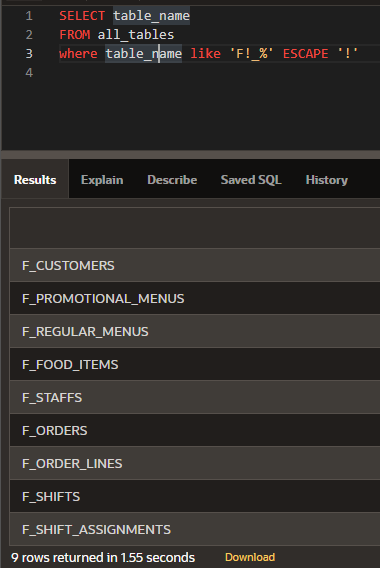
Now you know the basics of a SELECT statement, It's time to practice what you've learned.

1. Write a SQL statement that demonstrates projection.

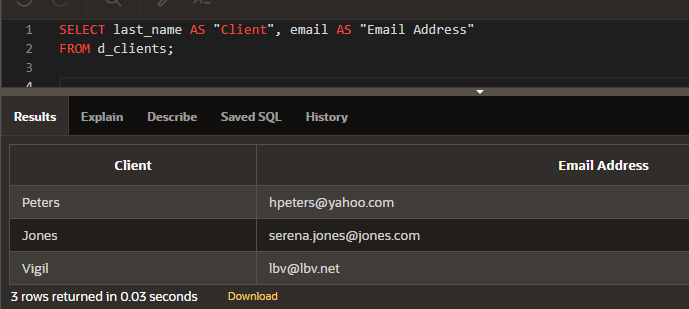
SELECT table\_name

FROM all\_tables

where table\_name like 'F!\_%' ESCAPE '!'



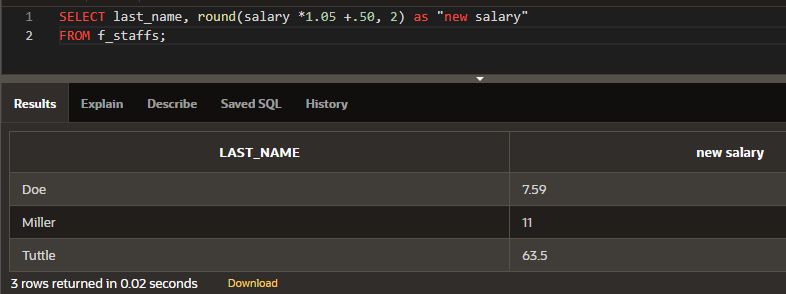
1. Write a query that displays the last\_name and email addresses for all the people in the DJs on Demand d\_client table. The column headings should appear as “Client” and “Email Address.”



SELECT last\_name AS "Client", email AS "Email Address"

FROM d\_clients;

1. 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, round(salary \*1.05 +.50, 2) as "new salary"

FROM f\_staffs;

1. Which of the following would be the easiest way to see all rows in the d\_songs table?
   1. SELECT id, title, duration, artist, type\_code
   2. SELECT columns
   3. SELECT \*
   4. SELECT all
2. If tax = 8.5% \* car\_cost and license = car\_cost \* .01%, which value will produce the largest car payment?
   1. Payment = (car\_cost \* 1.25) + 5.00 - (tax) - (license)
   2. Payment = car\_cost \* 1.25 + 5.00 - (tax - license)
3. In the example below, identify the keywords, the clause(s), and the statement(s): SELECT employee\_id, last\_name

FROM employees

Statement:

SELECT employee\_id, last\_name

FROM employees

Select Clause:

SELECT employee\_id, last\_name

FROM Clause:

FROM employees

1. Label each example as SELECTION or PROJECTION.
   1. Please give me Mary Adam's email address. - SELECTION
   2. I would like only the manager\_id column, and none of the other columns. - PROJECTION
2. Which of the following statements are true?
   1. null \* 25 = 0;

b. null \* 6.00 = 6.00

c. null \* .05 = null

d. (null + 1.00) + 5.00 = 5.00

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

SELECT bear\_id bears, color AS Color, age “age” FROM animals;

* 1. bears, color, age
  2. BEARS, COLOR, AGE
  3. BEARS, COLOR, age
  4. Bears, Color, Age

1. Which of the following words must be in a SELECT statement in order to return all rows?
   1. SELECT only
   2. SELECT and FROM
   3. FROM only
   4. SELECT \* only