EXERCISE-4

Writing Basic SQL SELECT Statements

OBJECTIVES

After the completion of this exercise, the students will be able to do the following:

- List the capabilities of SQL SELECT Statement
- Execute a basic SELECT statement

Capabilities of SQL SELECT statement

A SELECT statement retrieves information from the database. Using a select statement, we can perform

✓ Projection: To choose the columns in a table
✓ Selection: To choose the rows in a table
✓ Joining: To bring together the data that is stored in different tables

Basic SELECT Statement

Syntax

```
SELECT *|DISTINCT Column_ name| alias
`       FROM table_name;
```

NOTE:
DISTINCT—Suppr
ess the duplicates.
Alias—gives selected columns different headings.

Example: 1
SELECT * FROM departments;

Example: 2
SELECT location_id, department_id FROM departments;

Writing SQL Statements

- SQL statements are not case sensitive
- SQL statements can be on one or more lines.
- Keywords cannot be abbreviated or split across lines
- Clauses are usually placed on separate lines
- Indents are sued to enhance readability

Using Arithmetic Expressions

Basic Arithmetic operators like *, /, +, -can be used

Example:1

SELECT last_name, salary, salary+300 FROM employees;

Example:2
SELECT last_name, salary, 12*salary+100 FROM employees;

The statement is not same as
SELECT last_name, salary, 12*(salary+100) FROM employees;

Example:3

SELECT last_name, job_id, salary, commission_pct FROM employees;

Example:4

SELECT last_name, job_id, salary, 12*salary*commission_pct FROM employees;

Using Column Alias

- To rename a column heading with or without AS keyword.

Example:1
SELECT last_name AS Name
FROM employees;
Example: 2
SELECT last_name "Name" salary*12 "Annual Salary "
FROM employees;

Concatenation Operator

- Concatenates columns or character strings to other columns
- Represented by two vertical bars (||)
- Creates a resultant column that is a character expression

Example:
SELECT last_name||job_id AS "EMPLOYEES JOB" FROM employees;

Using Literal Character String

- A literal is a character, a number, or a date included in the SELECT list.
- Date and character literal values must be enclosed within single quotation marks.

Example:

SELECT last_name||'is a'||job_id AS "EMPLOYEES JOB" FROM employees;

Eliminating Duplicate Rows

- Using DISTINCT keyword.

Example:
SELECT DISTINCT deparment_id FROM employees;

Displaying Table Structure

- Using DESC keyword.

Syntax
DESC table_name;
Example:
DESC employees;

Find the Solution for the following:
True OR False

1. The following statement executes successfully.

Identify the Errors

SELECT employee_id, last_name
sal*12 ANNUAL SALARY

SELECT employee-id, last-name, sal*12 AS "ANNUAL SALARY"
FROM employees;

FROM employees;
Queries

2. Show the structure of departments the table. Select all the data from it.

DESC : database _name;

3. Create a query to display the last name, job code, hire date, and employee number for each employee, with employee number appearing first.

SELECT employee_id, last_name, job_id, hire_data
FROM employees;

4. Provide an alias STARTDATE for the hire date.

SELECT hire-date AS START DATE FROM employees;

5. Create a query to display unique job codes from the employee table.

SELECT DISTINCT Job_id FROM employees;

6. Display the last name concatenated with the job ID , separated by a comma and space, and name the column EMPLOYEE and TITLE.

SELECT last_name || ',' || job-id AS "EMPLOYEE and
TITLE " FROM employees;

7. Create a query to display all the data from the employees table. Separate each column by a comma. Name the column THE_OUTPUT.

SELECT employee_id || ',' || job-id || last_name|| ',' ||
hire_date AS "THE - OUTPUT' FROM employees ;