Date : 12. 8. 25

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—Suppress 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 FROM employees;

Ans: SELECT employee_id, last_name, sal*12 AS "ANNUAL SALARY" FROM employees;

Queries

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

Ans: 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.
Ans: SELECT employee_id, last_name, job_id, hire_date FROM employees;

4. Provide an alias STARTDATE for the hire date.
Ans: SELECT hire_date AS STARTDATE FROM employees;

5. Create a query to display unique job codes from the employee table.
Ans: 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.
Ans: 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.
Ans:: SELECT employee_id || ', ' || last_name || ', ' || job_id || ', ' || hire_date AS "THE_OUTPUT" FROM employees;

Evaluation Procedure	Marks awarded
Query(5)	5
Execution (5)	5
Viva(5)	5
Total (15)	15
Faculty Signature	2/9/25

Practice Questions

COMPARISON OPERATORS

1. Who are the partners of DJs on Demand who do not get an authorized expense amount?
Ans: SELECT partner_name FROM djs_partners WHERE authorized_expense IS NULL;

2. Select all the Oracle database employees whose last names end with "s". Change the heading of the column to read Possible Candidates.
Ans: SELECT last_name AS 'Possible Candidates' FROM oracle_employees WHERE last_name LIKE '%s';

3. Which statement(s) are valid?
a. WHERE quantity <> NULL;
b. WHERE quantity = NULL;
c. WHERE quantity IS NULL;
d. WHERE quantity != NULL;

4. Write a SQL statement that lists the songs in the DJs on Demand inventory that are type code 77, 12, or 1.
Ans: SELECT song_title FROM djs_inventory WHERE type_code IN (77, 12, 1);

Logical Comparisons and Precedence Rules

1. Execute the two queries below. Why do these nearly identical statements produce two different results? Name the difference and explain why.

SELECT code, description FROM d_themes WHERE code >200 AND description IN('Tropical', 'Football', 'Carnival');
SELECT code, description FROM d_themes WHERE code >200 OR description IN('Tropical', 'Football', 'Carnival');
Ans: There is a difference in the code where a code contains AND and another code contains OR.

2. Display the last names of all Global Fast Foods employees who have "e" and "i" in their last names.
Ans: SELECT last_name FROM gff_employees WHERE last_name LIKE '%e%' AND last_name LIKE '%i%';

3. "I need to know who the Global Fast Foods employees are that make more than $6.50/hour and their position is not order taker."
Ans: SELECT employee_name FROM gff_employees WHERE hourly_rate > 6.50 AND position <> 'Order Taker';

4. Using the employees table, write a query to display all employees whose last names start with "D" and have "a" and "e" anywhere in their last name.
Ans: SELECT last_name FROM employees WHERE last_name LIKE 'D%' AND last_name LIKE '%a%' AND last_name LIKE '%e%';

5. In which venues did DJs on Demand have events that were not in private homes?
Ans: SELECT DISTINCT venue FROM djs_events WHERE venue <> 'Private Home';

6. Which list of operators is in the correct order from highest precedence to lowest precedence?
a. AND, NOT, OR
b. NOT, OR, AND
c. NOT, AND, OR

For questions 7 and 8, write SQL statements that will produce the desired output.

7. Who am I? I was hired by Oracle after May 1998 but before June of 1999. My salary is less than $8000 per month, and I have an "en" in my last name.
Ans: SELECT employee_name FROM oracle_employees WHERE hire_date > '1998-05-31' AND hire_date < '1999-06-01' AND salary < 8000 AND last_name LIKE '%en%';

8. What's my email address? Because I have been working for Oracle since the beginning of 1996, I make more than $9000 per month. Because I make so much money, I don't get a commission
Ans: SELECT email FROM oracle_employees WHERE hire_date <= '1996-01-01' AND salary > 9000 AND commission IS NULL;

Evaluation Procedure	Marks awarded
Practice Evaluation (5)	5
Viva(5)	5
Total (10)	10
Faculty Signature	

2/9/25