Basic Select Queries

Task - 3

1. SELECT \* — get all columns and rows

SELECT \* FROM Employees;

Explanation:

Returns every column for every row in the table.

2) SELECT specific columns (Projection) :

SELECT EmpName, Dept, Salary FROM Employees;Explanation:

Only returns the listed columns. Useful when you don't need all columns.

3) Filtering rows with WHERE

SELECT \* FROM Employees WHERE Dept = 'IT';

Explanation:

Returns only employees whose Dept equals 'IT'.

4) Combine conditions with AND / OR

(AND):

SELECT EmpName, Salary FROM Employees WHERE Dept = 'IT' AND Salary > 70000;

(OR):

SELECT EmpName FROM Employees WHERE Dept = 'HR' OR Dept = 'Sales';

Explanation:

AND requires both conditions to be true; OR requires at least one.

5) Pattern matching with LIKE

SELECT EmpName FROM Employees WHERE EmpName LIKE 'A%';

-- names that start with 'A'

(OR )

SELECT EmpName FROM Employees WHERE EmpName LIKE '%a%';

-- names containing the letter 'a' (case-sensitivity depends on DB)

6) Range queries with BETWEEN

SELECT EmpName, Salary FROM Employees WHERE Salary BETWEEN 50000 AND 70000;

Explanation:

BETWEEN is inclusive: Salary >= 50000 AND Salary <= 70000.

7) IN vs =

SELECT \* FROM Employees WHERE Dept = 'HR';

SELECT \* FROM Employees WHERE Dept IN ('HR', 'Sales');

Explanation:

= compares with a single value. IN allows multiple values (short-hand for multiple ORs)

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8) Sorting results with ORDER BY

(ascending default):

SELECT EmpName, Salary FROM Employees ORDER BY Salary;

(descending):

SELECT EmpName, Salary FROM Employees ORDER BY Salary DESC;

Explanation:

ORDER BY sorts rows; default order is ascending (ASC).

9) Limit output rows

SQL (MySQL/SQLite):

SELECT \* FROM Employees ORDER BY HireDate DESC LIMIT 3;

10) Aliasing columns and tables (AS)

SELECT EmpName AS Name, Salary AS Pay FROM Employees;

(table alias):

SELECT e.EmpName, e.Salary FROM Employees AS e WHERE e.Dept = 'IT';

Explanation:

Aliases make output headers or queries shorter and clearer.

11) DISTINCT — remove duplicates

SELECT DISTINCT Dept FROM Employees;

Explanation:

Returns each department once.

1. What does SELECT \* do?

- SELECT \* returns all columns from the specified table(s).

2. How do you filter rows?

- Use WHERE with comparison operators and logical operators (AND, OR, NOT).

3. What is LIKE '%value%'?

- A pattern match: % is a wildcard. '%value%' finds any string that contains 'value'.

4. What is BETWEEN used for?

- To filter values inside a range, inclusive (e.g., BETWEEN low AND high).

5. How do you limit output rows?

- Use LIMIT n (MySQL/SQLite) or TOP n (SQL Server). Some DBs support FETCH FIRST n ROWS ONLY.

6. Difference between = and IN?

- = compares a single value; IN checks membership in a list of values.

7. How to sort in descending order?

- Use ORDER BY column\_name DESC.

8. What is aliasing?

- Using AS to rename columns/tables in the result for readability or convenience.

9. Explain DISTINCT.

- DISTINCT removes duplicate rows for the selected column(s).

10. What is the default sort order?

- Ascending (ASC) is the default.

The default sort order in SQL is ascending (ASC), meaning values are sorted from smallest to largest for numbers and A to Z for text.