SQL SELECT Statement – Understanding Notes

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1. Introduction to SELECT Statement
The SELECT statement is the most fundamental SQL command used to retrieve data from one or more tables.
Syntax:
SELECT column1, column2 FROM table_name;

2. Basic Data Retrieval
SELECT * FROM employees;
Retrieves all columns and all rows from the employees table.

3. Selecting Specific Columns
SELECT name, department FROM employees;
Retrieves only selected columns instead of all columns.

4. Using Aliases
SELECT name AS employee_name, department AS dept FROM employees;
Aliases provide temporary names for better readability.

5. Filtering Data with WHERE
SELECT * FROM employees WHERE age > 30;
Filters records based on conditions.

6. Using IN and NOT IN
SELECT * FROM employees WHERE department IN ('Sales','Marketing');
SELECT * FROM employees WHERE department NOT IN ('Sales','Marketing');
Filters data using a list of values.

7. Using AND and OR
SELECT * FROM employees WHERE age > 25 AND department = 'IT';
SELECT * FROM employees WHERE age > 30 OR department = 'HR';
Combines multiple conditions.

8. Comparison Operators
> , < , >= , <= , BETWEEN , LIKE , IS NULL , IS NOT NULL

Examples:
SELECT * FROM employees WHERE age BETWEEN 25 AND 30;
SELECT * FROM employees WHERE name LIKE 'J%';
SELECT * FROM employees WHERE department IS NULL;
SELECT * FROM employees WHERE department IS NOT NULL;

9. Sorting with ORDER BY
SELECT * FROM employees ORDER BY age ASC;
SELECT * FROM employees ORDER BY age DESC;

10. Multiple Column Sorting
SELECT * FROM employees ORDER BY department ASC, age DESC;

11. Using LIMIT and OFFSET
SELECT * FROM employees LIMIT 3;

SELECT * FROM employees LIMIT 3 OFFSET 1;
Used to restrict number of rows returned.

12. Saving Queries in MySQL Workbench
• Write query in editor.
• Click File → Save Script or Save Script As.
• Save with .sql extension.
• Open later to execute again.

Conclusion
The SELECT statement is essential for retrieving, filtering, sorting, and managing data in SQL databases. Mastering SELECT is the foundation for advanced SQL operations.