SESSION WILL BE DIVIDED INTO

1. SUBQUERIES IN SQL

2. Key Characteristics of SUBQUERIES

3. Inner and Outer Queries

4. Possible SUBQUERIES

5. Thought Process to follow

6. Learning with Example

SUBQUERIES In SQL

What is a SUBQUERY

- In SQL, **subqueries** are one of the **most powerful** and flexible tools for writing **efficient queries**.

- A **subquery** is essentially a query nested within another query, allowing users to **perform operations** that depend on the results of **another query**.

- In simple terms, subqueries are nothing but queries within queries.

SECTION 2

KEY CHARACTERISTICS

Key Characteristics of Subqueries

- **Nested Structure**: A subquery is executed within the context of an outer query.

- **Parentheses**: Subqueries must always be enclosed in parentheses.

- **Comparison Operators:** Subqueries can be used with operators like -, >, <, IN, NOT IN, LIKE, etc.

SECTION 3

INNER
&
OUTER
Query

Key Characteristics of Subqueries

- **OUTER QUERY**
- **INNER QUERY**

```sql
SELECT
        NAME,
        LOCATION,
        PHONE_NUMBER
FROM DATABASE
WHERE LOCATION IN
(
        SELECT DISTINCT LOCATION
        FROM LOCATION_TABLE
        WHERE REGION = 'West'
);
```

Possible Subqueries

Subqueries can be used in

- **WHERE**

  SELECT
  employee_name,
  salary
  FROM employees
  WHERE salary >
  (SELECT AVG(salary)
  FROM employees);

- **HAVING**

  SELECT department_id,
  SUM(salary) AS total_salary
  FROM employees
  GROUP BY department_id
  HAVING SUM(salary) >
  (SELECT AVG(total_salary)
  FROM
        (SELECT
  department_id, SUM(salary)
  AS total_salary
        FROM employees
        GROUP BY
  department_id) AS
  dept_salaries);

- **FROM**

  SELECT
  employee_name,
  total_sales
  FROM (
        SELECT *
  FROM
  OrgData25)

Thought Process

How to Think?

UP

BOTTOM

Bottom-Up Approach

- **Start with the Inner Query (Subquery)**

- **Integrate the Subquery into the Outer Query**

- **Validate the Query Step by Step**