LAB -5

Sub Query (Inner Query/Nested Query)

- ✓ A Subquery or Inner query or a Nested query is a query within another SQL query and embedded within clauses, most commonly in the WHERE clause.
- ✓ It is used to return data from a table, and this data will be used in the main query as a condition to further restrict the data to be retrieved.
- ✓ Subqueries can be used with the SELECT, INSERT, UPDATE, and DELETE statements along with the operators like =, <, >, >=, <=, IN etc.

Consider the following table named Employee

emp_id	name	age	department	salary
1	Ram Sharma	25	IT	27000
2	Hari Gautam	58	Finance	35000
3	Sita Thapa	28	HR	30000
4	Gita Shrestha	27	Marketing	28000
5	Nabin Rai	32	Sales	40000
6	Rina Magar	26	IT	26000
7	Prakash Karki	29	Finance	32000
8	Bimala Tamang	31	HR	29000
9	Nabin Rai	32	Finance	25000
10	Gita Shrestha	25	IT	25000

```
CREATE TABLE employee (
  emp_id INT,
  name VARCHAR(50),
  age INT,
  department VARCHAR(50),
  salary DECIMAL(10, 2)
);
```

```
INSERT INTO employee (emp_id, name, age, department, salary)
VALUES
  (1, 'Ram Sharma', 25, 'IT', 27000),
  (2, 'Hari Gautam', 58, 'Finance', 35000),
  (3, 'Sita thapa', 28, 'HR', 30000),
  (4, 'Gita Shrestha', 27, 'Marketing', 28000),
  (5, 'Nabin Rai', 32, 'Sales', 40000),
  (6, 'Rina Magar', 26, 'IT', 26000),
  (7, 'Prakash karki', 29, 'Finance', 32000),
  (8, 'Bimala Tamang', 31, 'HR', 29000),
  (9, 'Nabin Rai', 32, 'Finance', 25000),
  (10, 'Gita Shrestha', 25, 'IT', 25000);
```

Subqueries with SELECT statement

Display information of employee whose salary is greater than average salary of all employees

```
select *
from employee
where salary>(select avg(salary) from employee);
```

Display the information of employees whose salary is greater than 26000

```
select *
from employee
where emp_id in (select emp_id from employee where salary>26000);
```

Display information of employee whose salary is greater than at least one employee of IT department.

```
 select *
 from employee
 where salary>some(select salary from employee where department ='IT ');
```

Display information of employee whose salary is greater than that of all employee of IT department.

```
select *
 from employee
 where salary>all(select salary from employee where department ='IT ');
```

Subqueries with UPDATE statement

Increase salary of employees by 10% whose age is greater than 28

```
update employee
 set salary=salary*1.1
 where age in (select age from employee where age>28);
```

Increase salary of employees by 10% whose salary is greater than the average salary of all employees.

```
update employee
 set salary=salary*1.1
 where salary> (select avg(salary) from employee);
```

Subqueries with DELETE statement

Delete the information of employees whose age is less than 20

```
delete from employee where age in (select age from employee where age<20);
```

Delete the information of employees whose salary is less than average salary of all employees

```
delete from employee where salary < (select avg(salary) from employee);
```

Subqueries with INSERT statement

The INSERT statement uses the data returned from the subquery to insert into another table.

Suppose we want to make each employee board member of company whose department is 'finance' and age>55

Consider a table Boardmember with similar structure as Employee table. Now to copy the records of employee table whose department is 'finance' and age>55 into the Boardmember table, we can use the following syntax.

```
insert into Boardmember
select *
 from employee
where emp_id in (select emp_id from employee  where department='finance' and age>55);
```