SUBQUERIES IN SQL

Whenever there is an indirect condition, generally we go for the subqueries.

Whenever we write a subquery, we may sure be sure that at least one common column exists between tables.

There are 2 types of sub-queries. 1) Single-Row Subqueries

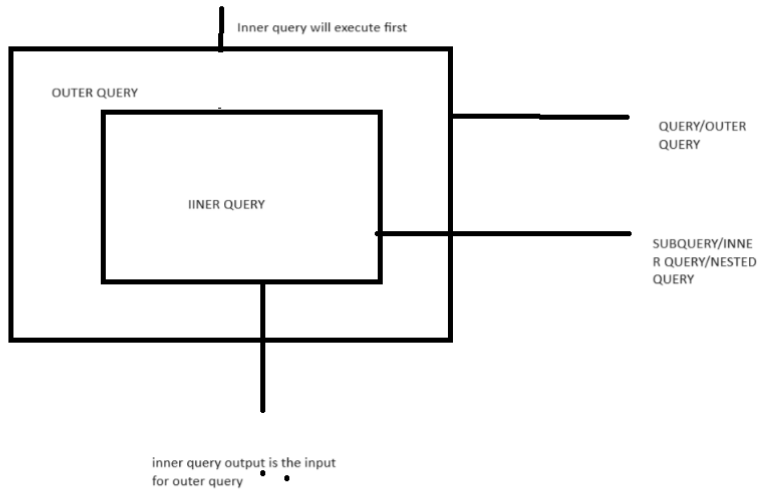
2) Multi-Row Subqueries.

SINGLE-ROW SUBQUERIES:

It returns a single output, hence we use a relational operators.

MULTI-ROW SUBQUERIES:

It returns multiple outputs, hence we use (SPECIAL OPERATOR) **IN**.



1.Write a query to Display whose deptno is similar to allen.

```
select * FROM EMP WHERE DEPTNO=(SELECT DEPTNO FROM EMP WHERE ENAME='ALLEN');
```

Output:

```
+-------+--------+--------+----------+------+------------+--------+------+
| EMPNO | DEPTNO | ENAME  | JOB      | MGR  | HIREDATE   | SALARY | COMM |
+-------+--------+--------+----------+------+------------+--------+------+
|  7499 |     30 | ALLEN  | SALESMAN | 7698 | 1920-02-20 |   1600 |  300 |
|  7521 |     30 | WARD   | SALESMAN | 7698 | 1981-02-22 |   1250 |  500 |
|  7654 |     30 | MARTIN | SALESMAN | 7698 | 1981-09-28 |   1250 | 1400 |
|  7698 |     30 | BLAKE  | MANAGER  | 7839 | 1981-05-01 |   2850 | NULL |
|  7844 |     30 | TURNER | SALESMAN | 7698 | 1981-07-08 |   1500 |    0 |
|  7900 |     30 | JAMES  | CLERK    | 7698 | 1981-12-03 |    950 | NULL |
+-------+--------+--------+----------+------+------------+--------+------+
```

2. Write a query to Display all the employee details whose designation is similar to an employe whose employee no is 7900

SELECT * FROM EMP WHERE JOB=(SELECT JOB FROM EMP WHERE EMPNO=7900);

Output:

EMPNO	DEPTNO	ENAME	JOB	MGR	HIREDATE	SALARY	COMM
7369	20	SMITH	CLERK	7902	1980-12-17	800	NULL
7876	20	ADAMS	CLERK	7788	1987-05-23	1100	NULL
7900	30	JAMES	CLERK	7698	1981-12-03	950	NULL
7934	10	MILLER	CLERK	7782	1982-01-23	1300	NULL

3. Write a query to Display whose salary is more than average salary of 10th Dept.

SELECT * FROM EMP WHERE SALARY>(SELECT AVG(SALARY) FROM EMP WHERE DEPTNO=10);

Output:

EMPNO	DEPTNO	ENAME	JOB	MGR	HIREDATE	SALARY	COMM
7566	20	JONES	MANAGER	7839	1981-04-02	2975	NULL
7788	20	SCOTT	ANALYST	7566	1987-04-19	3000	NULL
7839	10	KING	PRESIDENT	NULL	1981-11-17	5000	NULL
7902	20	FORD	ANALYST	7566	1981-12-03	3000	NULL

4. Write a query to Display all the employe detauls whose designation is similar to blake and salary is more than martin.

SELECT * FROM EMP WHERE SALARY>(SELECT SALARY FROM EMP WHERE ENAME='MARTIN')

AND JOB=(SELECT JOB FROM EMP WHERE ENAME='BLAKE');

Output:

EMPNO	DEPTNO	ENAME	JOB	MGR	HIREDATE	SALARY	COMM
7566	20	JONES	MANAGER	7839	1981-04-02	2975	NULL
7698	30	BLAKE	MANAGER	7839	1981-05-01	2850	NULL
7782	10	CLARK	MANAGER	7839	1980-12-17	2450	NULL

5. Write a query to Display the Work location of TURNER.

SELECT LOCATION FROM DEPT WHERE DEPTNO=(SELECT DEPTNO FROM EMP WHERE ENAME='TURNER');

Output:

```
+----------+
| LOCATION |
+----------+
| CHICAGO  |
+----------+
```

6. Write a query to Display who is the manager of Jones.

SELECT * FROM EMP WHERE EMPNO=(SELECT MGR FROM EMP WHERE ENAME='JONES');

(OR)

SELECT ENAME FROM EMP WHERE EMPNO=(SELECT MGR FROM EMP WHERE ENAME='JONES');

Output:

```
+-------+--------+-------+-----------+------+------------+--------+------+
| EMPNO | DEPTNO | ENAME | JOB       | MGR  | HIREDATE   | SALARY | COMM |
+-------+--------+-------+-----------+------+------------+--------+------+
|  7839 |     10 | KING  | PRESIDENT | NULL | 1981-11-17 |   5000 | NULL |
+-------+--------+-------+-----------+------+------------+--------+------+
+-------+
| ENAME |
+-------+
| KING  |
+-------+
```

7. Write a query to Display all the employe details who is working under blake.

SELECT * FROM EMP WHERE MGR=(SELECT EMPNO FROM EMP WHERE ENAME='BLAKE');

Output:

```
+-------+--------+--------+----------+------+------------+--------+------+
| EMPNO | DEPTNO | ENAME  | JOB      | MGR  | HIREDATE   | SALARY | COMM |
+-------+--------+--------+----------+------+------------+--------+------+
|  7499 |     30 | ALLEN  | SALESMAN | 7698 | 1920-02-20 |   1600 |  300 |
|  7521 |     30 | WARD   | SALESMAN | 7698 | 1981-02-22 |   1250 |  500 |
|  7654 |     30 | MARTIN | SALESMAN | 7698 | 1981-09-28 |   1250 | 1400 |
|  7844 |     30 | TURNER | SALESMAN | 7698 | 1981-07-08 |   1500 |    0 |
|  7900 |     30 | JAMES  | CLERK    | 7698 | 1981-12-03 |    950 | NULL |
+-------+--------+--------+----------+------+------------+--------+------+
```

8. Write a query to Display all the employe details who is working under blake and king.

SELECT * FROM EMP WHERE MGR IN (SELECT EMPNO FROM EMP WHERE ENAME IN ('BLAKE','KING'));

Output:

```
+-------+--------+--------+----------+------+------------+--------+------+
```

```
| EMPNO | DEPTNO | ENAME  | JOB      | MGR  | HIREDATE   | SALARY | COMM |
+-------+--------+--------+----------+------+------------+--------+------+
|  7499 |     30 | ALLEN  | SALESMAN | 7698 | 1920-02-20 |   1600 |  300 |
|  7521 |     30 | WARD   | SALESMAN | 7698 | 1981-02-22 |   1250 |  500 |
|  7566 |     20 | JONES  | MANAGER  | 7839 | 1981-04-02 |   2975 | NULL |
|  7654 |     30 | MARTIN | SALESMAN | 7698 | 1981-09-28 |   1250 | 1400 |
|  7698 |     30 | BLAKE  | MANAGER  | 7839 | 1981-05-01 |   2850 | NULL |
|  7782 |     10 | CLARK  | MANAGER  | 7839 | 1980-12-17 |   2450 | NULL |
|  7844 |     30 | TURNER | SALESMAN | 7698 | 1981-07-08 |   1500 |    0 |
|  7900 |     30 | JAMES  | CLERK    | 7698 | 1981-12-03 |    950 | NULL |
+-------+--------+--------+----------+------+------------+--------+------+
```

IF WE ERITE THIS CODE WE WILL GET ERRORS

```
SELECT * FROM EMP WHERE MGR = (SELECT EMPNO FROM EMP WHERE ENAME IN
('BLAKE','KING'));
```

```
ERROR 1242 (21000) at line 48: Subquery returns more than 1 row
```

9. Write a query to display all the team manager details who have minimum 3 employees Working under them.

```
SELECT * FROM EMP WHERE EMPNO IN (SELECT MGR FROM EMP
GROUP BY MGR
HAVING COUNT(*)>=3);
```

Output:

```
+-------+--------+-------+-----------+------+------------+--------+------+
| EMPNO | DEPTNO | ENAME | JOB       | MGR  | HIREDATE   | SALARY | COMM |
+-------+--------+-------+-----------+------+------------+--------+------+
|  7698 |     30 | BLAKE | MANAGER   | 7839 | 1981-05-01 |   2850 | NULL |
|  7839 |     10 | KING  | PRESIDENT | NULL | 1981-11-17 |   5000 | NULL |
+-------+--------+-------+-----------+------+------------+--------+------+
```

Table1: Student1

NAME	ROLL_NO	LOCATION	PHONE_NUMBER
Ram	101	chennai	9988773344
Raju	102	coimbatore	9090909090
Ravi	103	salem	8989898989

Table2: Student2

NAME	ROLL_NO	LOCATION	PHONE_NUMBER
Raj	111	chennai	8787878787
Sai	112	mumbai	6565656565

				Sri	**113**	**coimbatore**	**7878787878**

- To insert Student2 into Student1 table:
-

```
INSERT INTO Student1  SELECT * FROM Student2;
```