Q1. Explain Left JOIN or LEFT OUTER Join?

The SQL Left Join keywords return all matching and un matching records from the left table1 and only matching records from the right table table2

Ans:

Left Join/Left Outer Join

Table1   Table2

10   10
20   20
30   30
NULL   40

emp   dept

16 ROWS   4 ROWS

Left Join /Left outer Join

select column list from table1
left join table2
on tabl1.common_column=table2.common_column;
Example:

select * from emp left join dept
on emp.deptno=dept.deptno;

```
|   20 | Finance     | INDORE   |
|   30 | Agriculture | JABALPUR |
|   40 | PHARAMA     | UJJAIN   |
+------+-------------+----------+
4 rows in set (0.00 sec)

mysql> select * from emp left join dept
    -> on emp.deptno=dept.deptno;
+-------+--------+----------------+------+------------+-------+------+--------+--------+-------------+----------+
| empno | ename  | job            | mgr  | hiredate   | sal   | comm | deptno | deptno | dname       | loc      |
+-------+--------+----------------+------+------------+-------+------+--------+--------+-------------+----------+
|     1 | NULL   | NULL           | NULL | NULL       |  NULL | NULL |   NULL |   NULL | NULL        | NULL     |
|  7369 | SMITH  | CLERK          | 7902 | 1980-12-17 |   800 | NULL |     20 |     20 | Finance     | INDORE   |
|  7499 | ALLEN  | SALESMAN       | 7698 | 1981-02-20 | 21500 |  150 |     30 |     30 | Agriculture | JABALPUR |
|  7521 | WARD   | SALESMAN       | 7698 | 1981-02-22 | 10000 |  500 |     30 |     30 | Agriculture | JABALPUR |
|  7566 | JONES  | MANAGER        | 7839 | 1981-04-02 | 11512 | NULL |     20 |     20 | Finance     | INDORE   |
|  7654 | MARTIN | SALESMAN       | 7698 | 1981-09-28 | 12789 | 1400 |     30 |     30 | Agriculture | JABALPUR |
|  7698 | BLAKE  | MANAGER        | 7839 | 1981-05-01 | 21563 | NULL |     30 |     30 | Agriculture | JABALPUR |
|  7782 | CLARK  | MANAGER        | 7839 | 1981-06-09 | 10365 | NULL |     10 |     10 | CS          | BHOPAL   |
|  7788 | SCOTT  | ANALYST        | 7566 | 1982-12-09 | 17845 | NULL |     20 |     20 | Finance     | INDORE   |
|  7839 | KING   | PRESIDENT      | NULL | 1981-11-17 | 10234 | NULL |     10 |     10 | CS          | BHOPAL   |
|  7844 | TURNER | SALESMAN       | 7698 | 1981-09-08 | 11552 |    0 |     30 |     30 | Agriculture | JABALPUR |
|  7876 | ADAMS  | CLERK          | 7788 | 1983-01-12 | 15692 | NULL |     20 |     20 | Finance     | INDORE   |
|  7900 | JAMES  | CLERK          | 7698 | 1981-12-03 | 21212 | NULL |     30 |     30 | Agriculture | JABALPUR |
|  7902 | FORD   | ANALYST        | 7566 | 1981-12-03 | 13652 | NULL |     20 |     20 | Finance     | INDORE   |
|  7934 | MILLER | CLERK          | 7782 | 1982-01-23 | 14892 | NULL |     10 |     10 | CS          | BHOPAL   |
|  7935 | AMAN   | JAVA DEVELOPER | 7698 | 2024-01-01 | 23000 |  150 |     30 |     30 | Agriculture | JABALPUR |
+-------+--------+----------------+------+------------+-------+------+--------+--------+-------------+----------+
16 rows in set (0.00 sec)

mysql>
```

Q2. Write a SQL Query to print data empno,sal,job,deptno,dname,loc from emp and dept table?

Select empno,sal,job,emp.deptno,dname,loc from emp left join dept on emp.deptno=dept.deptno;

```
the right syntax to use near 'empno,sal,job,emp.deptno,dname,loc from emp left join dept on
emp.deptno=dept.de' at line 1
mysql> Select empno,sal,job,emp.deptno,dname,loc from emp left join dept on
    -> emp.deptno=dept.deptno;
+-------+-------+----------------+--------+-------------+----------+
| empno | sal   | job            | deptno | dname       | loc      |
+-------+-------+----------------+--------+-------------+----------+
|     1 |  NULL | NULL           |   NULL | NULL        | NULL     |
|  7369 |   800 | CLERK          |     20 | Finance     | INDORE   |
|  7499 | 21500 | SALESMAN       |     30 | Agriculture | JABALPUR |
|  7521 | 10000 | SALESMAN       |     30 | Agriculture | JABALPUR |
|  7566 | 11512 | MANAGER        |     20 | Finance     | INDORE   |
|  7654 | 12789 | SALESMAN       |     30 | Agriculture | JABALPUR |
|  7698 | 21563 | MANAGER        |     30 | Agriculture | JABALPUR |
|  7782 | 10365 | MANAGER        |     10 | CS          | BHOPAL   |
|  7788 | 17845 | ANALYST        |     20 | Finance     | INDORE   |
|  7839 | 10234 | PRESIDENT      |     10 | CS          | BHOPAL   |
|  7844 | 11552 | SALESMAN       |     30 | Agriculture | JABALPUR |
|  7876 | 15692 | CLERK          |     20 | Finance     | INDORE   |
|  7900 | 21212 | CLERK          |     30 | Agriculture | JABALPUR |
|  7902 | 13652 | ANALYST        |     20 | Finance     | INDORE   |
|  7934 | 14892 | CLERK          |     10 | CS          | BHOPAL   |
|  7935 | 23000 | JAVA DEVELOPER |     30 | Agriculture | JABALPUR |
+-------+-------+----------------+--------+-------------+----------+
16 rows in set (0.00 sec)

mysql>
```

Q1. Explain Left JOIN or LEFT OUTER Join?

The SQL Left Join keywords return all matching and un matching records from the left table1 and only matching records from the right table table2

Ans:

Right Join / Right Outer Join

Table1   Table2

10
20
30
NULL

10
20
30
40

emp   dept

16 ROWS   4 ROWS

Right Join / Right Outer Join

select column list from table1
right join table2
on tabl1.common_column=table2.common_column;
Example:

select * from emp right join dept
on emp.deptno=dept.deptno;

Q2. Write a SQL Query to print data empno,sal,job,deptno,dname,loc from emp and dept table?

```
16 rows in set (0.00 sec)

mysql> select * from emp right join dept
    -> on emp.deptno=dept.deptno;
+-------+-------+--------------+------+------------+-------+------+--------+--------+-------------+----------+
| empno | ename | job          | mgr  | hiredate   | sal   | comm | deptno | deptno | dname       | loc      |
+-------+-------+--------------+------+------------+-------+------+--------+--------+-------------+----------+
|  7934 | MILLER| CLERK        | 7782 | 1982-01-23 | 14892 | NULL |     10 |     10 | CS          | BHOPAL   |
|  7839 | KING  | PRESIDENT    | NULL | 1981-11-17 | 10234 | NULL |     10 |     10 | CS          | BHOPAL   |
|  7782 | CLARK | MANAGER      | 7839 | 1981-06-09 | 10365 | NULL |     10 |     10 | CS          | BHOPAL   |
|  7902 | FORD  | ANALYST      | 7566 | 1981-12-03 | 13652 | NULL |     20 |     20 | Finance     | INDORE   |
|  7876 | ADAMS | CLERK        | 7788 | 1983-01-12 | 15692 | NULL |     20 |     20 | Finance     | INDORE   |
|  7788 | SCOTT | ANALYST      | 7566 | 1982-12-09 | 17845 | NULL |     20 |     20 | Finance     | INDORE   |
|  7566 | JONES | MANAGER      | 7839 | 1981-04-02 | 11512 | NULL |     20 |     20 | Finance     | INDORE   |
|  7369 | SMITH | CLERK        | 7902 | 1980-12-17 |   800 | NULL |     20 |     20 | Finance     | INDORE   |
|  7935 | AMAN  | JAVA DEVELOPER| 7698 | 2024-01-01 | 23000 |  150 |     30 |     30 | Agriculture | JABALPUR |
|  7900 | JAMES | CLERK        | 7698 | 1981-12-03 | 21212 | NULL |     30 |     30 | Agriculture | JABALPUR |
|  7844 | TURNER| SALESMAN     | 7698 | 1981-09-08 | 11552 |    0 |     30 |     30 | Agriculture | JABALPUR |
|  7698 | BLAKE | MANAGER      | 7839 | 1981-05-01 | 21563 | NULL |     30 |     30 | Agriculture | JABALPUR |
|  7654 | MARTIN| SALESMAN     | 7698 | 1981-09-28 | 12789 | 1400 |     30 |     30 | Agriculture | JABALPUR |
|  7521 | WARD  | SALESMAN     | 7698 | 1981-02-22 | 10000 |  500 |     30 |     30 | Agriculture | JABALPUR |
|  7499 | ALLEN | SALESMAN     | 7698 | 1981-02-20 | 21500 |  150 |     30 |     30 | Agriculture | JABALPUR |
|  NULL | NULL  | NULL         | NULL | NULL       |  NULL | NULL |   NULL |     40 | PHARAMA     | UJJAIN   |
+-------+-------+--------------+------+------------+-------+------+--------+--------+-------------+----------+
16 rows in set (0.00 sec)

mysql>
```
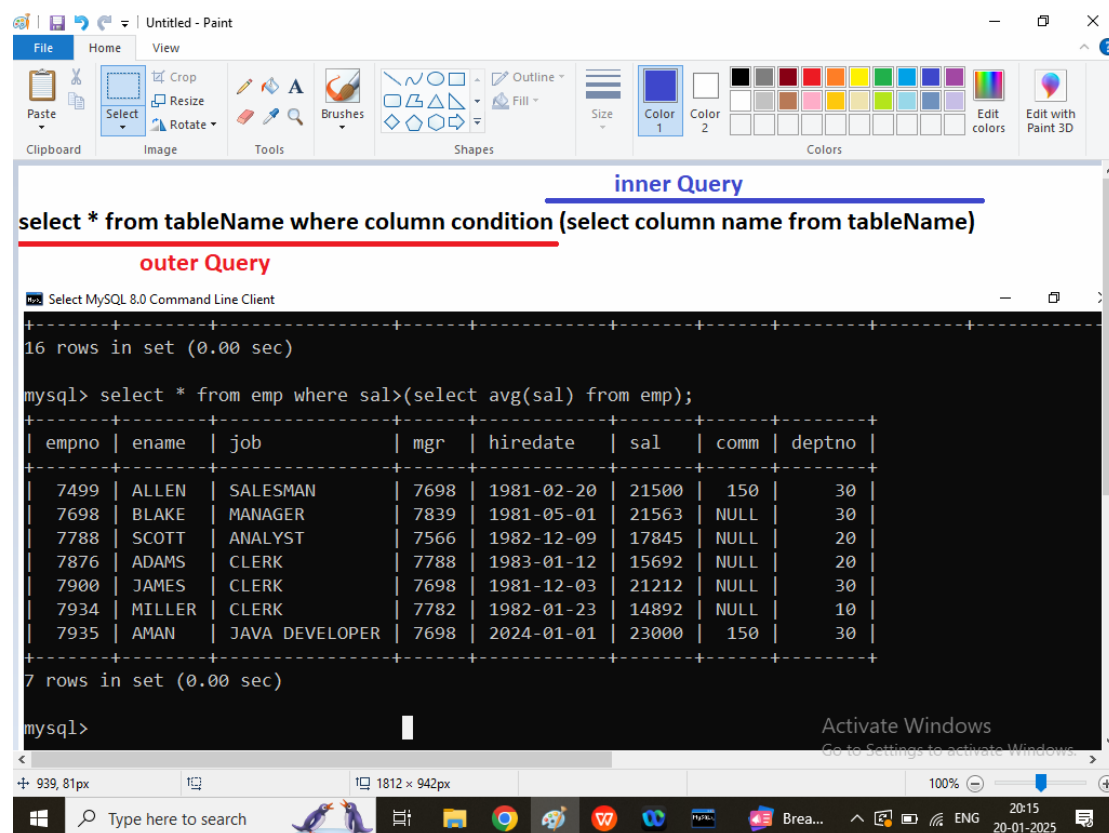
Q3. Explain sub Query in SQL?

Ans:

Qyery inside another Query is known as sub query

Example:

Write a SQL Query to print data of all employee whose salary is greater than average salary of the all employee?

Q1. Write a Sql Query to print data of employee whose salary is the largest in the emp table?

Select * from emp where sal=(select max(sal) from emp);

Q2. Write a Sql Query to print data of employee whose salary is the lowest in the emp table?

```
7 rows in set (0.00 sec)

mysql> Select * from emp where sal=(select max(sal) from emp);
+-------+-------+----------------+------+------------+-------+------+--------+
| empno | ename | job            | mgr  | hiredate   | sal   | comm | deptno |
+-------+-------+----------------+------+------------+-------+------+--------+
|  7935 | AMAN  | JAVA DEVELOPER | 7698 | 2024-01-01 | 23000 |  150 |     30 |
+-------+-------+----------------+------+------------+-------+------+--------+
1 row in set (0.00 sec)

mysql> Select * from emp where sal=(select min(sal) from emp);
+-------+-------+-------+------+------------+------+------+--------+
| empno | ename | job   | mgr  | hiredate   | sal  | comm | deptno |
+-------+-------+-------+------+------------+------+------+--------+
|  7369 | SMITH | CLERK | 7902 | 1980-12-17 |  800 | NULL |     20 |
+-------+-------+-------+------+------------+------+------+--------+
1 row in set (0.00 sec)

mysql>
```

Q3. find employees who belongs to departments located in the **INDORE?**

Name deptno

```
4 rows in set (0.00 sec)

mysql> select ename,deptno from emp where deptno in(select deptno from dept where loc='INDORE');
+-------+--------+
| ename | deptno |
+-------+--------+
| SMITH |     20 |
| JONES |     20 |
| SCOTT |     20 |
| ADAMS |     20 |
| FORD  |     20 |
+-------+--------+
5 rows in set (0.00 sec)

mysql>
```