Lab 5

1. Write the SQL Queries for the following queries (use emp_table and dept_table of Experiment 4).

Ques1: List the Deptno where there are no emps.

```
mysql> SELECT d.deptno FROM dept d LEFT JOIN emp e
    -> ON d.deptno = e.deptno
    -> WHERE e.deptno IS NULL;
+--------+
| deptno |
+--------+
|     40 |
+--------+
```

Ques2: List the No.of emp's and Avg salary within each department for each job.

```
mysql> select d.dname,e.job, count(e.empno) as "no_of_emp", avg(e.sal) as "avg_dept_job"
    -> from emp e JOIN dept d
    -> on (e.deptno = d.deptno)
    -> group by d.dname,e.job;
+------------+-----------+-----------+--------------+
| dname      | job       | no_of_emp | avg_dept_job |
+------------+-----------+-----------+--------------+
| RESEARCH   | CLERK     |         2 |     800.0000 |
| SALES      | SALESMAN  |         4 |    1400.0000 |
| RESEARCH   | MANAGER   |         1 |    2975.0000 |
| SALES      | MANAGER   |         1 |    2850.0000 |
| ACCOUNTING | MANAGER   |         1 |    2450.0000 |
| RESEARCH   | ANALYST   |         2 |    3000.0000 |
| ACCOUNTING | PRESIDENT |         1 |    5000.0000 |
| SALES      | CLERK     |         1 |     950.0000 |
| ACCOUNTING | CLERK     |         1 |    1300.0000 |
+------------+-----------+-----------+--------------+
```

Ques3: Find the maximum average salary drawn for each job except for 'President'.

```
mysql> select job, avg(sal) as "avg" from emp e RIGHT JOIN dept d
    -> on (e.deptno = d.deptno)
    -> group by job
    -> having job <> "president"
    -> order by avg(sal) desc LIMIT 1;
+---------+-----------+
| job     | avg       |
+---------+-----------+
| ANALYST | 3000.0000 |
+---------+-----------+
```

Ques4: List the department details where at least two emps are working.

```
mysql> select * from dept
    -> where dname IN (select d.dname from emp e join dept d
    -> on (e.deptno = d.deptno)
    -> group by d.dname
    -> having count(d.dname) >= 2);
+--------+------------+----------+
| deptno | dname      | loc      |
+--------+------------+----------+
|     10 | ACCOUNTING | NEW YORK |
|     20 | RESEARCH   | DALLAS   |
|     30 | SALES      | CHICAGO  |
+--------+------------+----------+
3 rows in set (0.00 sec)
```

Lab 5

Ques5: List the no. of emps in each department where the no. is more than 3.

```
mysql> select d.dname , count(d.dname) as "NO_Of_emp" from emp as e join dept as d
    -> on (e.deptno = d.deptno)
    -> group by d.dname
    -> having count(d.dname) > 3;
+----------+-----------+
| dname    | NO_Of_emp |
+----------+-----------+
| RESEARCH |         5 |
| SALES    |         6 |
+----------+-----------+
2 rows in set (0.00 sec)
```

Ques6: List the names of the emps who are getting the highest sal dept wise.

```
mysql> select ename,sal from emp
    -> where sal IN
    -> (select max(sal) from emp e join dept d
    -> on (e.deptno = d.deptno)
    -> group by dname);
+-------+------+
| ename | sal  |
+-------+------+
| BLAKE | 2850 |
| SCOTT | 3000 |
| KING  | 5000 |
| FORD  | 3000 |
+-------+------+
4 rows in set (0.00 sec)
```

Ques7: List the Deptno and their average salaries for dept with the average salary less than the averages for all departments.

```
mysql> select e.deptno, avg(e.sal) from emp e JOIN dept d
    -> on (e.deptno = d.deptno)
    -> group by e.deptno
    -> having avg(e.sal) < (select avg(e.sal) from emp e JOIN dept d
    -> on (e.deptno = d.deptno));
+--------+------------+
| deptno | avg(e.sal) |
+--------+------------+
|     30 |  1566.6667 |
+--------+------------+
1 row in set (0.00 sec)
```

Lab 5

2. Execute the experiment 4 using sql join.

Ques1: List the details of the emps whose Salaries more than the employee BLAKE.

```
mysql> SELECT emp.* FROM EMP emp
    -> JOIN EMP blake ON emp.SAL > blake.SAL
    -> WHERE blake.ENAME = 'BLAKE';
+-------+-------+-----------+------+------------+------+------+--------+
| empno | ename | job       | mgr  | hiredate   | sal  | comm | deptno |
+-------+-------+-----------+------+------------+------+------+--------+
|  7566 | JONES | MANAGER   | 7839 | 1981-04-02 | 2975 | NULL |     20 |
|  7788 | SCOTT | ANALYST   | 7566 | 1982-12-09 | 3000 | NULL |     20 |
|  7839 | KING  | PRESIDENT | NULL | 1981-11-17 | 5000 | NULL |     10 |
|  7902 | FORD  | ANALYST   | 7566 | 1981-12-03 | 3000 | NULL |     20 |
+-------+-------+-----------+------+------------+------+------+--------+
```

Ques2: List the emps whose Jobs are same as ALLEN.

```
mysql> SELECT emp.*
    -> FROM EMP emp
    -> JOIN EMP allen ON emp.JOB = allen.JOB
    -> WHERE allen.ENAME = 'ALLEN';
+-------+--------+----------+------+------------+------+------+--------+
| empno | ename  | job      | mgr  | hiredate   | sal  | comm | deptno |
+-------+--------+----------+------+------------+------+------+--------+
|  7499 | ALLEN  | SALESMAN | 7698 | 1981-02-20 | 1600 |  300 |     30 |
|  7521 | WARD   | SALESMAN | 7698 | 1981-02-22 | 1250 |  500 |     30 |
|  7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250 | 1400 |     30 |
|  7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500 |    0 |     30 |
+-------+--------+----------+------+------------+------+------+--------+
```

Ques3: List the Emps whose Sal is same as FORD or SMITH in desc order of Name

```
mysql> SELECT emp.*
    -> FROM EMP emp
    -> JOIN (SELECT 'FORD' AS ENAME, SAL FROM EMP WHERE ENAME = 'FORD'
    ->        UNION ALL
    ->        SELECT 'SMITH' AS ENAME, SAL FROM EMP WHERE ENAME = 'SMITH') ford_smith
    ->   ON emp.ENAME = ford_smith.ENAME AND emp.SAL = ford_smith.SAL
    -> ORDER BY emp.ENAME DESC;
+-------+-------+---------+------+------------+------+------+--------+
| empno | ename | job     | mgr  | hiredate   | sal  | comm | deptno |
+-------+-------+---------+------+------------+------+------+--------+
|  7369 | SMITH | CLERK   | 7902 | 1980-12-17 |  500 |  800 |     20 |
|  7902 | FORD  | ANALYST | 7566 | 1981-12-03 | 3000 | NULL |     20 |
+-------+-------+---------+------+------------+------+------+--------+
```

Ques4: List the emps Whose Jobs are same as MILLER or Sal is more than ALLEN.

```
mysql> SELECT emp.*
    -> FROM EMP emp
    -> LEFT JOIN EMP miller ON emp.JOB = miller.JOB AND miller.ENAME = 'MILLER'
    -> WHERE miller.ENAME IS NOT NULL OR emp.SAL > (SELECT SAL FROM EMP WHERE ENAME = 'ALLEN');
+-------+--------+-----------+------+------------+------+------+--------+
| empno | ename  | job       | mgr  | hiredate   | sal  | comm | deptno |
+-------+--------+-----------+------+------------+------+------+--------+
|  7369 | SMITH  | CLERK     | 7902 | 1980-12-17 |  500 |  800 |     20 |
|  7566 | JONES  | MANAGER   | 7839 | 1981-04-02 | 2975 | NULL |     20 |
|  7698 | BLAKE  | MANAGER   | 7839 | 1981-05-01 | 2850 | NULL |     30 |
|  7782 | CLARK  | MANAGER   | 7839 | 1981-06-09 | 2450 | NULL |     10 |
|  7788 | SCOTT  | ANALYST   | 7566 | 1982-12-09 | 3000 | NULL |     20 |
|  7839 | KING   | PRESIDENT | NULL | 1981-11-17 | 5000 | NULL |     10 |
|  7876 | ADAMS  | CLERK     | 7788 | 1983-01-12 | 1100 | NULL |     20 |
|  7900 | JAMES  | CLERK     | 7698 | 1981-12-03 |  950 | NULL |     30 |
|  7902 | FORD   | ANALYST   | 7566 | 1981-12-03 | 3000 | NULL |     20 |
|  7934 | MILLER | CLERK     | 7782 | 1982-01-23 | 1300 | NULL |     10 |
+-------+--------+-----------+------+------------+------+------+--------+
10 rows in set (0.00 sec)
```

Lab 5

Ques5 Find the highest paid employee of sales department.

```
mysql> SELECT emp.*
    -> FROM EMP emp
    -> JOIN DEPT dept ON emp.DEPTNO = dept.DEPTNO AND dept.DNAME = 'SALES'
    -> ORDER BY emp.SAL DESC
    -> LIMIT 1;
+-------+-------+---------+------+------------+------+------+--------+
| empno | ename | job     | mgr  | hiredate   | sal  | comm | deptno |
+-------+-------+---------+------+------------+------+------+--------+
|  7698 | BLAKE | MANAGER | 7839 | 1981-05-01 | 2850 | NULL |     30 |
+-------+-------+---------+------+------------+------+------+--------+
1 row in set (0.00 sec)
```

Ques6 List the employees who are senior to most recently hired employee working under king.

```
mysql> SELECT emp.*
    -> FROM EMP emp
    -> JOIN EMP king ON king.ENAME = 'KING'
    -> WHERE emp.HIREDATE < (SELECT MAX(HIREDATE) FROM EMP WHERE MGR = king.EMPNO);
+-------+-------+----------+------+------------+------+------+--------+
| empno | ename | job      | mgr  | hiredate   | sal  | comm | deptno |
+-------+-------+----------+------+------------+------+------+--------+
|  7369 | SMITH | CLERK    | 7902 | 1980-12-17 |  500 |  800 |     20 |
|  7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1600 |  300 |     30 |
|  7521 | WARD  | SALESMAN | 7698 | 1981-02-22 | 1250 |  500 |     30 |
|  7566 | JONES | MANAGER  | 7839 | 1981-04-02 | 2975 | NULL |     20 |
|  7698 | BLAKE | MANAGER  | 7839 | 1981-05-01 | 2850 | NULL |     30 |
+-------+-------+----------+------+------------+------+------+--------+
5 rows in set (0.01 sec)
```

Ques7 List the names of the emps who are getting the highest sal dept wise.

```
mysql> SELECT emp.ENAME, dept.DNAME
    -> FROM EMP emp
    -> JOIN DEPT dept ON emp.DEPTNO = dept.DEPTNO
    -> WHERE emp.SAL = (SELECT MAX(SAL) FROM EMP WHERE DEPTNO = emp.DEPTNO)
    -> ORDER BY dept.DNAME;
+-------+------------+
| ENAME | DNAME      |
+-------+------------+
| KING  | ACCOUNTING |
+-------+------------+
1 row in set (0.01 sec)
```

Ques8 List the emps whose sal is equal to the average of max and minimum

```
mysql> SELECT emp.*
    -> FROM EMP emp
    -> WHERE emp.SAL = (SELECT AVG(SAL) FROM (SELECT MAX(SAL) AS SAL FROM EMP
    -> UNION ALL
    -> SELECT MIN(SAL) AS SAL FROM EMP) sal_max_min);
Empty set (0.00 sec)
```

Ques9 List the emps who joined in the company on the same date.

```
mysql> SELECT emp1.*, emp2.*
    -> FROM EMP emp1
    -> JOIN EMP emp2 ON emp1.HIREDATE = emp2.HIREDATE AND emp1.EMPNO < emp2.EMPNO;
+-------+-------+-------+------+------------+------+------+--------+-------+-------+---------+------+------------+------+------+--------+
| empno | ename | job   | mgr  | hiredate   | sal  | comm | deptno | empno | ename | job     | mgr  | hiredate   | sal  | comm | deptno |
+-------+-------+-------+------+------------+------+------+--------+-------+-------+---------+------+------------+------+------+--------+
|  7900 | JAMES | CLERK | 7698 | 1981-12-03 |  950 | NULL |     30 | 7902  | FORD  | ANALYST | 7566 | 1981-12-03 | 3000 | NULL |     20 |
+-------+-------+-------+------+------------+------+------+--------+-------+-------+---------+------+------------+------+------+--------+
1 row in set (0.00 sec)
```

Lab 5

Ques10 Find out the emps who joined in the company before their Managers.

```
mysql> SELECT emp.*
    -> FROM EMP emp
    -> JOIN EMP mgr ON emp.MGR = mgr.EMPNO
    -> WHERE emp.HIREDATE < mgr.HIREDATE;
+-------+-------+----------+------+------------+------+------+--------+
| empno | ename | job      | mgr  | hiredate   | sal  | comm | deptno |
+-------+-------+----------+------+------------+------+------+--------+
|  7521 | WARD  | SALESMAN | 7698 | 1981-02-22 | 1250 |  500 |     30 |
|  7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1600 |  300 |     30 |
|  7782 | CLARK | MANAGER  | 7839 | 1981-06-09 | 2450 | NULL |     10 |
|  7698 | BLAKE | MANAGER  | 7839 | 1981-05-01 | 2850 | NULL |     30 |
|  7566 | JONES | MANAGER  | 7839 | 1981-04-02 | 2975 | NULL |     20 |
|  7369 | SMITH | CLERK    | 7902 | 1980-12-17 |  500 |  800 |     20 |
+-------+-------+----------+------+------------+------+------+--------+
6 rows in set (0.00 sec)
```