EXPERIMENT NO:- 05

OBJECTIVE: To understand the use of group by and having clause and execute the SQL commands using JOIN.

- **CREATE THE FOLLOWING TABLES (EMP & DEPT):**

1. **TABLE EMP:**

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-80	500	800	20
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7839	KING	PRESIDENT		17-NOV-81	5000		10
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20
7900	JAMES	CLERK	7698	03-DEC-81	950		30
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7934	MILLER	CLERK	7782	23-JAN-82	1300		10

```
SQL> CREATE TABLE EMP(
  2  EMPNO INT PRIMARY KEY,
  3  ENAME VARCHAR(40),
  4  JOB VARCHAR(40),
  5  MGR INT,
  6  HIREDATE VARCHAR(40),
  7  SAL INT,
  8  COMM INT,
  9  DEPTNO INT);

Table created.

SQL>
```

```
SQL> INSERT INTO EMP(EMPNO,ENAME,JOB,MGR,HIREDATE,SAL,COMM,DEPTNO) VALUES('7369'
,'SMITH','CLERK','7902','17-DEC-80','500','800','20');

1 row created.

SQL> INSERT INTO EMP(EMPNO,ENAME,JOB,MGR,HIREDATE,SAL,COMM,DEPTNO) VALUES('7499'
,'ALLEN','SALESMAN','7698','20-FEB-81','1600','300','30');

1 row created.

SQL> INSERT INTO EMP(EMPNO,ENAME,JOB,MGR,HIREDATE,SAL,COMM,DEPTNO) VALUES('7521'
,'WARD','SALESMAN','7698','22-FEB-81','1250','500','30');

1 row created.

SQL> INSERT INTO EMP(EMPNO,ENAME,JOB,MGR,HIREDATE,SAL,DEPTNO) VALUES('7566','JON
ES','MANAGER','7839','02-APR-81','2975','20');

1 row created.

SQL> INSERT INTO EMP(EMPNO,ENAME,JOB,MGR,HIREDATE,SAL,COMM,DEPTNO) VALUES('7654'
,'MARTIN','SALESMAN','7698','28-SEP-81','1250','1400','30');

1 row created.

SQL> INSERT INTO EMP(EMPNO,ENAME,JOB,MGR,HIREDATE,SAL,DEPTNO) VALUES('7698','BLA
KE','MANAGER','7839','01-MAY-81','2850','30');

1 row created.

SQL> INSERT INTO EMP(EMPNO,ENAME,JOB,MGR,HIREDATE,SAL,DEPTNO) VALUES('7782','CLA
RK','MANAGER','7839','09-JUN-81','2450','10');

1 row created.

SQL> INSERT INTO EMP(EMPNO,ENAME,JOB,MGR,HIREDATE,SAL,DEPTNO) VALUES('7788','SCO
TT','ANALYST','7566','09-DEC-82','3000','20');

1 row created.

SQL> INSERT INTO EMP(EMPNO,ENAME,JOB,HIREDATE,SAL,DEPTNO) VALUES('7839','KING','
PRESIDENT','17-NOV-81','5000','10');

1 row created.

SQL> INSERT INTO EMP(EMPNO,ENAME,JOB,MGR,HIREDATE,SAL,COMM,DEPTNO) VALUES('7844'
,'TURNER','SALESMAN','7698','08-SEP-81','1500','0','30');

1 row created.

SQL> INSERT INTO EMP(EMPNO,ENAME,JOB,MGR,HIREDATE,SAL,DEPTNO) VALUES('7876','ADA
MS','CLERK','7788','12-JAN-83','1100','20');

1 row created.

SQL> INSERT INTO EMP(EMPNO,ENAME,JOB,MGR,HIREDATE,SAL,DEPTNO) VALUES('7900','JAM
ES','CLERK','7698','03-DEC-81','950','30');

1 row created.
```

```
SQL> INSERT INTO EMP(EMPNO,ENAME,JOB,MGR,HIREDATE,SAL,DEPTNO) VALUES('7902','FOR
D','ANALYST','7566','03-DEC-81','3000','20');

1 row created.

SQL> INSERT INTO EMP(EMPNO,ENAME,JOB,MGR,HIREDATE,SAL,DEPTNO) VALUES('7934','MIL
LER','CLERK','7782','23-JAN-82','1300','10');

1 row created.
```

2.   **TABLE DEPT:**

DEPTNO	DNAME	LOC
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON

```
SQL> CREATE TABLE DEPT(
  2   DEPTNO INT PRIMARY KEY,
  3   DNAME VARCHAR(40),
  4   LOC VARCHAR(40));

Table created.

SQL>
```

```
SQL> INSERT INTO DEPT(DEPTNO,DNAME,LOC) VALUES('10','ACCOUNTING','NEW YORK');

1 row created.

SQL> INSERT INTO DEPT(DEPTNO,DNAME,LOC) VALUES('20','RESEARCH','DALLAS');

1 row created.

SQL> INSERT INTO DEPT(DEPTNO,DNAME,LOC) VALUES('30','SALES','CHICAGO');

1 row created.

SQL> INSERT INTO DEPT(DEPTNO,DNAME,LOC) VALUES('40','OPERATIONS','BOSTON');

1 row created.

SQL>
```

- **WRITE THE NESTED QUERIES FOR THE FOLLOWING QUERIES.**

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

   - List the Deptno where there are no emps.

```
SQL> SELECT DEPT.DEPTNO FROM DEPT LEFT JOIN EMP ON DEPT.DEPTNO=EMP.DEPTNO WHERE
EMP.DEPTNO IS NULL;

    DEPTNO
----------
        40
```

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

```
SQL> SELECT COUNT(*),AVG(SAL),DEPTNO,JOB FROM EMP GROUP BY DEPTNO,JOB;

  COUNT(*)    AVG(SAL)     DEPTNO JOB
---------- ----------- ---------- ----------------------------------
         2         800         20 CLERK
         4        1400         30 SALESMAN
         1        2975         20 MANAGER
         1         950         30 CLERK
         1        5000         10 PRESIDENT
         1        2850         30 MANAGER
         1        1300         10 CLERK
         1        2450         10 MANAGER
         2        3000         20 ANALYST

9 rows selected.
```

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

```
SQL> SELECT MAX(AVG(SAL)) FROM EMP WHERE JOB!='PRESIDENT' GROUP BY JOB;

MAX(AVG(SAL))
-------------
         3000
```

- **List the department details where at least two emps are working.**

```
    DEPTNO    COUNT(*)
---------- ----------
        30          6
        20          5
        10          3
```

- **List the no. of emps in each department where the no. is more than 3.**

```
SQL> SELECT DEPTNO,COUNT(*) FROM EMP GROUP BY DEPTNO HAVING COUNT(*)<3;

no rows selected
```

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

```
SQL> SELECT ENAME,SAL,DEPTNO FROM EMP WHERE SAL IN(SELECT MAX(SAL) FROM EMP GROU
P BY DEPTNO);

ENAME                                              SAL     DEPTNO
-------------------------------------------- ---------- ----------
BLAKE                                             2850         30
SCOTT                                             3000         20
KING                                              5000         10
FORD                                              3000         20
```

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

```
SQL> SELECT DEPTNO,AVG(SAL) FROM EMP GROUP BY DEPTNO HAVING AVG(SAL)<(SELECT AVG
(SAL) FROM EMP);

    DEPTNO    AVG(SAL)
---------- ----------
        30  1566.66667
```