Advance Database Management Systems

Experiment- 4

Use of built-in functions and relational algebra operations.

```
create database LabExperiment4;
USE LabExperiment4;

create table DEPT(DEPTNO INT, DNAME VARCHAR(30), LOC
VARCHAR(45), PRIMARY KEY(DEPTNO));
INSERT INTO DEPT VALUES(10, 'ACCOUNTING', 'NEW YORK');
INSERT INTO DEPT VALUES(20, 'RESEARCH', 'DALLAS');
INSERT INTO DEPT VALUES(30, 'SALES', 'CHICAGO');
INSERT INTO DEPT VALUES(40, 'OPERATIONS', 'BOSTON');

create table EMP(EMPNO int not null, ENAME varchar(45) NOT
NULL, JOB varchar(30) NOT NULL, MGR INT, HIREDATE DATE,
SAL INT, COMM INT, DEPTNO INT NOT NULL, PRIMARY KEY
(EMPNO), FOREIGN KEY(DEPTNO) REFERENCES DEPT(DEPTNO));
INSERT INTO EMP VALUES(7369, 'SMITH', 'CLERK', 7902, '17-
DEC-80', 500, 800, 20);
INSERT INTO EMP VALUES(7499, 'ALLEN', 'SALESMAN', 7698,
'20-DEC-81', 1600, 300, 30);
INSERT INTO EMP VALUES(7521, 'WARD', 'SALESMAN', 7698,
'22-FEB-81', 1250, 500, 30);
INSERT INTO EMP VALUES(7566, 'JONES', 'MANAGER', 7839,
'02-APR-81', 2975, '', 20);
INSERT INTO EMP VALUES(7654, 'MARTIN', 'SALESMAN', 7698,
'28-SEP-81', 1250, 1400, 30);
INSERT INTO EMP VALUES(7698, 'BLAKE', 'MANAGER', 7839,
'01-MAY-81', 2850, '', 30);
INSERT INTO EMP VALUES(7782, 'CLARK', 'MANAGER', 7839,
'09-JUN-81', 2450, '', 10);
INSERT INTO EMP VALUES(7778, 'SCOTT', 'ANALYST', 7566,
'09-DEC-82', 3000, '', 20);
INSERT INTO EMP VALUES(7839, 'KING', 'PRESIDENT', '', '17-
NOV-81', 5000, '', 10);
INSERT INTO EMP VALUES(7844, 'TURNER', 'SALESMAN', 7698,
'03-SEP-81', 1500, '', 30);
INSERT INTO EMP VALUES(7876, 'ADAMS', 'CLERK', 7788, '12-
JAN-83', 1100, '', 20);
```

```
INSERT INTO EMP VALUES(7900, 'FORD', 'ANALYST', 7566, '03-
DEC-81', 3000, '', 20);
INSERT INTO EMP VALUES(7934, 'MILLER', 'CLERK', 7782, '23-
JAN-82', 1300, '', 10);

-- List the details of the emps whose Salaries more than
the employee BLAKE.
SELECT * from EMP WHERE SAL > (SELECT SAL from EMP where
ENAME='Blake');
```

OUTPUT:

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7566	JONES	MANAGER	7839	1981-04-02	2975	0	20
2	7778	SCOTT	ANALYST	7566	1982-12-09	3000	0	20
3	7839	KING	PRESIDENT	0	1981-11-17	5000	0	10
4	7900	FORD	ANALYST	7566	1981-12-03	3000	0	20

```
-- List the emps whose Jobs are same as ALLEN.
SELECT * from EMP WHERE JOB = (SELECT JOB from EMP where
ENAME='Allen');
```

OUTPUT:

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7499	ALLEN	SALESMAN	7698	1981-12-20	1600	300	30
2	7521	WARD	SALESMAN	7698	1981-02-22	1250	500	30
3	7654	MARTIN	SALESMAN	7698	1981-09-28	1250	1400	30
4	7844	TURNER	SALESMAN	7698	1981-09-03	1500	0	30

```
-- List the Emps whose Sal is same as FORD or SMITH in
desc order of Names.
SELECT * from EMP WHERE SAL = (SELECT SAL from EMP where
ENAME='Ford') OR SAL = (SELECT SAL from EMP where
ENAME='Smith') ORDER BY ENAME DESC;
```

OUTPUT:

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7369	SMITH	CLERK	7902	1980-12-17	500	800	20
2	7778	SCOTT	ANALYST	7566	1982-12-09	3000	0	20
3	7900	FORD	ANALYST	7566	1981-12-03	3000	0	20

```
-- List the emps Whose Jobs are same as MILLER or Sal is
more than ALLEN.
SELECT * FROM EMP WHERE JOB = (SELECT JOB FROM EMP WHERE
ENAME='Miller') OR SAL > (SELECT SAL FROM EMP WHERE
ENAME='Allen');
```

OUTPUT:

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7369	SMITH	CLERK	7902	1980-12-17	500	800	20
2	7566	JONES	MANAGER	7839	1981-04-02	2975	0	20
3	7698	BLAKE	MANAGER	7839	1981-05-01	2850	0	30
4	7778	SCOTT	ANALYST	7566	1982-12-09	3000	0	20
5	7782	CLARK	MANAGER	7839	1981-06-09	2450	0	10
6	7839	KING	PRESIDENT	0	1981-11-17	5000	0	10
7	7876	ADAMS	CLERK	7788	1983-01-12	1100	0	20
8	7900	FORD	ANALYST	7566	1981-12-03	3000	0	20
9	7934	MILLER	CLERK	7782	1982-01-23	1300	0	10

```
-- Find the highest paid employee of sales department.
SELECT * FROM EMP WHERE DEPTNO = 30 AND SAL = (SELECT
MAX(SAL) FROM EMP WHERE DEPTNO = 30);
```

OUTPUT:

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7698	BLAKE	MANAGER	7839	1981-05-01	2850	0	30

```
-- List the employees who are senior to most recently
hired employee working under king.
SELECT * FROM EMP WHERE HIREDATE < (SELECT MAX(HIREDATE)
FROM EMP WHERE MGR = (SELECT EMPNO FROM EMP WHERE
ENAME='King'));
```

OUTPUT:

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7369	SMITH	CLERK	7902	1980-12-17	500	800	20
2	7521	WARD	SALESMAN	7698	1981-02-22	1250	500	30
3	7566	JONES	MANAGER	7839	1981-04-02	2975	0	20
4	7698	BLAKE	MANAGER	7839	1981-05-01	2850	0	30

```
-- List the names of the emps who are getting the highest
sal dept wise.
SELECT E.ENAME, D.DNAME, E.SAL FROM EMP E JOIN DEPT D ON
E.DEPTNO = D.DEPTNO WHERE E.SAL = (SELECT MAX(SAL) FROM
EMP WHERE DEPTNO = E.DEPTNO) GROUP BY E.ENAME, D.DNAME,
E.SAL ORDER BY D.DNAME;
```

OUTPUT:

	ENAME	DNAME	SAL
1	KING	ACCOUNTING	5000
2	FORD	RESEARCH	3000
3	SCOTT	RESEARCH	3000
4	BLAKE	SALES	2850

```
-- List the emps whose sal is equal to the average of max
and minimum
SELECT ENAME, SAL, JOB FROM EMP WHERE DEPTNO = 10 AND SAL
= (SELECT MAX(SAL) FROM EMP WHERE DEPTNO = 10) OR DEPTNO =
20 AND SAL = (SELECT MAX(SAL) FROM EMP WHERE DEPTNO = 20)
OR DEPTNO = 30 AND SAL = (SELECT MAX(SAL) FROM EMP WHERE
DEPTNO = 30) OR DEPTNO = 40 AND SAL = (SELECT MAX(SAL)
FROM EMP WHERE DEPTNO = 40);
```

OUTPUT:

	ENAME	SAL	JOB
1	BLAKE	2850	MANAGER
2	SCOTT	3000	ANALYST
3	KING	5000	PRESIDENT
4	FORD	3000	ANALYST

```
-- List the emps who joined in the company on the same
date.
SELECT ENAME, HIREDATE FROM EMP GROUP BY HIREDATE, ENAME
HAVING COUNT(*) > 1;
```

OUTPUT:

	ENAME	HIREDATE

```
-- Find out the emps who joined in the company before
their Managers.
SELECT * FROM EMP E WHERE HIREDATE < (SELECT HIREDATE FROM
EMP WHERE EMPNO = E.MGR);
```

OUTPUT:

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7521	WARD	SALESMAN	7698	1981-02-22	1250	500	30
2	7566	JONES	MANAGER	7839	1981-04-02	2975	0	20
3	7698	BLAKE	MANAGER	7839	1981-05-01	2850	0	30
4	7782	CLARK	MANAGER	7839	1981-06-09	2450	0	10