EXPERIMENT 7-8

Date: 24th March 2023

TITLE: Nested SQL queries or Subqueries

OBJECTIVE: To understand the use SQL Subquery

1. Create Tables (EMP and DEPT)

```
CREATE TABLE DEPT (
    DEPTNO INTEGER PRIMARY KEY,
   DNAME VARCHAR(20),
   LOC VARCHAR(20)
);
```

Field	Type	Null	Key	Default	Extra
DEPTNO	int	NO	PRI	NULL	
DNAME	varchar(20)	YES		NULL	
LOC	varchar(20)	YES		NULL	

```
CREATE TABLE EMP (
    EMPNO INTEGER PRIMARY KEY,
   EMPNAME VARCHAR(20),
   JOB VARCHAR(20),
   MGR INTEGER,
   HIREDATE DATE,
   SAL INTEGER,
   COMM INTEGER,
   DEPTNO INTEGER,
   FOREIGN KEY(DEPTNO) REFERENCES DEPT(DEPTNO)
);
```

Field	Type	Null	Key	Default	Extra
EMPNO	int	NO	PRI	NULL	
EMPNAME	varchar(20)	YES		NULL	
JOB	varchar(20)	YES		NULL	
MGR	int	YES		NULL	
HIREDATE	date	YES		NULL	
SAL	int	YES		NULL	
COMM	int	YES		NULL	
DEPTNO	int	YES	MUL	NULL	

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');

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

INSERT INTO EMP VALUES(7369 ,'SMITH','CLERK',7902,'1980-12-17',800,NULL,20);
INSERT INTO EMP VALUES(7499 ,'ALLEN','SALESMAN',7698,'1981-02-20',1600,300,30);
INSERT INTO EMP VALUES(7521 ,'WARD','SALESMAN',7698,' 1981-02-22',1250,500,30);
INSERT INTO EMP VALUES(7566, 'JONES','MANAGER',7839,' 1981-04-02',2975 ,NULL,20);
INSERT INTO EMP VALUES(7654, 'MARTIN','SALESMAN',7698 ,'1981-09-28',1250,1400,30);
INSERT INTO EMP VALUES(7698, 'BLAKE','MANAGER',7839,' 1981-05-01',2850,NULL,30);
INSERT INTO EMP VALUES(7782, 'CLARK','MANAGER',7839 ,'1981-06-09' ,2450 ,NULL,10);
INSERT INTO EMP VALUES(7788, 'SCOTT','ANALYST', 7566 ,'1987-04-19' ,3000 ,NULL,20);
INSERT INTO EMP VALUES(7839, 'KING','PRESIDENT',NULL, '1981-11-17', 5000,NULL,10);
INSERT INTO EMP VALUES(7844, 'TURNER','SALESMAN',7698,'1981-09-08',1500,0,30);
INSERT INTO EMP VALUES(7876, 'ADAMS','CLERK',7788,'1987-05-23',1100 ,NULL,20);
INSERT INTO EMP VALUES(7900, 'JAMES','CLERK',7698, '1981-12-03', 950 ,NULL,30);
INSERT INTO EMP VALUES(7902, 'FORD','ANALYST',7566, '1981-12-03',3000 ,NULL,20);
INSERT INTO EMP VALUES(7934, 'MILLER','CLERK',7782, '1982-01-23',1300 ,NULL,10);

EMPNO	EMPNAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	1980-12-17	800	NULL	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
7654	MARTIN	SALESMAN	7698	1981-09-28	1250	1400	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850	NULL	30
7782	CLARK	MANAGER	7839	1981-06-09	2450	NULL	10
7788	SCOTT	ANALYST	7566	1987-04-19	3000	NULL	20
7839	KING	PRESIDENT	NULL	1981-11-17	5000	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1500	0	30
7876	ADAMS	CLERK	7788	1987-05-23	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
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

2. Write the Nested Queries for the following queries.

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

SELECT * FROM EMP WHERE SAL >

(SELECT SAL FROM EMP WHERE EMPNAME = "BLAKE");

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

b. List the emps whose Jobs are same as ALLEN.

SELECT EMPNAME FROM EMP WHERE JOB =

(SELECT JOB FROM EMP WHERE EMPNAME = "ALLEN");

EMPNAME
ALLEN
WARD
MARTIN
TURNER

c. List the Emps whose Sal is same as FORD or SMITH in DESC order of Names.

SELECT EMPNAME FROM EMP WHERE SAL IN

(SELECT SAL FROM EMP WHERE EMPNAME IN ('FORD', 'SMITH')) ORDER BY EMPNAME DESC;

EMPNAME
SMITH
SCOTT
FORD

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

SELECT EMPNAME FROM EMP WHERE SAL >

(SELECT SAL FROM EMP WHERE EMPNAME = "ALLEN")

OR JOB = (SELECT JOB FROM EMP WHERE EMPNAME = "MILLER");

EMPNAME
SMITH
JONES
BLAKE
CLARK
SCOTT
KING
ADAMS
JAMES
FORD
MILLER

e. Find the highest paid employee of sales department.

```
SELECT EMPNAME FROM EMP WHERE SAL =
(SELECT MAX(SAL) FROM EMP WHERE DEPTNO IN
(SELECT DEPTNO FROM DEPT WHERE DNAME = "SALES")
AND DEPTNO = (SELECT DEPTNO FROM DEPT WHERE DNAME = 'SALES'));
```

EMPNAME	MAX(SAL)
ALLEN	1600
WARD	1250
MARTIN	1250
BLAKE	2850
TURNER	1500
JAMES	950

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

```
SELECT EMPNAME FROM EMP WHERE HIREDATE <
(SELECT MAX(HIREDATE) FROM EMP WHERE MGR IN
(SELECT EMPNO FROM EMP WHERE EMPNAME = "KING"));
```

	EMPNAME
▶	SMITH
	ALLEN
	WARD
	JONES
	BLAKE

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

```
SELECT EMPNAME, DEPTNO FROM EMP,
(SELECT MAX(SAL) AS M, DEPTNO AS D FROM EMP GROUP BY DEPTNO) as MD
WHERE SAL = MD.M AND DEPTNO = MD.D;
```

	EMPNAME	DEPTNO
1	BLAKE	30
2	SCOTT	20
3	KING	10
4	FORD	20

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

```
SELECT * FROM EMP WHERE SAL =
(SELECT (MAX(SAL) + MIN(SAL)) / 2 FROM EMP);
```

EMPNO	EMPNAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO

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

SELECT * FROM EMP AS E WHERE HIREDATE IN

(SELECT HIREDATE FROM EMP WHERE E.EMPNO <> EMPNO);

EMPNO	EMPNAME	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

j. Find out the emps who joined in the company before their managers.

SELECT EMPNAME FROM EMP E WHERE HIREDATE <

(SELECT HIREDATE FROM EMP WHERE EMPNO = E.MGR);

EMPNAME
SMITH
ALLEN
WARD
JONES
BLAKE
CLARK