EXPERIMENT 7

Aim: Implement various types of Joins & views.

Objective: To combine records from two or more tables in a database.

Description: Join command is used to combine fields of tables using common values of each. It is used to retrieve data from 2 or more tables based on some logical relationship between tables.

SQL join types: inner join, left join, right join, full join, self join, cartesian join, equi join.

- inner join - returns rows when match in both tables
  eg. select ename, dname from employee e, dept d where dno = end no.
- left join - returns all rows from left table even if there are no matches in right table
- right join - vice versa of left join.
- full join - return all rows in all tables.
- self join - used to join table to itself.
  eg. select ename, e1.salary, e2.salary from employee e1, e2 where e1.dno = e2.dno.

- cartesian join - returns cartesian product of records from 2 or more joined tables.

eg. select ename, d.dname from dept d cross join employee;

- equi join - rows satisfying the selection criteria from both joined tables are selected.

eg. select ename, dname from employee e, dept d where eno = dno.

SQL QUERIES:

```
SQL> SELECT MAX(SALARY) FROM EMPLOYEE;

MAX(SALARY)
-----------
      82400

SQL> SELECT * FROM EMPLOYEE;

       SSN ENAME                    SALARY   SUPERSSN        DNO
---------- -------------------- ---------- ---------- ----------
       100 William                   51500        100         10
       101 Jonas                     61800        101         11
       102 SCARLET                   82400        102         12
       103 BLAIR                     46350        103         13
       104 CHARLES                   50200        100         10

SQL> SELECT * FROM DEPT;

       DNO DNAME                STARTDATE     MGRSSN
---------- -------------------- --------- ----------
        10 FINANCE              12-NOV-21        100
        11 AUDIT                12-OCT-21        101
        12 MARKETING            01-NOV-21        102
        13 PRODUCTION           09-OCT-21        103

SQL> SELECT ENAME,DNAME FROM EMPLOYEE E,DEPT D WHERE E.DNO = D.DNO;

ENAME                DNAME
-------------------- --------------------
William              FINANCE
CHARLES              FINANCE
Jonas                AUDIT
SCARLET              MARKETING
BLAIR                PRODUCTION
```

```
SQL> SELECT ENAME,E.DNO,DNAME FROM EMPLOYEE E,DEPT D WHERE E.DNO = D.DNO;

ENAME                       DNO DNAME
-------------------- ---------- --------------------
William                      10 FINANCE
CHARLES                      10 FINANCE
Jonas                        11 AUDIT
SCARLET                      12 MARKETING
BLAIR                        13 PRODUCTION
```

```
SQL> SELECT ENAME,E.DNO,DNAME FROM (EMPLOYEE E JOIN DEPT D ON E.DNO = D.DNO);

ENAME                       DNO DNAME
-------------------- ---------- --------------------
William                      10 FINANCE
CHARLES                      10 FINANCE
Jonas                        11 AUDIT
SCARLET                      12 MARKETING
BLAIR                        13 PRODUCTION

SQL> SELECT E.ENAME AS EMPNAME,S.ENAME AS SUPERVISORNAME FROM EMPLOYEE E,EMPLOYEE S WHERE E.SUPERSSN=S.SSN

EMPNAME              SUPERVISORNAME
-------------------- --------------------
William              William
CHARLES              William
Jonas                Jonas
SCARLET              SCARLET
BLAIR                BLAIR

SQL> SELECT E.ENAME,E.DNO,DNAME FROM (EMPLOYEE E LEFT OUTER JOIN DEPT D ON E.DNO=D.DNO);

ENAME                       DNO DNAME
-------------------- ---------- --------------------
CHARLES                      10 FINANCE
William                      10 FINANCE
Jonas                        11 AUDIT
SCARLET                      12 MARKETING
BLAIR                        13 PRODUCTION

SQL> SELECT E.ENAME,E.DNO,DNAME FROM (EMPLOYEE E RIGHT OUTER JOIN DEPT D ON E.DNO=D.DNO);

ENAME                       DNO DNAME
-------------------- ---------- --------------------
William                      10 FINANCE
CHARLES                      10 FINANCE
Jonas                        11 AUDIT
SCARLET                      12 MARKETING
BLAIR                        13 PRODUCTION
```

```
SQL> SELECT E.ENAME,E.DNO,DNAME FROM (EMPLOYEE E FULL OUTER JOIN DEPT D ON E.DNO=D.DNO);

ENAMESELECT * FROM STUD_V1    O DNAME
-------------------- ---------- --------------------
William                      10 FINANCE
Jonas                        11 AUDIT
SCARLET                      12 MARKETING
BLAIR                        13 PRODUCTION
CHARLES                      10 FINANCE
```

```
SQL> CREATE VIEW EMPLOYEE_V2 AS SELECT E.ENAME,E.DNO,DNAME FROM (EMPLOYEE E FULL OUTER JOIN DEPT D ON E.DNO=D.DNO);

View created.

SQL> SELECT * FROM EMPLOYEE_V2;

ENAME                       DNO DNAME
-------------------- ---------- --------------------
William                      10 FINANCE
Jonas                        11 AUDIT
SCARLET                      12 MARKETING
BLAIR                        13 PRODUCTION
CHARLES                      10 FINANCE
```

Conclusion:

Thus we have successfully learned and implemented joins & views in our system.