Program 5

-- CREATION OF TABLES

-- EMPLOYEE

CREATE TABLE EMPLOYEE (

SSN VARCHAR(10) PRIMARY KEY,

FNAME VARCHAR(20),

LNAME VARCHAR(20),

ADDRESS VARCHAR(25),

SEX CHAR(1),

SALARY INTEGER,

SUPERSSN VARCHAR(10),

DNO VARCHAR(10),

FOREIGN KEY(SUPERSSN) REFERENCES EMPLOYEE(SSN));

-- DEPARTMENT

CREATE TABLE DEPARTMENT(

DNO VARCHAR(10) PRIMARY KEY,

DNAME VARCHAR(20),

MGRSTARTDATE DATE,

MGRSSN VARCHAR(10),

FOREIGN KEY(MGRSSN) REFERENCES EMPLOYEE(SSN));

-- ALTERING EMPLPOYEE

ALTER TABLE EMPLOYEE

ADD FOREIGN KEY(DNO) REFERENCES DEPARTMENT(DNO);

-- DLOCATION

CREATE TABLE DLOCATION(

DLOC VARCHAR(20),

DNO VARCHAR(10) PRIMARY KEY,

FOREIGN KEY(DNO) REFERENCES DEPARTMENT(DNO));

-- PROJECT

CREATE TABLE PROJECT(

PNO VARCHAR(20),

PNAME VARCHAR(20),

PLOCATION VARCHAR(20),

DNO VARCHAR(10),

PRIMARY KEY(PNO),

FOREIGN KEY(DNO) REFERENCES DEPARTMENT(DNO));

-- WORKS\_ON

CREATE TABLE WORKS\_ON(

HOURS VARCHAR(10),

SSN VARCHAR(10),

PNO VARCHAR(20),

PRIMARY KEY(SSN,PNO),

FOREIGN KEY(SSN) REFERENCES EMPLOYEE(SSN),

FOREIGN KEY(PNO) REFERENCES PROJECT(PNO));

-- VALUES FOR TABLES

-- EMPLOYEE

INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES ('RNSECE01','JOHN','SCOTT','BANGALORE','M', 450000);

INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES ('RNSCSE01','JAMES','SMITH','BANGALORE','M', 500000);

INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES ('RNSCSE02','HEARN','BAKER','BANGALORE','M', 700000);

INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES ('RNSCSE03','EDWARD','SCOTT','MYSORE','M', 500000);

INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES ('RNSCSE04','PAVAN','HEGDE','MANGALORE','M', 650000);

INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES ('RNSCSE05','GIRISH','MALYA','MYSORE','M', 450000);

INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES ('RNSCSE06','NEHA','SN','BANGALORE','F', 800000);

INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES ('RNSACC01','AHANA','K','MANGALORE','F', 350000);

INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES ('RNSACC02','SANTHOSH','KUMAR','MANGALORE','M', 300000);

INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES ('RNSISE01','VEENA','M','MYSORE','M', 600000);

INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY) VALUES ('RNSIT01','NAGESH','HR','BANGALORE','M', 500000);

-- DEPARTMENT

INSERT INTO DEPARTMENT VALUES ('1','ACCOUNTS','2001-01-01','RNSACC02');

INSERT INTO DEPARTMENT VALUES ('2','IT','2016-07-01','RNSIT01');

INSERT INTO DEPARTMENT VALUES ('3','ECE','2008-06-01','RNSECE01');

INSERT INTO DEPARTMENT VALUES ('4','ISE','2015-07-01','RNSISE01');

INSERT INTO DEPARTMENT VALUES ('5','CSE','2002-06-01','RNSCSE05');

-- UPDATING SUPERSSN AND DNO FOR EMPLPOYEE TABLE

UPDATE EMPLOYEE SET SUPERSSN = NULL , DNO='3' WHERE SSN='RNSECE01';

UPDATE EMPLOYEE SET SUPERSSN = 'RNSCSE02', DNO='5' WHERE SSN = 'RNSCSE01';

UPDATE EMPLOYEE SET SUPERSSN = 'RNSCSE03', DNO='5' WHERE SSN = 'RNSCSE02';

UPDATE EMPLOYEE SET SUPERSSN = 'RNSCSE04', DNO='5' WHERE SSN = 'RNSCSE03';

UPDATE EMPLOYEE SET SUPERSSN = 'RNSCSE05', DNO='5' WHERE SSN = 'RNSCSE04';

UPDATE EMPLOYEE SET SUPERSSN = 'RNSCSE06', DNO='5' WHERE SSN = 'RNSCSE05';

UPDATE EMPLOYEE SET SUPERSSN = NULL , DNO='5' WHERE SSN = 'RNSCSE06';

UPDATE EMPLOYEE SET SUPERSSN = 'RNSACC02', DNO='1' WHERE SSN = 'RNSACC01';

UPDATE EMPLOYEE SET SUPERSSN = NULL , DNO='1' WHERE SSN = 'RNSACC02';

UPDATE EMPLOYEE SET SUPERSSN = NULL , DNO='4' WHERE SSN = 'RNSISE01';

UPDATE EMPLOYEE SET SUPERSSN = NULL , DNO='2' WHERE SSN = 'RNSIT01';

-- DLOCATION

INSERT INTO DLOCATION VALUES ('BANGALORE', '1');

INSERT INTO DLOCATION VALUES ('BANGALORE', '2');

INSERT INTO DLOCATION VALUES ('BANGALORE', '3');

INSERT INTO DLOCATION VALUES ('MANGALORE', '4');

INSERT INTO DLOCATION VALUES ('MANGALORE', '5');

-- PROJECT

INSERT INTO PROJECT VALUES (100,'IOT','BANGALORE','5');

INSERT INTO PROJECT VALUES (101,'CLOUD','BANGALORE','5');

INSERT INTO PROJECT VALUES (102,'BIGDATA','BANGALORE','5');

INSERT INTO PROJECT VALUES (103,'SENSORS','BANGALORE','3');

INSERT INTO PROJECT VALUES (104,'BANK MANAGEMENT','BANGALORE','1');

INSERT INTO PROJECT VALUES (105,'SALARY MANAGEMENT','BANGALORE','1');

INSERT INTO PROJECT VALUES (106,'OPENSTACK','BANGALORE','4');

INSERT INTO PROJECT VALUES (107,'SMART CITY','BANGALORE','2');

-- WORKS\_ON

INSERT INTO WORKS\_ON VALUES (4, 'RNSCSE01', 100);

INSERT INTO WORKS\_ON VALUES (6, 'RNSCSE01', 101);

INSERT INTO WORKS\_ON VALUES (8, 'RNSCSE01', 102);

INSERT INTO WORKS\_ON VALUES (10, 'RNSCSE02', 100);

INSERT INTO WORKS\_ON VALUES (3, 'RNSCSE04', 100);

INSERT INTO WORKS\_ON VALUES (4, 'RNSCSE05', 101);

INSERT INTO WORKS\_ON VALUES (5, 'RNSCSE06', 102);

INSERT INTO WORKS\_ON VALUES (6, 'RNSCSE03', 102);

INSERT INTO WORKS\_ON VALUES (7, 'RNSECE01', 103);

INSERT INTO WORKS\_ON VALUES (5, 'RNSACC01', 104);

INSERT INTO WORKS\_ON VALUES (6, 'RNSACC02', 105);

INSERT INTO WORKS\_ON VALUES (4, 'RNSISE01', 106);

INSERT INTO WORKS\_ON VALUES (10, 'RNSIT01', 107);

-- DISPLAYING TABLES

-- EMPLOYEE

SELECT \* FROM EMPLOYEE;

-- DEPARTMENT

SELECT \* FROM DEPARTMENT ;

-- DLOCATION

SELECT \* FROM DLOCATION ;

-- PROJECT

SELECT \* FROM PROJECT ;

-- WORKS\_ON

SELECT \* FROM WORKS\_ON;

-- QUERIES

-- 1) Make a list of all project numbers for projects that involve an employee whose last name is ‘Scott’,

-- either as a worker or as a manager of the department that controls the project.

(SELECT DISTINCT P.PNO

FROM PROJECT P, DEPARTMENT D, EMPLOYEE E WHERE E.DNO=D.DNO

AND D.MGRSSN=E.SSN AND E.LNAME='SCOTT') UNION

(SELECT DISTINCT P1.PNO

FROM PROJECT P1, WORKS\_ON W, EMPLOYEE E1 WHERE P1.PNO=W.PNO

AND E1.SSN=W.SSN

AND E1.LNAME='SCOTT');

-- 2) Show the resulting salaries if every employee working on the ‘IoT’ project is given a 10 percent raise.

SELECT E.FNAME, E.LNAME, 1.1\*E.SALARY AS INCR\_SAL FROM EMPLOYEE E, WORKS\_ON W, PROJECT P

WHERE E.SSN=W.SSN AND W.PNO=P.PNO AND P.PNAME='IOT';

-- 3) Find the sum of the salaries of all employees of the ‘Accounts’ department, as well as the maximum salary,

-- the minimum salary, and the average salary in this department

SELECT SUM(E.SALARY), MAX(E.SALARY), MIN(E.SALARY), AVG(E.SALARY)

FROM EMPLOYEE E, DEPARTMENT D WHERE E.DNO=D.DNO

AND D.DNAME='ACCOUNTS';

-- 4) Retrieve the name of each employee who works on all the projects Controlled by department number 5

-- (use NOT EXISTS operator).

SELECT E.FNAME,E.LNAME FROM EMPLOYEE E WHERE NOT EXISTS

(SELECT PNO FROM PROJECT P WHERE DNO=5 AND PNO NOT IN

(SELECT PNO FROM WORKS\_ON W WHERE E.SSN=SSN));

-- 5) For each department that has more than five employees, retrieve the department number and the number of

-- its employees who are making more than Rs. 6, 00,000.

SELECT D.DNO, COUNT(\*)

FROM DEPARTMENT D, EMPLOYEE E WHERE D.DNO=E.DNO

AND E.SALARY>600000

AND D.DNO IN (SELECT E1.DNO FROM EMPLOYEE E1 GROUP BY E1.DNO HAVING COUNT(\*)>5)

GROUP BY D.DNO;