**COMPANY DATABASE**

Consider the schema for Company Database:

EMPLOYEE(SSN, Name, Address, Sex, Salary, SuperSSN, DNo)

DEPARTMENT(DNo, DName, MgrSSN, MgrStartDate)

DLOCATION(DNo,DLoc)

PROJECT(PNo, PName, PLocation, DNo)

WORKS\_ON(SSN, PNo, Hours)

CREATE TABLE DEPARTMENT (DNO INTEGER PRIMARY KEY,DNAME VARCHAR2(20),MGRSTARTDATE DATE);

CREATE TABLE EMPLOYEE (SSN VARCHAR2(20) PRIMARY KEY,FNAME VARCHAR2(20),LNAME VARCHAR2(20),ADDRESS VARCHAR2(20),SEX CHAR(1),SALARY INTEGER,SUPERSSN REFERENCES EMPLOYEE(SSN),DNO REFERENCES DEPARTMENT (DNO));

CREATE TABLE DLOCATION (DNO REFERENCES DEPARTMENT (DNO),DLOC VARCHAR2(20),PRIMARY KEY(DNO,DLOC));

CREATE TABLE PROJECT (PNO INTEGER PRIMARY KEY,PNAME VARCHAR2(20),PLOCATION VARCHAR2(20),DNO REFERENCES DEPARTMENT (DNO));

CREATE TABLE WORKS\_ON (SSN REFERENCES EMPLOYEE(SSN),PNO REFERENCES PROJECT(PNO),HOURS INTEGER,PRIMARY KEY(SSN,PNO));

ALTER TABLE DEPARTMENT ADD MGRSSN REFERENCES EMPLOYEE(SSN);

**INSERT**

**INSERT INTO EMPLOYEE (SSN,FNAME,LNAME,ADDRESS,SEX,SALARY) VALUES ('4VV19CS101','JOHN','SCOTT','PARIS','M',715000);**

**INSERT INTO EMPLOYEE (SSN,FNAME,LNAME,ADDRESS,SEX,SALARY) VALUES ('4VV19CS102','MARY','STEVES','LONDON','F',915000);**

**INSERT INTO EMPLOYEE (SSN,FNAME,LNAME,ADDRESS,SEX,SALARY) VALUES ('4VV19CS103','EVAN','V','GERMANY','M',71000);**

**INSERT INTO EMPLOYEE (SSN,FNAME,LNAME,ADDRESS,SEX,SALARY) VALUES ('4VV19CS104','DAVID','P','PARIS','M',1000);**

**INSERT INTO EMPLOYEE (SSN,FNAME,LNAME,ADDRESS,SEX,SALARY) VALUES ('4VV19CS105','JAMES','S','LONDON','M',885000);**

**INSERT INTO EMPLOYEE (SSN,FNAME,LNAME,ADDRESS,SEX,SALARY) VALUES ('4VV19CS106','CHRISTINE','T','SANFRANSICO','F',500000);**

**INSERT INTO EMPLOYEE (SSN,FNAME,LNAME,ADDRESS,SEX,SALARY) VALUES ('4VV19CS107','EE','PP','ARIS','M',7000);**

**INSERT INTO DEPARTMENT VALUES (5,'ACCOUNTS','01-JAN-2020','4VV19CS104');**

**INSERT INTO DEPARTMENT VALUES (4,'MARKETING','11-JAN-2020','4VV19CS107');**

**UPDATE EMPLOYEE SET SUPERSSN='4VV19CS104',DNO=5**

**WHERE SSN='4VV19CS101';**

**UPDATE EMPLOYEE SET SUPERSSN='4VV19CS104',DNO=5**

**WHERE SSN='4VV19CS102';**

**UPDATE EMPLOYEE SET SUPERSSN='4VV19CS104',DNO=5**

**WHERE SSN='4VV19CS103';**

**UPDATE EMPLOYEE SET SUPERSSN='4VV19CS104',DNO=5**

**WHERE SSN='4VV19CS105';**

**UPDATE EMPLOYEE SET SUPERSSN=NULL ,DNO=5**

**WHERE SSN='4VV19CS104';**

**UPDATE EMPLOYEE SET SUPERSSN= '4VV19CS104’ ,DNO=5**

**WHERE SSN='4VV19CS106';**

**UPDATE EMPLOYEE SET SUPERSSN=NULL ,DNO=4**

**WHERE SSN='4VV19CS107';**

**INSERT INTO DLOCATION VALUES(5,'BENGAL');**

**INSERT INTO DLOCATION VALUES(4,'MUMBAI');**

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

**INSERT INTO PROJECT VALUES (101,'DBMS','BENGALURU',5);**

**INSERT INTO PROJECT VALUES (102,'AI','MYSURU',4);**

**INSERT INTO WORKS\_ON VALUES ('4VV19CS101',101,4);**

**INSERT INTO WORKS\_ON VALUES ('4VV19CS102',101,3);**

**INSERT INTO WORKS\_ON VALUES ('4VV19CS103',101,4);**

**INSERT INTO WORKS\_ON VALUES ('4VV19CS104',101,4);**

**INSERT INTO WORKS\_ON VALUES ('4VV19CS105',102,4);**

**INSERT INTO WORKS\_ON VALUES ('4VV19CS106',102,6);**

**INSERT INTO WORKS\_ON VALUES ('4VV19CS107',103,14);**

Write SQL queries to

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.DNO=P.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';

## Result Set 6

|  |
| --- |
| **PNO** |
| 101 |

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

CREATE VIEW INCR\_SAL AS

SELECT E.FNAME,E.LNAME,1.1\*E.SALARY

FROM EMPLOEE E,PROJECT P,WORKS\_ON W

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

SELECT \* FROM INCR\_SAL;

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(SALARY),MIN(SALARY),MAX(SALARY),AVG(SALARY)

FROM DEPARTMENT D,EMPLOYEE E

WHERE D.DNO=E.DNO AND DNAME='ACCOUNTS';

## Result Set 2

|  |  |  |  |
| --- | --- | --- | --- |
| **SUM(SALARY)** | **MIN(SALARY)** | **MAX(SALARY)** | **AVG(SALARY)** |
| 3087000 | 1000 | 915000 | 514500 |

4. Retrieve the name of each employee who works on all the projects controlledby 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) MINUS (SELECT PNO FROM WORKS\_ON W WHERE E.SSN=W.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 EMPLOYEE E,DEPARTMENT D

WHERE E.DNO=D.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;

## Result Set 4

|  |  |
| --- | --- |
| **DNO** | **COUNT(\*)** |
| 5 | 3 |