EXPERIMENT 1:

CREATE TABLE PUBLISHER (NAME VARCHAR(20) PRIMARY KEY,PHONE INTEGER, ADDRESS VARCHAR(20));

CREATE TABLE BOOK (BOOK_ID INTEGER PRIMARY KEY, TITLE VARCHAR(20), PUB_YEAR DATE, PUBLISHER_NAME VARCHAR(20) REFERENCES PUBLISHER(NAME) ON DELETE CASCADE);

CREATE TABLE BOOK_AUTHORS (AUTHOR_NAME VARCHAR(20), BOOK_ID INTEGER REFERENCES BOOK(BOOK_ID) ON DELETE CASCADE, PRIMARY KEY(BOOK_ID, AUTHOR_NAME));

CREATE TABLE LIBRARY_BRANCH (BRANCH_ID INTEGER PRIMARY KEY, BRANCH_NAME VARCHAR(20), ADDRESS VARCHAR(20));

CREATE TABLE BOOK_COPIES (NO_OF_COPIES INTEGER, BOOK_ID INTEGER REFERENCES BOOK(BOOK_ID) ON DELETE CASCADE, BRANCH_ID INTEGER REFERENCES LIBRARY_BRANCH(BRANCH_ID) ON DELETE CASCADE, PRIMARY KEY(BOOK_ID,BRANCH_ID));

CREATE TABLE CARD(CARD_NO INTEGER PRIMARY KEY);

CREATE TABLE BOOK_LENDING (DATE_OUT DATE, DUE_DATE DATE, BOOK_ID INTEGER REFERENCES BOOK(BOOK_ID) ON DELETE CASCADE, BRANCH_ID INTEGER REFERENCES LIBRARY_BRANCH(BRANCH_ID) ON DELETE CASCADE, CARD_NO INTEGER REFERENCES CARD(CARD_NO) ON DELETE CASCADE, PRIMARY KEY(BOOK_ID, BRANCH_ID, CARD_NO));

INSERT INTO PUBLISHER VALUES ('MCGRAW-HILL', 998907658, 'BANGALORE');

INSERT INTO PUBLISHER VALUES ('PEARSON', 988907656, 'NEWDELHI');

INSERT INTO PUBLISHER VALUES ('RANDOM HOUSE', 745567934, 'HYDRABAD');

INSERT INTO PUBLISHER VALUES ('HACHETTE LIVRE', 897086234, 'CHENAI');

INSERT INTO PUBLISHER VALUES ('GRUPO PLANETA', 775612023, 'BANGALORE');

INSERT INTO BOOK VALUES (1,'DBMS','2017-01-01','MCGRAW-HILL');

INSERT INTO BOOK VALUES (2,'ADBMS','2016-06-22', 'MCGRAW-HILL');

INSERT INTO BOOK VALUES (3,'CN','2016-09-24', 'PEARSON');

INSERT INTO BOOK VALUES (4,'CG','2015-09-13', 'GRUPO PLANETA');

INSERT INTO BOOK VALUES (5,'OS','2016-05-09', 'PEARSON');

INSERT INTO BOOK_AUTHORS VALUES ('NAVATHE', 1);

INSERT INTO BOOK_AUTHORS VALUES ('NAVATHE', 2);

```sql
INSERT INTO BOOK_AUTHORS VALUES ('TANENBAUM', 3);
INSERT INTO BOOK_AUTHORS VALUES ('EDWARD ANGEL', 4);
INSERT INTO BOOK_AUTHORS VALUES ('GALVIN', 5);


INSERT INTO LIBRARY_BRANCH VALUES (10,'RR NAGAR','BANGALORE');
INSERT INTO LIBRARY_BRANCH VALUES (11,'RNSIT','BANGALORE');
INSERT INTO LIBRARY_BRANCH VALUES (12,'RAJAJI NAGAR', 'BANGALORE');
INSERT INTO LIBRARY_BRANCH VALUES (13,'NITTE','MANGALORE');
INSERT INTO LIBRARY_BRANCH VALUES (14,'MANIPAL','UDUPI');


INSERT INTO BOOK_COPIES VALUES (10, 1, 10);
INSERT INTO BOOK_COPIES VALUES (5, 1, 11);
INSERT INTO BOOK_COPIES VALUES (2, 2, 12);
INSERT INTO BOOK_COPIES VALUES (5, 2, 13);
INSERT INTO BOOK_COPIES VALUES (7, 3, 14);
INSERT INTO BOOK_COPIES VALUES (1, 5, 10);
INSERT INTO BOOK_COPIES VALUES (3, 4, 11);


INSERT INTO CARD VALUES (100);
INSERT INTO CARD VALUES (101);
INSERT INTO CARD VALUES (102);
INSERT INTO CARD VALUES (103);
INSERT INTO CARD VALUES (104);


INSERT INTO BOOK_LENDING VALUES ('2017-01-01','2017-06-01', 1, 10, 101);
INSERT INTO BOOK_LENDING VALUES ('2017-10-11','2017-03-11', 3, 14, 101);
INSERT INTO BOOK_LENDING VALUES ('2017-02-21','2017-04-21', 2, 13, 101);
INSERT INTO BOOK_LENDING VALUES ('2017-03-15','2017-07-15', 4, 11, 101);
INSERT INTO BOOK_LENDING VALUES ('2017-04-12','2017-05-12', 1, 11, 104);
```

QUERIES:

1) SELECT B.BOOK_ID, B.TITLE, B.PUBLISHER_NAME, A.AUTHOR_NAME, C.NO_OF_COPIES, C.BRANCH_ID FROM BOOK B, BOOK_AUTHORS A, BOOK_COPIES C, LIBRARY_BRANCH L WHERE B.BOOK_ID = A.BOOK_ID AND B.BOOK_ID = C.BOOK_ID AND L.BRANCH_ID = C.BRANCH_ID;

```
   BOOK_ID TITLE                PUBLISHER_NAME      AUTHOR_NAME
---------- ------------------- ------------------- -------------------

NO_OF_COPIES   BRANCH_ID
------------ ----------
         1 DBMS                 MCGRAW-HILL         NAVATHE
        10          10


         1 DBMS                 MCGRAW-HILL         NAVATHE
         5          11


         2 ADBMS                MCGRAW-HILL         NAVATHE
         2          12


         2 ADBMS                MCGRAW-HILL         NAVATHE
         5          13


         3 CN                   PEARSON             TANENBAUM
         7          14


         5 OS                   PEARSON             GALVIN
         1          10


         4 CG                   GRUPO PLANETA       EDWARD ANGEL
```

3　　　　　　11

2) SELECT CARD_NO FROM BOOK_LENDING WHERE DATE_OUT BETWEEN '01-JAN-2017' AND '01-JUL-2017' GROUP BY CARD_NO HAVING COUNT(*) > 3;

　　CARD_NO

　　　　101

3) DELETE FROM BOOK WHERE BOOK_ID = 3;

SELECT * FROM BOOK;

```
   BOOK_ID TITLE                 PUB_YEAR   PUBLISHER_NAME
---------- -------------------- --------- --------------------
         1 DBMS                  01-JAN-17 MCGRAW-HILL
         2 ADBMS                 22-JUN-16 MCGRAW-HILL
         4 CG                    13-SEP-15 GRUPO PLANETA
         5 OS                    09-MAY-16 PEARSON
```

4) CREATE VIEW V_PUB AS SELECT DISTINCT(PUB_YEAR) FROM BOOK;

SELECT * FROM V_PUB;

PUB_YEAR

22-JUN-16

09-MAY-16

01-JAN-17

13-SEP-15

5) CREATE VIEW V_BOOKS AS SELECT B.BOOK_ID, B.TITLE, C.NO_OF_COPIES FROM BOOK B, BOOK_COPIES C, LIBRARY_BRANCH L WHERE B.BOOK_ID = C.BOOK_ID AND C.BRANCH_ID = L.BRANCH_ID;

SELECT * FROM V_BOOKS;

BOOK_ID TITLE	NO_OF_COPIES
1 DBMS	10
1 DBMS	5
2 ADBMS	2
2 ADBMS	5
5 OS	1
4 CG	3

EXPERIMENT 2:

CREATE TABLE SALESMAN (SALESMAN_ID INTEGER PRIMARY KEY, NAME VARCHAR(20), CITY VARCHAR(20), COMMISSION VARCHAR(4));

CREATE TABLE CUSTOMER1 (CUSTOMER_ID INTEGER PRIMARY KEY, CUST_NAME VARCHAR(20), CITY VARCHAR(20), GRADE INTEGER, SALESMAN_ID INTEGER REFERENCES SALESMAN(SALESMAN_ID) ON DELETE CASCADE);

CREATE TABLE ORDERS (ORD_NO INTEGER PRIMARY KEY, PURCHASE_AMT INTEGER, ORD_DATE DATE, CUSTOMER_ID INTEGER REFERENCES CUSTOMER1(CUSTOMER_ID) ON DELETE CASCADE, SALESMAN_ID INTEGER REFERENCES SALESMAN(SALESMAN_ID) ON DELETE CASCADE);

INSERT INTO SALESMAN VALUES (1000, 'JOHN','BANGALORE','25 %');

INSERT INTO SALESMAN VALUES (2000, 'RAVI','BANGALORE','20 %');

INSERT INTO SALESMAN VALUES (3000, 'KUMAR','MYSORE','15 %');

INSERT INTO SALESMAN VALUES (4000, 'SMITH','DELHI','30 %');

INSERT INTO SALESMAN VALUES (5000, 'HARSHA','HYDRABAD','15 %');

INSERT INTO CUSTOMER1 VALUES (10, 'PREETHI','BANGALORE', 100, 1000);

INSERT INTO CUSTOMER1 VALUES (11, 'VIVEK','MANGALORE', 300, 1000);

INSERT INTO CUSTOMER1 VALUES (12, 'BHASKAR','CHENNAI', 400, 2000);

INSERT INTO CUSTOMER1 VALUES (13, 'CHETHAN','BANGALORE', 200,

2000);

INSERT INTO CUSTOMER1 VALUES (14, 'MAMATHA','BANGALORE', 400,

3000);

INSERT INTO ORDERS VALUES (50, 5000, '2017-05-04', 10, 1000);

INSERT INTO ORDERS VALUES (51, 450, '2017-01-20', 10, 2000);

INSERT INTO ORDERS VALUES (52, 1000, '2017-02-24', 13, 2000);

INSERT INTO ORDERS VALUES (53, 3500, '2017-04-13', 14, 3000);

INSERT INTO ORDERS VALUES (54, 550, '2017-03-19', 12, 2000);

QUERIES:

1) SELECT GRADE , COUNT(CUSTOMER_ID) FROM CUSTOMER1 GROUP BY GRADE HAVING GRADE >
(SELECT AVG(GRADE) FROM CUSTOMER1 WHERE CITY = 'BANGALORE');

```
     GRADE COUNT(CUSTOMER_ID)

---------- ------------------
        400                 2
        300                 1
```


2) SELECT S.SALESMAN_ID, S.NAME FROM SALESMAN S WHERE SALESMAN_ID IN (SELECT SALESMAN_ID
FROM CUSTOMER1 C1 GROUP BY C1.SALESMAN_ID HAVING COUNT(*)>1);


```
SALESMAN_ID NAME

----------- --------------------
       1000 JOHN
       2000 RAVI
```

3) SELECT S.SALESMAN_ID, S.NAME, C.CUST_NAME FROM SALESMAN S, CUSTOMER1 C WHERE S.CITY = C.CITY AND S.SALESMAN_ID = C.SALESMAN_ID UNION SELECT S.SALESMAN_ID, S.NAME , C.CUST_NAME FROM SALESMAN S, CUSTOMER1 C WHERE S.CITY!=C.CITY AND S.SALESMAN_ID = C.SALESMAN_ID;

SALESMAN_ID NAME   CUST_NAME

----------- ------------------- -------------------

       1000 JOHN   PREETHI

       1000 JOHN   VIVEK

       2000 RAVI   BHASKAR

       2000 RAVI   CHETHAN

       3000 KUMAR   MAMATHA

4) CREATE VIEW ESS_SALESMAN AS SELECT B.ORD_DATE, S.SALESMAN_ID, S.NAME FROM ORDERS B, SALESMAN S WHERE S.SALESMAN_ID = B.SALESMAN_ID AND B.PURCHASE_AMT = (SELECT MAX(PURCHASE_AMT) FROM ORDERS C WHERE C.ORD_DATE = B.ORD_DATE);

SELECT * FROM ESS_SALESMAN;

ORD_DATE   SALESMAN_ID NAME

--------- ----------- --------------------

04-MAY-17   1000 JOHN

20-JAN-17   2000 RAVI

24-FEB-17   2000 RAVI

13-APR-17   3000 KUMAR

09-MAR-17   2000 RAVI

5) DELETE FROM SALESMAN WHERE SALESMAN_ID = 1000;

SELECT * FROM SALESMAN;

```
SALESMAN_ID NAME                            CITY                    COMM

----------- -------------------- -------------------- ----

       2000 RAVI                 BANGALORE               20 %

       3000 KUMAR                  MYSORE                 15 %

       4000 SMITH                  DELHI                 30 %

       5000 HARSHA                 HYDRABAD               15 %
```

EXPERIMENT 3:

CREATE TABLE ACTOR(ACT_ID INTEGER PRIMARY KEY, ACT_NAME VARCHAR(10), ACT_GENDER VARCHAR(1));

CREATE TABLE DIRECTOR(DIR_ID INTEGER PRIMARY KEY, DIR_NAME VARCHAR(20), DIR_PHONE NUMERIC);

CREATE TABLE MOVIES(MOV_ID INTEGER PRIMARY KEY, MOV_TITLE VARCHAR(20), MOV_YEAR INTEGER, MOV_LANG VARCHAR(10), DIR_ID INTEGER REFERENCES DIRECTOR(DIR_ID) ON DELETE CASCADE);

CREATE TABLE MOVIE_CAST(ACT_ID INTEGER REFERENCES ACTOR(ACT_ID) ON DELETE CASCADE, MOV_ID INTEGER REFERENCES MOVIES(MOV_ID) ON DELETE CASCADE, ROLE VARCHAR(10), PRIMARY KEY(ACT_ID,MOV_ID));

CREATE TABLE RATING(MOV_ID INTEGER REFERENCES MOVIES(MOV_ID) ON DELETE CASCADE, REV_STARS INTEGER, PRIMARY KEY(MOV_ID,REV_STARS));

INSERT INTO ACTOR VALUES (301,'ANUSHKA','F');

INSERT INTO ACTOR VALUES (302,'PRABHAS','M');

INSERT INTO ACTOR VALUES (303,'PUNITH','M');

INSERT INTO ACTOR VALUES (304,'JERMY','M');

INSERT INTO DIRECTOR VALUES (60,'RAJAMOULI', 8751611001);

INSERT INTO DIRECTOR VALUES (61,'HITCHCOCK', 7766138911);

INSERT INTO DIRECTOR VALUES (62,'FARAN', 9986776531);

INSERT INTO DIRECTOR VALUES (63,'STEVEN SPIELBERG', 8989776530);

INSERT INTO MOVIES VALUES (1001,'BAHUBALI-2', 2017, 'TELAGU', 60);

INSERT INTO MOVIES VALUES (1002,'BAHUBALI-1', 2015, 'TELAGU', 60);

INSERT INTO MOVIES VALUES (1003,'AKASH', 2008, 'KANNADA', 61);

INSERT INTO MOVIES VALUES (1004,'WAR HORSE', 2011, 'ENGLISH', 63);

INSERT INTO MOVIE_CAST VALUES (301, 1002, 'HEROINE');

INSERT INTO MOVIE_CAST VALUES (301, 1001, 'HEROINE');

INSERT INTO MOVIE_CAST VALUES (303, 1003, 'HERO');

INSERT INTO MOVIE_CAST VALUES (303, 1002, 'GUEST');

INSERT INTO MOVIE_CAST VALUES (304, 1004, 'HERO');

INSERT INTO RATING VALUES (1001, 4);

INSERT INTO RATING VALUES (1002, 2);

INSERT INTO RATING VALUES (1003, 5);

INSERT INTO RATING VALUES (1004, 4);

QUERIES:

1) SELECT MOV_TITLE FROM MOVIES WHERE DIR_ID IN (SELECT DIR_ID FROM DIRECTOR WHERE DIR_NAME = 'HITCHCOCK');

 MOV_TITLE

AKASH

2) SELECT MOV_TITLE FROM MOVIES M , MOVIE_CAST MC WHERE M.MOV_ID = MC.MOV_ID AND MC.ACT_ID IN (SELECT ACT_ID FROM MOVIE_CAST GROUP BY ACT_ID HAVING COUNT(ACT_ID)>1);

MOV_TITLE

AKASH

BAHUBALI-1

BAHUBALI-1

BAHUBALI-2

3) SELECT ACT_NAME, MOV_TITLE, MOV_YEAR FROM ACTOR A JOIN MOVIE_CAST C ON A.ACT_ID = C.ACT_ID JOIN MOVIES M ON C.MOV_ID = M.MOV_ID WHERE M.MOV_YEAR NOT BETWEEN 2000 AND 2015;

ACT_NAME	MOV_TITLE	MOV_YEAR
ANUSHKA	BAHUBALI-2	2017

4) SELECT MOV_TITLE, MAX(REV_STARS) FROM MOVIES INNER JOIN RATING USING (MOV_ID) GROUP BY MOV_TITLE HAVING MAX(REV_STARS) > 0 ORDER BY MOV_TITLE;

MOV_TITLE	MAX(REV_STARS)
AKASH	5
BAHUBALI-1	2
BAHUBALI-2	4
WAR HORSE	4

5) UPDATE RATING SET REV_STARS = 5 WHERE MOV_ID IN (SELECT MOV_ID FROM MOVIES WHERE DIR_ID IN (SELECT DIR_ID FROM DIRECTOR WHERE DIR_NAME = 'STEVEN SPIELBERG'));

SELECT * FROM RATING;

MOV_ID	REV_STARS
1001	4
1002	2

1003	5
1004	5

EXPERIMENT 4:

CREATE TABLE STUDENT(USN VARCHAR(20) PRIMARY KEY, SNAME VARCHAR(20), ADDRESS VARCHAR(20), PHONE NUMERIC, GENDER VARCHAR(1));

CREATE TABLE SEMSEC(SSID VARCHAR(5) PRIMARY KEY, SEM INTEGER, SEC VARCHAR(1));

CREATE TABLE SUBJECT(SUBCODE VARCHAR(10) PRIMARY KEY, TITLE VARCHAR(5), SEM INTEGER, CREDITS INTEGER);

CREATE TABLE CLASS(USN VARCHAR(20) REFERENCES STUDENT(USN) ON DELETE CASCADE, SSID VARCHAR(5) REFERENCES SEMSEC(SSID) ON DELETE CASCADE, PRIMARY KEY(USN,SSID));

CREATE TABLE IAMARKS(USN VARCHAR(20) REFERENCES STUDENT(USN) ON DELETE CASCADE, SUBCODE VARCHAR(10) REFERENCES SUBJECT(SUBCODE) ON DELETE CASCADE, SSID VARCHAR(5) REFERENCES SEMSEC(SSID) ON DELETE CASCADE, TEST1 INTEGER, TEST2 INTEGER, TEST3 INTEGER, FINALIA INTEGER, PRIMARY KEY(USN,SUBCODE,SSID));

INSERT INTO STUDENT VALUES ('1RN13CS020','AKSHAY','BELAGAVI', 8877881122,'M');

INSERT INTO STUDENT VALUES ('1RN13CS062','SANDHYA','BENGALURU', 7722829912,'F');

INSERT INTO STUDENT VALUES ('1RN13CS091','TEESHA','BENGALURU', 7712312312,'F');

INSERT INTO STUDENT VALUES ('1RN13CS066','SUPRIYA','MANGALURU', 8877881122,'F');

INSERT INTO STUDENT VALUES ('1RN14CS010','ABHAY','BENGALURU', 9900211201,'M');

INSERT INTO STUDENT VALUES ('1RN14CS032','BHASKAR','BENGALURU', 9923211099,'M');

INSERT INTO STUDENT VALUES ('1RN14CS025','ASMI','BENGALURU', 7894737377,'F');

INSERT INTO STUDENT VALUES ('1RN15CS011','AJAY','TUMKUR', 9845091341,'M');

INSERT INTO STUDENT VALUES ('1RN15CS029','CHITRA','DAVANGERE', 7696772121,'F');

INSERT INTO STUDENT VALUES ('1RN15CS045','JEEVA','BELLARY', 9944850121,'M');

INSERT INTO STUDENT VALUES ('1RN15CS091','SANTOSH','MANGALURU', 8812332201,'M');

INSERT INTO STUDENT VALUES ('1RN16CS045','ISMAIL','KALBURGI', 9900232201,'M');

INSERT INTO STUDENT VALUES ('1RN16CS088','SAMEERA','SHIMOGA', 9905542212,'F');

INSERT INTO STUDENT VALUES ('1RN16CS122','VINAYAKA','CHIKAMAGALUR', 8800880011,'M');

```sql
INSERT INTO SEMSEC VALUES ('CSE8A', 8,'A');

INSERT INTO SEMSEC VALUES ('CSE8B', 8,'B');

INSERT INTO SEMSEC VALUES ('CSE8C', 8,'C');

INSERT INTO SEMSEC VALUES ('CSE7A', 7,'A');

INSERT INTO SEMSEC VALUES ('CSE7B', 7,'B');

INSERT INTO SEMSEC VALUES ('CSE7C', 7,'C');

INSERT INTO SEMSEC VALUES ('CSE6A', 6,'A');

INSERT INTO SEMSEC VALUES ('CSE6B', 6,'B');

INSERT INTO SEMSEC VALUES ('CSE6C', 6,'C');

INSERT INTO SEMSEC VALUES ('CSE5A', 5,'A');

INSERT INTO SEMSEC VALUES ('CSE5B', 5,'B');

INSERT INTO SEMSEC VALUES ('CSE5C', 5,'C');

INSERT INTO SEMSEC VALUES ('CSE4A', 4,'A');

INSERT INTO SEMSEC VALUES ('CSE4B', 4,'B');

INSERT INTO SEMSEC VALUES ('CSE4C', 4,'C');

INSERT INTO SEMSEC VALUES ('CSE3A', 3,'A');

INSERT INTO SEMSEC VALUES ('CSE3B', 3,'B');

INSERT INTO SEMSEC VALUES ('CSE3C', 3,'C');

INSERT INTO SEMSEC VALUES ('CSE2A', 2,'A');

INSERT INTO SEMSEC VALUES ('CSE2B', 2,'B');

INSERT INTO SEMSEC VALUES ('CSE2C', 2,'C');

INSERT INTO SEMSEC VALUES ('CSE1A', 1,'A');

INSERT INTO SEMSEC VALUES ('CSE1B', 1,'B');

INSERT INTO SEMSEC VALUES ('CSE1C', 1,'C');


INSERT INTO CLASS VALUES ('1RN13CS020','CSE8A');

INSERT INTO CLASS VALUES ('1RN13CS062','CSE8A');

INSERT INTO CLASS VALUES ('1RN13CS066','CSE8B');

INSERT INTO CLASS VALUES ('1RN13CS091','CSE8C');
```

INSERT INTO CLASS VALUES ('1RN14CS010','CSE7A');

INSERT INTO CLASS VALUES ('1RN14CS025','CSE7A');

INSERT INTO CLASS VALUES ('1RN14CS032','CSE7A');

INSERT INTO CLASS VALUES ('1RN15CS011','CSE4A');

INSERT INTO CLASS VALUES ('1RN15CS029','CSE4A');

INSERT INTO CLASS VALUES ('1RN15CS045','CSE4B');

INSERT INTO CLASS VALUES ('1RN15CS091','CSE4C');

INSERT INTO CLASS VALUES ('1RN16CS045','CSE3A');

INSERT INTO CLASS VALUES ('1RN16CS088','CSE3B');

INSERT INTO CLASS VALUES ('1RN16CS122','CSE3C');

INSERT INTO SUBJECT VALUES ('10CS81','ACA', 8, 4);

INSERT INTO SUBJECT VALUES ('10CS82','SSM', 8, 4);

INSERT INTO SUBJECT VALUES ('10CS83','NM', 8, 4);

INSERT INTO SUBJECT VALUES ('10CS84','CC', 8, 4);

INSERT INTO SUBJECT VALUES ('10CS85','PW', 8, 4);

INSERT INTO SUBJECT VALUES ('10CS71','OOAD', 7, 4);

INSERT INTO SUBJECT VALUES ('10CS72','ECS', 7, 4);

INSERT INTO SUBJECT VALUES ('10CS73','PTW', 7, 4);

INSERT INTO SUBJECT VALUES ('10CS74','DWDM', 7, 4);

INSERT INTO SUBJECT VALUES ('10CS75','JAVA', 7, 4);

INSERT INTO SUBJECT VALUES ('10CS76','SAN', 7, 4);

INSERT INTO SUBJECT VALUES ('15CS51', 'ME', 5, 4);

INSERT INTO SUBJECT VALUES ('15CS52','CN', 5, 4);

INSERT INTO SUBJECT VALUES ('15CS53','DBMS', 5, 4);

INSERT INTO SUBJECT VALUES ('15CS54','ATC', 5, 4);

INSERT INTO SUBJECT VALUES ('15CS55','JAVA', 5, 3);

INSERT INTO SUBJECT VALUES ('15CS56','AI', 5, 3);

INSERT INTO SUBJECT VALUES ('15CS41','M4', 4, 4);

INSERT INTO SUBJECT VALUES ('15CS42','SE', 4, 4);

INSERT INTO SUBJECT VALUES ('15CS43','DAA', 4, 4);

INSERT INTO SUBJECT VALUES ('15CS44','MPMC', 4, 4);

INSERT INTO SUBJECT VALUES ('15CS45','OOC', 4, 3);

INSERT INTO SUBJECT VALUES ('15CS46','DC', 4, 3);

INSERT INTO SUBJECT VALUES ('15CS31','M3', 3, 4);

INSERT INTO SUBJECT VALUES ('15CS32','ADE', 3, 4);

INSERT INTO SUBJECT VALUES ('15CS33','DSA', 3, 4);

INSERT INTO SUBJECT VALUES ('15CS34','CO', 3, 4);

INSERT INTO SUBJECT VALUES ('15CS35','USP', 3, 3);

INSERT INTO SUBJECT VALUES ('15CS36','DMS', 3, 3);

INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES ('1RN13CS091','10CS81','CSE8C', 15, 16, 18);

INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES ('1RN13CS091','10CS82','CSE8C', 12, 19, 14);

INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES ('1RN13CS091','10CS83','CSE8C', 19, 15, 20);

INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES ('1RN13CS091','10CS84','CSE8C', 20, 16, 19);

INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES ('1RN13CS091','10CS85','CSE8C', 15, 15, 12);

QUERIES:

1) SELECT S.*,SS.SEM, SS.SEC FROM STUDENT S, SEMSEC SS, CLASS C WHERE S.USN=C.USN AND SS.SSID = C.SSID AND SS.SEM = 4 AND SS.SEC='C';

USN   SNAME   ADDRESS   PHONE G

-------------------- -------------------- -------------------- ---------- -

       SEM S

---------- -

1RN15CS091   SANTOSH   MANGALURU   8812332201 M

        4 C

2) SELECT SS.SEM, SS.SEC, S.GENDER, COUNT(S.GENDER) AS COUNT FROM STUDENT S, SEMSEC SS, CLASS C WHERE S.USN = C.USN AND SS.SSID = C.SSID GROUP BY SS.SEM, SS.SEC, S.GENDER ORDER BY SS.SEM;

        SEM S G   COUNT

---------- - - ----------

        3 A M   1

        3 B F   1

        3 C M   1

        4 A F   1

        4 A M   1

        4 B M   1

        4 C M   1

        7 A F   1

        7 A M   2

        8 A F   1

        8 A M   1

        8 B F   1

        8 C F   1

3) CREATE VIEW STU_TEST_MARKS AS SELECT TEST1,SUBCODE FROM IAMARKS WHERE USN='1RN13CS091';

    SELECT * FROM STU_TEST_MARKS;

      TEST1 SUBCODE

---------- ----------

        15 10CS81

12 10CS82

19 10CS83

20 10CS84

15 10CS85

4) UPDATE IAMARKS SET FINALIA=GREATEST (TEST1+TEST2, TEST2+TEST3, TEST1+TEST3)/2;

   SELECT   *   FROM IAMARKS;

USN	SUBCODE	SSID	TEST1	TEST2	TEST3

FINALIA

USN	SUBCODE	SSID	TEST1	TEST2	TEST3	FINALIA
1RN13CS091	10CS81	CSE8C	15	16	18	17
1RN13CS091	10CS82	CSE8C	12	19	14	17
1RN13CS091	10CS83	CSE8C	19	15	20	20
1RN13CS091	10CS84	CSE8C	20	16	19	20
1RN13CS091	10CS85	CSE8C	15	15	12	15

5) SELECT S.USN, S.SNAME, S.ADDRESS, S.PHONE, S.GENDER,

(CASE WHEN IA.FINALIA BETWEEN 17 AND 20 THEN 'OUTSTANDING' WHEN IA.FINALIA BETWEEN 12 AND 16 THEN 'AVERAGE' ELSE 'WEAK' END) AS CAT FROM STUDENT S, IAMARKS IA, SUBJECT SUB,

SEMSEC SS WHERE S.USN = IA.USN AND SS.SSID = IA.SSID AND SUB.SUBCODE = IA.SUBCODE AND SUB.SEM = 8;

USN	SNAME	ADDRESS	PHONE G
--------------------	--------------------	--------------------	---------- -
CAT			

1RN13CS091	TEESHA	BENGALURU	7712312312 F
OUTSTANDING			
1RN13CS091	TEESHA	BENGALURU	7712312312 F
OUTSTANDING			
1RN13CS091	TEESHA	BENGALURU	7712312312 F
OUTSTANDING			
1RN13CS091	TEESHA	BENGALURU	7712312312 F
OUTSTANDING			
1RN13CS091	TEESHA	BENGALURU	7712312312 F
AVERAGE			

EXPERIMENT 5:

CREATE TABLE EMPLOYEE (SSN VARCHAR(10) PRIMARY KEY, FNAME VARCHAR(10), LNAME VARCHAR(10), ADDRESS VARCHAR(20), SEX VARCHAR(1), SALARY INTEGER, SUPERSSN VARCHAR(10), DNO INTEGER);

CREATE TABLE DEPARTMENT(DNO INTEGER PRIMARY KEY, DNAME VARCHAR(10), MGRSTARTDATE DATE, MGRSSN VARCHAR(20) REFERENCES EMPLOYEE(SSN) ON DELETE CASCADE);

CREATE TABLE DLOCATION(DLOC VARCHAR(20), DNO INTEGER REFERENCES DEPARTMENT(DNO) ON DELETE CASCADE);

CREATE TABLE PROJECT (PNO INTEGER PRIMARY KEY, PNAME VARCHAR(20), PLOCATION VARCHAR(20), DNO INTEGER REFERENCES DEPARTMENT(DNO) ON DELETE CASCADE);

CREATE TABLE WORKS_ON(HOURS INTEGER, SSN VARCHAR(20) REFERENCES EMPLOYEE(SSN) ON DELETE CASCADE, PNO INTEGER REFERENCES PROJECT(PNO) ON DELETE CASCADE, PRIMARY KEY(SSN,PNO));

ALTER TABLE EMPLOYEE ADD FOREIGN KEY(SUPERSSN) REFERENCES EMPLOYEE(SSN) ON DELETE CASCADE;

ALTER TABLE EMPLOYEE ADD FOREIGN KEY(DNO) REFERENCES DEPARTMENT(DNO) ON DELETE CASCADE;

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);

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

INSERT INTO DEPARTMENT VALUES ('2','IT','2001-08-16','RNSIT01');

INSERT INTO DEPARTMENT VALUES ('3','ECE','2001-06-08','RNSECE01');

INSERT INTO DEPARTMENT VALUES ('4','ISE','2001-08-15','RNSISE01');

INSERT INTO DEPARTMENT VALUES ('5','CSE','2001-06-02','RNSCSE05');

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

DNO='5', SUPERSSN='RNSCSE05'

WHERE SSN='RNSCSE04';

```sql
UPDATE EMPLOYEE SET
DNO='5', SUPERSSN='RNSCSE06'
WHERE SSN='RNSCSE05';
UPDATE EMPLOYEE SET
DNO='5', SUPERSSN=NULL
WHERE SSN='RNSCSE06';
UPDATE EMPLOYEE SET
DNO='1', SUPERSSN='RNSACC02'
WHERE SSN='RNSACC01';
UPDATE EMPLOYEE SET
DNO='1', SUPERSSN=NULL
WHERE SSN='RNSACC02';
UPDATE EMPLOYEE SET
DNO='4', SUPERSSN=NULL
WHERE SSN='RNSISE01';
UPDATE EMPLOYEE SET
DNO='2', SUPERSSN=NULL
WHERE SSN='RNSIT01';


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');


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');
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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');

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);

QUERIES:

1) (SELECT P.PNO FROM PROJECT P, DEPARTMENT D, EMPLOYEE E

   WHERE P.DNO = D.DNO AND D.MGRSSN = E.SSN AND E.LNAME = 'SCOTT')

UNION

(SELECT P1.PNO FROM PROJECT P1, WORKS_ON W, EMPLOYEE E1

   WHERE P1.PNO = W.PNO AND E1.SSN = W.SSN AND E1.LNAME = 'SCOTT');

  PNO

----

    102   103

2) 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';

FNAME	LNAME	INCR_SAL
HEARN	BAKER	770000
PAVAN	HEGDE	715000
JAMES	SMITH	550000

3) SELECT SUM(E.SALARY), MAX(E.SALARY), MIN(E.SALARY), AVG(E.SALARY) FROM EMPLOYEE E, DEPARTMENT D

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

SUM(E.SALARY)	MAX(E.SALARY)	MIN(E.SALARY)	AVG(E.SALARY)
650000	350000	300000	325000

4) SELECT E.FNAME, E.LNAME FROM EMPLOYEE E WHERE NOT EXISTS (SELECT PNO FROM PROJECT WHERE DNO = 5 AND PNO NOT IN (SELECT PNO FROM WORKS_ON W WHERE E.SSN=W.SSN));

FNAME	LNAME
JAMES	SMITH

5) 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;

DNO	COUNT(*)
5	3