Lab 8 :-

i. Create the above tables by properly specifying the primary keys and the foreign keys.

CREATE TABLE student(

regno VARCHAR(20),

name VARCHAR(20),

major VARCHAR(20),

bdate DATE,

PRIMARY KEY(regno));

CREATE TABLE course(

course INT,

cname VARCHAR(20),

dept VARCHAR(20),

PRIMARY KEY(course));

CREATE TABLE enroll(

regno VARCHAR(20),

cname VARCHAR(20),

sem INT,

marks INT,

PRIMARY KEY (regno,cname),

FOREIGN KEY (regno) REFERENCES student (regno)

ON UPDATE CASCADE ON DELETE CASCADE,

FOREIGN KEY (cname) REFERENCES course (cname)

ON UPDATE CASCADE ON DELETE CASCADE);

CREATE TABLE text(

book_isbn INT,

book_title VARCHAR(20),

publisher VARCHAR(20),

author VARCHAR(20),

PRIMARY KEY(book_isbn));

CREATE TABLE book_adoption(

course INT,

sem INT,

book_isbn INT,

PRIMARY KEY(course,book_isbn),

FOREIGN KEY (course) REFERENCES course (course)

ON UPDATE CASCADE ON DELETE CASCADE,

FOREIGN KEY (book_isbn) REFERENCES text(book_isbn)

ON UPDATE CASCADE ON DELETE CASCADE);

ii. Enter at least five tuples for each relation.

INSERT INTO student VALUES

('1BM19CS001','a','maths','1999-09-11'),

('1bm19cs002','b','physics','1998-07-21'),

('1bm19cs003','c','maths','2000-11-30'),

('1BM19CS004','d','maths','2001-12-01'),

('1BM19CS005','e','chemistry','1998-03-06');

INSERT INTO course VALUES

(111,'OS','CSE'),

(112,'JAVA','CSE'),

(113,'LOD','ISE'),

(114,'DBMS','CSE'),

(115,'IOT','ECE');

INSERT INTO enroll VALUES

```sql
('1BM19CS001','OS',4,100),

('1BM19CS002','DBMS',3,80),

('1BM19CS003','LOD',5,100),

('1BM19CS004','OS',4,40),

('1BM19CS005','JAVA',3,90);


INSERT INTO text VALUES

(10,'DATABASE SYSTEMS','PEARSON','SONAM'),

(11,'OPERATING SYSTEM','PEARSON','JUAN'),

(12,'OIJ','HEAL','RON'),

(13,'CIRCUIT DESIGNS','MCGARW','JACOB'),

(14,'SCHEDULING','PEARSON','PATIL');


INSERT INTO book_adoption VALUES

(111,4,11),

(111,4,14),

(112,3,12),

(113,5,13),

(114,5,10),

(115,3,13);



SELECT * FROM student;
```

```
1BM19CS001|a|maths|1999-09-11
1bm19cs002|b|physics|1998-07-21
1bm19cs003|c|maths|2000-11-30
1BM19CS004|d|maths|2001-12-01
1BM19CS005|e|chemistry|1998-03-06

[Program exited with exit code 0]
```

SELECT * FROM course;

```
111|OS|CSE
112|JAVA|CSE
113|LOD|ISE
114|DBMS|CSE
115|IOT|ECE

[Program exited with exit code 0]
```

SELECT * FROM enroll;

```
1BM19CS001|OS|4|100
1BM19CS002|DBMS|3|80
1BM19CS003|LOD|5|100
1BM19CS004|OS|4|40
1BM19CS005|JAVA|3|90

[Program exited with exit code 0]
```

SELECT * FROM text;

```
10|DATABASE SYSTEMS|PEARSON|SONAM
11|OPERATING SYSTEM|PEARSON|JUAN
12|OIJ|HEAL|RON
13|CIRCUIT DESIGNS|MCGRAW|JACOB
14|SCHEDULING|PEARSON|PATIL

[Program exited with exit code 0]
```

SELECT * FROM book_adoption;

```
111|4|11
111|4|14
112|3|12
113|5|13
114|5|10
115|3|13

[Program exited with exit code 0]
```

iii. Demonstrate how you add a new text book to the database and make this book be adopted by some department.

Insert into text values (15,'COMPLETE REFERENCE TO OS','TATA MAC','HOBERT');

SELECT * FROM text;

```
10|DATABASE SYSTEMS|PEARSON|SONAM
11|OPERATING SYSTEM|PEARSON|JUAN
12|OIJ|HEAL|RON
13|CIRCUIT DESIGNS|MCGRAW|JACOB
14|SCHEDULING|PEARSON|PATIL
15|COMPLETE REFERENCE TO OS|TATA MAC|HOBERT

[Program exited with exit code 0]
```

INSERT INTO book_adoption VALUES (111,4,15);

SELECT * FROM book_adoption;

```
111|4|11
111|4|14
112|3|12
113|5|13
114|5|10
115|3|13
111|4|15

[Program exited with exit code 0]
```

iv. Produce a list of text books (include Course #, Book-ISBN, Book-title) in the alphabetical order for courses offered by the 'CS' department that use more than two books.

SELECT c.course,t.book_isbn,t.book_title FROM course c,book_adoption b,text t

WHERE c.course=b.course AND b.book_isbn=t.book_isbn AND c.dept='CSE'

AND (SELECT COUNT(book_isbn) FROM book_adoption b1

WHERE c.course=b1.course)>2 ORDER BY t.book_title;

```
111|15|COMPLETE REFERENCE TO OS
111|11|OPERATING SYSTEM
111|14|SCHEDULING


[Program exited with exit code 0]
```

v. List any department that has all its adopted books published by a specific publisher.

SELECT DISTINCT c.dept FROM course c WHERE c.dept IN

(SELECT c.dept FROM course c,book_adoption b,text t

WHERE c.course=b.course AND t.book_isbn=b.book_isbn AND t.publisher='MCGRAW')

AND c.dept NOT IN (SELECT c1.dept FROM course c1,book_adoption b1,text t1 WHERE c1.course=b1.course

AND t1.book_isbn=b1.book_isbn AND t1.publisher != 'MCGRAW');

```
ISE
ECE

[Program exited with exit code 0]
```