PROGRAM 8: STUDENT ENROLLMENT DATABASE

Consider the following database of student enrollment in courses and books adopted for each course.

STUDENT (regno: String, name: String, major: String, bdate: date)

COURSE (course #: int, cname: String, dept: String)

ENROLL (regno: String, cname: String, sem: int, marks: int)

BOOK_ADOPTION (course #: int, sem: int, book-ISBN: int)

TEXT(book-ISBN:int, book-title:String, publisher:String, author:String)

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

ii. Enter at least five tuples for each relation.

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

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

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

```
create database student_enrollment;
use student_enrollment;
```

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

```
CREATE TABLE student(regno VARCHAR(15),name VARCHAR(20),major
VARCHAR(20), bdate DATE,PRIMARY KEY (regno) );
CREATE TABLE course(courseno INT,cname VARCHAR(20),dept
VARCHAR(20),PRIMARY KEY (courseno) );
CREATE TABLE enroll(regno VARCHAR(15),courseno INT,sem INT(3),marks
INT(4),PRIMARY KEY (regno,courseno),FOREIGN KEY (regno) REFERENCES
student (regno),FOREIGN KEY (courseno) REFERENCES course (courseno));
CREATE TABLE text(book_isbn INT(5),book_title VARCHAR(20),publisher
VARCHAR(20),author VARCHAR(20),PRIMARY KEY (book_isbn) );
CREATE TABLE book_adoption(courseno INT,sem INT(3),book_isbn INT(5),PRIMARY
KEY (courseno,book_isbn),FOREIGN KEY (courseno) REFERENCES course
(courseno),FOREIGN KEY (book_isbn) REFERENCES text(book_isbn));
```

ii. Enter at least five tuples for each relation.

```
INSERT INTO student (regno,name,major,bdate) VALUES
('1PE11CS001','a','sr',19931230),
('1PE11CS002','b','sr','19930924'),
('1PE11CS003','c','sr','19931127'),
('1PE11CS004','d','sr','19930413'),
('1PE11CS005','e','jr','19940824');

INSERT INTO course VALUES
(111,'OS','CSE'),
(112,'EC','CSE'),
(113,'SS','ISE'),
(114,'DBMS','CSE'),
(115,'SIGNALS','ECE');

INSERT INTO text VALUES
(10,'DATABASE SYSTEMS','PEARSON','SCHIELD'),
(900,'OPERATING SYS','PEARSON','LELAND'),
(901,'CIRCUITS','HALL INDIA','BOB'),
(902,'SYSTEM SOFTWARE','PETERSON','JACOB'),
(903,'SCHEDULING','PEARSON','PATIL'),
(904,'DATABASE SYSTEMS','PEARSON','JACOB'),
(905,'DATABASE MANAGER','PEARSON','BOB');

INSERT INTO enroll (regno,courseno,sem,marks) VALUES
('1pe11cs001',115,3,100),
('1pe11cs002',114,5,100),
('1pe11cs003',113,5,100),
('1pe11cs004',111,5,100),
('1pe11cs005',112,3,100);

INSERT INTO book_adoption (courseno,sem,book_isbn) VALUES
(111,5,900),
```

```
(111,5,903),
(111,5,904),
(112,3,901),
(113,3,10),
(114,5,905),
(113,5,902);
```

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 (906,'SIGNALS','HALL INDIA','SUMIT');
INSERT INTO book_adoption VALUES (115,3,906);
```

iv. Produce a list of textbooks (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.courseno,t.book_isbn,t.book_title FROM course c,book_adoption ba,text t
WHERE c.courseno=ba.courseno AND ba.book_isbn=t.book_isbn AND c.dept='CSE'
AND 2<(SELECT COUNT(book_isbn) FROM book_adoption b WHERE
c.courseno=b.courseno) ORDER BY t.book_title;
```

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.courseno=b.courseno AND
t.book_isbn=b.book_isbn AND t.publisher='PEARSON');
```