DBMS LAB 5

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)**

1) **Create the above tables by properly specifying the primary keys and the foreign keys.**
2) **Enter at least five tuples for each relation.**
3) **Demonstrate how you add a new text book to the database and make this book be**
4) **adopted by some department.**
5) **Produce a list of text books (include Course #, Book-ISBN, Book-title) in the**
6) **alphabetical order for courses offered by the 'CS' department that use more than two**
7) **Books.**
8) **List any department that has all its adopted books published by a specific publisher.**

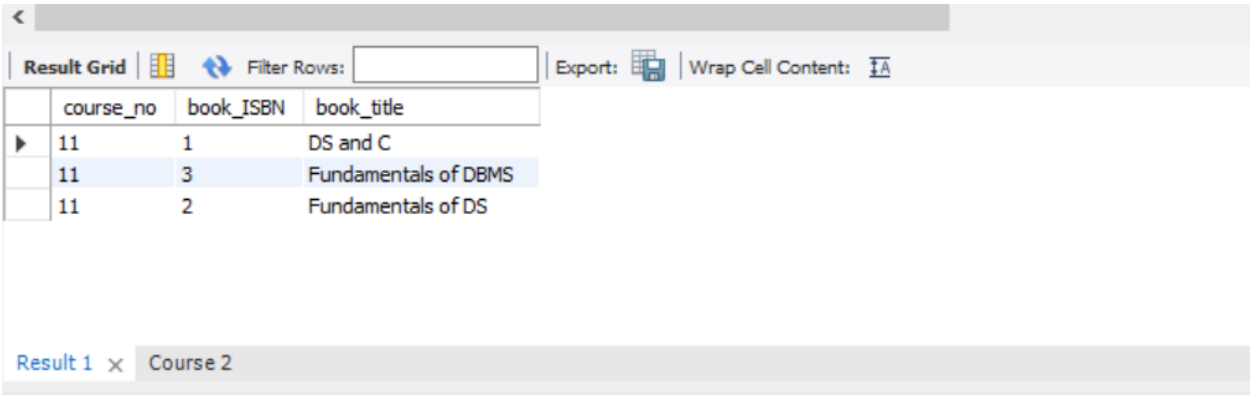
```
CREATE DATABASE books_adopted_db;
USE books_adopted_db;

CREATE TABLE Student(
        regno VARCHAR(15),
        sname VARCHAR(20),
        major VARCHAR(20),
        bdate DATE,
        PRIMARY KEY (regno)
);
DESC Student;

CREATE TABLE Course(
    course_no INT,
    cname VARCHAR(20),
```

```
    dept VARCHAR(20),
    PRIMARY KEY (course_no)
);
DESC Course;

CREATE TABLE Enroll(
    regno VARCHAR(15),
    course_no INT,
    sem INT,
    marks INT,
    PRIMARY KEY (regno,course_no),
    FOREIGN KEY (regno) REFERENCES student (regno),
    FOREIGN KEY (course_no) REFERENCES course (course_no)
);
DESC enroll;

CREATE TABLE BText(
    book_ISBN INT,
    book_title VARCHAR(20),
    publisher VARCHAR(20),
    author VARCHAR(20),
    PRIMARY KEY (book_ISBN)
);
DESC BText;

CREATE TABLE Book_Adoption(
    course_no INT,
    sem INT,
    book_ISBN INT,
    PRIMARY KEY (course_no,book_ISBN),
    FOREIGN KEY(course_no) REFERENCES Course(course_no),
    FOREIGN KEY(book_ISBN) REFERENCES BText(book_ISBN) );
DESC Book_Adoption;


INSERT INTO Student VALUES('CS01','RAM','DS','1986-03-12');
INSERT INTO Student VALUES('IS02','SMITH','USP','1987-12-23');
INSERT INTO Student VALUES('EC03','AHMED','SNS','1985-04-17');
INSERT INTO Student VALUES('CS03','SNEHA','DBMS','1987-01-01');
INSERT INTO Student VALUES('TC05','AKHILA','EC','1986-10-06');
select * from Student;

INSERT INTO Course VALUES (11,'DS','CS');
INSERT INTO Course VALUES (22,'USP','IS');
```

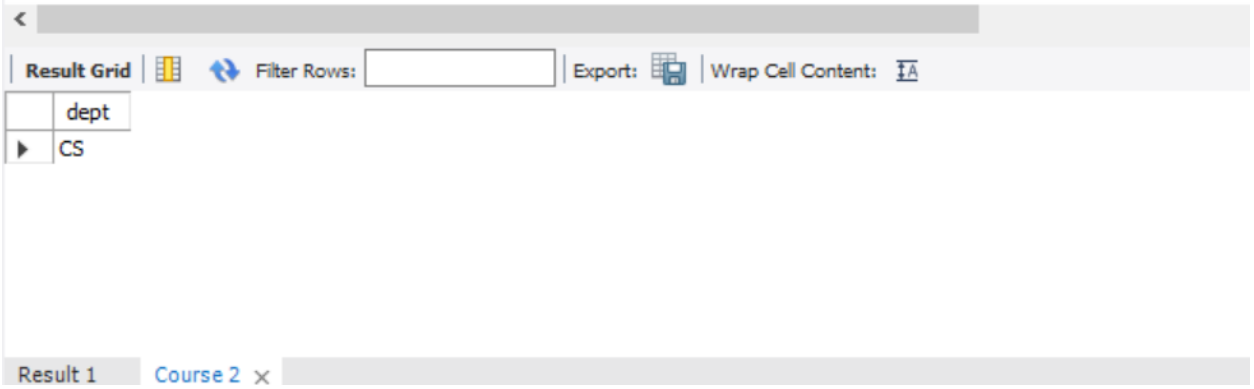
```
INSERT INTO Course VALUES (33,'SNS','EC');
INSERT INTO Course VALUES (44,'DBMS','CS');
INSERT INTO Course VALUES (55,'EC','EC');
select * from Course;

INSERT INTO BText VALUES(1,'DS and C','Princeton','Padma Reddy');
INSERT INTO BText VALUES(2,'Fundamentals of DS','Princeton','Godse');
INSERT INTO BText VALUES(3,'Fundamentals of DBMS','Princeton','Navathe');
INSERT INTO BText VALUES(4,'SQL','Princeton','Foley');
INSERT INTO BText VALUES(5,'Electronic circuits','TMH','Elmasri');
SELECT * FROM BText;

INSERT INTO Enroll VALUES ('CS01',11,4,85);
INSERT INTO Enroll VALUES ('IS02',22,6,80);
INSERT INTO Enroll VALUES ('EC03',33,2,80);
INSERT INTO Enroll VALUES ('CS03',44,6,75);
INSERT INTO Enroll VALUES ('TC05',55,2,8);
SELECT * FROM Enroll;

INSERT INTO Book_Adoption VALUES(11,4,1);
INSERT INTO Book_Adoption VALUES(11,4,2);
INSERT INTO Book_Adoption VALUES(44,6,3);
INSERT INTO Book_Adoption VALUES(44,6,4);
INSERT INTO Book_Adoption VALUES(55,2,5);
SELECT * FROM Book_Adoption;

/*                          **********QUERY 1**********
Demonstrate how you add a new text book to the database and make this book be
adopted by some department.
*/

INSERT INTO BText VALUES(6,'Adv unix prog','TMH','Stevens');
INSERT INTO Book_Adoption VALUES(55,2,6);
INSERT INTO Book_Adoption VALUES(11,4,3);

/*                          **********QUERY 2**********
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_no,t.book_ISBN,t.book_title
    FROM Course c,Book_Adoption ba,BText t
    WHERE c.course_no=ba.course_no
```

```
    AND ba.book_ISBN=t.book_ISBN
    AND c.dept='CS'
    AND 2<(
                SELECT COUNT(book_ISBN)
                FROM Book_Adoption b
                WHERE c.course_no=b.course_no)
                ORDER BY t.book_title;

/*                          ****************QUERY 3**************
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,BText t
    WHERE c.course_no=b.course_no
    AND t.book_ISBN=b.book_ISBN
    AND t.publisher='Princeton')
    AND c.dept NOT IN
    (SELECT c.dept
    FROM Course c,Book_Adoption b,BText t
    WHERE c.course_no=b.course_no
    AND t.book_ISBN=b.book_ISBN
    AND t.publisher != 'Princeton');
```

Query 2:



Query 3


Result Grid
Filter Rows:
Export:
Wrap Cell Content:
dept
CS
Result 1
Course 2