

Program 8:

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.

```
CREATE TABLE STUDENT(  
    REGNO VARCHAR(20),  
    NAME VARCHAR(20),  
    MAJOR VARCHAR(5),  
    BDATE DATE,  
    PRIMARY KEY(REGNO)  
);
```

```
CREATE TABLE COURSE(  
    COURSE_ID INT,  
    CNAME VARCHAR(20),  
    DEPT VARCHAR(4),  
    PRIMARY KEY(COURSE_ID)  
);
```

```
CREATE TABLE TEXT(  
    ISBN INT,  
    BOOK_TITLE VARCHAR(50),  
    PUBLISHER VARCHAR(20),  
    AUTHOR VARCHAR(20),
```
















```
PRIMARY KEY(ISBN)
);
```

```
CREATE TABLE ADOPTION(
    COURSE_ID INT,
    SEM INT,
    ISBN INT,
    PRIMARY KEY(COURSE_ID, ISBN),
    FOREIGN KEY(COURSE_ID) REFERENCES COURSE(COURSE_ID),
    FOREIGN KEY(ISBN) REFERENCES TEXT(ISBN)
);
```

```
CREATE TABLE ENROLL(
    REGNO VARCHAR(20),
    COURSE_ID INT,
    SEM INT,
    MARKS INT,
    PRIMARY KEY(REGNO, COURSE_ID),
    FOREIGN KEY(REGNO) REFERENCES STUDENT(REGNO),
    FOREIGN KEY(COURSE_ID) REFERENCES COURSE(COURSE_ID)
);
```

ii. Enter at least five tuples for each relation.

```
INSERT INTO `student` (`REGNO`, `NAME`, `MAJOR`, `BDATE`) VALUES ('101', 'ravi', 'CS', '2001-06-01'), ('102', 'murali', 'IS', '2001-06-04'), ('103', 'Subash', 'CV', '2001-05-11'), ('104', 'Akshay', 'CS', '2001-05-27'), ('105', 'Rajeev', 'ME', '2001-07-21')
```

<div><div><div></div><div></div><div></div></div></div>				REGNO	NAME	MAJOR	BDATE
<input type="checkbox"/>		 Copy	 Delete	101	ravi	CS	2001-06-01
<input type="checkbox"/>		 Copy	 Delete	102	murali	IS	2001-06-04
<input type="checkbox"/>		 Copy	 Delete	103	Subash	CV	2001-05-11
<input type="checkbox"/>		 Copy	 Delete	104	Akshay	CS	2001-05-27
<input type="checkbox"/>		 Copy	 Delete	105	Rajeev	ME	2001-07-21

```
INSERT INTO `course` (`COURSE_ID`, `CNAME`, `DEPT`) VALUES ('201', 'Data Structures', 'IS'), ('202', 'Fluid mechanics', 'ME'), ('203', 'Building materials', 'CV'), ('204', 'Java', 'CS'), ('205', 'DBMS', 'CS')
```

				COURSE_ID	CNAME	DEPT
<input type="checkbox"/>				201	Data Structures	IS
<input type="checkbox"/>				202	Fluid mechanics	ME
<input type="checkbox"/>				203	Building materials	CV
<input type="checkbox"/>				204	Java	CS
<input type="checkbox"/>				205	DBMS	CS

```
INSERT INTO `text` (`ISBN`, `BOOK_TITLE`, `PUBLISHER`, `AUTHOR`) VALUES ('301', 'Fluid Mechanics', 'Rachana Sagar', 'Ramesh N R'), ('302', 'Building Materials', 'Woodhead', 'Haimei Zang'), ('303', 'The complete java ref', 'Tata McGraw Hill', 'Herbert'), ('304', 'Data structures', 'Technical Publications', 'A Puntambekar'), ('305', 'DBMS And MySQL', 'Tata McGraw Hill', 'Paul DuBois')
```

				ISBN	BOOK_TITLE	PUBLISHER	AUTHOR
<input type="checkbox"/>				301	Fluid Mechanics	Rachana Sagar	Ramesh N R
<input type="checkbox"/>				302	Building Materials	Woodhead	Haimei Zang
<input type="checkbox"/>				303	The complete java ref	Tata McGraw Hill	Herbert
<input type="checkbox"/>				304	Data structures	Technical Publicatio	A Puntambekar
<input type="checkbox"/>				305	DBMS And MySQL	Tata McGraw Hill	Paul DuBois

```
INSERT INTO `enroll` (`REGNO`, `COURSE_ID`, `SEM`, `MARKS`) VALUES ('101', '205', '4', '89'), ('103', '203', '3', '78'), ('105', '202', '3', '76'), ('104', '204', '3', '88')
```

				REGNO	COURSE_ID	SEM	MARKS
<input type="checkbox"/>				101	205	4	89
<input type="checkbox"/>				103	203	3	78
<input type="checkbox"/>				104	204	3	88
<input type="checkbox"/>				105	202	3	76

```
INSERT INTO `adoption` (`COURSE_ID`, `SEM`, `ISBN`) VALUES ('205', '4', '305'), ('204', '3', '303'), ('203', '3', '302'), ('202', '3', '301')
```

		COURSE_ID	SEM	ISBN
<input type="checkbox"/>	Edit Copy Delete	202	3	301
<input type="checkbox"/>	Edit Copy Delete	203	3	302
<input type="checkbox"/>	Edit Copy Delete	204	3	303
<input type="checkbox"/>	Edit Copy Delete	205	4	305

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

✓ 1 row inserted. (Query took 0.0413 seconds.)

```
INSERT INTO TEXT VALUES('4242', 'JAVA PROG', 'PHI', 'DAVE R')
```

✓ 1 row inserted. (Query took 0.0246 seconds.)

```
INSERT INTO ADOPTION VALUES(204, 3, 4242)
```

		ISBN	BOOK_TITLE	PUBLISHER	AUTHOR
<input type="checkbox"/>	Edit Copy Delete	301	Fluid Mechanics	Rachana Sagar	Ramesh N R
<input type="checkbox"/>	Edit Copy Delete	302	Building Materials	Woodhead	Haimei Zang
<input type="checkbox"/>	Edit Copy Delete	303	The complete java ref	Tata McGraw Hill	Herbert
<input type="checkbox"/>	Edit Copy Delete	304	Data structures	Technical Publicatio	A Puntambekar
<input type="checkbox"/>	Edit Copy Delete	305	DBMS And MySQL	Tata McGraw Hill	Paul DuBois
<input type="checkbox"/>	Edit Copy Delete	4242	JAVA PROG	PHI	DAVE R

- 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 COURSE_ID,a.isbn,book_title FROM adoption a,text WHERE
COURSE_ID IN(SELECT course_id FROM course WHERE dept="cs") AND
book_title IN(SELECT book_title FROM text t WHERE t.ISBN=a.isbn)
GROUP BY COURSE_ID HAVING COUNT(a.ISBN)>=2
```

✓ Showing rows 0 - 0 (1 total, Query took 0.0095 seconds.)

```
SELECT COURSE_ID,a.isbn,book_title FROM adoption a,text WHERE COURSE_ID IN(SELECT course_id FROM course WHERE dept="cs") AND book_title IN(SELECT book_title FROM text t WHERE t.ISBN=a.isbn) GROUP BY COURSE_ID HAVING COUNT(a.ISBN)>=2
```

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☐ Show all | Number of rows: 25 | Filter rows:

+ Options

COURSE_ID	isbn	book_title
204	303	The complete java ref

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

```
SELECT c1.dept FROM course c1 NATURAL JOIN adoption a1 NATURAL JOIN text t1 ,course c2 NATURAL JOIN adoption a2 NATURAL JOIN text t2 WHERE (c1.COURSE_ID!=c2.COURSE_ID AND c1.DEPT=c2.DEPT and t1.PUBLISHER=t2.PUBLISHER)
```

✓ Showing rows 0 - 1 (2 total, Query took 0.0064 seconds.)

```
SELECT c1.dept FROM course c1 NATURAL JOIN adoption a1 NATURAL JOIN text t1 ,course c2 NATURAL JOIN adoption a2 NATURAL JOIN text t2 WHERE (c1.COURSE_ID!=c2.COURSE_ID AND c1.DEPT=c2.DEPT and t1.PUBLISHER=t2.PUBLISHER)
```

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☐ Show all | Number of rows: 25 | Filter rows: Sort by key: None

+ Options

dept

CS

CS
