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1BM19CS230

Program 8 - Student Enrollment Database

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

STUDENT (regno: string, name: string, major: string, bdate:date)
COURSE (course #:int, cname:string, dept:string)
ENROLL (regno:string, course#:int, 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 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.
v. List any department that has all its adopted books published by a specific publisher.
vi. Generate suitable reports.

```
create database student2;
use student2;

create table Student(
        regno varchar(10) not null,
        sname varchar(20) not null,
        major varchar(20) not null,
        bdate date not null,
        primary key(regno)
);

create table Course(
        courseno int not null,
        cname varchar(20) not null,
```

```
        dept varchar(20) not null,
        primary key(courseno)
);

create table Enroll(
        regno varchar(10) not null,
        courseno int not null,
        sem int not null,
        marks int not null,
        primary key(regno,courseno),
        foreign key(regno) references Student(regno) on delete cascade,
        foreign key(courseno) references Course(courseno) on delete cascade
);

create table Text(
        book_ISBN int not null,
        book_title varchar(20) not null,
        publisher varchar(20) not null,
        author varchar(20) not null,
        primary key(book_ISBN)
);

create table BookAdoption(
        courseno int not null,
        sem int not null,
        book_ISBN int not null,
        primary key(courseno,book_ISBN),
        foreign key(courseno) references Course(courseno) on delete cascade,
        foreign key(book_ISBN) references Text(book_ISBN) on delete cascade
);

insert into Student(regno,sname,major,bdate)
        values
   ('1pe11cs001','a','jr','1993-10-25'),
        ('1pe11cs002','b','sr','1993-09-24'),
```

```
        ('1pe11cs003','c','sr','1993-11-27'),
        ('1pe11cs004','d','sr','1993-04-13'),
        ('1pe11cs005','e','jr','1994-08-24');

insert into Course(courseno,cname,dept)
        values
        (111,'OS','CSE'),
        (112,'EC','CSE'),
        (113,'SS','ISE'),
        (114,'DBMS','CSE'),
        (115,'SIGNALS','ECE');

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 Text(book_ISBN,book_title,publisher,author)
        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'),
        (906,'SIGNALS','HALL INDIA','SUMIT');

insert into BookAdoption(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),
(115,3,906);

update Text set publisher = 'PEARSON' where book_ISBN = 907;

-- Queries
-- Demonstrate how you add a new text book to the database and make this book be adopted by some department.
insert into Text values (907,'English literature','Random House','ABCDE');
insert into BookAdoption values (112,5,907);

-- Produce a list of text books (include Course #, Book-ISBN, Book-title) in the alphabetical order for courses offered by the 'CSE' department that use more than two books.
select ba.courseno,ba.book_ISBN,t.book_title
from BookAdoption ba,Text t,Course c
where ba.book_ISBN = t.book_ISBN and ba.courseno = c.courseno
and c.dept = 'CSE'
and 2 < (select count(ba1.courseno) from BookAdoption ba1,Course c1 where ba1.courseno = c1.courseno and ba1.sem = ba.sem and c.dept = 'CSE')
order by t.book_title;

courseno	book_ISBN	book_title
112	901	CIRCUITS
114	905	DATABASE MANAGER
111	904	DATABASE SYSTEMS
112	907	English literature
111	900	OPERATING SYS
111	903	SCHEDULING

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

publisher.

```
select c.dept from Course c,BookAdoption ba
where c.courseno = ba.courseno
group by c.dept
having count(ba.book_ISBN) = (select count(book_ISBN) from Text where publisher =
'Pearson');
```

	dept
▶	CSE

-- Generate suitable reports.

```
create view student_view as
select s.regno,s.sname,s.major,c.cname,s.bdate from Student s,Enroll e,course c where
s.regno = e.regno and c.courseno = e.courseno;

select * from student_view;
```

	regno	sname	major	cname	bdate
▶	1pe11cs001	a	jr	SIGNALS	1993-10-25
	1pe11cs002	b	sr	DBMS	1993-09-24
	1pe11cs003	c	sr	SS	1993-11-27
	1pe11cs004	d	sr	OS	1993-04-13
	1pe11cs005	e	jr	EC	1994-08-24