MA 518: DATABASE MANAGEMENT SYSTEMS
MONSOON 2021
LAB #8: SQL Queries

----

1. The schema of three relations are shown below
     STUDENT(rollNo, sname, cpi, age)
     ENROLL(rollNo, courseNo, term)
     COURSE(courseNo, cname, instructor)

The attributes rollNo and courseNo in ENROLL are foreign key. Enforce referential integrity constraints. Use the option "ON DELETE CASCADE". The relational instances of the relations are shown below.

STUDENT

rollNo	sname	cpi	age
22	Dustin	7	25
29	Brown	9	23
31	Leo	8	25
32	Andy	8	22
58	Rusell	10	24
64	Henry	7	29
71	Zora	7	21
74	Henry	9	27
85	Art	5	26
95	Bob	5	20

ENROLL

rollNo	courseNo	term
22	MA501	Spring 2008
22	MA502	Spring 2008
22	MA503	Monsoon 2009
22	MA504	Monsoon 2009
31	MA502	Spring 2008
31	MA503	Monsoon 2009
31	MA504	Monsoon 2009
64	MA501	Spring 2008
64	MA502	Spring 2008
74	MA503	Monsoon 2009

COURSE

courseNo	cname	Instructor
MA501	Algebra	Krish
MA502	Computation	George
MA503	Algorithm	Krish
MA504	Number Theory	George

MA 518: DATABASE MANAGEMENT SYSTEMS
MONSOON 2021
LAB #8: SQL Queries

Perform the following tasks on the database. All the tasks have to be performed using HTML forms

(a) **Insert**: Populate the tables as shown in the first page

(b) **Cartesian Product**: Take as input two tables and output their Cartesian product. Example

SELECT S.*, C.*
FROM student S, Course C;

(c) **Inner Join**: Take as input a course number (eg MA501) and print the name of all students who have registered for the course.

SELECT S.sname
FROM student S, Enroll E, Course C
WHERE C.courseno=E.courseno **AND** E.rollno=S.rollno **AND** C.courseNo='MA501';

(d) **Division**: Print the name of all students who have registered for all courses

SELECT distinct E1.rollNo
FROM Enroll E1
WHERE NOT EXISTS (**SELECT** C.courseNo
                                    FROM Course C
                                  WHERE NOT EXISTS
                                   (**SELECT** E2.rollNo
                                   FROM Enroll E2
                                    WHERE E1.rollNo=E2.rollNo
                                   AND
                                   C.courseNo=E2.courseNo));

(e) **Division again**: Print the name of all students who have registered for all courses taught by a particular instructor. Your input should be the instructor name

(f) **Deletion**: Take as input the rollNo and delete the corresponding record of the student. The corresponding record in enrol should also get deleted. Print the student and enroll table after deletion.

Deliverable: Take the snapshot of each output task and submit it as a single pdf.

---oOo---