CO226-Lab 07
Views, Triggers, Stored Procedures

E/17/219
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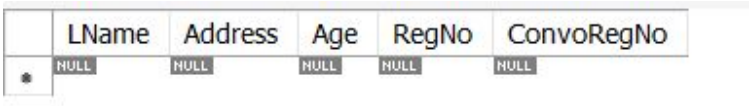
1. Create a table named Student to insert the above data. Determine a suitable primary key for this table. Populate your table with these data.

```
CREATE DATABASE LAB7;
USE LAB7;

CREATE TABLE Student(
SName VARCHAR(30),
RegNo INT PRIMARY KEY,
Gpa FLOAT(3,2),
ConvoRegNo INT,
Class VARCHAR(50)
);

INSERT INTO Student
VALUES
('Sameera',425,3.25,NULL,NULL),
('Kasun',210,3.40,NULL,NULL),
('Kalpa',201,3.10,NULL,NULL),
('Chathura',312,3.85,NULL,NULL),
('Lakmali',473,3.75,NULL,NULL),
('Sidath',352,3.30,NULL,NULL),
('Kumudu',111,3.70,NULL,NULL),
('Nalin',456,3.05,NULL,NULL),
('Rohani',324,3.70,NULL,NULL),
('Chithra',231,3.30,NULL,NULL);

SELECT * FROM Student;
```

SName	RegNo	Gpa	ConvoRegNo	Class
Kumudu	111	3.70	NULL	NULL
Kalpa	201	3.10	NULL	NULL
Kasun	210	3.40	NULL	NULL
Chithra	231	3.30	NULL	NULL
Chathura	312	3.85	NULL	NULL
Rohani	324	3.70	NULL	NULL
Sidath	352	3.30	NULL	NULL
Sameera	425	3.25	NULL	NULL
Nalin	456	3.05	NULL	NULL
Lakmali	473	3.75	NULL	NULL
NULL	NULL	NULL	NULL	NULL

2. Create another table named Convocation to store the details about the registration to the convocation. Table should have fields to hold the Last Name, Address, Age, Registration Number and Convocation Registration Number of each student. The Convocation Registration Number is given when a student registers for the convocation. Determine a suitable primary key and a foreign key for this table.

```
CREATE TABLE Convocation(
LName VARCHAR(30),
Address VARCHAR(100),
Age INT,
RegNo INT ,
ConvoRegNo INT PRIMARY KEY,
FOREIGN KEY (RegNo) REFERENCES Student(RegNo)
);

SELECT * FROM Convocation;
```



	LName	Address	Age	RegNo	ConvoRegNo
*	NULL	NULL	NULL	NULL	NULL

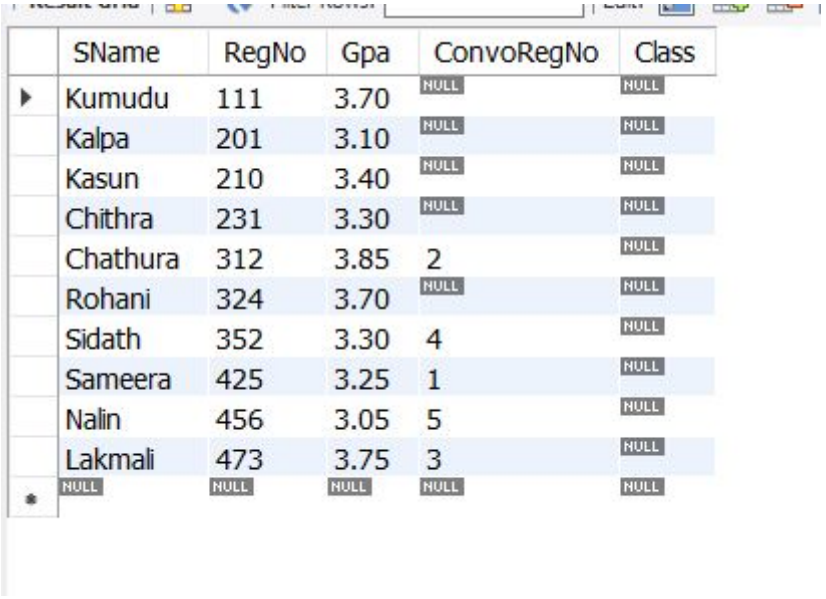
3. Create a stored procedure to store the details about the students as one student at a time in the Convocation table when they register for the convocation. (In the registration a unique convocation registration number should be given to each student and at the same time Convocation Registration Number column in the Student table should be updated by inserting relevant registration numbers for that student.)

```
DELIMITER //

CREATE PROCEDURE RegForConvo(
IN FName VARCHAR(30),
IN LName VARCHAR(30),
IN Address VARCHAR(100),
IN Age INT,
IN RegNo_ INT,
IN ConvoRegNo_ INT
)
BEGIN

        INSERT INTO Convocation
   VALUES
   (LName,Address,Age,RegNo_,ConvoRegNo_);

   UPDATE Student
   SET ConvoRegNo=ConvoRegNo_
   WHERE RegNo=RegNo_;

END //

DELIMITER ;
```

4. Perform the registration for Sameera, Chathura, Lakmali, Sidath and Nalin with registration numbers 1, 2, 3, 4 and 5 respectively. Give suitable meaningful values for the rest of the columns for each of these students. Observe the updates made to the Student table.

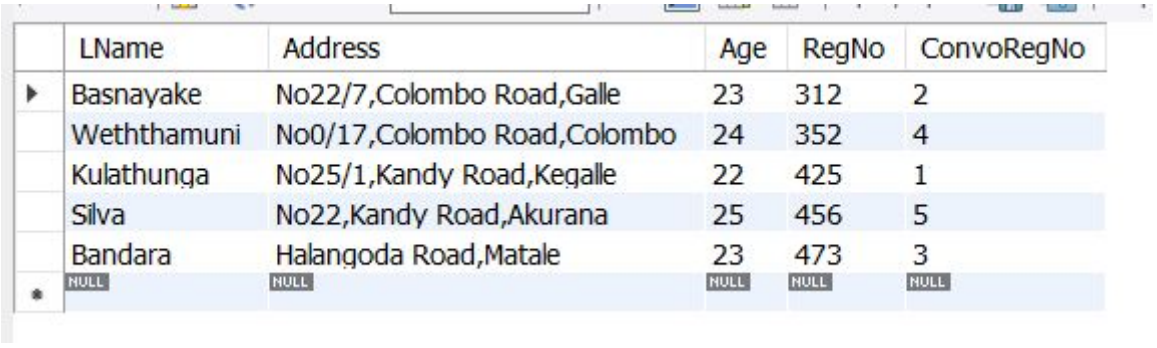
```
CALL RegForConvo('Sameera','Kulathunga','No25/1,Kandy Road,Kegalle',22,425,1);
CALL RegForConvo('Chathura','Basnayake','No22/7,Colombo Road,Galle',23,312,2);
CALL RegForConvo('Lakmali','Bandara','Halangoda Road,Matale',23,473,3);
CALL RegForConvo('Sidath','Weththamuni','No0/17,Colombo Road,Colombo',24,352,4);
CALL RegForConvo('Nalin','Silva','No22,Kandy Road,Akurana',25,456,5);
```

```
SELECT * FROM Student;
```



SName	RegNo	Gpa	ConvoRegNo	Class
Kumudu	111	3.70	NULL	NULL
Kalpa	201	3.10	NULL	NULL
Kasun	210	3.40	NULL	NULL
Chithra	231	3.30	NULL	NULL
Chathura	312	3.85	2	NULL
Rohani	324	3.70	NULL	NULL
Sidath	352	3.30	4	NULL
Sameera	425	3.25	1	NULL
Nalin	456	3.05	5	NULL
Lakmali	473	3.75	3	NULL
NULL	NULL	NULL	NULL	NULL

```
SELECT * FROM Convocation;
```



LName	Address	Age	RegNo	ConvoRegNo
Basnayake	No22/7,Colombo Road,Galle	23	312	2
Weththamuni	No0/17,Colombo Road,Colombo	24	352	4
Kulathunga	No25/1,Kandy Road,Kegalle	22	425	1
Silva	No22,Kandy Road,Akurana	25	456	5
Bandara	Halangoda Road,Matale	23	473	3
NULL	NULL	NULL	NULL	NULL

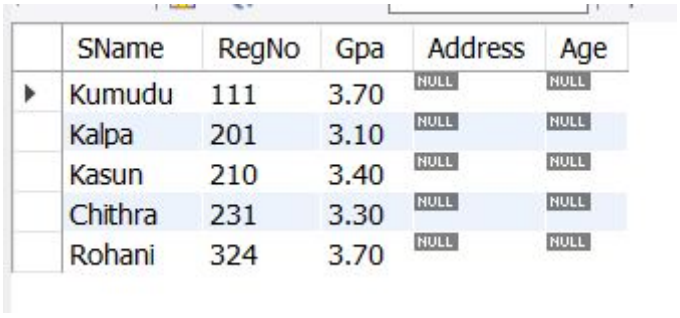
5. Create a view called Registered to retrieve the details Name, Registration Number, GPA,Convocation Registration Number, Address and Age of those students who have registered for the convocation. Observe the view with the respective data.

```
CREATE VIEW Registered(FullName,RegNo,Gpa,ConvoRegNo,Address,Age)
AS
SELECT CONCAT(CONCAT(SName," "),LName), Student.RegNo, Gpa,
Convocation.ConvoRegNo,Address,Age
FROM Student,Convocation
WHERE Student.RegNo=Convocation.RegNo;

SELECT *
FROM Registered;
```

FullName	RegNo	Gpa	ConvoRegNo	Address	Age
Sameera Kulathunga	425	3.25	1	No25/1,Kandy Road,Kegalle	22
Chathura Basnayake	312	3.85	2	No22/7,Colombo Road,Galle	23
Lakmali Bandara	473	3.75	3	Halangoda Road,Matale	23
Sidath Weththamuni	352	3.30	4	No0/17,Colombo Road,Colombo	24
Nalin Silva	456	3.05	5	No22,Kandy Road,Akurana	25

6. Create a view called NotRegistered to retrieve the details Name, Registration Number, GPA, Address and Age of those students who have not registered for the convocation. Observe the view with the respective data.

```
CREATE VIEW NotRegistered(SName,RegNo,Gpa,Address,Age)
AS
SELECT SName,Student.RegNo,Gpa,Address,Age
FROM Student
LEFT JOIN Convocation
ON Student.ConvoRegNo=Convocation.ConvoRegNo
WHERE Student.ConvoRegNo IS NULL;

SELECT *
FROM NotRegistered;
```



SName	RegNo	Gpa	Address	Age
Kumudu	111	3.70	NULL	NULL
Kalpa	201	3.10	NULL	NULL
Kasun	210	3.40	NULL	NULL
Chithra	231	3.30	NULL	NULL
Rohani	324	3.70	NULL	NULL

7. Create a table called LateRegistration with the same columns as the Convocation table to store the details about the students who do the late registration

```
CREATE TABLE LateRegistration(
LName VARCHAR(30),
Address VARCHAR(100),
Age INT,
RegNo INT ,
ConvoRegNo INT PRIMARY KEY,
FOREIGN KEY (RegNo) REFERENCES Student(RegNo)
);
```

8. Write a trigger to monitor the state of the LateRegistration table, so that after a late registration is done in this table, the Student table should be updated with the relevant Convocation Registration Number for that student.

```
DELIMITER //

CREATE TRIGGER AfterLateReg
AFTER INSERT ON LateRegistration
FOR EACH ROW
UPDATE Student
SET Student.ConvoRegNo=NEW.ConvoRegNo
WHERE Student.RegNo=NEW.RegNo;

DELIMITER;
```

9. Perform the registration for Kasun, Kalpa, Kumudu, Rohani and Chithra with registration numbers 6, 7, 8, 9 and 10 respectively. Give suitable meaningful values for the rest of the columns for each of these students. Observe the updates made to the Student table.

```
INSERT INTO LateRegistration
VALUES
('Karunanayake','Kady Rd,Matale',22,210,6),
('Karunarathne','Raththota,Galle',24,201,7),
('Perera','Matale rd,Dambulla',23,111,8),
('Weerasinghe','Kaikawela rd,Madirigiriya',21,324,9),
('Welagedara','Anuradhapura rd,Kekirawa',22,231,10);
```

```
SELECT * FROM LateRegistration;
```

Result Grid | Filter Rows: | Edit: | Export/Import:

LName	Address	Age	RegNo	ConvoRegNo
Karunanayake	Kady Rd,Matale	22	210	6
Karunarathne	Raththota,Galle	24	201	7
Perera	Matale rd,Dambulla	23	111	8
Weerasinghe	Kaikawela rd,Madirigiriya	21	324	9
Welagedara	Anuradhapura rd,Kekirawa	22	231	10
NULL	NULL	NULL	NULL	NULL

```
SELECT * FROM Student;
```

SName	RegNo	Gpa	ConvoRegNo	Class
Kumudu	111	3.70	8	NULL
Kalpa	201	3.10	7	NULL
Kasun	210	3.40	6	NULL
Chithra	231	3.30	10	NULL
Chathura	312	3.85	2	NULL
Rohani	324	3.70	9	NULL
Sidath	352	3.30	4	NULL
Sameera	425	3.25	1	NULL
Nalin	456	3.05	5	NULL
Lakmali	473	3.75	3	NULL
NULL	NULL	NULL	NULL	NULL

10. Create a stored procedure to and fill the class column as follows.
A. GPA >=3.7 First class honors
B. GPA <3.7 and GPA>=3.3 Second class honors-upper division
C. GPA <3.3 and GPA>=2.7 Second class honors-lower division
D. GPA <2.7 and GPA>=2.0 Third class honors
Call the stored procedure which you created at this step and observe the class values assigned to each student.

```
DELIMITER //

CREATE PROCEDURE FillClass()
BEGIN

        UPDATE student SET Class = (CASE
   WHEN Gpa>=3.70 AND Gpa<4.00THEN  'First class honors'
   WHEN Gpa>=3.30 AND Gpa<3.70 THEN 'Second class honors-upper division'
   WHEN Gpa>=2.70 AND Gpa<3.30 THEN  'Second class honors-lower division'
   WHEN Gpa>=2.00 AND Gpa<2.70 THEN 'Third class honors' END);

END //

DELIMITER ;

CALL FillClass();

SELECT * FROM Student;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap

SName	RegNo	Gpa	ConvoRegNo	Class
Kumudu	111	3.70	8	First class honors
Kalpa	201	3.10	7	Second class honors-lower division
Kasun	210	3.40	6	Second class honors-upper division
Chithra	231	3.30	10	Second class honors-upper division
Chathura	312	3.85	2	First class honors
Rohani	324	3.70	9	First class honors
Sidath	352	3.30	4	Second class honors-upper division
Sameera	425	3.25	1	Second class honors-lower division
Nalin	456	3.05	5	Second class honors-lower division
Lakmali	473	3.75	3	First class honors
NULL	NULL	NULL	NULL	NULL