Department of Computer Engineering
University of Peradeniya

CO226-Database Systems

Lab Sheet Number : 07
Topic : Views, Triggers, Stored Procedures
Due Date : 1st February 2022 before 11:55 PM

Enum- E/18/375

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QUERIES

1) CREATE DATABASE Lab07;

CREATE TABLE Student

   -> (Name VARCHAR(20),

   -> RegistrationNumber INT PRIMARY KEY,

   -> GPA DOUBLE(3,2),

   -> ConvocationRegistrationNumber INT,

   -> Class VARCHAR(20));

INSERT INTO Student(Name,RegistrationNumber,GPA)

   -> VALUES('Sameera',425,3.25),

   -> ('Kasun',210,3.40),

   -> ('Kalpa',201,3.10),

   -> ('Chathura',312,3.85),

   -> ('Lakmali',473,3.75),

```
   -> ('Sidath',352,3.30),

    -> ('Kumudu',111,3.70),

    -> ('Nalin',456,3.05),

    -> ('Rohani',324,3.70),

    -> ('Chithra',231,3.30);
```

```
2) CREATE TABLE Convocation

    -> (LastName VARCHAR(20),

    -> Address VARCHAR(50),

    -> Age INT,

    -> RegistrationNumber INT,

    -> ConvocationRegistrationNumber INT PRIMARY KEY,

    -> FOREIGN KEY(RegistrationNumber) REFERENCES Student(RegistrationNumber));
```

```
3) DELIMITER // ;

   CREATE PROCEDURE store_student(IN p_LastName VARCHAR(20),IN p_Address VARCHAR(50),IN p_Age INT,IN
p_RegistrationNumber INT,IN p_ConvocationRegistrationNumber INT)

    -> BEGIN

    -> INSERT INTO Convocation(LastName,Address,Age,RegistrationNumber,ConvocationRegistrationNumber)
values(p_LastName,p_Address,p_Age,p_RegistrationNumber,p_ConvocationRegistrationNumber);

    -> UPDATE Student SET ConvocationRegistrationNumber=p_ConvocationRegistrationNumber WHERE
RegistrationNumber=p_RegistrationNumber;

    -> END//
```

```
4) CALL store_student('Kumara','no go road,galle',23,425,1)//

   CALL store_student('Gedara','high road,kandy',25,312,2)//

   CALL store_student('Silva','A4 road,matara',29,473,3)//

   CALL store_student('Perera','A6 road,Moratuwa',35,352,4)//

   CALL store_student('Ruwanpura','A10 road,Jaffna',42,456,5)//


   DELIMITER ; //
```

```
mysql> SELECT * FROM STUDENT;
```

5) CREATE VIEW Registered

   -> AS

   -> SELECT Name,Student.RegistrationNumber,GPA,Student.ConvocationRegistrationNumber,Address,Age

   -> FROM Student,Convocation

   -> WHERE Student.ConvocationRegistrationNumber IS NOT NULL AND
Student.ConvocationRegistrationNumber=Convocation.ConvocationRegistrationNumber;

6) CREATE VIEW NotRegistered

   -> AS

   -> SELECT Name,Student.RegistrationNumber,GPA

   -> FROM Student

   -> WHERE Student.ConvocationRegistrationNumber IS NULL;

7) CREATE TABLE LateRegistration

   -> (LastName VARCHAR(20),

   -> Address VARCHAR(50),

   -> Age INT,

   -> RegistrationNumber INT,

   -> ConvocationRegistrationNumber INT PRIMARY KEY,

   -> FOREIGN KEY(RegistrationNumber) REFERENCES Student(RegistrationNumber));

8) DELIMITER // ;

```
mysql> CREATE TRIGGER Late_Registration_Insert
```

   -> AFTER INSERT ON LateRegistration

   -> FOR EACH ROW

   -> BEGIN

   -> UPDATE Student

```sql
-> SET Student.ConvocationRegistrationNumber=NEW.ConvocationRegistrationNumber

-> WHERE Student.RegistrationNumber=NEW.RegistrationNumber;

-> END//
```

9)
```sql
INSERT INTO LateRegistration

-> VALUES('Niman','A11 road,kegalle',34,210,6),

-> ('Gamage','A12 road,kegalle',36,201,7),

-> ('Liyanage','A14 road,mawanalla',45,111,8),

-> ('Viyad','A18 road,mawanalla',54,324,9),

-> ('Doom','A43 road,mawanalla',53,231,10)//
```

10)
```sql
CREATE PROCEDURE Class()

-> BEGIN

-> UPDATE Student

-> SET Class='First class honors'

-> WHERE GPA >=3.7;

-> UPDATE Student

-> SET Class='Second class honors-upper division'

-> WHERE GPA <3.7 AND GPA >=3.3;

-> UPDATE Student

-> SET Class='Second class honors-lower division'

-> WHERE GPA <3.3 AND GPA >=2.7;

-> UPDATE Student

-> SET Class='Third class honors'

-> WHERE GPA <2.7 AND GPA >=2;

-> END//
```

```sql
ALTER TABLE Student

-> modify Class VARCHAR(100)//
```

CALL Class//

SCREENSHOTS

1)

```
mysql> SELECT *
    -> FROM Student;
+----------+--------------------+------+-----------------------------+-------+
| Name     | RegistrationNumber | GPA  | ConvocationRegistrationNumber | 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  |
+----------+--------------------+------+-----------------------------+-------+
10 rows in set (0.00 sec)
```

2)

```
mysql> CREATE TABLE Convocation
    -> (LastName VARCHAR(20),
    -> Address VARCHAR(50),
    -> Age INT,
    -> RegistrationNumber INT,
    -> ConvocationRegistrationNumber INT PRIMARY KEY,
    -> FOREIGN KEY(RegistrationNumber) REFERENCES Student(RegistrationNumber));
Query OK, 0 rows affected (0.31 sec)

mysql> DESCRIBE Convocation;
+-------------------------------+-------------+------+-----+---------+-------+
| Field                         | Type        | Null | Key | Default | Extra |
+-------------------------------+-------------+------+-----+---------+-------+
| LastName                      | varchar(20) | YES  |     | NULL    |       |
| Address                       | varchar(50) | YES  |     | NULL    |       |
| Age                           | int         | YES  |     | NULL    |       |
| RegistrationNumber            | int         | YES  | MUL | NULL    |       |
| ConvocationRegistrationNumber | int         | NO   | PRI | NULL    |       |
+-------------------------------+-------------+------+-----+---------+-------+
5 rows in set (0.20 sec)
```

4)

```
mysql> DELIMITER ; //
mysql> SELECT * FROM STUDENT;
+----------+--------------------+-------+------------------------------+-------+
| Name     | RegistrationNumber | GPA   | ConvocationRegistrationNumber | 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  |
+----------+--------------------+-------+------------------------------+-------+
10 rows in set (0.00 sec)
```

5)

```
mysql> CREATE VIEW Registered
    -> AS
    -> SELECT Name,Student.RegistrationNumber,GPA,Student.ConvocationRegistrationNumber,Address,Age
    -> FROM Student,Convocation
    -> WHERE Student.ConvocationRegistrationNumber IS NOT NULL AND Student.ConvocationRegistrationNumber=Convocation.ConvocationRegistrationNumber;
Query OK, 0 rows affected (0.06 sec)

mysql> SELECT *
    -> FROM Registered;
+----------+--------------------+-------+------------------------------+------------------+-----+
| Name     | RegistrationNumber | GPA   | ConvocationRegistrationNumber | Address          | Age |
+----------+--------------------+-------+------------------------------+------------------+-----+
| Chathura |                312 | 3.85  |                            2 | high road,kandy  |  25 |
| Sidath   |                352 | 3.30  |                            4 | A6 road,Moratuwa |  35 |
| Sameera  |                425 | 3.25  |                            1 | no go road,galle |  23 |
| Nalin    |                456 | 3.05  |                            5 | A10 road,Jaffna  |  42 |
| Lakmali  |                473 | 3.75  |                            3 | A4 road,matara   |  29 |
+----------+--------------------+-------+------------------------------+------------------+-----+
5 rows in set (0.00 sec)
```

6)

```
mysql> CREATE VIEW NotRegistered
    -> AS
    -> SELECT Name,Student.RegistrationNumber,GPA
    -> FROM Student
    -> WHERE Student.ConvocationRegistrationNumber IS NULL;
Query OK, 0 rows affected (0.08 sec)

mysql> SELECT *
    -> FROM NotRegistered;
+----------+--------------------+-------+
| Name     | RegistrationNumber | GPA   |
+----------+--------------------+-------+
| Kumudu   |                111 | 3.70  |
| Kalpa    |                201 | 3.10  |
| Kasun    |                210 | 3.40  |
| Chithra  |                231 | 3.30  |
| Rohani   |                324 | 3.70  |
+----------+--------------------+-------+
5 rows in set (0.11 sec)
```

7)

```
mysql> CREATE TABLE LateRegistration
    -> (LastName VARCHAR(20),
    -> Address VARCHAR(50),
    -> Age INT,
    -> RegistrationNumber INT,
    -> ConvocationRegistrationNumber INT PRIMARY KEY,
    -> FOREIGN KEY(RegistrationNumber) REFERENCES Student(RegistrationNumber));
Query OK, 0 rows affected (1.20 sec)

mysql> DESCRIBE LateRegistration;
+-------------------------------+-------------+------+-----+---------+-------+
| Field                         | Type        | Null | Key | Default | Extra |
+-------------------------------+-------------+------+-----+---------+-------+
| LastName                      | varchar(20) | YES  |     | NULL    |       |
| Address                       | varchar(50) | YES  |     | NULL    |       |
| Age                           | int         | YES  |     | NULL    |       |
| RegistrationNumber            | int         | YES  | MUL | NULL    |       |
| ConvocationRegistrationNumber | int         | NO   | PRI | NULL    |       |
+-------------------------------+-------------+------+-----+---------+-------+
5 rows in set (0.06 sec)
```

9)

```
Query OK, 0 rows affected (0.13 sec)

mysql> INSERT INTO LateRegistration
    -> VALUES('Niman','A11 road,kegalle',34,210,6),
    -> ('Gamage','A12 road,kegalle',36,201,7),
    -> ('Liyanage','A14 road,mawanalla',45,111,8),
    -> ('Viyad','A18 road,mawanalla',54,324,9),
    -> ('Doom','A43 road,mawanalla',53,231,10)//
Query OK, 5 rows affected (0.24 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> SELECT *
    -> FROM STUDENT//
+---------+--------------------+------+-------------------------------+-------+
| Name    | RegistrationNumber | GPA  | ConvocationRegistrationNumber | 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  |
+---------+--------------------+------+-------------------------------+-------+
10 rows in set (0.00 sec)
```

10)

```
mysql> CALL Class//
Query OK, 0 rows affected (0.12 sec)

mysql> SELECT *
    -> FROM STUDENT//
+---------+--------------------+------+-------------------------------+----------------------------------+
| Name    | RegistrationNumber | GPA  | ConvocationRegistrationNumber | 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               |
+---------+--------------------+------+-------------------------------+----------------------------------+
10 rows in set (0.00 sec)
```