

CO226 – Database Systems

Lab 07 – Answers

Lab Task:

1.

```
mysql> create database eXXXXXFacultyLab07;  
Query OK, 1 row affected (0.00 sec)
```

```
mysql> use eXXXXXfacultylab07;
```

Database changed

```
mysql> create table Student(  
  -> Name varchar(20),  
  -> RegistrationNumber int(5) primary key,  
  -> GPA float,  
  -> ConvocationRegistrationNumber int(10)  
  -> );
```

Query OK, 0 rows affected (0.14 sec)

```
mysql> insert into Student(Name,RegistrationNumber,GPA)  
  -> values('Sameera',425,3.25)  
  -> ;
```

Query OK, 1 row affected (0.20 sec)

```
mysql> insert into Student(Name,RegistrationNumber,GPA)  
  -> values('Kasun',210,3.40)  
  -> ;
```

Query OK, 1 row affected (0.24 sec)

```
mysql> insert into Student(Name,RegistrationNumber,GPA)  
  -> values('Kalpa',201,3.10)  
  -> ;
```

Query OK, 1 row affected (0.26 sec)

```
mysql> insert into Student(Name,RegistrationNumber,GPA)  
  -> values('Chathura',312,3.85)  
  -> ;
```

Query OK, 1 row affected (0.23 sec)

```
mysql> insert into Student(Name,RegistrationNumber,GPA)  
  -> values('Lakmali',473,3.75)  
  -> ;
```

Query OK, 1 row affected (0.19 sec)

```
mysql> insert into Student(Name,RegistrationNumber,GPA)  
  -> values('Sidath',352,3.30)  
  -> ;
```

Query OK, 1 row affected (0.23 sec)

```
mysql> insert into Student(Name,RegistrationNumber,GPA)
-> values('Kumudu',111,3.70)
-> ;
```

Query OK, 1 row affected (0.31 sec)

```
mysql> insert into Student(Name,RegistrationNumber,GPA)
-> values('Nalin',456,3.05)
-> ;
```

Query OK, 1 row affected (0.20 sec)

```
mysql> insert into Student(Name,RegistrationNumber,GPA)
-> values('Rohani',324,3.70)
-> ;
```

Query OK, 1 row affected (0.24 sec)

```
mysql> insert into Student(Name,RegistrationNumber,GPA)
-> values('Chithra',231,3.30)
-> ;
```

Query OK, 1 row affected (0.23 sec)

2.

```
mysql> create table Convocation(
-> LastName varchar(20),
-> Address varchar(50),
-> Age int(5),
-> RegistrationNumber int(5),
-> ConvocationRegistrationNumber int(10),
-> primary key(RegistrationNumber,ConvocationRegistrationNumber)
-> );
```

Query OK, 0 rows affected (0.16 sec)

```
mysql> alter table Convocation add foreign key (RegistrationNumber) references
Student(RegistrationNumber)
-> on update cascade on delete restrict;
```

Query OK, 0 rows affected (0.48 sec)

Records: 0 Duplicates: 0 Warnings: 0

```
mysql> alter table Convocation add foreign key (ConvocationRegistrationNumber) references
Student(ConvocationRegistrationNumber)
-> on update cascade on delete set null;
```

Query OK, 0 rows affected (0.48 sec)

Records: 0 Duplicates: 0 Warnings: 0

3.

```
mysql> delimiter //
mysql> create procedure storeDetails(IN Regno int,IN convRegno int ,IN age int,IN address
varchar(50),IN Iname varchar(20))
-> begin
->                                     insert                                     into
Convocation(LastName,Address,Age,RegistrationNumber,ConvocationRegistrationNumber)
values(Iname,address,age,Regno,convRegno);
-> end //
Query OK, 0 rows affected (0.01 sec)
mysql> delimiter ;
```

4.

```
mysql> call storeDetails(425,1,24,'Colombo','Sameera');
Query OK, 1 row affected (0.21 sec)
```

```
mysql> call storeDetails(312,2,25,'Kandy','Chathura');
Query OK, 1 row affected (0.20 sec)
```

```
mysql> call storeDetails(473,3,25,'Galle','Lakmali');
Query OK, 1 row affected (0.26 sec)
```

```
mysql> call storeDetails(352,4,24,'Gampaga','Sidath');
Query OK, 1 row affected (0.28 sec)
```

```
mysql> call storeDetails(456,5,24,'Gampaga','Nalin');
Query OK, 1 row affected (0.23 sec)
```

```
mysql> select * from Student;
```

Name	RegistrationNumber	GPA	ConvocationRegistrationNumber	Class
Kumudu	111	3.7	NULL	First class honors
Kalpa	201	3.1	NULL	Second class honors-
Kasun	210	3.4	NULL	Second class honors-
Chithra	231	3.3	NULL	Second class honors-
Chathura	312	3.85	2	First class honors
Rohani	324	3.7	NULL	First class honors
Sidath	352	3.3	4	Second class honors-
Sameera	425	3.25	1	Second class honors-
Nalin	456	3.05	5	Second class honors-
Lakmali	473	3.75	3	First class honors

10 rows in set (0.00 sec)

5.

```
mysql> create view Registered as
-> select Student.Name,Student.RegistrationNumber,GPA,
Convocation.ConvocationRegistrationNumber,Address,Age
-> from Student,Convocation
-> where Student.RegistrationNumber=Convocation.RegistrationNumber and
Convocation.ConvocationRegistrationNumber is not null group by Student.RegistrationNumber;
Query OK, 0 rows affected (0.08 sec)
```

```
mysql> select * from Registered;
```

Name	RegistrationNumber	GPA	ConvocationRegistrationNumber	Address	Age
Chathura	312	3.85	2	Kandy	25
Sidath	352	3.3	4	Gampaga	24
Sameera	425	3.25	1	Colombo	24
Nalin	456	3.05	5	Gampaga	24
Lakmali	473	3.75	3	Galle	25

5 rows in set (0.00 sec)

6.

```
mysql> create view NotRegistered as
-> select
Student.Name,Student.RegistrationNumber,GPA,Convocation.ConvocationRegistrationNumber,
Address,Age
-> from Student,Convocation
-> where Student.RegistrationNumber=Convocation.RegistrationNumber
and Student.ConvocationRegistrationNumber is null
group by Student.RegistrationNumber;
```

Query OK, 0 rows affected (0.03 sec)

```
mysql> select * from NotRegistered;
```

Name	RegistrationNumber	GPA	ConvocationRegistrationNumber	Address	Age
Chithra	231	3.30	NULL	NULL	NULL
Kalpa	201	3.10	NULL	NULL	NULL
Kumudu	111	3.70	NULL	NULL	NULL
Kasun	210	3.40	NULL	NULL	NULL
Rohani	224	3.70	NULL	NULL	NULL

5 rows in set (0.00 sec)

7.

```
mysql> create table LateRegistration(  
-> LastName varchar(20),  
-> Address varchar(50),  
-> Age int(5),  
-> RegistrationNumber int(10),  
-> ConvocationRegistrationNumber int(10),  
-> primary key(RegistrationNumber,ConvocationRegistrationNumber)  
-> );
```

Query OK, 0 rows affected (0.19 sec)

```
mysql> select * from LateRegistration;
```

LastName	Address	Age	RegNo	ConvoRegNo
Wikramasignhe	Galle	24	111	8
Balasooriya	Anuradhapura	24	201	7
Bandara	Muruthalawa	24	210	6
Herath	Kadugannawa	24	231	10
Bandara	Kandy	24	324	9

5 rows in set (0.00 sec)

8.

```
mysql> delimiter //
```

```
mysql> create trigger Late_Registration before insert on Convocation
```

```
-> for each row
```

```
-> begin
```

```
-> insert into LateRegistration
```

```
-> (LastName,Address,Age,RegistrationNumber,ConvocationRegistrationNumber)
```

```
->
```

```
values(NEW.LastName,NEW.Address,NEW.Age,NEW.RegistrationNumber,NEW.ConvocationRegistrationNumber);
```

```
-> end //
```

Query OK, 0 rows affected (0.11 sec)

9.....

```
mysql> #QUESTION9
```

```
mysql> SELECT RegNo INTO @RegNoVar FROM Student WHERE Name='Kasun';
```

Query OK, 1 row affected (0.01 sec)

```
mysql> INSERT INTO LateRegistration (RegNo,ConvoRegNo,LastName,Address,Age) VALUES  
(@RegNoVar,6,'Bandara','Muruthalawa',24);
```

Query OK, 1 row affected (0.00 sec)

```
mysql>
```

```
mysql> SELECT RegNo INTO @RegNoVar FROM Student WHERE Name='Kalpa';
```

Query OK, 1 row affected (0.00 sec)

```
mysql> INSERT INTO LateRegistration (RegNo,ConvoRegNo,LastName,Address,Age) VALUES
(@RegNoVar,7,'Balasooriya','Anuradhapura',24);
Query OK, 1 row affected (0.01 sec)
```

```
mysql>
mysql> SELECT RegNo INTO @RegNoVar FROM Student WHERE Name='Kumudu';
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO LateRegistration (RegNo,ConvoRegNo,LastName,Address,Age) VALUES
(@RegNoVar,8,'Wikramasignhe','Galle',24);
Query OK, 1 row affected (0.01 sec)
```

```
mysql>
mysql> SELECT RegNo INTO @RegNoVar FROM Student WHERE Name='Rohani';
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO LateRegistration (RegNo,ConvoRegNo,LastName,Address,Age) VALUES
(@RegNoVar,9,'Bandara','Kandy',24);
Query OK, 1 row affected (0.00 sec)
```

```
mysql>
mysql> SELECT RegNo INTO @RegNoVar FROM Student WHERE Name='Chithra';
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO LateRegistration (RegNo,ConvoRegNo,LastName,Address,Age) VALUES
(@RegNoVar,10,'Herath','Kadugannawa',24);
Query OK, 1 row affected (0.01 sec)
```

```
mysql>
mysql> SELECT * FROM Student;
+-----+-----+-----+-----+
| Name   | RegNo | GPA  | ConvoRegNo | Class |
+-----+-----+-----+-----+
| Kumudu | 111   | 3.7  | 8          | NULL  |
| Kalpa  | 201   | 3.1  | 7          | NULL  |
| Kasun  | 210   | 3.4  | 6          | NULL  |
| Chithra | 231   | 3.3  | 10         | NULL  |
| Chathura | 312   | 3.85 | 2          | NULL  |
| Rohani  | 324   | 3.7  | 9          | NULL  |
| Sidath  | 352   | 3.3  | 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)
```

```
.....
.
```

9.

```
mysql> insert into
Convocation(LastName,Address,Age,RegistrationNumber,ConvocationRegistrationNumber)
-> values
-> ('Kasun','Colombo',26,210,6);
-> //
Query OK, 1 row affected (0.22 sec)
```

```
mysql> insert into
Convocation(LastName,Address,Age,RegistrationNumber,ConvocationRegistrationNumber)
-> values
-> ('Kalpa','Kandy',25,201,7);
-> //
Query OK, 1 row affected (0.27 sec)
```

```
mysql> insert into
Convocation(LastName,Address,Age,RegistrationNumber,ConvocationRegistrationNumber)
-> values
-> ('Kumudu','Galle',26,111,8);
-> //
Query OK, 1 row affected (0.23 sec)
```

```
mysql> insert into
Convocation(LastName,Address,Age,RegistrationNumber,ConvocationRegistrationNumber)
-> values
-> ('Rohani','Colombo',26,324,9);
-> //
Query OK, 1 row affected (0.25 sec)
```

```
mysql> insert into
Convocation(LastName,Address,Age,RegistrationNumber,ConvocationRegistrationNumber)
-> values
-> ('Chithra','Colombo',24,231,10);
-> //
Query OK, 1 row affected (0.27 sec)
```

```
mysql> select * from Student;
```

Name	RegistrationNumber	GPA	ConvocationRegistrationNumber	Class
Kumudu	111	3.7	8	First class honors
Kalpa	201	3.1	7	Second class honors-
Kasun	210	3.4	6	Second class honors-
Chithra	231	3.3	10	Second class honors-
Chathura	312	3.85	2	First class honors
Rohani	324	3.7	9	First class honors
Sidath	352	3.3	4	Second class honors-
Sameera	425	3.25	1	Second class honors-

Nalin	456	3.05	5	Second class honors-
Lakmali	473	3.75	3	First class honors

10 rows in set (0.00 sec)

10.

```
mysql> delimiter //
```

```
mysql> create procedure findClass(IN GPA float,IN Rgnum int)
```

```
  -> begin
```

```
  -> if GPA>=3.7 then update Student set Class='First class honors' where
RegistrationNumber=Rgnum;
```

```
  -> elseif GPA<3.7 and GPA>=3.3 then update Student set Class='Second class honors-upper
division' where RegistrationNumber=Rgnum;
```

```
  -> elseif GPA<3.3 and GPA>=2.7 then update Student set Class='Second class honors-lower
division' where RegistrationNumber=Rgnum;
```

```
  -> elseif GPA<2.7 and GPA>=2.0 then update Student set Class='Third class honors' where
RegistrationNumber=Rgnum;
```

```
  -> end if;
```

```
  -> end //
```

Query OK, 0 rows affected (0.00 sec)

```
mysql> call findClass(3.25,425);
```

```
  -> //
```

Query OK, 0 rows affected, 1 warning (0.28 sec)

```
mysql> call findClass(3.05,456);
```

```
  -> //
```

Query OK, 1 row affected, 1 warning (0.24 sec)

```
mysql> call findClass(3.40,210);
```

```
  -> //
```

Query OK, 1 row affected, 1 warning (0.25 sec)

```
mysql> call findClass(3.10,201);
```

```
  -> //
```

Query OK, 1 row affected, 1 warning (0.23 sec)

```
mysql> call findClass(3.85,312);
```

```
  -> //
```

Query OK, 1 row affected (0.25 sec)

```
mysql> call findClass(3.75,473);
```

```
  -> call findClass(3.30,352);
```

```
  -> //
```

Query OK, 1 row affected (0.25 sec)


```
mysql> call findClass(3.70,111);
-> call findClass(3.70,324);
-> call findClass(3.30,231);
-> //
Query OK, 1 row affected (0.35 sec)
```

```
mysql> select * from Student;
-> //
```

Name	RegistrationNumber	GPA	ConvocationRegistrationNumber	Class
Kumudu	111	3.7	NULL	First class honors
Kalpa	201	3.1	NULL	Second class honors-
Kasun	210	3.4	NULL	Second class honors-
Chithra	231	3.3	NULL	Second class honors-
Chathura	312	3.85	NULL	First class honors
Rohani	324	3.7	NULL	First class honors
Sidath	352	3.3	NULL	Second class honors-
Sameera	425	3.25	NULL	Second class honors-
Nalin	456	3.05	NULL	Second class honors-
Lakmali	473	3.75	NULL	First class honors

10 rows in set (0.00 sec)