Lab 5: Stored Procedures and Triggers

Prepare Lab Sheet of MYSQL Statements for following.

1. Write a stored procedure named “GetEmployee()” to get name, birthdate, address of employees.

```
mysql> DELIMITER $$
mysql> CREATE PROCEDURE GetEmployee()
    -> BEGIN
    ->     SELECT Ename, Bdate, Address
    ->     FROM Employee;
    -> END$$
Query OK, 0 rows affected (0.01 sec)

mysql> DELIMITER ;
mysql>
```

2. Execute the procedure in Q.1 and show the result.

```
mysql> call GetEmployee();
+------------------+------------+------------+
| Ename            | Bdate      | Address    |
+------------------+------------+------------+
| Santosh Parajuli | 1996-05-01 | Kirtipur   |
| Raju Shrestha    | 1995-01-01 | Kalimati   |
| Bipin Maharjan   | 1994-08-12 | Kirtipur   |
| Rishi Pradhananga | 1990-10-21 | Anamnagar  |
| Dipen Khatri     | 1993-02-07 | Pepsicola  |
| Gopal Shrama     | 0200-01-01 | Lagankhel  |
| Tina  Lama       | 2002-07-12 | Balkhu     |
| Shyam Tamang     | 1998-12-12 | Kalanki    |
| Prakash Karki    | 1988-03-03 | Baneshwor  |
| Kaushal Khatiwada | 1996-10-28 | Kaushaltar |
+------------------+------------+------------+
10 rows in set (0.01 sec)

Query OK, 0 rows affected (0.03 sec)
```

3. Write a stored procedure to get PF category name, Amount and start date where the amount is greater than provided input value. Your procedure should contain an IN parameter named amt to take input value of amount. Call the procedure with inputs 1000 and 3000 respectively.

```
mysql> DELIMITER $$
mysql> CREATE PROCEDURE GetPF(in amt decimal(10,2))
    -> BEGIN
    ->     SELECT PFCategoryName, Amount, Start_date
    ->     FROM PF
    ->     WHERE Amount > amt;
    -> END$$
Query OK, 0 rows affected (0.02 sec)

mysql> DELIMITER ;
mysql>
```

```
mysql> call GetPF(1000.00);
+----------------+---------+------------+
| PFCategoryName | Amount  | Start_date |
+----------------+---------+------------+
| SSF            | 5500.00 | 2017-05-01 |
| SSF            | 5000.00 | 2019-03-01 |
| SSF            | 4000.00 | 2022-02-01 |
| SSF            | 6000.00 | 2016-08-01 |
| SSF            | 5800.00 | 2014-12-01 |
| CIT            | 2500.00 | 2023-07-01 |
| CIT            | 3600.00 | 2022-06-01 |
| CIT            | 3000.00 | 2018-02-01 |
+----------------+---------+------------+
8 rows in set (0.01 sec)

Query OK, 0 rows affected (0.02 sec)

mysql> call GetPF(3000.00);
+----------------+---------+------------+
| PFCategoryName | Amount  | Start_date |
+----------------+---------+------------+
| SSF            | 5500.00 | 2017-05-01 |
| SSF            | 5000.00 | 2019-03-01 |
| SSF            | 4000.00 | 2022-02-01 |
| SSF            | 6000.00 | 2016-08-01 |
| SSF            | 5800.00 | 2014-12-01 |
| CIT            | 3600.00 | 2022-06-01 |
+----------------+---------+------------+
6 rows in set (0.00 sec)

Query OK, 0 rows affected (0.01 sec)
```

4. Write a stored procedure to get number of PF records where the amount of PF is equal to the provided input value. Your procedure should contain an IN parameter named amt to take input value of amount and should contain OUT parameter named total to return the total number of PF records satisfying the condition.

```
mysql> DELIMITER $$
mysql> CREATE PROCEDURE GetNumberOfPF(in amt decimal(10,2),OUT total INT)
    -> BEGIN
    ->     SELECT COUNT(Amount)
    ->     FROM PF
    ->     WHERE Amount = amt;
    -> END$$
Query OK, 0 rows affected (0.01 sec)

mysql> DELIMITER ;
mysql>
```

5. Call the procedure in Q4. with input of 3000 and print the @total.

```
mysql> call GetNumberOfPF(3000.00,@total);
+---------------+
| COUNT(Amount) |
+---------------+
|             1 |
+---------------+
1 row in set (0.01 sec)

Query OK, 0 rows affected (0.01 sec)
```

6. Write before insert trigger before inserting a record into the Employee table. Show some action on the event.

```
mysql> DELIMITER $$
mysql> create trigger new_employee_create
    -> before insert  on employee for each row
    -> begin
    ->  if new.salary<0 then set new.salary = 0;
    ->  end if;
    -> end; $$
Query OK, 0 rows affected (0.01 sec)

mysql> DELIMITER ;
mysql>
```

Before insert trigger created so that if salary is inserted negative value, it set the salary value to 0.

```
mysql> insert into Employee (SSN, Ename, Gender, Bdate, Address, Salary, Ono, Years_of_experience)
    -> values   (10,"Suresh timalsina","M","1992-03-22","Koteshwor",-55000,1,11);
Query OK, 1 row affected (0.01 sec)

mysql> select * from employee;
+-----+------------------+--------+------------+------------+----------+------+--------------------+----------------+
| SSN | Ename            | Gender | Bdate      | Address    | Salary   | Ono  | Years_of_experience | Matrial_status |
+-----+------------------+--------+------------+------------+----------+------+--------------------+----------------+
|   1 | Santosh Parajuli | M      | 1996-05-01 | Kirtipur   | 55000.00 |    1 |                  7 | Married        |
|   2 | Raju Shrestha    | M      | 1995-01-01 | Kalimati   | 50000.00 |    2 |                  5 | Single         |
|   3 | Bipin Maharjan   | M      | 1994-08-12 | Kirtipur   | 40000.00 |    5 |                  2 | Married        |
|   4 | Rishi Pradhananga| M      | 1990-10-21 | Anamnagar  | 60000.00 |    4 |                  8 | Divorced       |
|   5 | Dipen Khatri     | M      | 1993-02-07 | Pepsicola  | 58000.00 |    3 |                 10 | Married        |
|   6 | Gopal Shrama     | M      | 0200-01-01 | Lagankhel  | 25000.00 |    1 |                  1 | Divorced       |
|   7 | Tina  Lama       | F      | 2002-07-12 | Balkhu     | 36000.00 |    2 |                  2 | Single         |
|   8 | Shyam Tamang     | M      | 1998-12-12 | Kalanki    | 48000.00 |    3 |                  3 | Divorced       |
|   9 | Prakash Karki    | M      | 1988-03-03 | Baneshwor  | 57000.00 |    4 |                  4 | Single         |
|  10 | Suresh timalsina | M      | 1992-03-22 | Koteshwor  |     0.00 |    1 |                 11 | NULL           |
|  13 | Kaushal Khatiwada| M      | 1996-10-28 | Kaushaltar | 30000.00 |    6 |                  6 | Single         |
+-----+------------------+--------+------------+------------+----------+------+--------------------+----------------+
11 rows in set (0.00 sec)
```

Here, Suresh timalsina's salary is inserted as -55000 but after the trigger is trigged the value is set to zero.

7. Write after delete trigger on PF table during delete operation. Print "It is deleted".

First create a table to store the deleted items

```
mysql> create table deleted_pf (
    ->     PFID int,
    ->     SSN int,
    ->     Start_date date,
    ->     Amount decimal(10,2),
    ->     deletion_date timestamp,
    ->     Remarks varchar(255)
    -> );
Query OK, 0 rows affected (0.03 sec)
```

Created **after delete** trigger to insert the deleted item in the newly created table.

```
mysql> DELIMITER $$
mysql> create trigger after_PF_delete
    -> after delete on PF for each row
    -> begin
    ->     insert into deleted_pf values (old.pfid, old.ssn,old.start_date,old.amount,now(),"It is deleted");
    -> end; $$
Query OK, 0 rows affected (0.01 sec)

mysql> DELIMITER ;
```

```
mysql> select * from pf;
+------+------+----------------+---------+------------+----------------------+
| PFID | SSN  | PFCategoryName | Amount  | Start_date | Remarks              |
+------+------+----------------+---------+------------+----------------------+
|    1 |    1 | SSF            | 5500.00 | 2017-05-01 | Regular Contributor  |
|    2 |    2 | SSF            | 5000.00 | 2019-03-01 | Irregular Contributor |
|    3 |    3 | SSF            | 4000.00 | 2022-02-01 | Regular Contributor  |
|    4 |    4 | SSF            | 6000.00 | 2016-08-01 | Irregular Contributor |
|    5 |    5 | SSF            | 5800.00 | 2014-12-01 | Regular Contributor  |
|    6 |    6 | CIT            | 2500.00 | 2023-07-01 | Irregular Contributor |
|   13 |   13 | CIT            | 3000.00 | 2018-02-01 | NULL                 |
+------+------+----------------+---------+------------+----------------------+
7 rows in set (0.00 sec)

mysql> delete from pf where pfid = 6;
Query OK, 1 row affected (0.01 sec)

mysql> select * from pf;
+------+------+----------------+---------+------------+----------------------+
| PFID | SSN  | PFCategoryName | Amount  | Start_date | Remarks              |
+------+------+----------------+---------+------------+----------------------+
|    1 |    1 | SSF            | 5500.00 | 2017-05-01 | Regular Contributor  |
|    2 |    2 | SSF            | 5000.00 | 2019-03-01 | Irregular Contributor |
|    3 |    3 | SSF            | 4000.00 | 2022-02-01 | Regular Contributor  |
|    4 |    4 | SSF            | 6000.00 | 2016-08-01 | Irregular Contributor |
|    5 |    5 | SSF            | 5800.00 | 2014-12-01 | Regular Contributor  |
|   13 |   13 | CIT            | 3000.00 | 2018-02-01 | NULL                 |
+------+------+----------------+---------+------------+----------------------+
6 rows in set (0.00 sec)
```

Delete event triggered

```
mysql> select * from deleted_pf;
+------+------+------------+---------+---------------------+---------------+
| PFID | SSN  | Start_date | Amount  | deletion_date       | Remarks       |
+------+------+------------+---------+---------------------+---------------+
|    6 |    6 | 2023-07-01 | 2500.00 | 2024-05-13 13:23:26 | It is deleted |
+------+------+------------+---------+---------------------+---------------+
1 row in set (0.00 sec)
```

After Delete trigger, the deleted item is inserted into newly created database with message “It is deleted”.