DBMS LAB-8

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DATE:- 26-10-2022

Example-1:

```
mysql> delimiter ./
mysql> CREATE DEFINER=`root`@`localhost` TRIGGER `sales_BEFORE_INSERT` BEFORE
    -> INSERT ON `sales` FOR EACH ROW BEGIN
    -> set new.total=new.qtysold*new.price;
    -> END ./
Query OK, 0 rows affected (0.01 sec)

mysql> insert into sales(sid,itemid,qtysold,price) values(2,3,10,100);
    -> select * from sales;
    -> ./
Query OK, 1 row affected (0.01 sec)

+------+--------+---------+-------+-------+
| sid  | itemid | qtysold | price | total |
+------+--------+---------+-------+-------+
|    1 | 2      |       5 |   500 | 0     |
|    2 | 3      |      10 |   100 | 1000  |
|    2 | 3      |      10 |   100 | 1000  |
+------+--------+---------+-------+-------+
3 rows in set (0.01 sec)

mysql>
```

Example-2:

```
mysql> delimiter $$
mysql> CREATE DEFINER=`root`@`localhost` TRIGGER `sales_BEFORE_INSERT` BEFORE
    -> INSERT ON `sales` FOR EACH ROW BEGIN
    -> insert into trig_logs values("Updating Sales.total column...");
    -> set new.total=new.qtysold*new.price;
    -> insert into trig_logs values("Updating item.quntity column...");
    -> update item
    -> set quantity =quantity-new.qtysold
    -> where itemid=new.itemid;
    -> END $$
Query OK, 0 rows affected (0.01 sec)
```

EXERCISES:

1. Write a trigger program to update the total capacity in the WorkCenterStats table before a new work center is inserted into the WorkCenter table.

```
mysql> DELIMITER $$
mysql> CREATE TRIGGER before_workcenters_insert
    -> BEFORE INSERT
    -> ON WorkCenters FOR EACH ROW
    -> BEGIN
    ->  DECLARE rowcount INT;
    ->
    ->  SELECT COUNT(*)
    ->  INTO rowcount
    ->  FROM WorkCenterStats;
    ->
    ->  IF rowcount > 0 THEN
    ->  UPDATE WorkCenterStats
    ->  SET totalCapacity = totalCapacity + new.capacity;
    ->  ELSE
    ->  INSERT INTO WorkCenterStats(totalCapacity)
    ->  VALUES(new.capacity);
    ->  END IF;
    -> END $$
Query OK, 0 rows affected (0.01 sec)
```

Checking the trigger:-

```
mysql> INSERT INTO WorkCenters(name, capacity) VALUES('Mold Machine',100);
    -> SELECT * FROM WorkCenterStats;
    -> $$
Query OK, 1 row affected (0.01 sec)

+---------------+
| totalCapacity |
+---------------+
|           100 |
+---------------+
1 row in set (0.01 sec)
```

2. Write a trigger program to insert a reminder into the reminders table if the birth date of the member is NULL.

```
mysql> DELIMITER ..
mysql> CREATE TRIGGER after_members_insert
    -> AFTER INSERT
    -> ON members FOR EACH ROW
    -> BEGIN
    ->  IF NEW.birthDate IS NULL THEN
    ->  INSERT INTO reminders(memberId, message)
    ->  VALUES(new.id,CONCAT('Hi ', NEW.name, ', please update your date of
    '> birth.'));
    ->  END IF;
    -> END ..
Query OK, 0 rows affected (0.01 sec)

mysql>
```

Checking the trigger:-

```
mysql> INSERT INTO members(name, email, birthDate)
    -> VALUES
    ->  ('John Doe', 'john.doe@example.com', NULL),
    ->  ('Jane Doe', 'jane.doe@example.com','2000-01-01');
    -> SELECT * FROM members;
    -> SELECT * FROM reminders;
    -> ..
Query OK, 2 rows affected (0.01 sec)
Records: 2  Duplicates: 0  Warnings: 0

+----+----------+----------------------+------------+
| id | name     | email                | birthDate  |
+----+----------+----------------------+------------+
|  1 | John Doe | john.doe@example.com | NULL       |
|  2 | Jane Doe | jane.doe@example.com | 2000-01-01 |
+----+----------+----------------------+------------+
2 rows in set (0.01 sec)

+----+----------+-------------------------------------------------+
| id | memberId | message                                         |
+----+----------+-------------------------------------------------+
|  1 |        1 | Hi John Doe, please update your date of
birth. |
+----+----------+-------------------------------------------------+
1 row in set (0.02 sec)

mysql>
```

3. Create a MySQL Trigger that inserts a new row into the SalaryArchives table before a row from the Salaries table is deleted.

```
mysql> DELIMITER ..
mysql> CREATE TRIGGER before_salaries_delete
    -> BEFORE DELETE
    -> ON salaries1 FOR EACH ROW
    -> BEGIN
    ->  INSERT INTO SalaryArchives(employeeNumber,validFrom,amount)
    ->  VALUES(OLD.employeeNumber,OLD.validFrom,OLD.amount);
    -> END..
Query OK, 0 rows affected (0.01 sec)

mysql>
```

Checking the trigger:-

```
mysql> DELETE FROM salaries1
    -> WHERE employeeNumber = 1002;
    -> SELECT * FROM SalaryArchives;
    ->
    -> DELETE FROM salaries1;
    -> SELECT * FROM SalaryArchives;..
Query OK, 0 rows affected (0.00 sec)

+----+----------------+------------+----------+---------------------+
| id | employeeNumber | validFrom  | amount   | deletedAt           |
+----+----------------+------------+----------+---------------------+
|  1 |           1002 | 2000-01-01 | 50000.00 | 2022-10-26 16:30:53 |
+----+----------------+------------+----------+---------------------+
1 row in set (0.00 sec)

Query OK, 2 rows affected (0.01 sec)

+----+----------------+------------+----------+---------------------+
| id | employeeNumber | validFrom  | amount   | deletedAt           |
+----+----------------+------------+----------+---------------------+
|  1 |           1002 | 2000-01-01 | 50000.00 | 2022-10-26 16:30:53 |
|  2 |           1056 | 2000-01-01 | 60000.00 | 2022-10-26 16:32:24 |
|  3 |           1076 | 2000-01-01 | 70000.00 | 2022-10-26 16:32:24 |
+----+----------------+------------+----------+---------------------+
3 rows in set (0.01 sec)

mysql>
```

4. Create MySQL Trigger updates the total salary in the SalaryBudgets table after a row is deleted from the Salaries table.

```
mysql> delimiter .
mysql> CREATE TRIGGER after_salaries_delete
    -> AFTER DELETE
    -> ON Salaries FOR EACH ROW
    -> UPDATE SalaryBudgets
    -> SET total = total - old.salary;
Query OK, 0 rows affected (0.01 sec)
```

Checking the trigger:-

```
mysql> DELETE FROM Salaries
    -> WHERE employeeNumber = 1002;
    -> SELECT * FROM SalaryBudgets;
    -> .
Query OK, 0 rows affected (0.00 sec)

+----------+
| total    |
+----------+
| 15000.00 |
+----------+
1 row in set (0.00 sec)

mysql>
```