OPEN ENDED EXPERIMENT - 1

Aim: Implementation of Triggers in SQL.

Software Used: MySQL

Theory:

To demonstrate Trigger in MySQL, we use the following tables.

```
CREATE TABLE Employee
(
 Id INT PRIMARY KEY,
 Name VARCHAR(45),
 Salary INT,
 Gender VARCHAR(12),
 DepartmentId INT
)
```

Inserting some record in the table

```
INSERT INTO Employee VALUES (1,'Steffan', 82000, 'Male', 3),
(2,'Amelie', 52000, 'Female', 2),
(3,'Antonio', 25000, 'male', 1),
(4,'Marco', 47000, 'Male', 2),
(5,'Eliana', 46000, 'Female', 3)
```

```
SELECT * FROM Employee;
```

Id	Name	Salary	Gender	DepartmentId
1	Steffan	82000	Male	3
2	Amelie	52000	Female	2
3	Antonio	25000	male	1
4	Marco	47000	Male	2
5	Eliana	46000	Female	3
6	Peter	62000	Male	3

We will also create another table named 'Employee_Audit_Test' to automatically store transaction records of each operation, such as INSERT, UPDATE, or DELETE on the

Employee table:

```
CREATE TABLE Employee_Audit_Test
(
Id int IDENTITY,
Audit_Action text
)
```

Now, creating a trigger that stores transaction records of each insert operation on the Employee table into the Employee_Audit_Test table.

```
CREATE TRIGGER trInsertEmployee
ON Employee
FOR INSERT
AS
BEGIN
Declare @Id int
SELECT @Id = Id from inserted
INSERT INTO Employee_Audit_Test
VALUES ('New employee with Id = ' + CAST(@Id AS VARCHAR(10)) + ' is added at ' + C
```

```
AST(Getdate() AS VARCHAR(22)))
END

INSERT INTO Employee VALUES (6,'Peter', 62000, 'Male', 3)
```

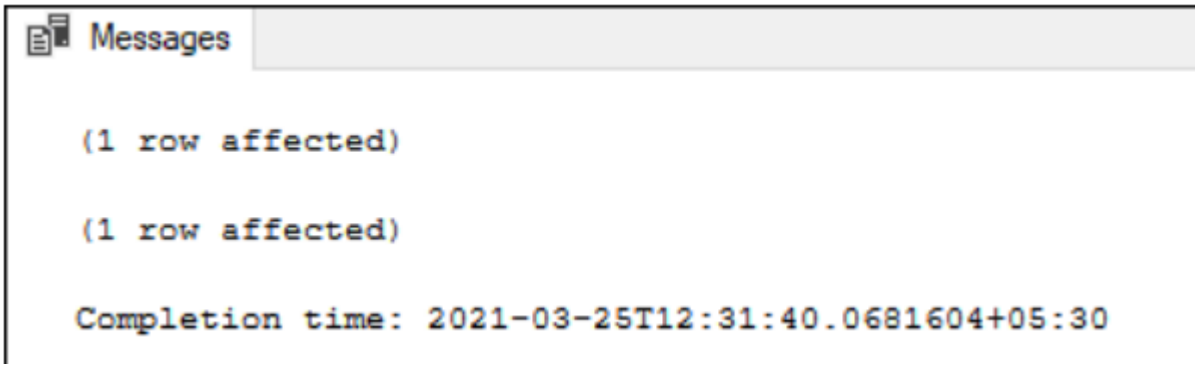
Id	Audit_Action
1	New employee with Id = 6 is added at Mar 24 2021 2:08PM

```
CREATE TRIGGER trDeleteEmployee
ON Employee
FOR DELETE
AS
BEGIN
Declare @Id int
SELECT @Id = Id from deleted
INSERT INTO Employee_Audit_Test
VALUES ('An existing employee with Id = ' + CAST(@Id AS VARCHAR(10)) + ' is deleted
at ' + CAST(Getdate() AS VARCHAR(22)))
END
```

After creating a trigger, we will delete a record from the Employee table:

```
DELETE FROM Employee WHERE Id = 2;
```

If no error is found, it gives the message as below:



Finally, execute the SELECT statement to check the audit records:

Id	Audit_Action
1	New employee with Id = 6 is added at Mar 24 2021 2:08PM
2	An existing employee with Id = 2 is deleted at Mar 25 2021 12:26PM

Conclusion: Trigger queries were demonstrated.