



School of Computer Science, UPES, Dehradun.

A

LABORATORY FILE

On

DATABASE MANAGEMENT
SYSTEM (DBMS) LAB

B.TECH. -III Semester

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EXPERIMENT – 16

To understand the concepts of Trigger.

Objective: Students will be able to implement the concept of trigger.

Create a row level trigger for the customers table that would fire for INSERT or UPDATE or DELETE operations performed on the CUSTOMERS table. This trigger will display the salary difference between the old values and new values.

-- Step 1: Create the CUSTOMERS table

```
CREATE TABLE CUSTOMERS (  
    ID INT PRIMARY KEY,  
    NAME VARCHAR(50),  
    AGE INT,  
    ADDRESS VARCHAR(100),  
    SALARY DECIMAL(10, 2)  
);
```

-- Step 2: Insert initial data into the CUSTOMERS table

```
INSERT INTO CUSTOMERS (ID, NAME, AGE, ADDRESS, SALARY)  
VALUES  
(1, 'Ramesh', 32, 'Ahmedabad', 2000.00),  
(2, 'Khilan', 25, 'Delhi', 1500.00),  
(3, 'Kaushik', 23, 'Kota', 2000.00),  
(4, 'Chaitali', 25, 'Mumbai', 6500.00),  
(5, 'Hardik', 27, 'Bhopal', 8500.00),  
(6, 'Komal', 22, 'MP', 4500.00);
```

-- Step 3: Create separate triggers for INSERT, UPDATE, and DELETE

DELIMITER \$\$

-- Trigger for INSERT

```
CREATE TRIGGER Trigger_Customer_Insert  
AFTER INSERT ON CUSTOMERS  
FOR EACH ROW
```

BEGIN

```
    INSERT INTO Salary_Log (Log_Message)
    VALUES (CONCAT('New record inserted. New Salary: ',
NEW.SALARY));
END$$
```

-- Trigger for UPDATE

```
CREATE TRIGGER Trigger_Customer_Update
AFTER UPDATE ON CUSTOMERS
```

```
FOR EACH ROW
```

BEGIN

```
    INSERT INTO Salary_Log (Log_Message)
    VALUES (CONCAT('Salary updated. Difference: ', NEW.SALARY -
OLD.SALARY));
END$$
```

-- Trigger for DELETE

```
CREATE TRIGGER Trigger_Customer_Delete
AFTER DELETE ON CUSTOMERS
```

```
FOR EACH ROW
```

BEGIN

```
    INSERT INTO Salary_Log (Log_Message)
    VALUES (CONCAT('Record deleted. Old Salary: ', OLD.SALARY));
END$$
```

DELIMITER ;

```
CREATE TABLE Salary_Log (
```

```
    Log_ID INT AUTO_INCREMENT PRIMARY KEY,
```

```
    Log_Message VARCHAR(255),
```

```
    Log_Time TIMESTAMP DEFAULT CURRENT_TIMESTAMP
```

```
);
```

```
INSERT INTO CUSTOMERS (ID, NAME, AGE, ADDRESS, SALARY)
```

```
VALUES (7, 'Aayush', 24, 'Dehradun', 5000.00);
```

```
DELETE FROM CUSTOMERS WHERE ID = 2;
```

```
SELECT * FROM Salary_Log;
```

```
+-----+-----+-----+
| Log_ID | Log_Message                               | Log_Time           |
+-----+-----+-----+
|      1 | New record inserted. New Salary: 5000.00 | 2024-11-17 15:00:23 |
|      2 | Record deleted. Old Salary: 1500.00      | 2024-11-17 15:00:42 |
+-----+-----+-----+
2 rows in set (0.00 sec)
```