School of Computer Science, UPES, Dehradun.

A

LABORATORY FILE

On

DATABASE MANAGEMENT

SYSTEM (DBMS) LAB

B.TECH. -III Semester

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EXEPERIMENT – 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)
```

| Log_ID | Log_Message | Log_Time |