OBJECTIVE: IMPLEMETING TRIGGERS

INITIAL SETUP:
Step1: Create a database lab7
CREATE DATABASE lab7;

Step2: Use the database lab7
USE lab7;

Step3: Create a student table and insert some data
CREATE TABLE student (
    id INT PRIMARY KEY,
    name VARCHAR(100),
    age INT,
    address VARCHAR(50)
);

INSERT INTO student (id, name, age, address) VALUES
(101, 'Maya', 19, 'Ktm'),
(102, 'Arnav', 18, 'Bkt'),
(103, 'Krishna', 19, 'Lalitpur');

Step4: Create student audit table to store events
CREATE TABLE student_audit (
    id INT PRIMARY KEY,
    audit_description VARCHAR(100)
);

Step5: Show the student table
SELECT * FROM student;

id	name	age	address
abc Filter...	abc Filter...	abc Filter...	abc Filter...
101	Maya	19	Ktm
102	Arnav	18	Bkt
103	Krishna	19	Lalitpur

Step6: Show the student audit table
SELECT * FROM student_audit;

id	audit_description	
abc Filter...	abc Filter...	
		No data

LAB EXERCISE:

➔ **Create a trigger called 'afterInsertStudent' which will be set to insert the audit details into the 'student_audit' table when a new row is added to 'student' table.**

Step1: Create a trigger for after insert

```
DELIMITER //

CREATE TRIGGER afterInsertStudent
AFTER INSERT ON student
FOR EACH ROW
BEGIN
    INSERT INTO student_audit (id, audit_description)
    VALUES (NEW.id, CONCAT('A new student has been added at time ', NOW()));
END //

DELIMITER ;
```

Step2: Insert a new row into the student table

```
INSERT INTO student (id, name, age, address)
VALUES
(104, 'Sita', 20, 'Pokhara'),
(105, 'Rita', 21, 'Dhanghadi');
```

Step3: Show the student table

```
SELECT * FROM student;
```

id	name	age	address
abc Filter…	abc Filter…	abc Filter…	abc Filter…
101	Maya	19	Ktm
102	Arnav	18	Bkt
103	Krishna	19	Lalitpur
104	Sita	20	Pokhara
105	Rita	21	Dhanghadi

Step4: Show the student audit table

SELECT * FROM student_audit;

id	audit_description
abc Filter…	abc Filter…
104	A new student has been added at time 2025-01-09 20:08:07
105	A new student has been added at time 2025-01-09 20:08:07

➔ **Create a trigger called 'afterUpdateStudent' which will be set to insert the audit details into the 'student_audit' table when a new row is added to 'student' table.**

Step1: Create a trigger for after update

DELIMITER //

CREATE TRIGGER afterUpdateStudent

AFTER UPDATE ON student

FOR EACH ROW

BEGIN

  INSERT INTO student_audit (id, audit_description)

   VALUES (NEW.id, CONCAT('Student with ID ', NEW.id, ' has been updated at time ', NOW()));

END //

DELIMITER ;

Step2: Update a row in the student table

UPDATE student

SET name = 'Maya Devi', age = 20, address = 'Kathmandu'

WHERE id = 101;

Step3: Show the student table

SELECT * FROM student;

id	name	age	address
Filter...	Filter...	Filter...	Filter...
101	Maya Devi	20	Kathmandu
102	Arnav	18	Bkt
103	Krishna	19	Lalitpur
104	Sita	20	Pokhara
105	Rita	21	Dhanghadi

Step4: Show the student audit table

SELECT * FROM student_audit;

id	audit_description
Filter...	Filter...
101	Student with ID 101 has been updated at time 2025-01-09 20:18:12
104	A new student has been added at time 2025-01-09 20:08:07
105	A new student has been added at time 2025-01-09 20:08:07

➔ **Cleanup**

DROP TABLE student;

DROP TABLE student_audit;