|  |  |  |  |
| --- | --- | --- | --- |
| **Class: FYMCA Div: A**  **Semester: 2** | **Course Code:**  **MCA01555**  **Course Name: Database Systems Laboratory** | | **Batch: F2** |
| **Name: Pranav Raju Malwatkar** | | **Roll No: 51037** | |
| **CO No: CO516.3** | | **Assignment No:10** | |

**PRACTICAL SUBMISSION RECORD- A.Y. 2024-25**

**Query 10: Application using database triggers – Create a transparent audit system for a table Client\_master. The system must keep track of the records that are being deleted or updated. When the record is deleted or modified the original record details date of operation are stored in the audit table then the delete update is allowed to go.**

**Ans:**

**Query:**

**Query 1: Create Client\_master table:**

CREATE TABLE Client\_master (

client\_id NUMBER PRIMARY KEY,

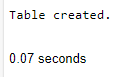
client\_name VARCHAR2(100),

city VARCHAR2(50),

phone VARCHAR2(20)

);

**Output:**



**Query 2: Create Client\_audit table:**

CREATE TABLE Client\_audit (

audit\_id NUMBER GENERATED BY DEFAULT AS IDENTITY PRIMARY KEY,

client\_id NUMBER,

client\_name VARCHAR2(100),

city VARCHAR2(50),

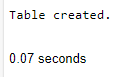
phone VARCHAR2(20),

operation VARCHAR2(10),

operation\_date DATE

);

**Output:**



**Query 3: Create Trigger**

CREATE OR REPLACE TRIGGER trg\_audit\_client\_master

BEFORE DELETE OR UPDATE ON Client\_master

FOR EACH ROW

BEGIN

INSERT INTO Client\_audit (

client\_id, client\_name, city, phone,

operation, operation\_date

) VALUES (

:OLD.client\_id, :OLD.client\_name, :OLD.city, :OLD.phone,

CASE

WHEN DELETING THEN 'DELETE'

WHEN UPDATING THEN 'UPDATE'

END,

SYSDATE

);

END;

/

**Output:**

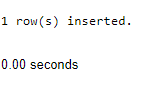


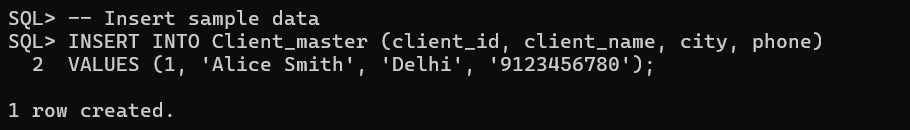
**Query 4: Insert data and check audit log:**

INSERT INTO Client\_master (client\_id, client\_name, city, phone)

VALUES (1, 'Alice Smith', 'Delhi', '9123456780');

**Output:**





**Query 5: Update data and check trigger audit log:**

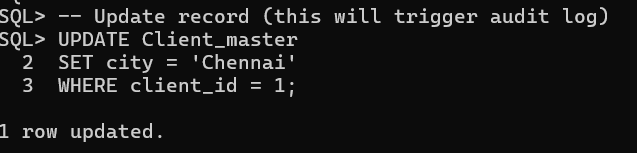
UPDATE Client\_master

SET city = 'Chennai'

WHERE client\_id = 1;

COMMIT;

**Output:**



**Query 6: Delet data and check trigger audit log:**

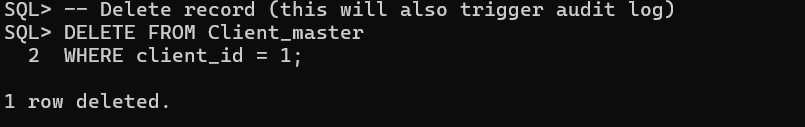
DELETE FROM Client\_master

WHERE client\_id = 1;

COMMIT;

/

**Output:**



**Query 7: View trigger audit log:**

SELECT \* FROM Client\_audit;

**Output:**

