

A7

Name: Pranay Shankarrao Chavhan

Roll No: 31412

Problem Statement: -Write a database trigger on Library table. The System should keep track of the records that are being updated or deleted. The old value of updated or deleted records should be added in Library_Audit table.

```
mysql> CREATE TABLE Library (
```

```
->   book_id INT PRIMARY KEY,
```

```
->   book_name VARCHAR(255),
```

```
->   author VARCHAR(255)
```

```
-> );
```

Query OK, 0 rows affected (0.02 sec)

```
mysql> INSERT INTO Library (book_id, book_name, author)
```

```
-> VALUES
```

```
->   (1, 'The 7 Habits of Highly Effective People', 'Stephen R. Covey'),
```

```
->   (2, 'How to Win Friends and Influence People', 'Dale Carnegie'),
```

```
->   (3, 'Mindset: The New Psychology of Success', 'Carol S. Dweck'),
```

```
->   (4, 'Atomic Habits: An Easy & Proven Way to Build Good Habits & Break Bad Ones', 'James Clear'),
```

```
->   (5, 'Grit: The Power of Passion and Perseverance', 'Angela Duckworth');
```

Query OK, 5 rows affected (0.01 sec)

Records: 5 Duplicates: 0 Warnings: 0

```
mysql> select * from Library;
```

```
+-----+-----+-----+
| book_id | book_name                                     | author           |
+-----+-----+-----+
| 1 | The 7 Habits of Highly Effective People           | Stephen R. Covey |
| 2 | How to Win Friends and Influence People           | Dale Carnegie    |
| 3 | Mindset: The New Psychology of Success             | Carol S. Dweck   |
| 4 | Atomic Habits: An Easy & Proven Way to Build Good Habits & Break Bad Ones | James Clear      |
| 5 | Grit: The Power of Passion and Perseverance        | Angela Duckworth |
+-----+-----+-----+
5 rows in set (0.00 sec)
```

```
mysql> CREATE TABLE Library_Audit (  
-> audit_id INT AUTO_INCREMENT PRIMARY KEY,  
-> book_id INT,  
-> old_book_name VARCHAR(255),  
-> old_author VARCHAR(255),  
-> action VARCHAR(10),  
-> timestamp TIMESTAMP DEFAULT CURRENT_TIMESTAMP  
-> );  
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> DELIMITER //  
  
mysql> CREATE TRIGGER Library_Update_Trigger  
-> AFTER UPDATE ON Library  
-> FOR EACH ROW  
-> BEGIN  
-> IF OLD.book_name != NEW.book_name OR OLD.author != NEW.author THEN  
-> INSERT INTO Library_Audit (book_id, old_book_name, old_author, action)  
-> VALUES (OLD.book_id, OLD.book_name, OLD.author, 'update');  
-> END IF;  
-> END //  
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> CREATE TRIGGER Library_Delete_Trigger  
-> AFTER DELETE ON Library  
-> FOR EACH ROW  
-> BEGIN  
-> INSERT INTO Library_Audit (book_id, old_book_name, old_author, action)  
-> VALUES (OLD.book_id, OLD.book_name, OLD.author, 'delete');  
-> END //  
Query OK, 0 rows affected (0.01 sec)  
  
mysql> DELIMITER ;
```

```
mysql> UPDATE Library  
-> SET book_name = 'Updated book name'  
-> WHERE book_id = 1;  
Query OK, 1 row affected (0.02 sec)  
Rows matched: 1 Changed: 1 Warnings: 0  
  
mysql> DELETE FROM Library  
-> WHERE book_id = 2;  
Query OK, 1 row affected (0.01 sec)
```

```
mysql> select * from Library_Audit;
```

audit_id	book_id	old_book_name	old_author	action	timestamp
1	1	The 7 Habits of Highly Effective People	Stephen R. Covey	update	2023-09-21 18:19:16
2	2	How to Win Friends and Influence People	Dale Carnegie	delete	2023-09-21 18:19:31

2 rows in set (0.00 sec)

```
mysql> select * from Library;
```

book_id	book_name	author
1	Updated book name	Stephen R. Covey
3	Mindset: The New Psychology of Success	Carol S. Dweck
4	Atomic Habits: An Easy & Proven Way to Build Good Habits & Break Bad Ones	James Clear
5	Grit: The Power of Passion and Perseverance	Angela Duckworth

4 rows in set (0.00 sec)