**Assignment 7**

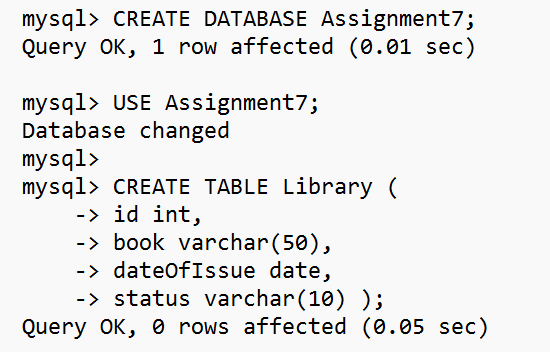
**Database Trigger**

Write a database trigger on Library table. The System should keep track of the records that are being updated or deleted. The old value

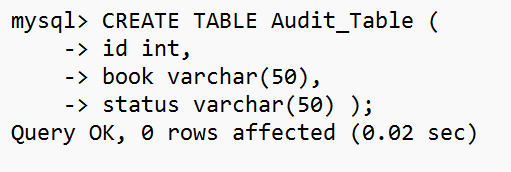
of updated or deleted records should be added in Library\_Audit table.

**Screenshots**

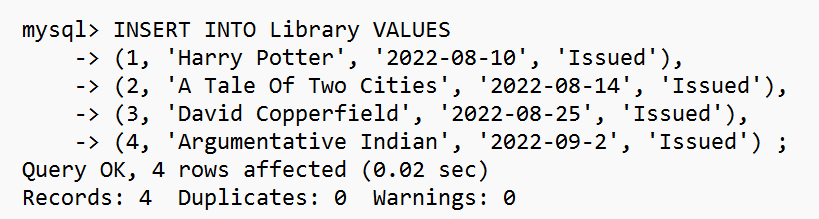
Creating Database and Library Table



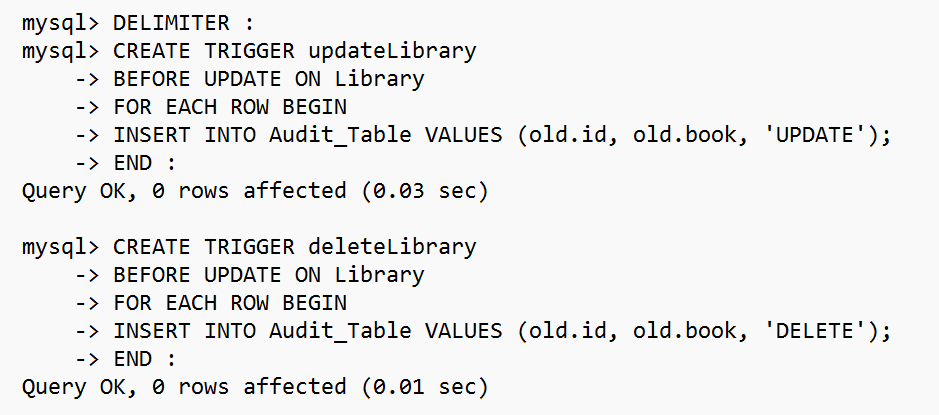
Audit\_Table



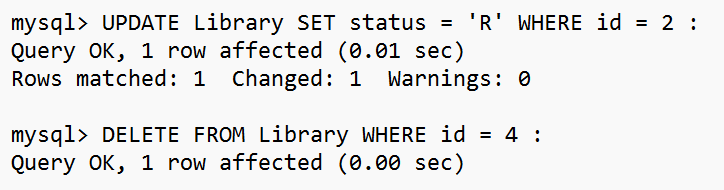
Inserting Into Table Library



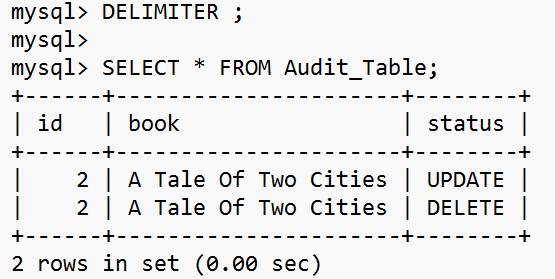
Creating Trigger



Making Changes in Library Table to trigger Database Trigger



Changes reflected in Audit\_Table



**DBMS Lab**

**Assignment No. 7 (Trigger)**

**Name: RAJVARDHAN SINGH INDA**

**Roll No: 7348**

Database Trigger (All Types: Row level and Statement level triggers, Before and After Triggers).

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.

**Tables**

**LIBRARY**

mysql> CREATE TABLE LIBRARY (Book\_ID INTEGER PRIMARY KEY, Title VARCHAR(100), Author VARCHAR(60), P\_Year INTEGER);

Query OK, 0 rows affected (0.21 sec)

mysql> DESC LIBRARY;

+---------+--------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------+--------------+------+-----+---------+-------+

| Book\_ID | int(11) | NO | PRI | NULL | |

| Title | varchar(100) | YES | | NULL | |

| Author | varchar(60) | YES | | NULL | |

| P\_Year | int(11) | YES | | NULL | |

+---------+--------------+------+-----+---------+-------+

4 rows in set (0.00 sec)

**LIBRARY\_AUDIT**

mysql> CREATE TABLE LIBRARY\_AUDIT (Book\_ID INTEGER, Title VARCHAR(100), Author VARCHAR(60), P\_Year INTEGER, Event VARCHAR(30));

Query OK, 0 rows affected (0.21 sec)

mysql> DESC LIBRARY\_AUDIT;

+---------+--------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------+--------------+------+-----+---------+-------+

| Book\_ID | int(11) | YES | | NULL | |

| Title | varchar(100) | YES | | NULL | |

| Author | varchar(60) | YES | | NULL | |

| P\_Year | int(11) | YES | | NULL | |

| Event | varchar(30) | YES | | NULL | |

+---------+--------------+------+-----+---------+-------+

5 rows in set (0.00 sec)

**INSERT**

mysql> DELIMITER //

mysql> DROP TRIGGER IF EXISTS INSERT\_LIB //

Query OK, 0 rows affected, 1 warning (0.00 sec)

mysql> CREATE TRIGGER INSERT\_LIB

-> AFTER INSERT ON LIBRARY

-> FOR EACH ROW

-> BEGIN

-> INSERT INTO LIBRARY\_AUDIT VALUES(NEW.Book\_ID, NEW.Title, NEW.Author, NEW.P\_Year, "INSERT");

-> END

-> //

Query OK, 0 rows affected (0.07 sec)

mysql> INSERT INTO LIBRARY VALUES(1, "Origin", "Dan Brown", 200

Query OK, 1 row affected (0.05 sec)

mysql> SELECT \* FROM LIBRARY //

+---------+--------+-----------+--------+

| Book\_ID | Title | Author | P\_Year |

+---------+--------+-----------+--------+

| 1 | Origin | Dan Brown | 2000 |

+---------+--------+-----------+--------+

1 row in set (0.00 sec)

mysql> SELECT \* FROM LIBRARY\_AUDIT //

+---------+--------+-----------+--------+--------+

| Book\_ID | Title | Author | P\_Year | Event |

+---------+--------+-----------+--------+--------+

| 1 | Origin | Dan Brown | 2000 | INSERT |

+---------+--------+-----------+--------+--------+

1 row in set (0.00 sec)

**UPDATE**

mysql> DELIMITER //

mysql> DROP TRIGGER IF EXISTS UPDATE\_LIB //

Query OK, 0 rows affected, 1 warning (0.00 sec)

mysql> CREATE TRIGGER UPDATE\_LIB

-> BEFORE UPDATE ON LIBRARY

-> FOR EACH ROW

-> BEGIN

-> INSERT INTO LIBRARY\_AUDIT VALUES(OLD.Book\_ID, OLD.Title, OLD.Author, OLD.P\_Year, "UPDATE");

-> END

-> //

Query OK, 0 rows affected (0.06 sec)

mysql> UPDATE LIBRARY SET P\_YEAR = 2002 WHERE Book\_ID = 1 //

Query OK, 1 row affected (0.05 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> SELECT \* FROM LIBRARY //

+---------+--------+-----------+--------+

| Book\_ID | Title | Author | P\_Year |

+---------+--------+-----------+--------+

| 1 | Origin | Dan Brown | 2002 |

+---------+--------+-----------+--------+

1 row in set (0.00 sec)

mysql> SELECT \* FROM LIBRARY\_AUDIT //

+---------+--------+-----------+--------+--------+

| Book\_ID | Title | Author | P\_Year | Event |

+---------+--------+-----------+--------+--------+

| 1 | Origin | Dan Brown | 2000 | INSERT |

| 1 | Origin | Dan Brown | 2000 | UPDATE |

+---------+--------+-----------+--------+--------+

2 rows in set (0.00 sec)

mysql>

**DELETE**

mysql> DELIMITER //

mysql> DROP TRIGGER IF EXISTS DELETE\_LIB //

Query OK, 0 rows affected, 1 warning (0.00 sec)

mysql> CREATE TRIGGER DELETE\_LIB

-> BEFORE DELETE ON LIBRARY

-> FOR EACH ROW

-> BEGIN

-> INSERT INTO LIBRARY\_AUDIT VALUES(OLD.Book\_ID, OLD.Title, OLD.Author, OLD.P\_Year, "DELETE");

-> END

-> //

Query OK, 0 rows affected (0.06 sec)

mysql> DELETE FROM LIBRARY WHERE Book\_ID = 1;

-> //

Query OK, 1 row affected (0.04 sec)

mysql> SELECT \* FROM LIBRARY //

Empty set (0.00 sec)

mysql> SELECT \* FROM LIBRARY\_AUDIT //

+---------+--------+-----------+--------+--------+

| Book\_ID | Title | Author | P\_Year | Event |

+---------+--------+-----------+--------+--------+

| 1 | Origin | Dan Brown | 2000 | INSERT |

| 1 | Origin | Dan Brown | 2000 | UPDATE |

| 1 | Origin | Dan Brown | 2002 | DELETE |

+---------+--------+-----------+--------+--------+

3 rows in set (0.00 sec)