15/09/2020 **ASSIGNMENT 8**  Sanjay Rawat(7341)

**Database Trigger (All Types: Row level 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.**

mysql> use assgn8;

Database changed

mysql> CREATE TABLE LIBRARY(

-> BookID int primary key,

-> BookName varchar(20),

-> PublicationYear int,

-> Edition varchar(5),

-> Status char(30)

-> );

Query OK, 0 rows affected (0.81 sec)

mysql> CREATE TABLE LIBRARYAUDITTABLE(

-> BookID int,

-> BookName varchar(20),

-> PublicationYear int,

-> Edition varchar(5),

-> Status char(30)

-> );

Query OK, 0 rows affected (0.90 sec)

mysql> delimiter ##

mysql> Create procedure insertdata(bookid int,bookname varchar(20),publicationyear int,edition varchar(5),status char(30))

-> begin

-> insert into library values (bookid,bookname,publicationyear,edition,status);

-> end;

-> ##

Query OK, 0 rows affected (0.10 sec)

mysql> call insertdata(101,'DBMS',2018,'5th',NULL)##

Query OK, 1 row affected (0.14 sec)

mysql> call insertdata(102,'CN',2017,'4th',NULL)##

Query OK, 1 row affected (0.14 sec)

mysql> call insertdata(103,'ISEE',2015,'3th',NULL)##

Query OK, 1 row affected (0.07 sec)

mysql> call insertdata(104,'SEPM',2015,'1st',NULL)##

Query OK, 1 row affected (0.18 sec)

mysql> call insertdata(105,'TOC',2020,'8th',NULL)##

Query OK, 1 row affected (0.09 sec)

mysql> select\* from library##

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

| BookID | BookName | PublicationYear | Edition | Status |

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

| 101 | DBMS | 2018 | 5th | NULL |

| 102 | CN | 2017 | 4th | NULL |

| 103 | ISEE | 2015 | 3th | NULL |

| 104 | SEPM | 2015 | 1st | NULL |

| 105 | TOC | 2020 | 8th | NULL |

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

5 rows in set (0.00 sec)

mysql> select\* from libraryaudittable##

Empty set (0.00 sec)

**BEFORE UPDATE TRIGGER:**

mysql> create trigger beforeupdate

-> before update on library

-> for each row

-> begin

-> -> insert into libraryaudittable values(old.bookid,old.bookname,old.publicationyear,old.edition,old.status);

-> end;

-> ##

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '-> insert into libraryaudittable values(old.bookid,old.bookname,old.publicationy' at line 5

mysql> create trigger beforeupdate

-> before update on library

-> for each row

-> begin

-> insert into libraryaudittable values(old.bookid,old.bookname,old.publicationyear,old.edition,old.status);

-> end;

-> ##

Query OK, 0 rows affected (0.17 sec)

mysql> update library set edition='3rd' ,status='before update' where bookid=103 ##

Query OK, 1 row affected (0.09 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> select \* from library##

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

| BookID | BookName | PublicationYear | Edition | Status |

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

| 101 | DBMS | 2018 | 5th | NULL |

| 102 | CN | 2017 | 4th | NULL |

| 103 | ISEE | 2015 | 3rd | before update |

| 104 | SEPM | 2015 | 1st | NULL |

| 105 | TOC | 2020 | 8th | NULL |

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

5 rows in set (0.00 sec)

mysql> select \* from libraryaudittable##

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

| BookID | BookName | PublicationYear | Edition | Status |

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

| 103 | ISEE | 2015 | 3th | NULL |

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

1 row in set (0.00 sec)

**AFTER UPDATE TRIGGER:**

mysql> create trigger afterupdatelib

-> after update on library

-> for each row

-> begin

-> insert into libraryaudittable values(new.bookid,new.bookname,new.publicationyear,new.edition,new.status);

-> end;

-> ##

Query OK, 0 rows affected (0.19 sec)

mysql> update library set status ='Afte rupdate' where bookid=101 ##

Query OK, 1 row affected (0.10 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> select \* from library##

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

| BookID | BookName | PublicationYear | Edition | Status |

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

| 101 | DBMS | 2018 | 5th | Afte rupdate |

| 102 | CN | 2017 | 4th | NULL |

| 103 | ISEE | 2015 | 3rd | before update |

| 104 | SEPM | 2015 | 1st | NULL |

| 105 | TOC | 2020 | 8th | NULL |

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

5 rows in set (0.00 sec)

mysql> select \* from libraryaudittable##

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

| BookID | BookName | PublicationYear | Edition | Status |

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

| 103 | ISEE | 2015 | 3th | NULL |

| 101 | DBMS | 2018 | 5th | NULL |

| 101 | DBMS | 2018 | 5th | Afte rupdate |

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

3 rows in set (0.00 sec)

**BEFORE DELETE TRIGGER:**

mysql> create trigger beforedelete

-> before delete

-> on library for each row

-> begin

-> insert into libraryaudittable values(old.bookid,old.bookname,old.publicationyear,old.edition,"Before delete");

-> end;

-> ##

Query OK, 0 rows affected (0.23 sec)

mysql> delete from library where bookname='DBMS'##

Query OK, 1 row affected (0.14 sec)

mysql> select \* from library##

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

| BookID | BookName | PublicationYear | Edition | Status |

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

| 102 | CN | 2017 | 4th | NULL |

| 103 | ISEE | 2015 | 3rd | before update |

| 104 | SEPM | 2015 | 1st | NULL |

| 105 | TOC | 2020 | 8th | NULL |

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

4 rows in set (0.00 sec)

mysql> select\* from libraryaudittable##

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

| BookID | BookName | PublicationYear | Edition | Status |

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

| 103 | ISEE | 2015 | 3th | NULL |

| 101 | DBMS | 2018 | 5th | NULL |

| 101 | DBMS | 2018 | 5th | Afte rupdate |

| 101 | DBMS | 2018 | 5th | Before delete |

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

4 rows in set (0.00 sec)

**AFTER DELETE TRIGGER:**

mysql> create trigger afterdelete

-> after delete

-> on library for each row

-> begin

-> insert into libraryaudittable values(old.bookid,old.bookname,old.publicationyear,old.edition,"After delete");

-> end;

-> ##

Query OK, 0 rows affected (0.27 sec)

mysql> delete from library where bookid=103##

Query OK, 1 row affected (0.18 sec)

mysql> select \* from library##

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

| BookID | BookName | PublicationYear | Edition | Status |

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

| 102 | CN | 2017 | 4th | NULL |

| 104 | SEPM | 2015 | 1st | NULL |

| 105 | TOC | 2020 | 8th | NULL |

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

3 rows in set (0.00 sec)

mysql> select \* from libraryaudittable##

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

| BookID | BookName | PublicationYear | Edition | Status |

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

| 103 | ISEE | 2015 | 3th | NULL |

| 101 | DBMS | 2018 | 5th | NULL |

| 101 | DBMS | 2018 | 5th | Afte rupdate |

| 101 | DBMS | 2018 | 5th | Before delete |

| 103 | ISEE | 2015 | 3rd | Before delete |

| 103 | ISEE | 2015 | 3rd | After delete |

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

6 rows in set (0.00 sec)

mysql>