Experiment No:**8**

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Class : TE 'C'

Batch : C2

Problem statement:

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.

**Frame the problem statement for writing Database Triggers of all types, in-line with above statement. The problem statement should clearly state the requirements**

SQL\*Plus: Release 10.2.0.1.0 - Beta on Fri Sep 15 10:17:14 2017

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SQL> connect system/123

Connected.

SQL> CREATE TABLE LIBRARY\_BOOK(BOOK\_ID NUMBER,TITLE VARCHAR(30),PRICE NUMBER(7,2

2 ),AUTHOR VARCHAR2(20),AVAIL VARCHAR2(10));

Table created.

SQL> CREATE TABLE LIBRARY\_AUDIT(BOOK\_ID NUMBER,TITLE VARCHAR(30),PRICE NUMBER(7,

2 2),AUTHOR VARCHAR2(20),AVAIL VARCHAR2(10),CURDATE DATE,TRIG\_NAME VARCHAR2(50));

Table created.

SQL> DESC LIBRARY\_BOOK;

Name Null? Type

----------------------------------------- -------- ----------------------------

BOOK\_ID NUMBER

TITLE VARCHAR2(30)

PRICE NUMBER(7,2)

AUTHOR VARCHAR2(20)

AVAIL VARCHAR2(10)

SQL> DESC LIBRARY\_AUDIT;

Name Null? Type

----------------------------------------- -------- ----------------------------

BOOK\_ID NUMBER

TITLE VARCHAR2(30)

PRICE NUMBER(7,2)

AUTHOR VARCHAR2(20)

AVAIL VARCHAR2(10)

CURDATE DATE

TRIG\_NAME VARCHAR2(50)

SQL>

SQL> insert into library\_book values(101,'DBMS',200,'Korth','Yes');

1 row created.

SQL> insert into library\_book values(102,'TOC',300,'PK Sinha','Yes');

1 row created.

SQL> select \* from library\_book;

BOOK\_ID TITLE PRICE AUTHOR AVAIL

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101 DBMS 200 Korth Yes

102 TOC 300 PK Sinha Yes

SQL>CREATE or REPLACE TRIGGER before\_update\_row\_library

BEFORE

UPDATE ON library\_book

FOR EACH ROW

BEGIN

INSERT INTO LIBRARY\_AUDIT

VALUES

(:old.BOOK\_id,

:old.title,

:old.price,

:old.author,

:old.avail,

sysdate,

'before update,row library');

END;

Trigger created.

SQL> select \* from library\_book;

BOOK\_ID TITLE PRICE AUTHOR AVAIL

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101 DBMS 200 Korth Yes

102 TOC 300 PK Sinha Yes

SQL> update library\_book set price=390 where book\_id=101;

1 row updated.

SQL> select \* from library\_book;

BOOK\_ID TITLE PRICE AUTHOR AVAIL

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101 DBMS 390 Korth Yes

102 TOC 300 PK Sinha Yes

SQL> select \* from library\_audit;

BOOK\_ID TITLE PRICE AUTHOR AVAIL CURDATE TRIG\_NAME

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101 DBMS 200 Korth Yes 15-SEP-17 before update,row library

SQL>

1 CREATE or REPLACE TRIGGER before\_insert\_row\_library

2 BEFORE

3 INSERT ON library\_book

4 FOR EACH ROW

5 BEGIN

6 INSERT INTO LIBRARY\_AUDIT

7 VALUES

8 (:old.BOOK\_id,

9 :old.title,

10 :old.price,

11 :old.author,

12 :old.avail,

13 sysdate,

14 'before insert,row library');

15\* END;

SQL> /

Trigger created.

SQL> insert into library\_book values(103,'ISEE',360,'N K Desai','yes');

1 row created.

SQL> select \* from library\_book;

BOOK\_ID TITLE PRICE AUTHOR AVAIL

---------- ------------------------------ ---------- -------------------- ----------

101 DBMS 390 Korth Yes

102 TOC 300 PK Sinha Yes

103 ISEE 360 N K Desai yes

SQL> select \* from library\_audit;

BOOK\_ID TITLE PRICE AUTHOR AVAIL CURDATE TRIG\_NAME

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101 DBMS 200 Korth Yes 15-SEP-17 before update,row library

15-SEP-17 before insert,row library

SQL> CREATE or REPLACE TRIGGER before\_delete\_row\_library

BEFORE

DELETE ON library\_book

FOR EACH ROW

BEGIN

INSERT INTO LIBRARY\_AUDIT

VALUES

(:old.BOOK\_id,

:old.title,

:old.price,

:old.author,

:old.avail,

sysdate,

'before delete,row library');

END;

SQL> /

Trigger created.

SQL> delete from library\_book where book\_id=103;

1 row deleted.

SQL> select \* from library\_book;

BOOK\_ID TITLE PRICE AUTHOR AVAIL

---------- ------------------------------ ---------- -------------------- ----------

101 DBMS 390 Korth Yes

102 TOC 300 PK Sinha Yes

SQL> select \* from library\_audit;

BOOK\_ID TITLE PRICE AUTHOR AVAIL CURDATE TRIG\_NAME

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101 DBMS 200 Korth Yes 15-SEP-17 before update,row library

15-SEP-17 before insert,row library

103 ISEE 360 N K Desai yes 15-SEP-17 before delete,row library

SQL>