

Group A : Lab Assignment No.7

Title : 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> create table library(  
2 book_id int primary key,  
3 book_name varchar(25),  
4 author_name varchar(40),  
5 price int  
6 );
```

```
create table library(  
*
```

ERROR at line 1:

ORA-00955: name is already used by an existing object

```
SQL> drop table library;
```

Table dropped.

```
SQL> create table library(  
2 book_id int primary key,  
3 book_name varchar(25),  
4 author_name varchar(40),  
5 price int  
6 );
```

Table created.

```
SQL> insert into library(book_id, book_name, author_name, price)  
2 values(1,'early india','ramila thapar',1200);
```

1 row created.

```
SQL> insert into library(book_id, book_name, author_name, price)  
2 values(2,'verity','collen hoover',1600);
```

1 row created.

```
SQL> insert into library(book_id, book_name, author_name, price)  
2 values(3,'Nelson mandela','Hovely reads',900);
```

1 row created.

```
SQL> insert into library(book_id, book_name, author_name, price)  
2 values(4,'everyday gita','sunita pant',1500);
```

1 row created.

```
SQL>
```

```
SQL> insert into library(book_id, book_name, author_name, price)
  2 values(5,'b1','a1',2000);
```

1 row created.

```
SQL> create table library_audit(
  2 old_book_id int primary key,
  3 old_book_name varchar(25),
  4 old_author_name varchar(40),
  5 old_price int,
  6 operation_type varchar(20)
  7 );
```

```
create table library_audit(
  *
```

ERROR at line 1:

ORA-00955: name is already used by an existing object

```
SQL> drop table library_audit;
```

Table dropped.

```
SQL> create table library_audit(
  2 old_book_id int primary key,
  3 old_book_name varchar(25),
  4 old_author_name varchar(40),
  5 old_price int,
  6 operation_type varchar(20)
  7 );
```

Table created.

```
SQL> create or replace trigger before_library_update
  2 before
  3 update on library
  4 for each row
  5 begin
  6 insert into
  7 library_audit(old_book_id,old_book_name,old_author_name,old_price,operation_type)
  8 values(:OLD.book_id, :OLD.book_name, :OLD.author_name, :OLD.price, 'update');
  9 end;
 10 /
```

Trigger created.

```
SQL> UPDATE Library
  2 SET book_name = 'Gatsby (Updated)', author_name = 'Fitzgerald'
  3 WHERE book_id = 1;
```

1 row updated.

```
SQL> create or replace trigger before_library_delete
  2 before
  3 delete on library
  4 for each row
  5 begin
  6 insert into
  7 library_audit(old_book_id,old_book_name,old_author_name,old_price,operation_type)
  8 values(:OLD.book_id, :OLD.book_name, :OLD.author_name, :OLD.price, 'delete');
  9 end;
 10 /
```

Trigger created.

SQL> DELETE FROM Library WHERE book_id = 2;

1 row deleted.

SQL> select* from library_audit;

OLD_BOOK_ID	OLD_BOOK_NAME	OLD_AUTHOR_NAME
1	early india	ramila thapar
1200	update	
2	verity	collen hoover
1600	delete	

SQL> select* from library;

BOOK_ID	BOOK_NAME	AUTHOR_NAME
1	Gatsby (Updated)	Fitzgerald
1200		
3	Nelson mandela	Hovely reads
900		
4	everyday gita	sunita pant
1500		

BOOK_ID	BOOK_NAME	AUTHOR_NAME
5	b1	a1
2000		

SQL>