

2004-2020

Computer Science DBMS
(2nd Year)

PL/SQL Triggers

Triggers are stored programs, which are automatically executed or fired when some event occurs.

The triggers are in fact, written to be executed in response to any of the following events -

- ⇒ A database manipulation (DML) statement (
DELETE, INSERT or UPDATE)
- ⇒ A database definition (DDL) statement (
CREATE, ALTER, DROP).
- ⇒ A database operation (SERVERERROR, LOGON,
LOGOFF, STARTUP or SHUTDOWN).

Triggers can be defined on the table, view, schema or database with which the event is associated.

Benefits of Triggers

Triggers can be written for the following purposes

- ⇒ Generating some derived column values automatically.
- ⇒ enforcing referential integrity
- ⇒ Event logging and storing information on table access

- ⇒ auditing
- ⇒ synchronous replication of tables.
- ⇒ Imposing security authorizations.
- ⇒ Preventing invalid transactions.

Creating Triggers

The syntax for creating a trigger is -

```
CREATE [OR REPLACE] TRIGGER trigger-name
{ BEFORE | AFTER | INSTEAD OF }
{ INSERT [OR] | UPDATE [OR] | DELETE }
[ OF col-name ]
ON Table-name
[ REFERENCING OLD AS o NEW AS n ]
[ FOR EACH ROW ]
When (Condition)
DECLARE
```

Declaration - Statements

BEGIN

Executable - Statements

EXCEPTION

Exception - handling - statements

END;

Where,

⇒ CREATE [OR REPLACE] Trigger TRIGGER 1

Trigger-name - Creates or Replaces an existing trigger

with the trigger - name .

⇒ { BEFORE | AFTER | INSTEAD OF } - This specifies when the trigger will be executed . The INSTEAD OF clause is used for creating trigger on a view .

⇒ { INSERT [OR] | UPDATE [OR] | DELETE } - This specifies the DML operation .

⇒ { OF col-name } - This specifies the column name that will be updated .

⇒ [ON table-name] - This specifies the name of the table associated with the trigger

⇒ [REFERENCING OLD AS o NEW AS n] - This allow you to refer new and old values for various DML Statement, such as INSERT, UPDATE and DELETE .

⇒ [FOR EACH ROW] - This specifies a row-level trigger, i.e; the trigger will be executed for each row being affected . Otherwise the trigger will execute just once when the SQL statement is executed which is called a table level trigger .

⇒ WHEN (condition) - This provides a condition for rows for which the trigger would fire. This ~~clause~~ clause is valid only for row level triggers

Shrady
20/04/2020
Shardha Rish