Trigger and Procedure in DBMS

1. Procedures: A procedure is a combination of SQL statements written to perform specified tasks. It helps in code re-usability and saves time and lines of code.

Advantages of Procedures:

- A Stored Procedure can be used as modular programming, which means that it can be created once, stored, and called multiple times as needed. This allows for speedier execution.

- Reduces network traffic

- Improving data security

- Easy to maintain because the stored procedure scripts are all in one place and hence, it is easy to update and track dependencies when schema changes occur.

- Testing can be carried out independent of the application.

2. Triggers: A trigger is a special kind of procedure that executes only when some triggering event such as INSERT, UPDATE, or DELETE operations occur in a table.

Advantages of Triggers:

- Protection of data

- Inhibits transactions that are not valid

- It also keeps the different tables in sync.

- Referential integrity is enforced with the use of triggers.

- Triggers can also be used in event logging and auditing.

Difference between Triggers and Procedures:

S. No.	Parameters	Triggers	Procedures
1.	Basics	A Trigger is implicitly invoked whenever any event such as INSERT, DELETE, or UPDATE occurs in a TABLE.	A Procedure is explicitly called by the user/application using statements or commands such as exec, EXECUTE, or simply procedure name

S. No.	Parameters	Triggers	Procedures
2.	Action	When an event occurs, a trigger helps to execute an action automatically.	A procedure helps to perform a specified task when it is invoked.
3.	Define/ call	Only nesting of triggers can be achieved in a table. We cannot define/call a trigger inside another trigger.	We can define/call procedures inside another procedure.
4.	Syntax	In a database, the syntax to define a trigger: CREATE TRIGGER TRIGGER_NAME	In a database, the syntax to define a procedure: CREATE PROCEDURE PROCEDURE_NAME
5.	Transaction statements	Transaction statements such as COMMIT, ROLLBACK, and SAVEPOINT are not allowed in triggers.	All transaction statements such as COMMIT and ROLLBACK are allowed in procedures.
6.	Usage	Triggers are used to maintain referential integrity by keeping a record of activities performed on the table.	Procedures are used to perform tasks defined or specified by the users.
7.	Return value	We cannot return values in a trigger. Also, as an input, we cannot pass values as a parameter.	We can return 0 to n values. However, we can pass values as parameters.