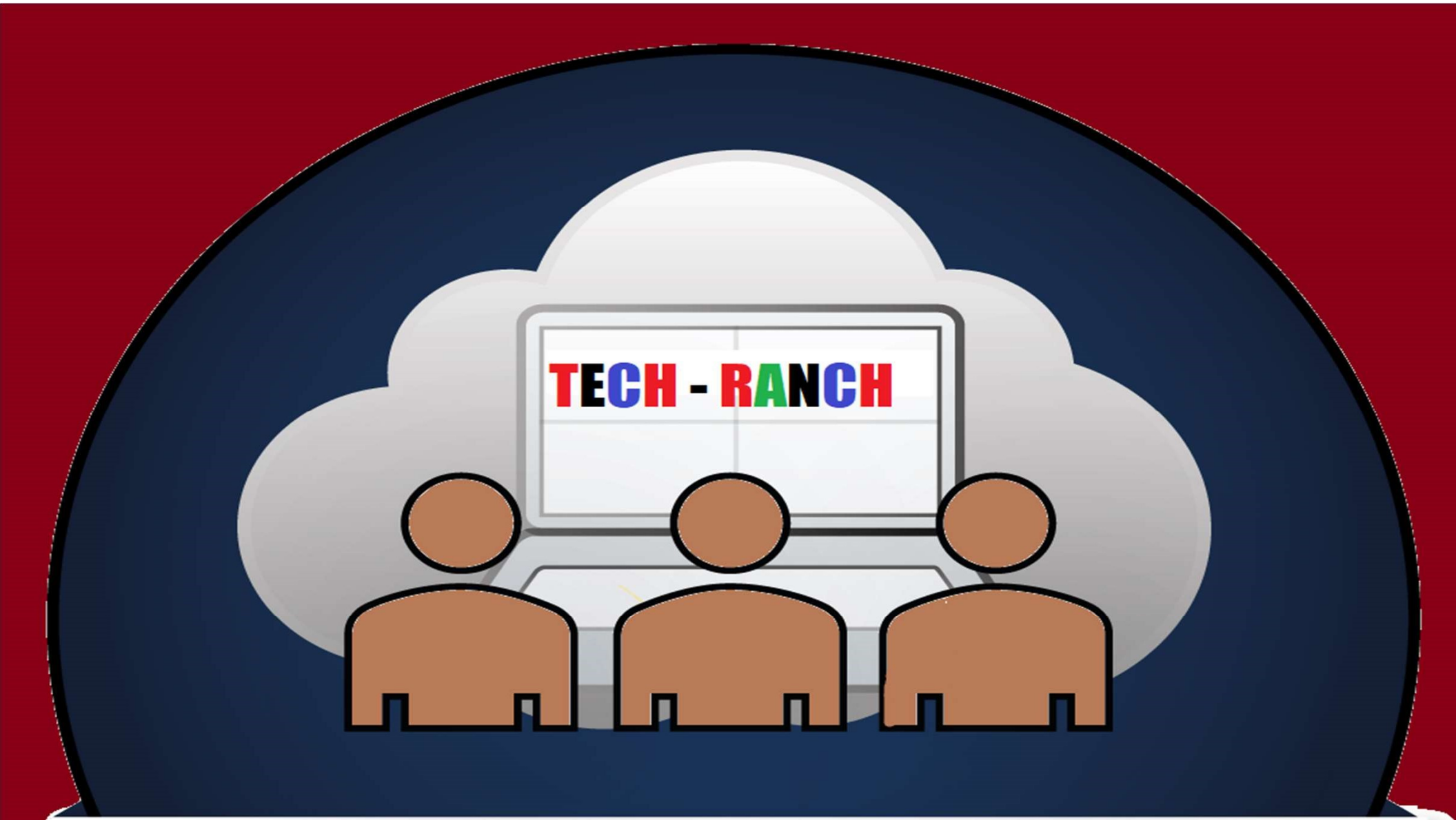
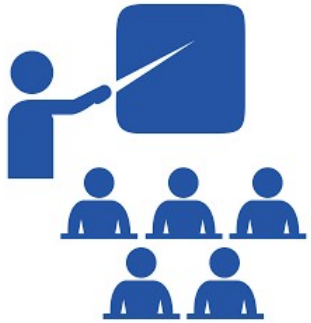

TECH - RANCH



PL/SQL Tutorial

(Procedural - Structured Query Language)

By

Anjali singh

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Chapter 4

PL/SQL Tutorial

Trigger

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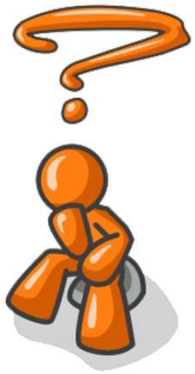
What do we learn in this Chapter?



- What is Trigger?
- Types of Triggers
- Triggers Declaration
- Trigger Demonstration
- HOMEWORK

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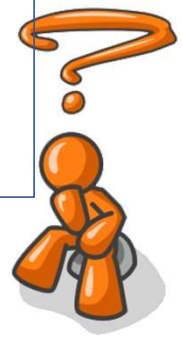
What is Triggers?

Triggers are stored programs, which are automatically executed or fired when some events occur.
"Oracle engine allows definition of procedures that are implicitly executed when an insert, update or delete is issued against a table from an application."

- Enforce Complex Security
- Scheduling execution
- Prevent invalid transaction
- Keep auditing of database



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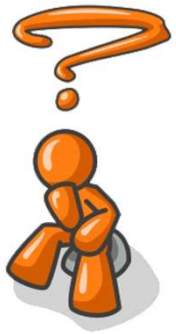
Types of Database Triggers

Row Triggers	• Row Trigger is fired each time a row in the table is affected by triggering statement • For example UPDATE statement update multiple rows
Statement Triggers	• Fired once on behalf of triggering statement, independent of number of rows affected
Before v/s After Triggers	• Before triggers execute trigger action before triggering statement to deprive specific column in INSERT or UPDATE • After Triggers execute trigger action after triggering statement
Cascading Triggers	• When a trigger is fired, SQL statement inside the trigger's PL/SQL code block can also fire the same or other trigger.
Combination Trigger	• After / Before Statement • Row / Statement



Triggers Declaration Syntax

```
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;
```

{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 allows you to refer new and old values for various DML statements, 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 is valid only for row-level triggers.

Trigger Demonstration

```
create or replace TRIGGER Trigger_1
BEFORE INSERT OR UPDATE OR DELETE ON tablea
FOR EACH ROW
WHEN (NEW.colb > 10)
DECLARE
   col_b_diff number;
BEGIN
   col_b_diff := :NEW.colb  - :OLD.colb;
   dbms_output.put_line('Old values: ' || :OLD.colb);
   dbms_output.put_line('New values: ' || :NEW.colb);
   dbms_output.put_line('COlB difference: ' || col_b_diff);
END;
```

Table A

COLA	COLB
ROW11	20
ROW21	12

Practice Project

HOTEL MANAGEMENT

GUEST_ID	BOOKING DATE	NAME	ROOM No.
GUEST01	2-22-2019	ALEX	56
GUEST02	3-30-2019	ROBIN	67
GUEST03	4-2-2019	JOHN	78
GUSET04	4-23-2019	MAX	23

HOME WORK!

Instructions

1. Create a Trigger to find name of guests who booked after and update to current system date.
2. Create a trigger to insert a new guests whose booking for next day of current date.

For more resource , assistance and questions , please contact techranch2019@gmail.com

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Conclusion

PL/SQL

Stored Procedure

Functions

Trigger

Cursors

Demonstration

Interview Tips

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THANK YOU

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