Experiment No.8
Implementation of Views and Triggers.
Date of Performance:
Date of Submission:

Aim :- Write a SQL query to implement views and triggers

Objective :- To learn about virtual tables in the database and also PLSQL constructs

Theory:

SQL Views:

In SQL, a view is a virtual table based on the result-set of an SQL statement.

A view contains rows and columns, just like a real table. The fields in a view are fields from one or more real tables in the database.
You can add SQL statements and functions to a view and present the data as if the data were coming from one single table.
A view is created with the CREATE VIEW statement.

CREATE VIEW syntax

CREATE VIEW view name AS

SELECT columni, column2, ...

FROM table name

WHERE condition;

SQL Updating a View

A view can be updated with the CREATE OR REPLACE VIEW statement.

SQL CREATE OR REPLACE VIEW Syntax

CREATE OR REPLACE VIEW view name AS

SELECT columnl, column2,...

FROM table name

WHERE condition;

SQL Dropping a View

A view is deleted with the DROP VIEW statement.

SQL DROP VIEW syntax

DROP VIEW view name;

Trigger: A trigger is a stored procedure in the database which automatically invokes whenever a special event in the database occurs. For example, a trigger can be invoked when a row is inserted into a specified table or when certain table columns are being updated.

Syntax:

create trigger [trigger name]

[before after] {insert

update delete} on [table

name] [for each row]

[trigger body]

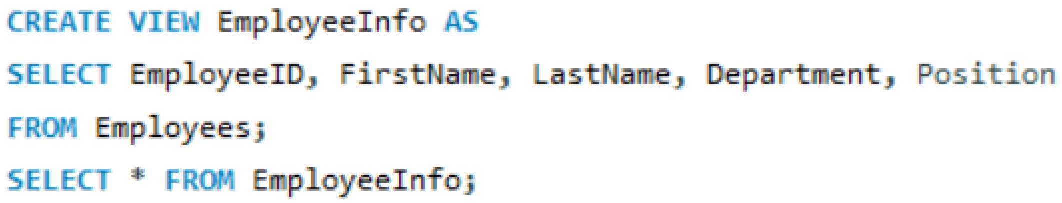
Explanation of syntax:

1.create trigger [trigger name]: Creates or replaces an existing trigger with the trigger name.
2. [before after]: This specifies when the trigger will be executed.
3. {insert update delete}: This specifies the DML operation.
4. on [table name]: This specifies the name of the table associated with the trigger.
5. [for each row]: This specifies a row-level trigger, i.e., the trigger will be executed for each row being affected.
6. [trigger_body]: This provides the operation to be performed as trigger is fired

Implementation:

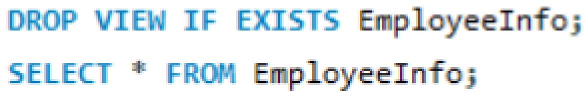
SQL View:

1)Create View:



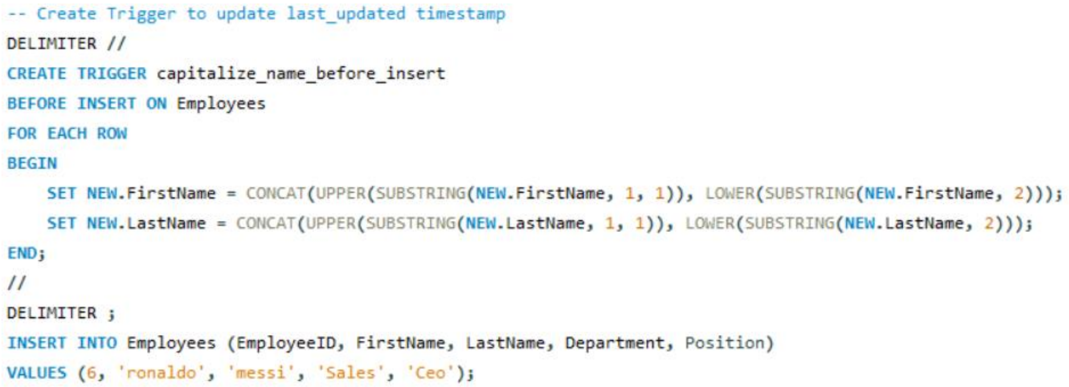
```
CREATE VIEW EmployeeInfo AS
SELECT EmployeeID, FirstName, LastName, Department, Position
FROM Employees;
SELECT * FROM EmployeeInfo;
```

2)Drop View:



```
DROP VIEW IF EXISTS EmployeeInfo;
SELECT * FROM EmployeeInfo;
```

SQL Trigger:



```
-- Create Trigger to update last_updated timestamp
DELIMITER //
CREATE TRIGGER capitalize_name_before_insert
BEFORE INSERT ON Employees
FOR EACH ROW
BEGIN
    SET NEW.FirstName = CONCAT(UPPER(SUBSTRING(NEW.FirstName, 1, 1)), LOWER(SUBSTRING(NEW.FirstName, 2)));
    SET NEW.LastName = CONCAT(UPPER(SUBSTRING(NEW.LastName, 1, 1)), LOWER(SUBSTRING(NEW.LastName, 2)));
END;
//
DELIMITER ;
INSERT INTO Employees (EmployeeID, FirstName, LastName, Department, Position)
VALUES (6, 'ronaldo', 'messi', 'Sales', 'Ceo');
```

Conclusion:

1. Brief about the benefits for using views and triggers.

Ans.: Views simplify queries, enhance security, abstract table structures, and optimize performance. Triggers enforce data integrity, audit changes, enforce business logic, and support replication.

2. Explain different strategies to update views.

Ans.: Updating views can be done directly, by updating base tables, using triggers, or by recreating views. These methods offer varying degrees of control and are applied based on the view's complexity and update requirements.