SQL Views



- Views in SQL are a kind of virtual table.
- A view also has rows and columns like tables, but a view doesn't store data on the disk like a table.
- A View defines a customized query that retrieves data from one or more tables, and represents the data as if it was coming from a single source.
- We can create a view by selecting fields from one or more tables present in the database.
- A View can either have all the rows of a table or specific rows based on certain conditions.

Creating a View



To create a view, you use the CREATE VIEW statement.
 Here's the syntax:

CREATE VIEW view_name AS

SELECT column1, column2, ...

FROM table_name

WHERE condition;

Parameters:

view_name: Name for the View

table name: Name of the table

condition: Condition to select rows

Example 1: Creating View from a single table:



CREATE VIEW DetailsView AS

SELECT NAME, ADDRESS

FROM StudentDetails

WHERE $S_{ID} < 5$;

 To see the data in the View, you query the view in the same manner as we query a table.

SELECT * FROM DetailsView;

Example 2: Creating View from multiple tables

CREATE VIEW MarksView AS

SELECT StudentDetails.NAME, StudentDetails.ADDRESS, StudentMarks.MARKS

FROM StudentDetails, StudentMarks

WHERE StudentDetails.NAME = StudentMarks.NAME;

- We can list View using the SHOW FULL TABLES statement or using the information_schema table.
- Syntax :

```
USE "database_name";
SHOW FULL TABLES WHERE table type LIKE "%VIEW";
```

We can delete or drop View using the DROP statement.
 Syntax: DROP VIEW view name;

- You can also update data through a view, but there are some restrictions. The view must be updatable, which generally means:
 - The view should be based on a single table.
 - The view should not contain any aggregated data (like SUM, AVG, etc.).
 - The view should not contain any joins, subqueries, or set operations like UNION.
 - All columns being updated must come from the same base table.

- We can insert a row in a View in the same way as we do in a table.
- We can use the INSERT INTO statement of SQL to insert a row in a View.

INSERT INTO DetailsView(NAME, ADDRESS) VALUES("Suresh", "Gurgaon");

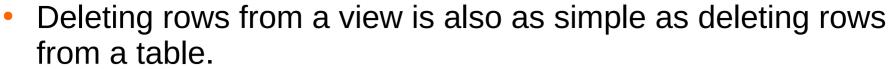
- We can use the CREATE OR REPLACE VIEW statement to add or replace fields from a view.
- For example in the query below we update the view MarksView and add the field AGE to this View from StudentMarks Table,

CREATE OR REPLACE VIEW MarksView AS

SELECT StudentDetails.NAME, StudentDetails.ADDRESS, StudentMarks.MARKS, StudentMarks.AGE

FROM StudentDetails, StudentMarks

WHERE StudentDetails.NAME = StudentMarks.NAME;





- We can use the DELETE statement of SQL to delete rows from a view.
- Deleting a row from a view first deletes the row from the actual table and the change is then reflected in the view.
- For example:

DELETE FROM DetailsView

WHERE NAME="Suresh";