# Views

24 March 2023     17:37

- **What are Views?**

  In SQL, a view is a virtual table that does not store any data on its own but presents a customized view of one or more tables in a database. A view can be thought of as a pre-defined SELECT statement that retrieves data from one or more tables and returns a specific subset of data to the user.

  So basically it is a logical table instead of a physical table

  Once a view is created, it can be used in the same way as a table in SQL queries, and any changes made to the underlying tables will be reflected in the view.(Show)

  **Simple Views** - Created from 1 single table

  **Complex Views** - Created from multiple tables with the help of joins, subquery etc.

- **Read only Vs Updatable Views**

  a. **Read-only views**: As the name suggests, read-only views are views that cannot be updated. They are used to simplify the process of querying data, but they cannot be used to modify or delete data in the underlying tables.

  b. **Updatable views**: Updatable views are views that allow you to modify, insert or delete data in the underlying tables through the view. They behave like normal tables, but with restrictions.

     To make a view updatable, certain conditions must be met. For example, the view must not contain any derived columns, subqueries, or aggregate functions. Additionally, the view must be based on a single table or a join of tables with a unique one-to-one relationship.
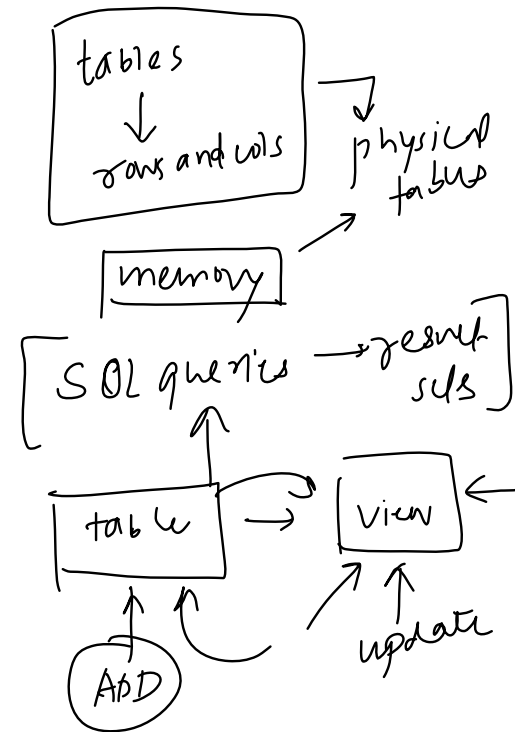
- **Materialized Views**

  A materialized view is a database object in SQL that contains the results of a query. Unlike regular views, which are just virtual tables that store SQL queries, materialized views are physical tables that store the results of a query. Materialized views are precomputed and stored on disk, which makes them much faster to access than regular views.

  Benefit - Faster queries

  Disadvantage - Need to manually update the view

- **Advantages of using a View**

  No Physical Storage
  Security
  Make complex queries simple

# User Defined Functions

24 March 2023        18:58

## - What are function and their   advantages

User-defined functions (UDFs) in SQL are functions that are created by users to perform specific tasks. These functions can be used just like built-in functions in SQL and can take parameters as input, perform some operations on them, and then return a value.

## - Syntax

```
DELIMITER $$

CREATE FUNCTION Function_Name(
    Parameter_1 DataType,
    Parameter_2 DataType,
    Parameter_n DataType,
)
RETURNS Return_Datatype
[NOT] DETERMINISTIC
BEGIN
        Function Body
        Return Return_Value
END $$

DELIMITER ;
```

## Examples
- hello world
- parameterized vs non parameterized
- Calculate age in years(for col)
- greet with name -> conditional title
- Date formatting and flights between 2 cities(deterministic Vs Non Deterministic)
- show all functions of a database
- Drop function

## Benefits

1. Simplifies SQL queries
2. Reusability
3. Enhances readability