07 - Views

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What is Views ?

As you see things become complex specially when join happen with more than one table and so on ..

What the problem ?

When I write complex query to get some data it's gone and when I need to get that query again
I have to write all that complex query again and again and again.

VIEWS is HERE

Views keep your table , literally like store your query as table that output look like that

- Make complex query as view Say AS ' my First View'
- You need to get the result of query again
- You just instead of write it you deal with the view as it your table like select * from myFirstView

How To Create View & Call It ?

CREATE VIEW view_name AS
………. YOUR STATEMENT …………….

CREATE VIEW sales_by_clients AS
SELECT c.client_id , c.name , i.invoice_total , i.payment_total
FROM clients c
JOIN invoices i USING (client_id);

NOTE

- Virtual Table: When you create a view in SQL, you're essentially defining a saved query that behaves like a table. This means you can query a view using SELECT statements, just like you would query a table.

- No Physical Storage: Unlike tables, which store data directly on disk, views do not store data themselves. They are defined by a query that retrieves data from underlying tables or views when the view is queried.

Every time you query a view in SQL, the underlying query that defines the view will be executed. This means that the data presented by the view is always up-to-date and reflects the current state of the underlying tables or views.

How to Drop & Alter views

- **To Drop View**

    DROP VIEW view_name

- **How To Change it using CREATE OR REPLACE**

  Two approaches

1 - store the SQL statement and modify it later as you want
2 - change on code that DBMS generate it to you

CREATE OR REPLACE VIEW client_balance AS
SELECT
    c.name ,
  i.client_id,
  SUM(invoice_total-payment_total) AS 'payment_total'

FROM clients c
JOIN invoices i USING (client_id)
GROUP BY name , i.client_id

Can We Make CRUP Operation on the View ?

Yes , but there are set of rules your table must meet
  ○ **NO - Union**
  ○ **NO - Agg Function**
  ○ **Group By - Have**
  ○ **Distinct**

IF all is good with this conditions you will be able to do crud on it

THE WITH OPTION CHECK Clause

There are cases when you make conditions and when you update the values or column in the view
This column will be exclude from the view , assume you want to prevent that ?

CREATE OR REPLACE VIEW Balance_View AS
SELECT
    invoice_id ,
  client_id ,
  invoice_total ,
  payment_total,
  invoice_total - payment_total AS Balance

FROM invoices
WHERE (invoice_total - payment_total) > 0
WITH CHECK OPTION ;