

Research

1 VIEW

What it is:

A **View** is a *virtual table* created from a SQL query. It does **not store data** itself; it shows data from one or more tables.

Why we use it:

- Simplify complex queries
- Improve security (hide sensitive columns)
- Reuse common queries

Type	Description
Simple View	From one table
Complex View	Uses JOIN, GROUP BY
Updatable View	Can INSERT/UPDATE
Read-Only View	Cannot modify data

2 Transaction

What it is:

A **Transaction** is a group of SQL operations executed as **one unit**.

Either *all* changes happen, or *none* happen.

Key properties (ACID):

- **Atomicity** – all or nothing
- **Consistency** – data stays valid

- **Isolation** – transactions don't interfere
- **Durability** – changes are permanent after commit

Commands:

- BEGIN TRANSACTION
- COMMIT
- ROLLBACK

◊ Real-Life Example

Bank transfer:

- Deduct money from Account A
 - Add money to Account B
- If one fails → rollback everything

◆ ACID Properties

Property	Meaning
Atomicity	All or nothing
Consistency	Data remains valid
Isolation	Transactions don't interfere
Durability	Changes are permanent

◊ Advantages

-  Data integrity
-  Error recovery

3 Stored Procedure

What it is:

A **Stored Procedure** is a *prewritten SQL program* saved in the database and executed when needed.

Why we use it:

- Faster execution
- Reusable logic
- Better security
- Reduces SQL code repetition

COMPARISON TABLE:

Feature	View	Transaction	Stored Procedure
Stores data	✗ No	✗ No	✗ No
Accepts parameters	✗ No	✗ No	✓ Yes
Contains logic	✗ No	⚠ Control only	✓ Yes
Improves security	✓ Yes	✗ No	✓ Yes
Improves performance	⚠ Sometimes	✗ No	✓ Yes