Session- 19 Database

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Introduction to SQL

SQL -> Stands for structured query language, & SQL is used for storing, manupulating & retrieving data from db.

Q. What are SQL commands?

Ans -> SQL commands are instructions that interact with RDBMS.

These commands allows users to perform various operations such as quering data, update records, inserting new data, & managing the structure of db.

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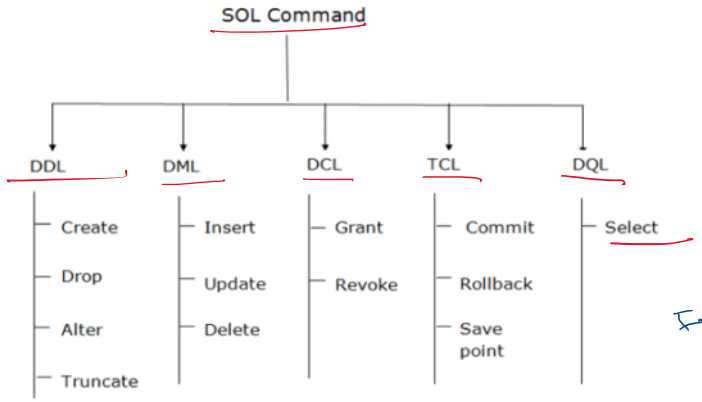
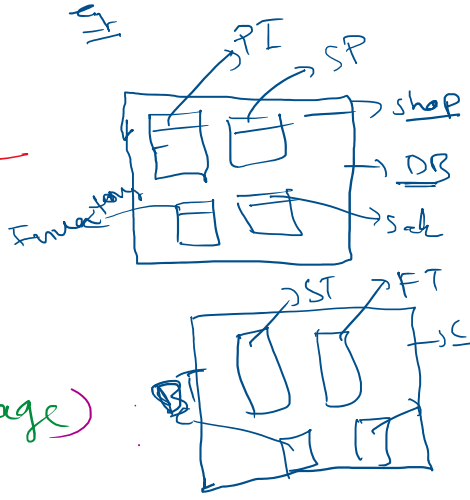




1. DDL (Data Definition Language)

-> Consist of SQL commands that can be used to

→ Consist of SQL commands that can be used to define database schema.

eg * Create → To create database or its objects.

* Drop → To delet object from database.

eg DROP colum contactName

DROP DATABASE testDB

* Alter → To alter the structure of db.

* Truncate → To remove all records from a table.

② DML (Data manipulation language)

→ Deal with the manipulation of data present in the database

eg Insert → is used to insert new data into table.

update → is used to update existing data into table.

Delete → is used to delete records from table.

(3) DCL (Data control language)

It deals with rights, permissions & other controls.

eg Grant : Give user's access privileges.

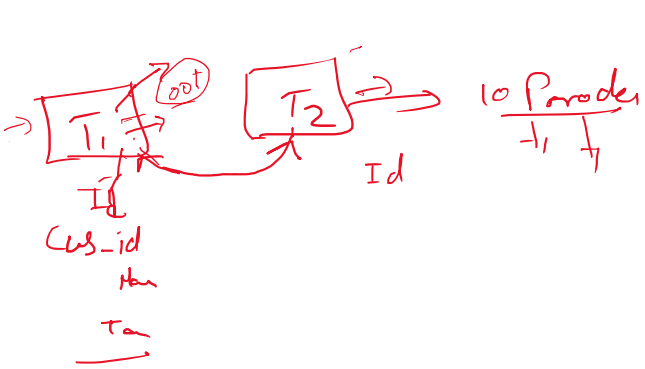
Revoke : Withdraw user's access privileges.

(4) TCL (Transaction Control language)

It deal with the transaction with the database.

Eg * Commit → Commit a transaction

Roll back : → rollbacks a transactions in case of any errors occurs.



* SavePoint → sets a save point within a transaction.

(5) DQL (Data Query language)

Performing queries on the data within schema objects.

Eg SELECT → is used to retrieve data

Normalization

It is a method to used in a db to reduce the data redundancy & data inconsistency from table.

Note — No. of tables ↑

× 4 forms { 1NF , 2NF , 3NF , 4NF }

Denormalization

It is used to add redundancy to execute the query quickly.

Note — No. of table ↓

Difference between Normalization and Denormalization:

	Normalization	Denormalization
Implementaion	Decomposes data into different tables to reduce redundancy.	Combines data to improve the access time
Query Execution Speed	Speed of update, delete and write operations is higher.	Speed of read operations is higher, but that of update and write operations is slower.
Memory	Memory consumption is less	Memory consumption is more as redundancy is

Query Execution Speed	Speed of update, delete and write operations is higher.	Speed of read operations is higher, but that of update and write operations is slower.
Memory Consumption	Memory consumption is less as data redundancy is less.	Memory consumption is more as redundancy is introduced.
Number of Tables	Number of tables is more on account of decomposition of data.	Combines tables and hence number of tables are less.
Data Integrity	Data integrity is maintained.	Data integrity might not be maintained.

ACID

(Atomicity Consistency Isolation Durability)