INTRODUCTION TO SQL

SQL Series Part 1

-Mayuri Dandekar

WHAT IS SQL?

SQL is **Structured Query Language.**
It is a programming language used to interact with database.

There are 4 **basic applications** in SQL
Create, Read, Update, Delete. These are also called as **CRUD** Statements.

Create - Inserts new data
Read (Select) – Reads the data
Update – Update existing data
Delete – Removes the data

SQL V/S NOSQL

SQL	NOSQL
It is Relational Database	It is Non-Relational Database
Data is stored in tables	Data stored as either key-value pair, document-based, graph database or wide-columns.
Database have fixed/ stable/ predefined schema.	Database have dynamic schema
Low performance with huge volume of data	Easily works with huge volumes of data.
Example- PostgreSQL, My-SQL	Example- MongoDB, Hbase

SQL COMMANDS

There are mainly 3 types of SQL commands:

- **DDL**

DDL is Data Definition Language. It includes create, alter, and drop

- **DML**

DML is Data Manipulation Language. It includes select, insert, update and delete

- **DCL**

DCL is Data Control Language. It includes grant and revoke permission to users

WHAT IS DATABASE?

Database is a system that allows users to **store and organize data**.

Predominant type of database is **Relational** database.

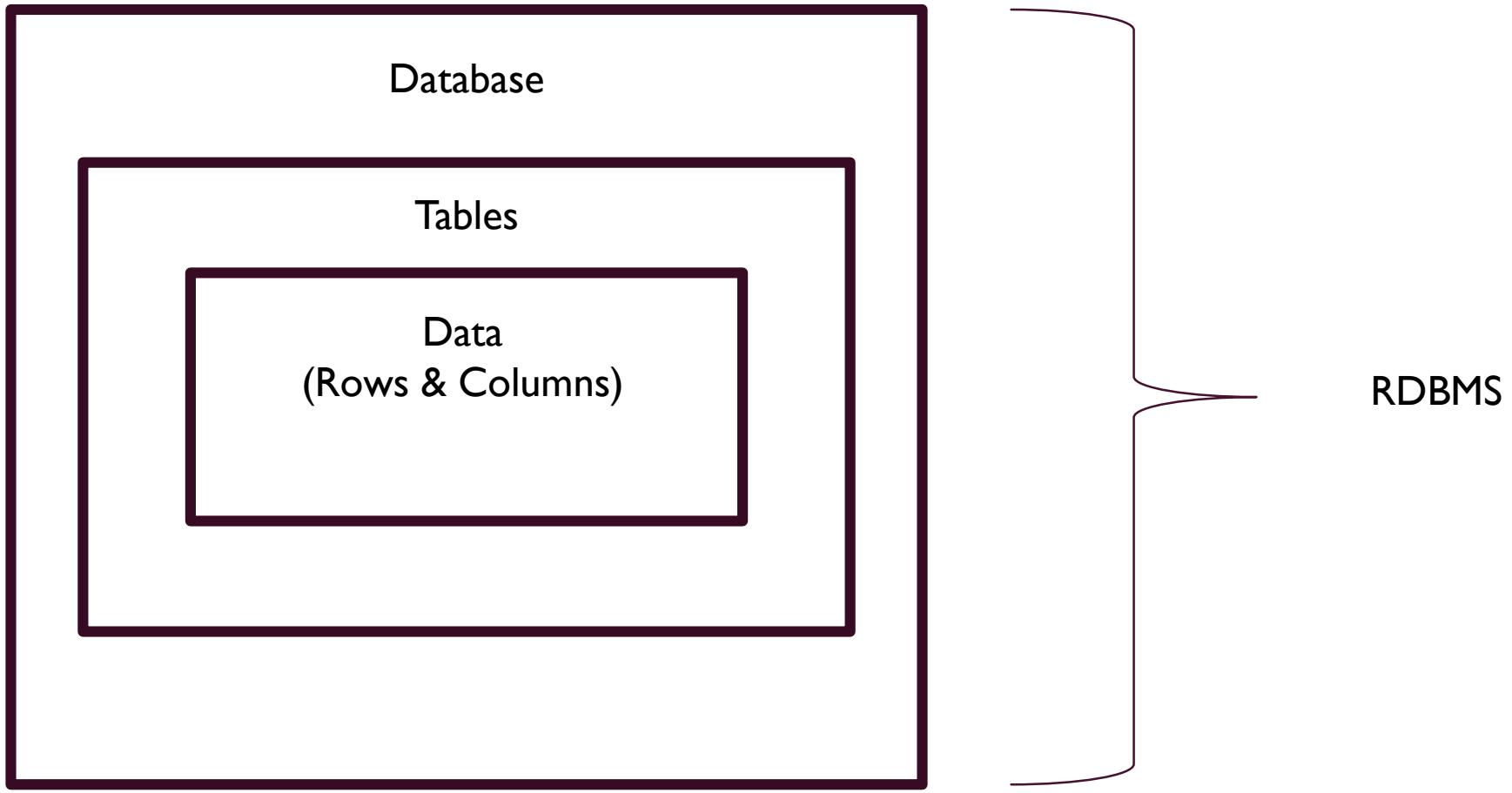
Relational database organize data in the **form of tables** also sometimes in the form of **queries, views and other elements** to help us interact with the data.

EXCEL V/S DATABASE

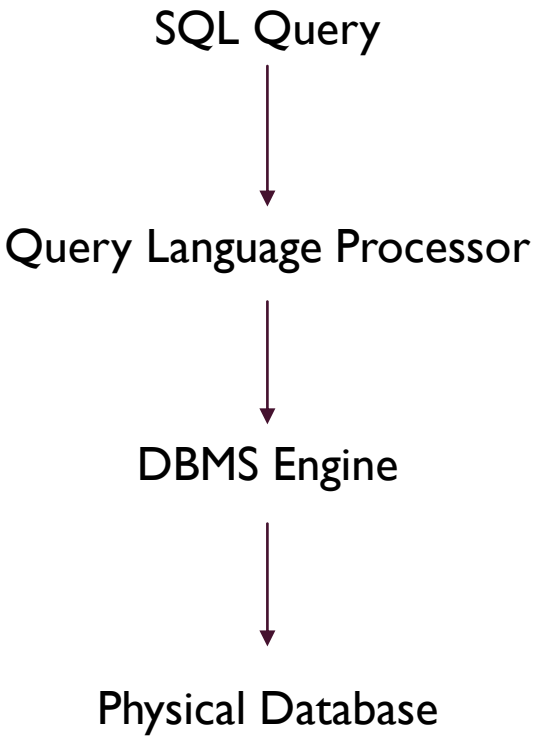
EXCEL	DATABASE
Excel is easy to use as untrained person can work.	In database trained person can work.
Excel stores less data.	Database can store large amount of data.
It is good for one time analysis/ quick charts.	Database can automate tasks.
There is no data integrity due to manual operations.	There is high data integrity.
There are low search/ filter capabilities.	There are high search/ filter capabilities.

DIFFERENT SQL DATABASES

STRUCTURE OF SQL



FLOW OF SQL



The flow of SQL begins with a SQL query issued by a user or application.
The query is processed by the Query Language Processor, which parses and analyzes it.
The parsed query is then handed over to the DBMS engine, which includes components like the query optimizer, execution engine, and transaction manager.
The execution engine interacts with the physical database to retrieve or modify data as per the query, and the results are returned to the user or application.

THANK YOU!!!

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