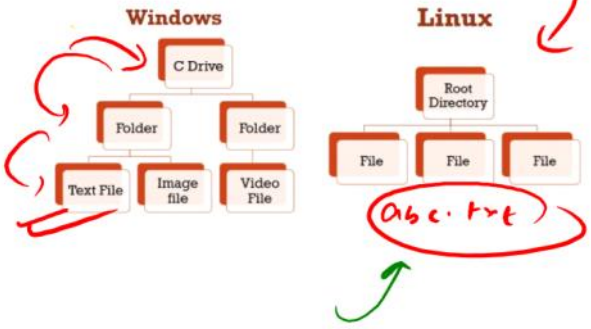
Introduction to database

08 January 2025 11:14

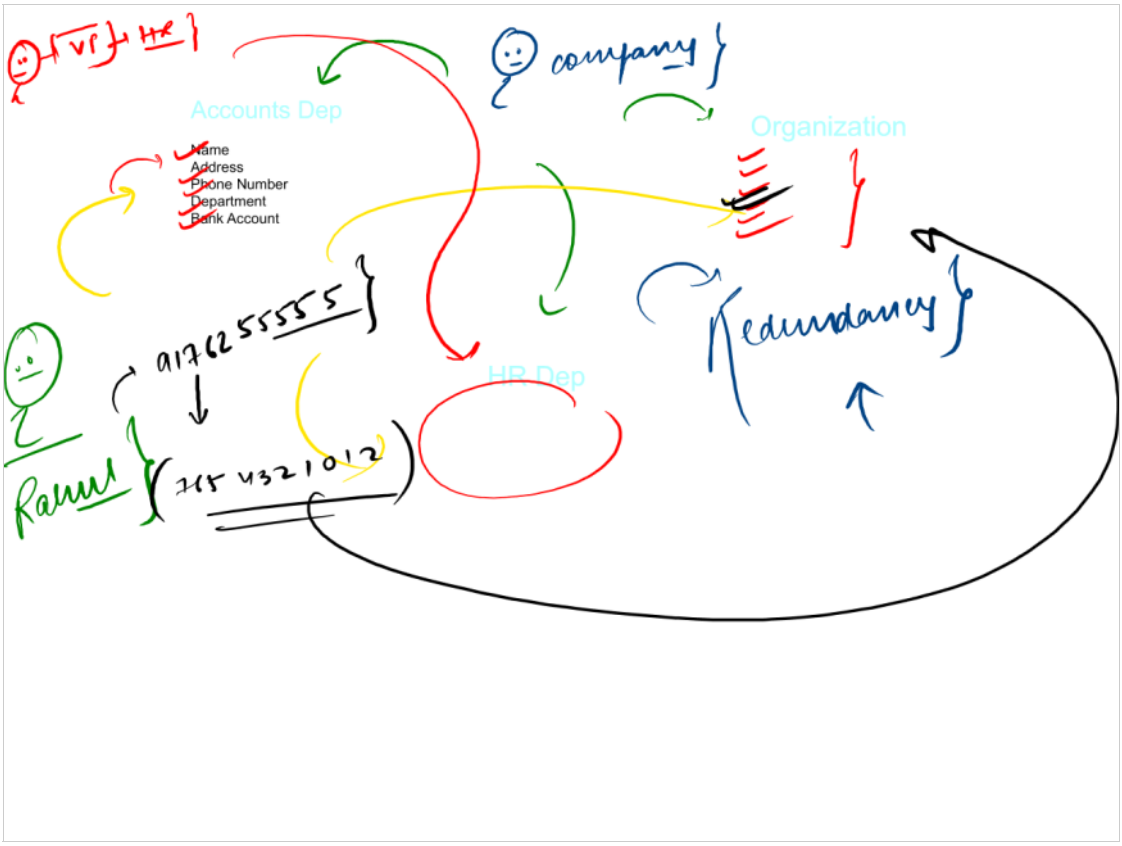
FBSS

File Based Storage System → WHAT?



Advantages | Why to use FBSS

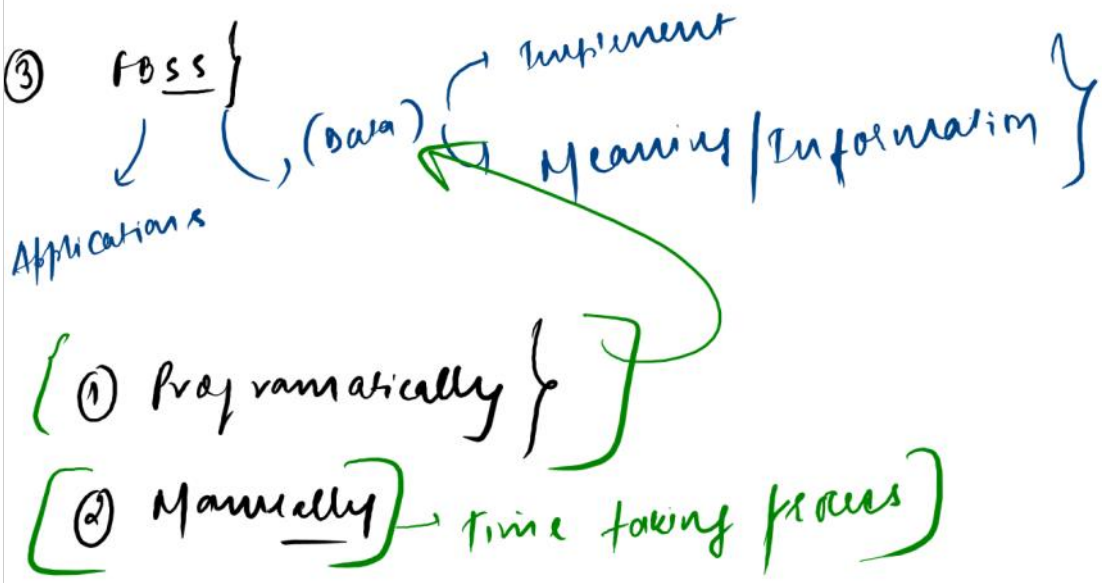
1. Easy to use
2. No complications involved
3. Easily copied and stored at multiple locations



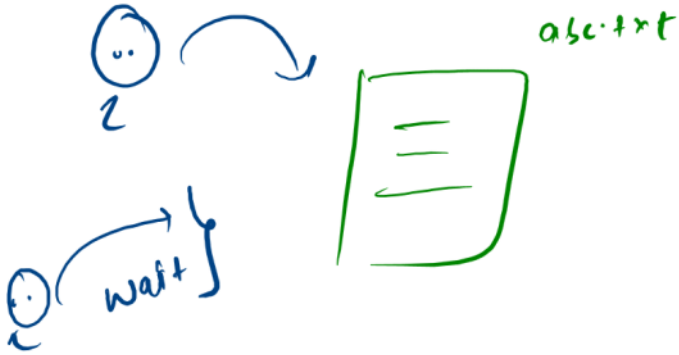
Challenges of FBSS

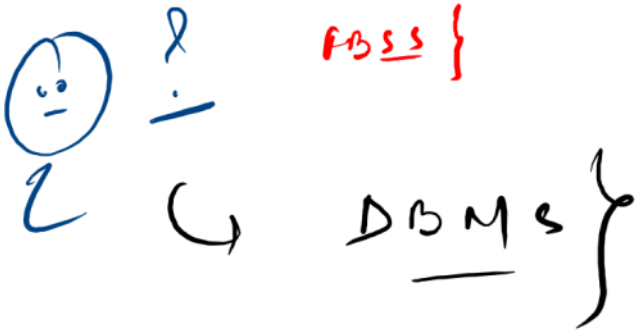
1. Redundancy
   - Read anamoly (stale data)
   - Update anamoly
   - Write → duplicate

② Security concerns



④ Difficulty in concurrent usage





Introduction to the Database

What is Database

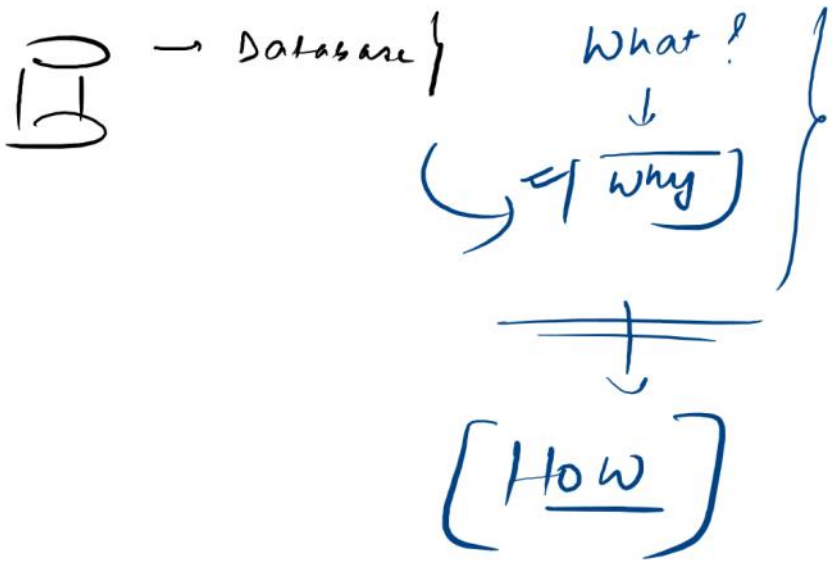
Why do we need databases

File Based Storage System

Challenges of FileBased Storage System

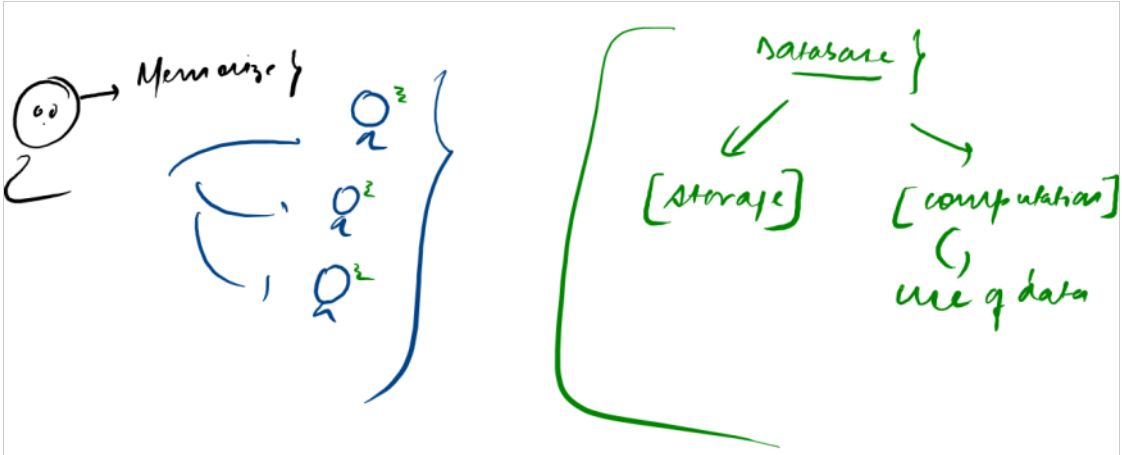
Database Management System

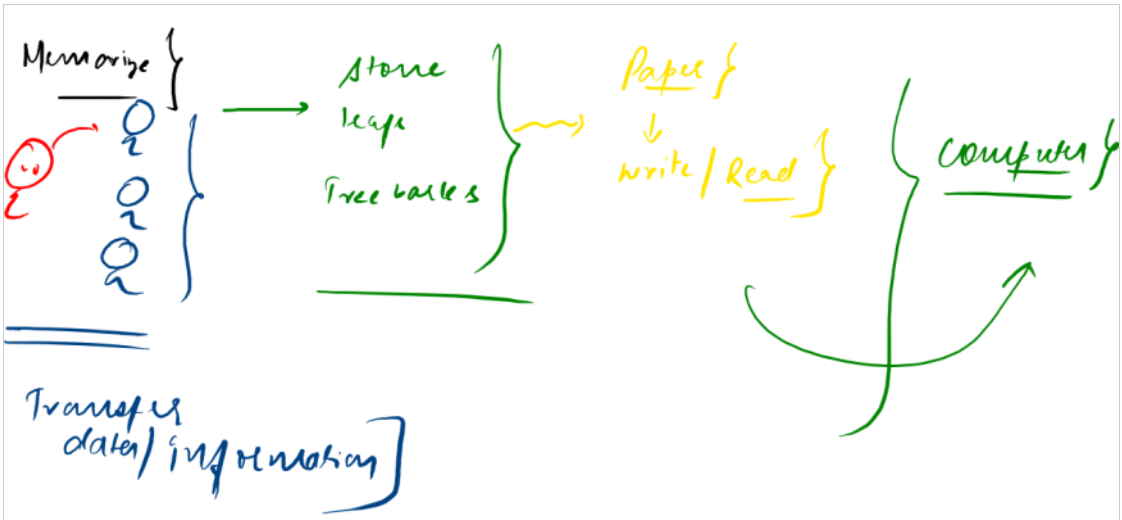
Data Modelling

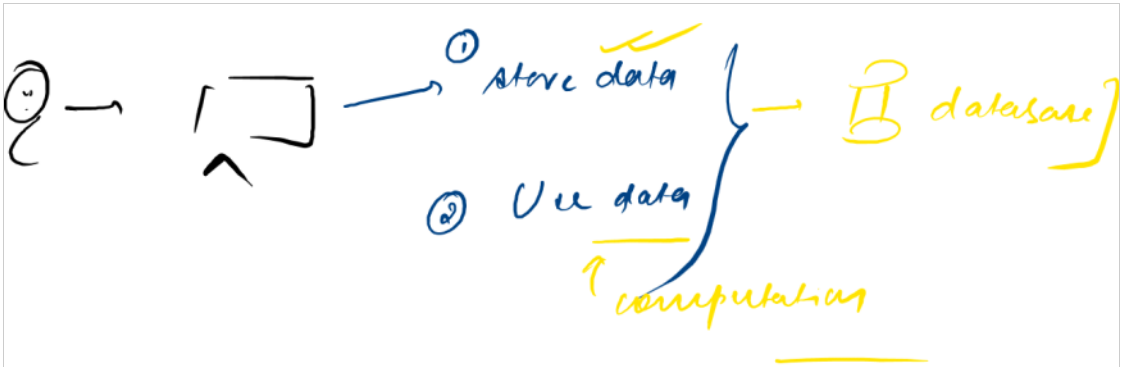


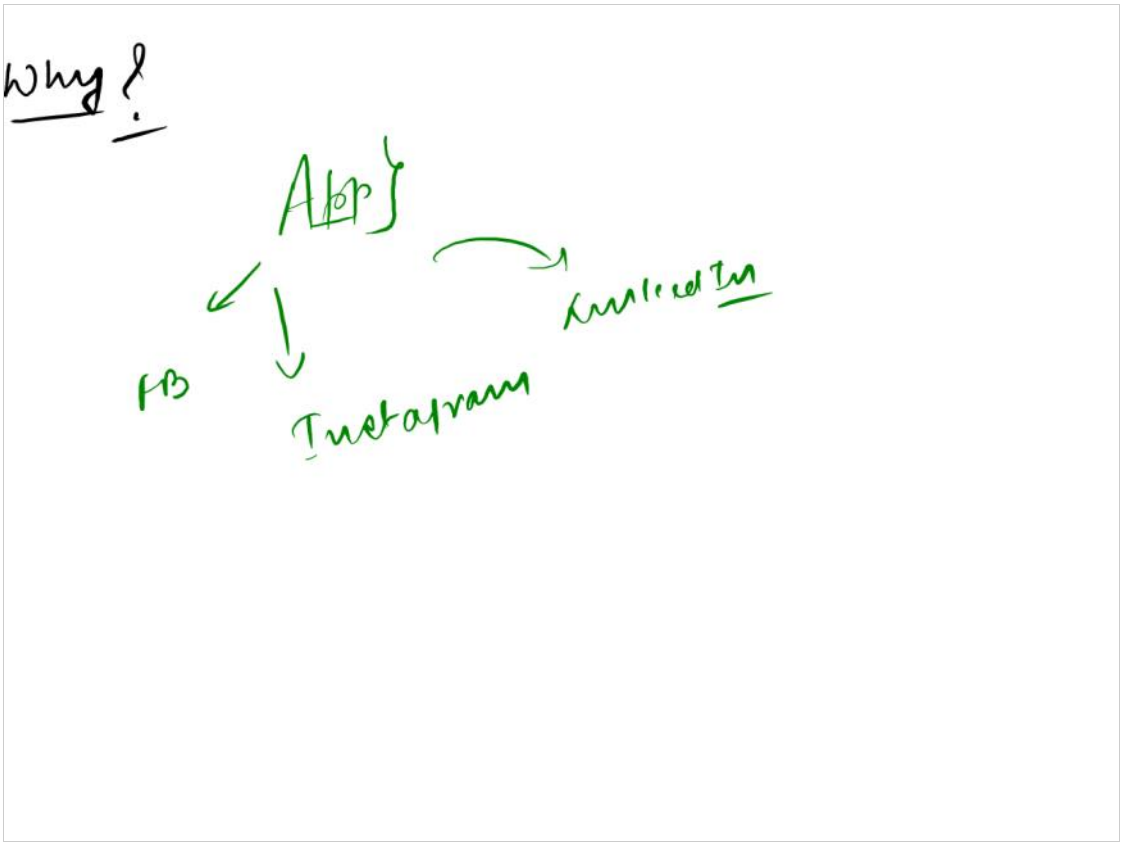
what is a Database }

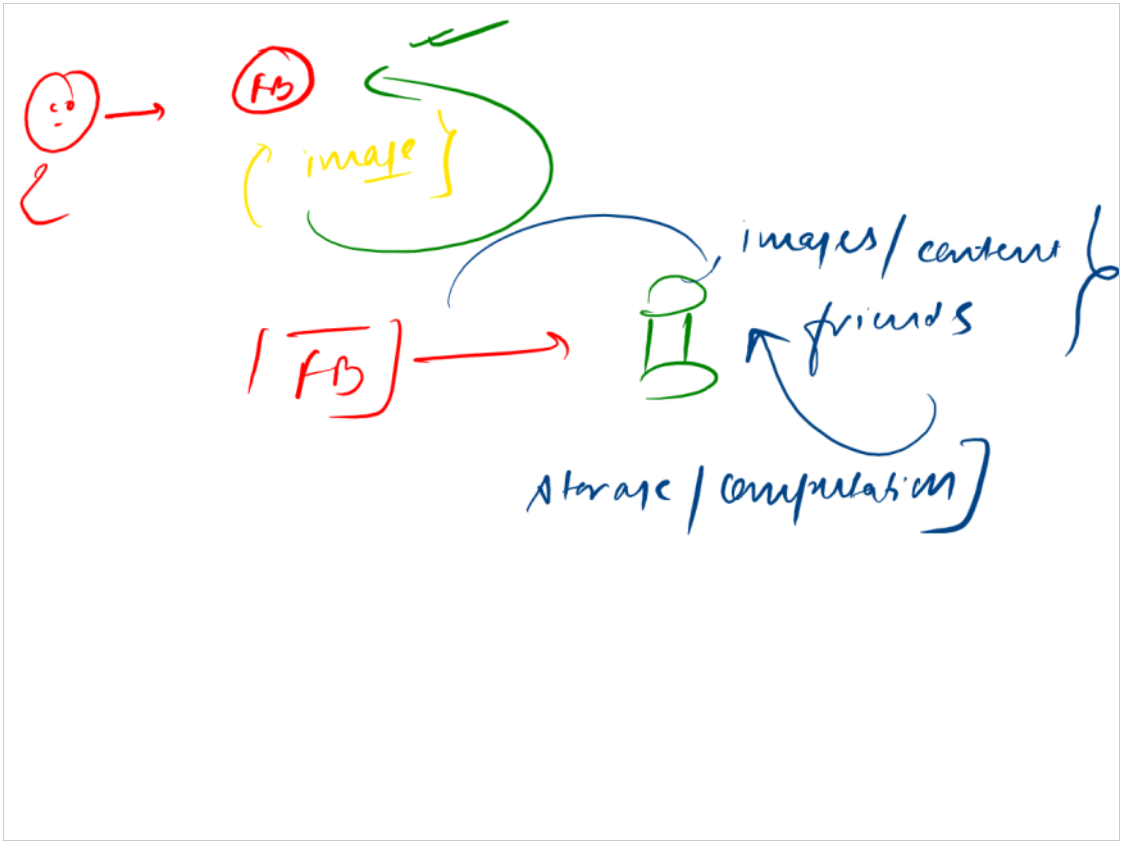
Data + Base }

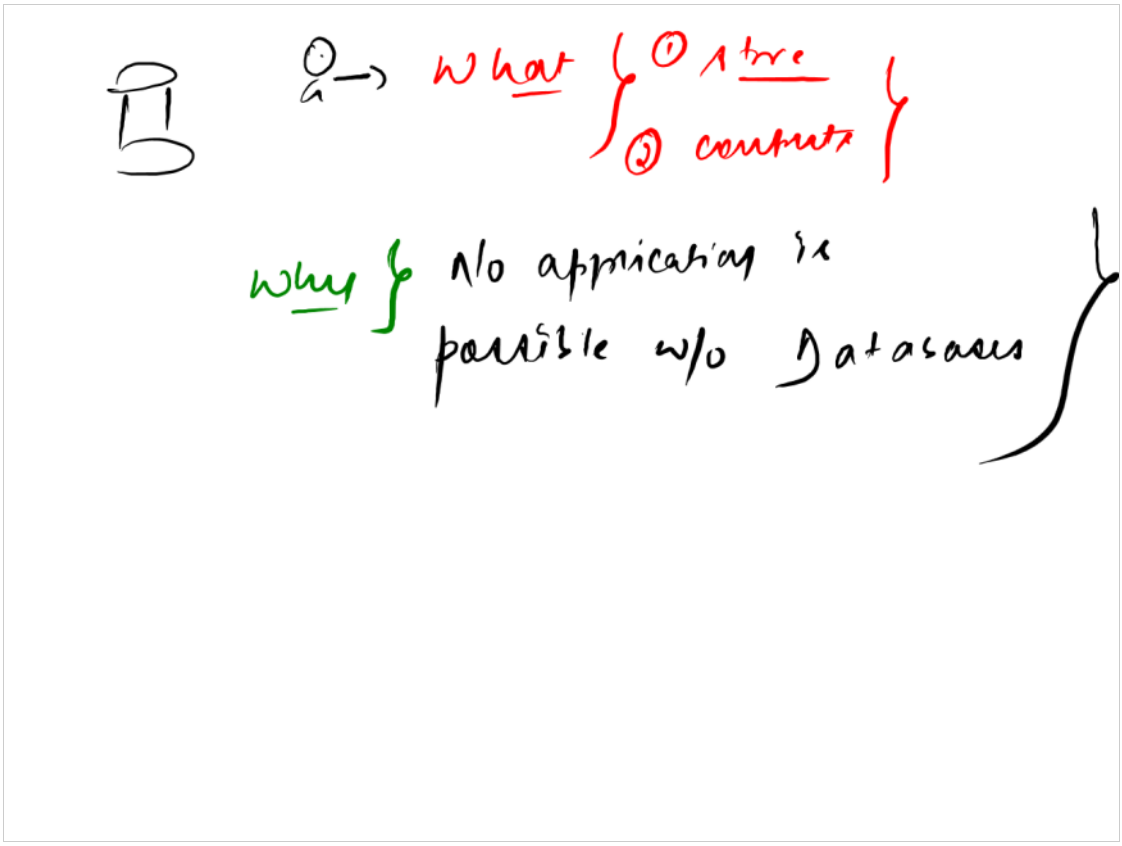



Memorize
Store
keep
Tree tables
Paper
write / Read
computer
Transfer
data / information


store data
database
Use data
computation


Why ?
App
FB
Instagram

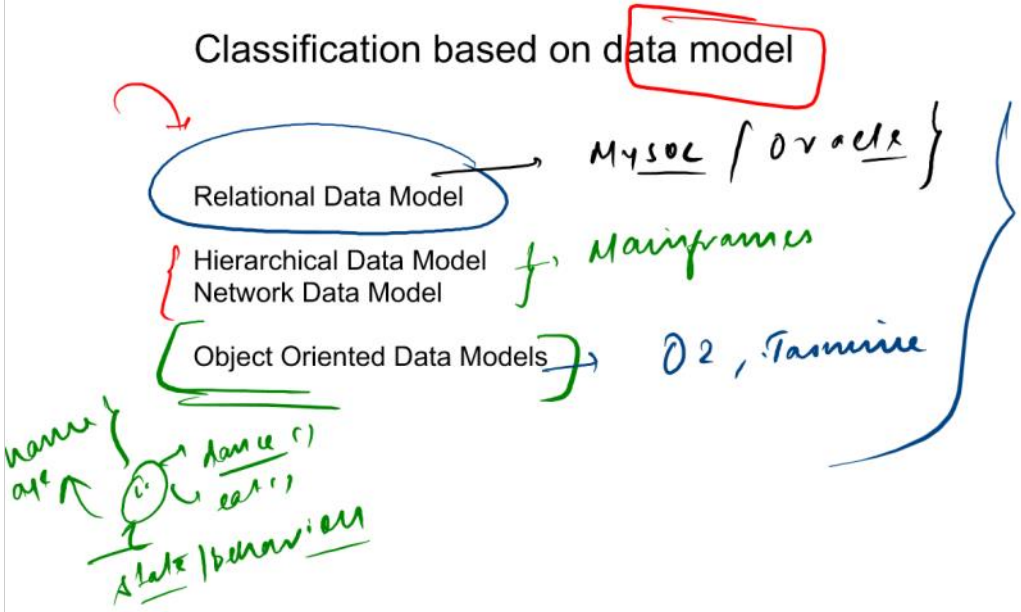

FB
image
FB
images / content
friends
storage / computation



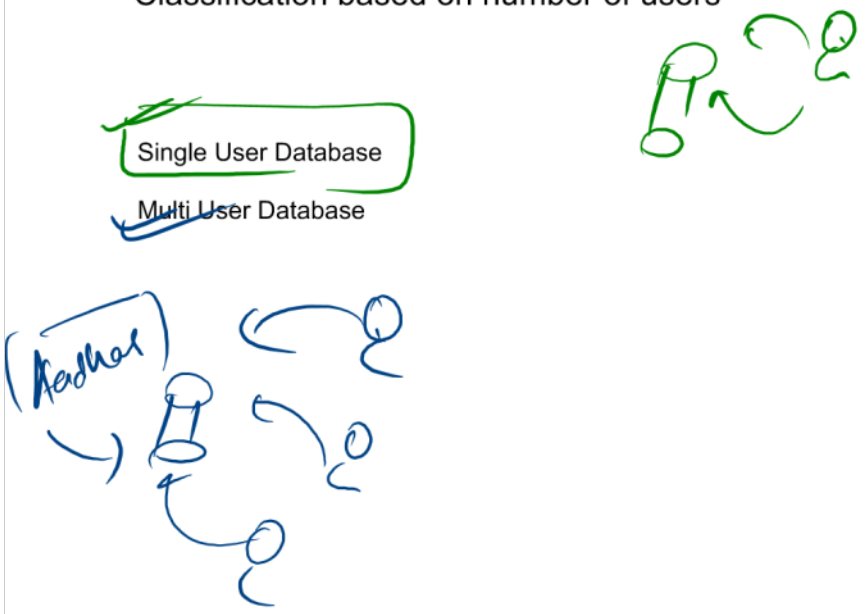
Classification of DBMS

Classifications of DBMS

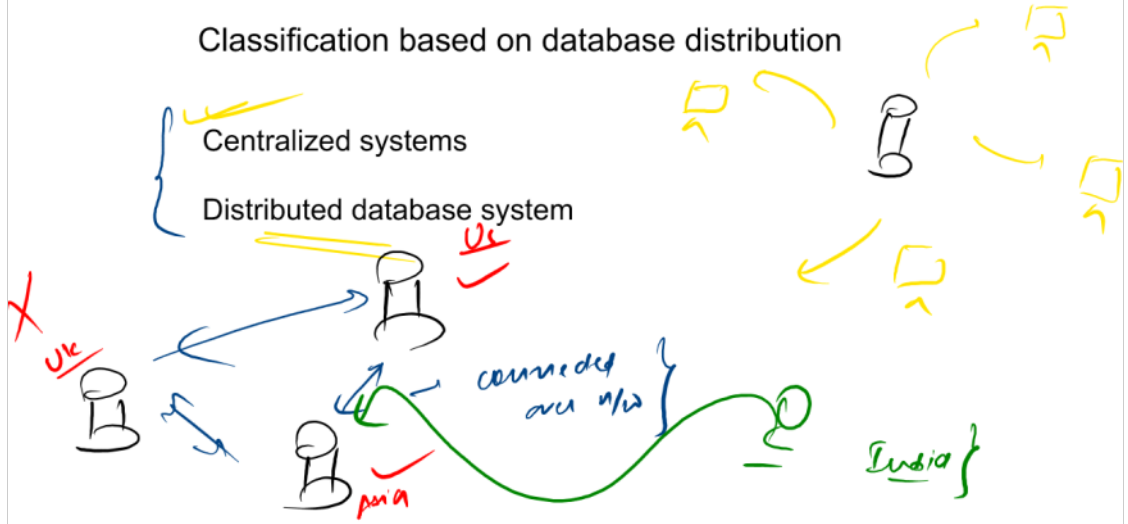
Classification based on data model



Classification based on number of users

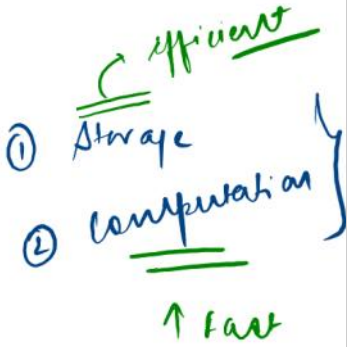


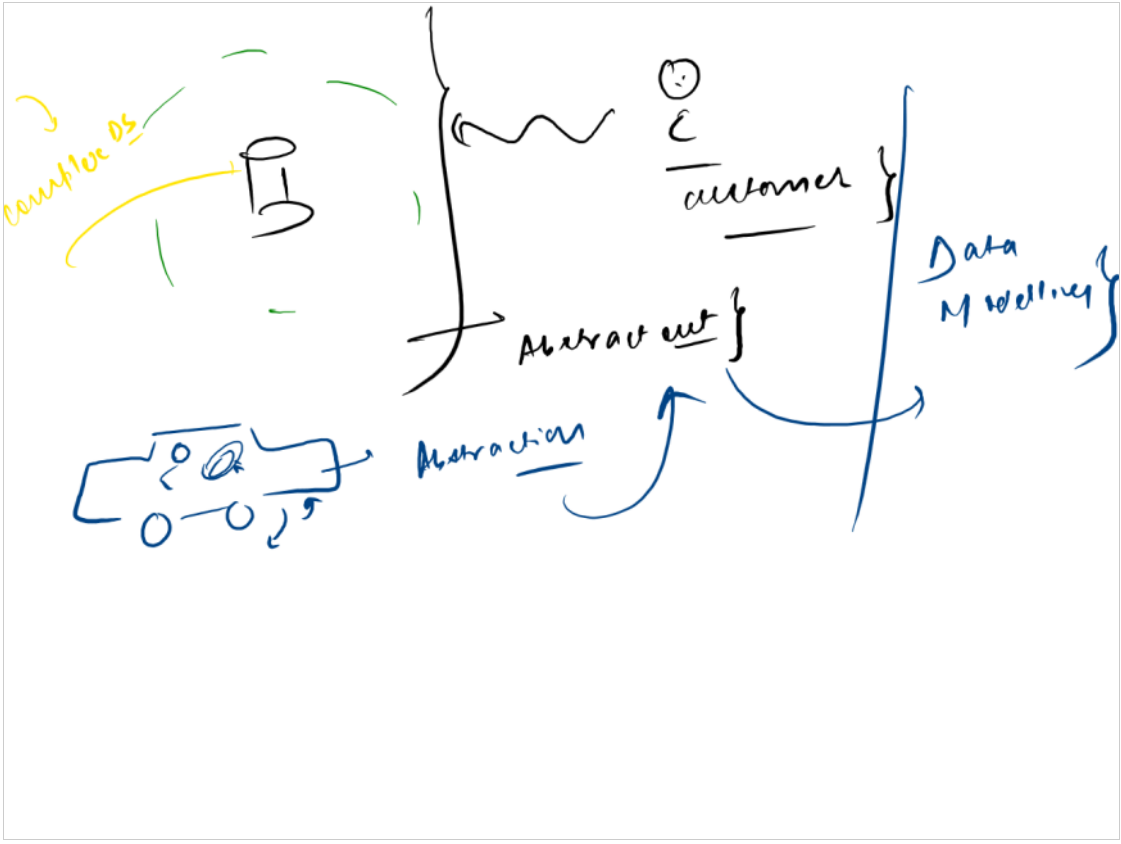
Classification based on database distribution



Introduction to Data Models

What is a data model ?



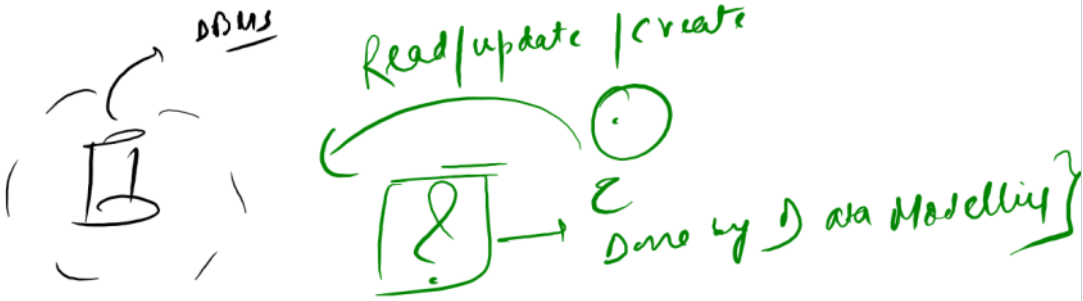


Data Modelling

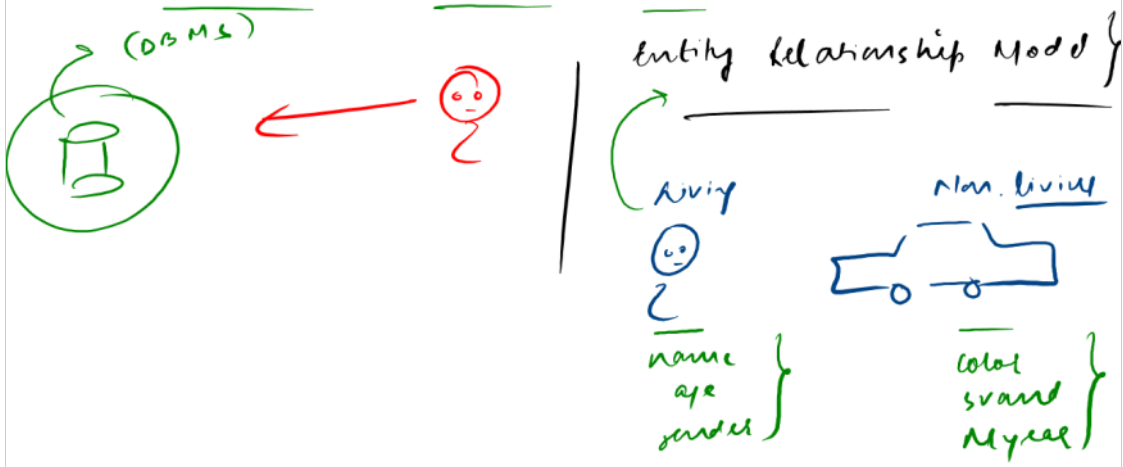
↳ collection of concepts n notations for describing data

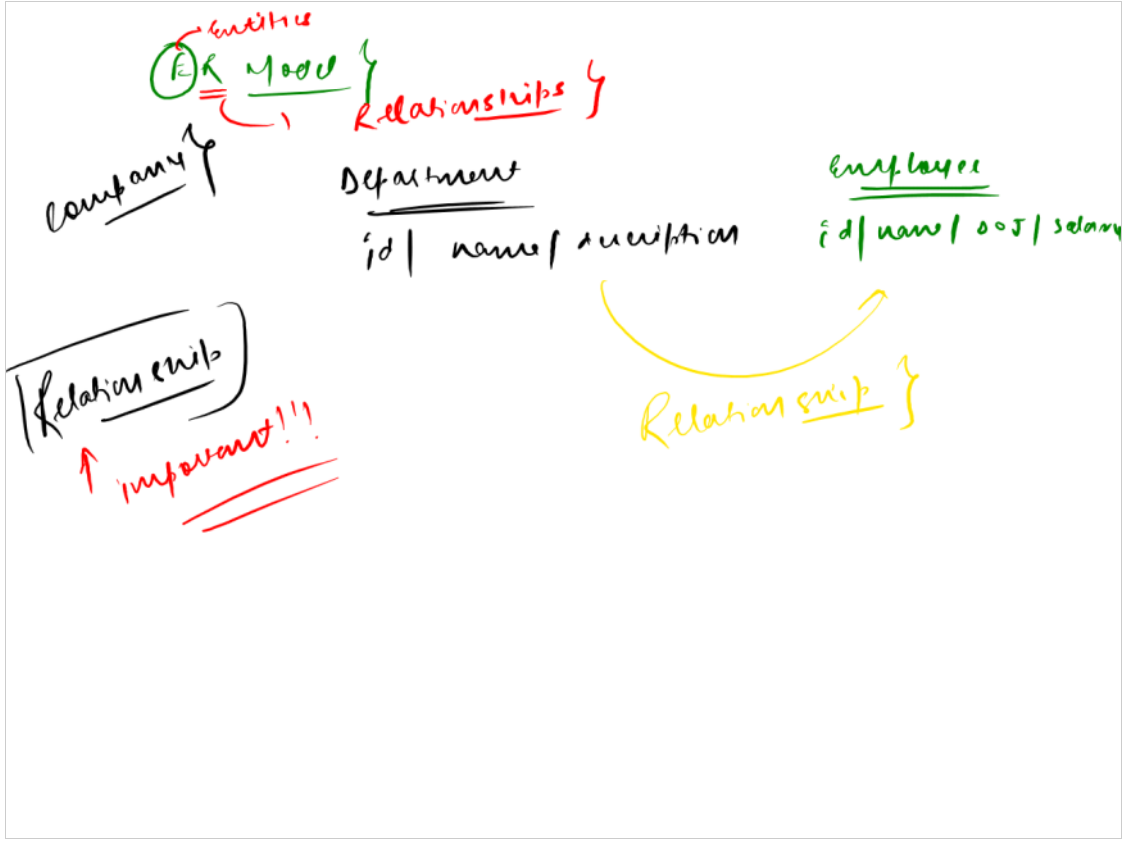
↳ Relationships b/w data

↳ Data semantics

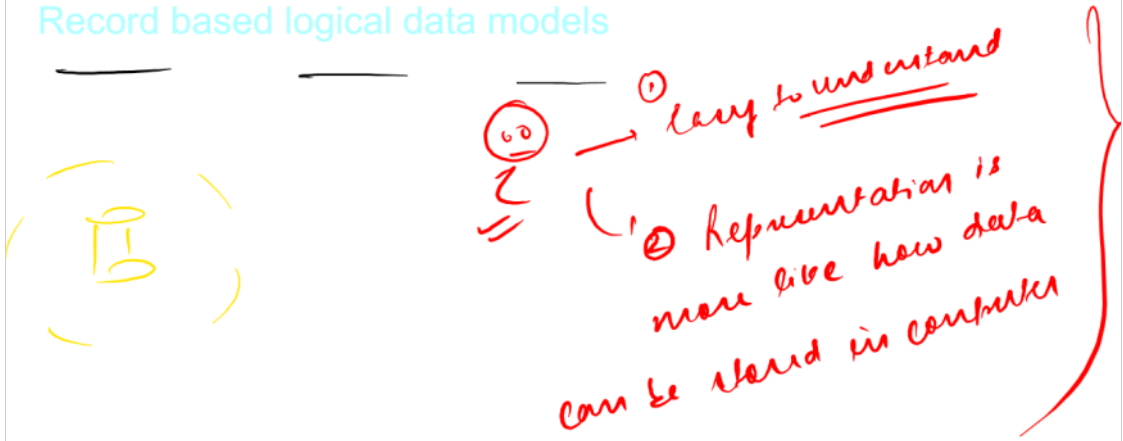

DBMS
Read/update/create
Done by Data Modelling

High Level Conceptual Data Models

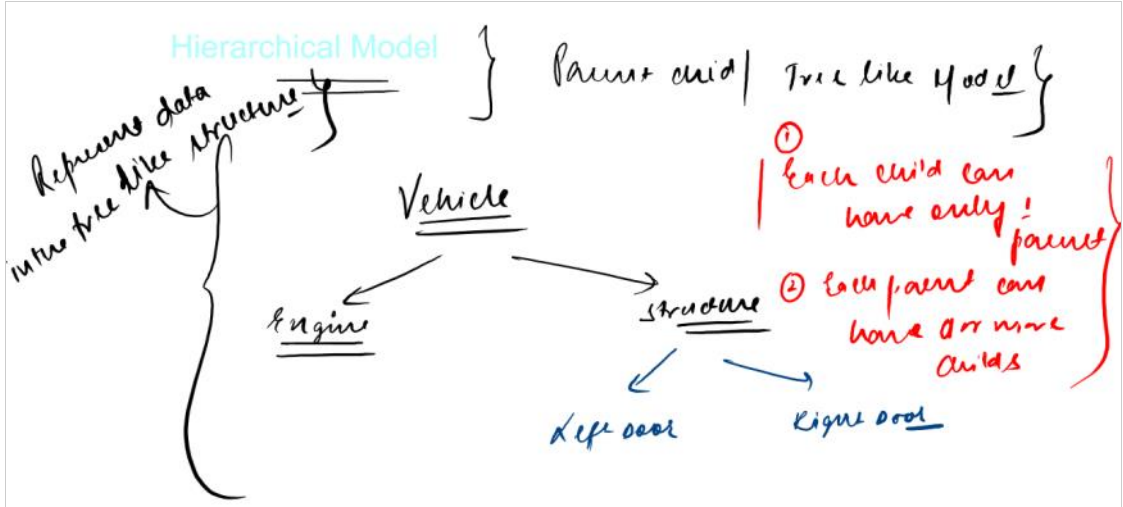




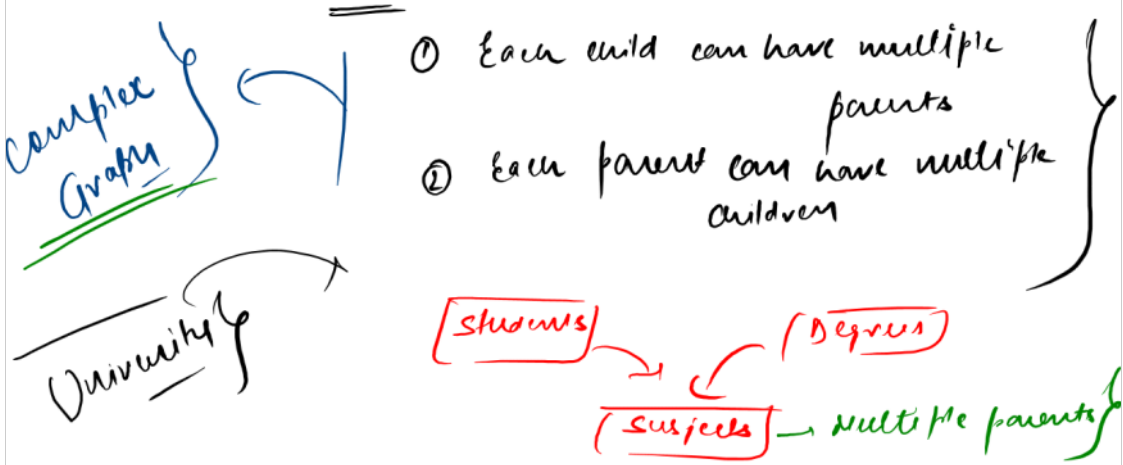
Record based logical data models



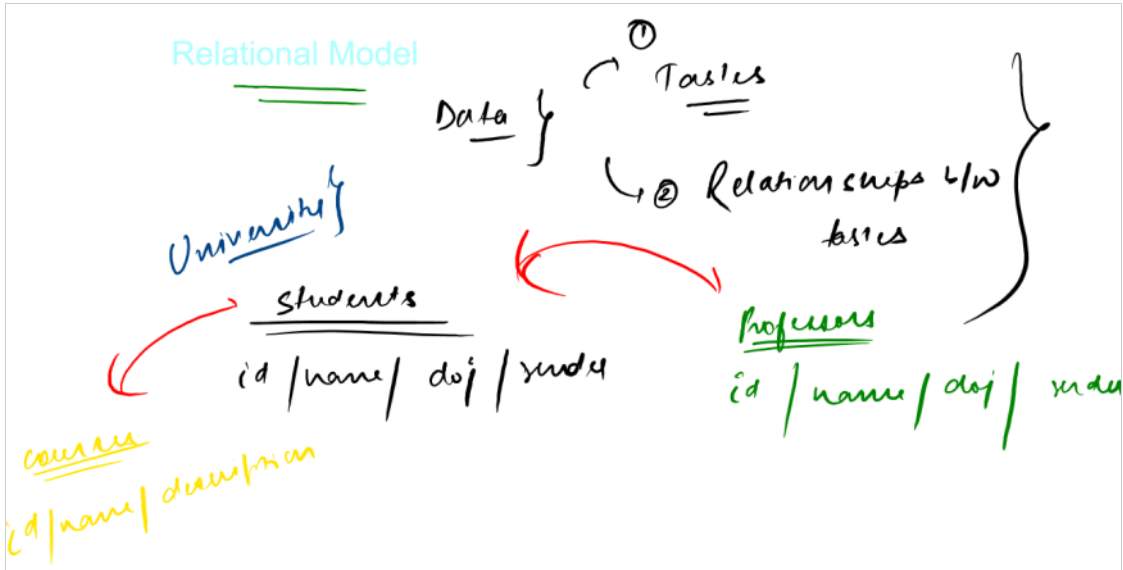
Hierarchical Model



Network Model



Relational Model



Physical Data Model

How data is stored physically in computer memory

Data tasks
- Attribute → Name
- → type

retrieved from computer Memory
ordered / arranged in the computer Memory

Student taste

id : Integer
name : String
Age : Integer
Address : String / varchar

Department taste

id : Integer
name : varchar
location : varchar

↑ Relationship