Saturday, 3 December 2022 7:12 PM

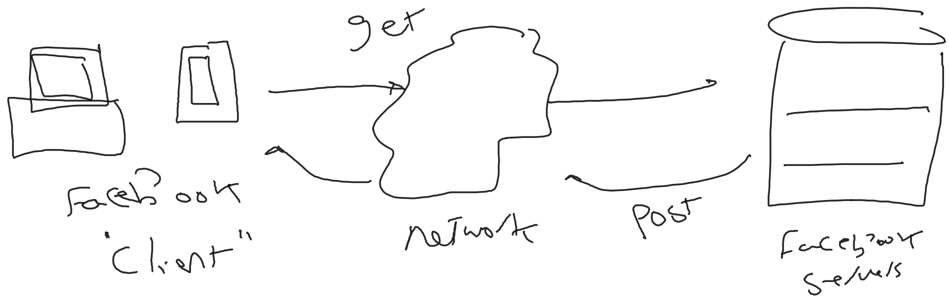
Data Storage → heart Application

why?

- Store Data
- Cache
- messages
- Small Detail find to cat... [illegible]

Uber — Battery status → 1% — Resolve Theme

Imagine FB without DB ??



Data storage system

→ DataBase Tools

- MySQL
- SqlServer
- oracle

Tasks

- filter data
- Perform CRUD operation
- Search Data
- Store Data

Relational DataBase VS Document graph

SQL vs non-SQL

- Structured — limitation
- Big Data — unstructured

⇒Data : Data is facts and figures about anyThings

eg. Person → name ... job ... age ...

⇒While we store the data → search insert

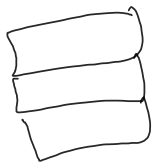
data is no longer stored in manual files

Store it in data Base system

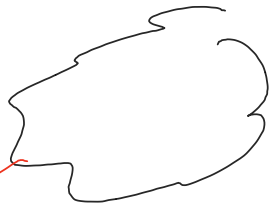
systematic

all data Contains elements or features and attributes

DataBasehosting



localmachines



Cloud hosting

hosted DigitalOcean

Guys Wehadabad news Thereis no Cloud, it's JUST someone else Computer that connect with internet...

Terminologies

⇒ Entity : AThing in The real world With an independent Existance

- Physical → Person, Car, house....
- Conceptual → Course, Subject, order

*Attributes : Properties That describe The entity...

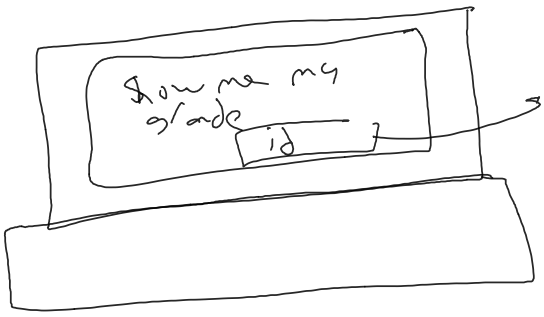
ERD

- Composite Attribute :
  Can be divided into further parts.

- Simple attribute.
  - ⇒ Single Valued attribute
    eg. age...
  - ⇒ Multi Valued attribute
    eg. degree, certificate
  - ⇒ Derived attribute
    eg. age.. → sign FB
  - ⇒ Stored attribute
    → Birthdate.
  - ⇒ Complex attribute
    - Multi Valued attribute
    - Composite
      eg. College degree
      - College
      - year
      - Degree

is our age important?
ads 18? movie items
Game toy

- ⇒ Key attribute : is capable of identifying each entity uniquely
  eg. student-ID



Select grade * from student where id = ?

- ⇒ ERD : Entity Relationship Diagram

Entity → table

Weak Entity — don't have own Key attribute

attribute

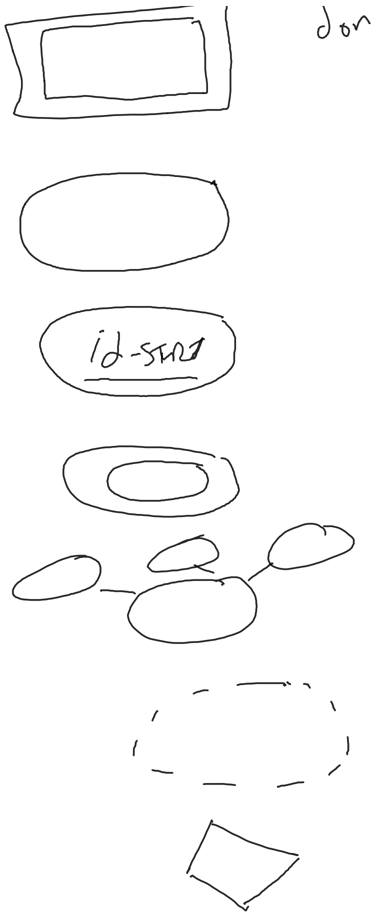
Key attribute

Multi Valued attribute

Composit attribute

Derived attribute

Relationship



DataBase Design

implementation — imperative

Declarative

sql

1) Data Base designers understand and document the data Requirement of the database use

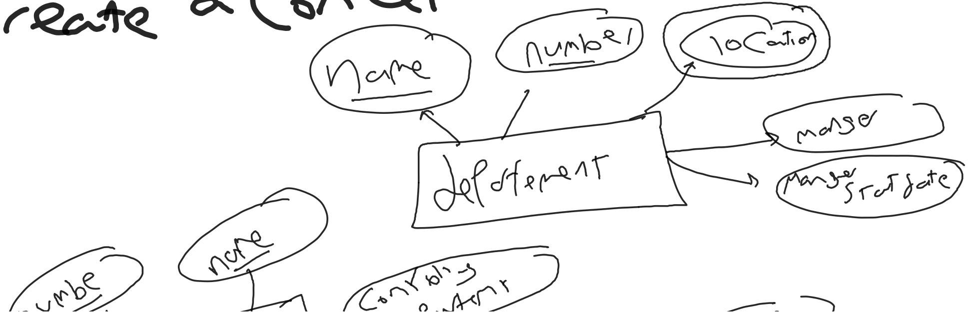
Company Data base
Functional Requirements…

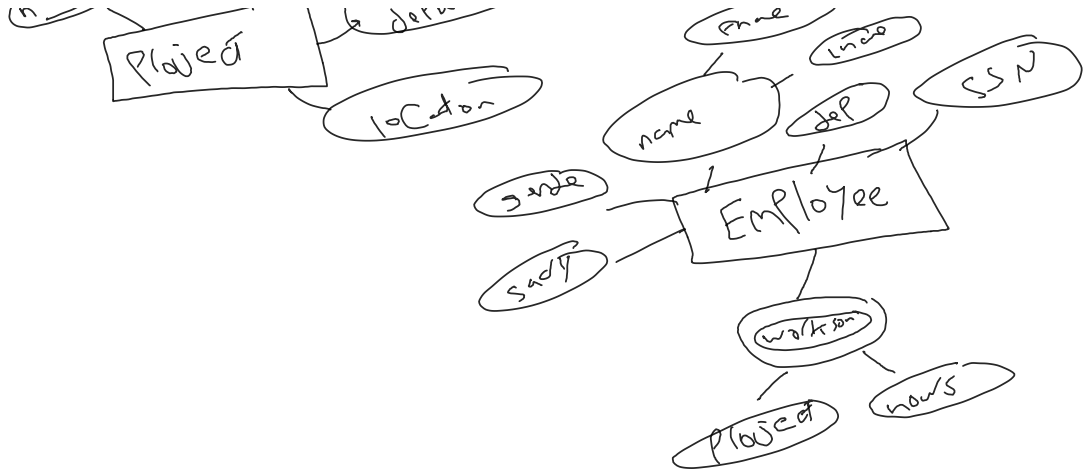
- Company is organized into **department**, each departement has a unique number and particular employee who manges the deparetemtn we also keep track of the start date of a manger a departement may have a serveral location.
- Departement controlls number of **projects** each project has a unique name , unique number and a single location.
- **Employee** Details name ,ssn ,gender,salary,keep track of hours per week of each project.
- Keep track of each employee's dependent

Entity = Noun

Relation = Verbs

2) Create a Conceptual Schema Design



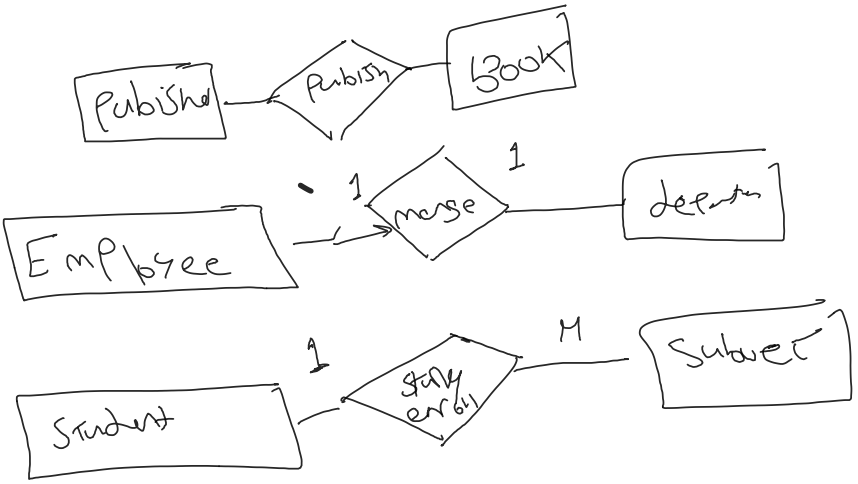


3 logical Design

actual implementation DB

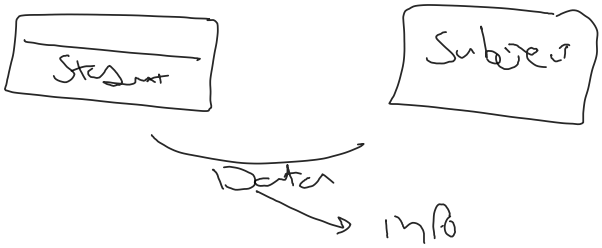
4 Physical Design

Book Store



Why data should be related?

So it can be processed into meaningful information...

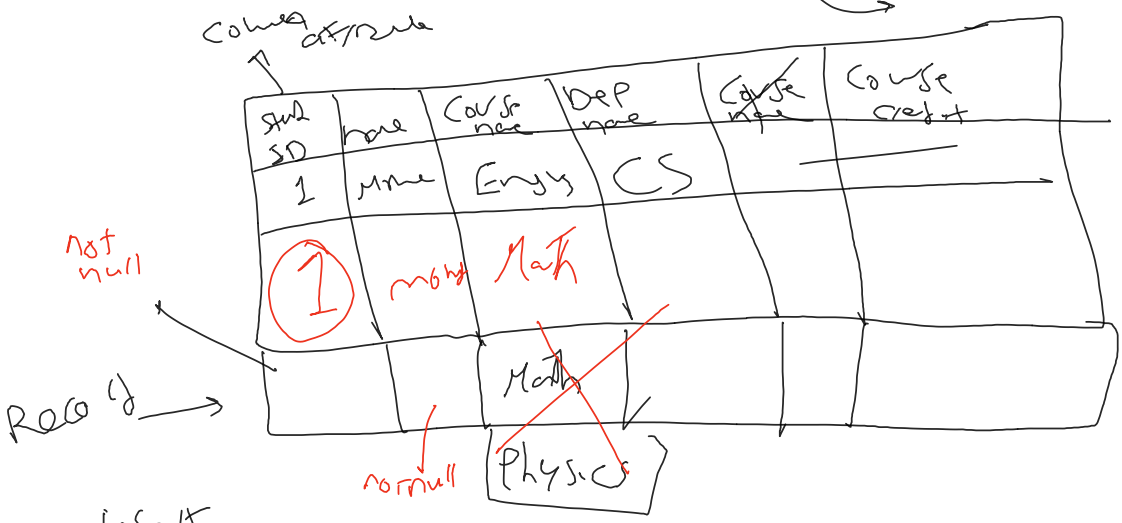


Mohaed Study / enrolled
Math 9
Physics
OS

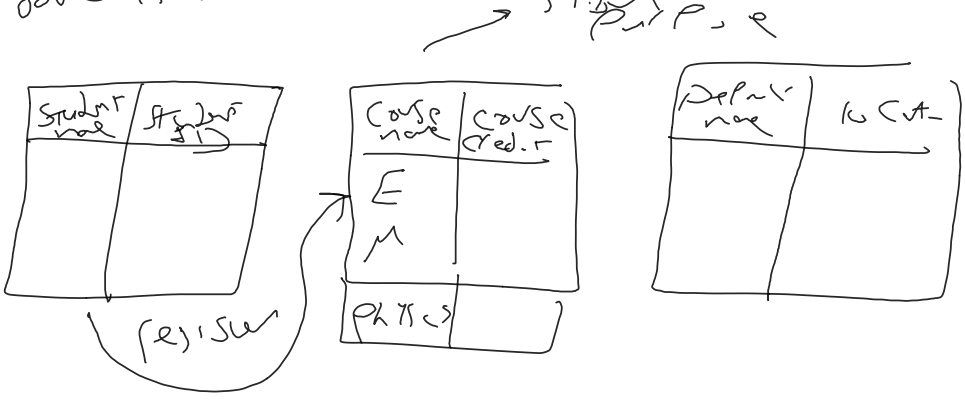
Data Base Normalization....

→ is The Process For Structuring Tables That minimize Challenging Faces data base systems

→ Single purpose ... function Calculate age ()



Insert Anomaly
Delete Anomaly
Update Anomaly



(3) fundamental normalization forms

1 NF 2NF 3 NF

first normal form