SQL ⇒ Structured Query Language.
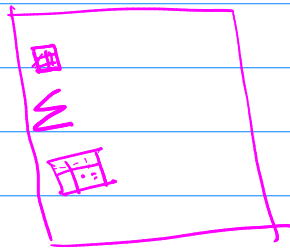
Data Modeling.

Data Modeling is a critical step in defining data structure, creating data models to describe associations and constraints for reuse. Data model is the conceptual design or plan for organizing data. It visually represents data with diagrams, symbols, or text to visualize relationships.

Data Modeling Terminology

① **Entity** :→ Entity are object or items in business environment for which we need to store the data.

ex- In ecomerse data entities are People, Customers, order, product.

② **Attributes** :→ It provide a way to structure and organise the data within an entity.

Ex ⇒ Name, Address, email ID, Contactdetails.

⇒ Sale, OrderID, OrderDate, ship day

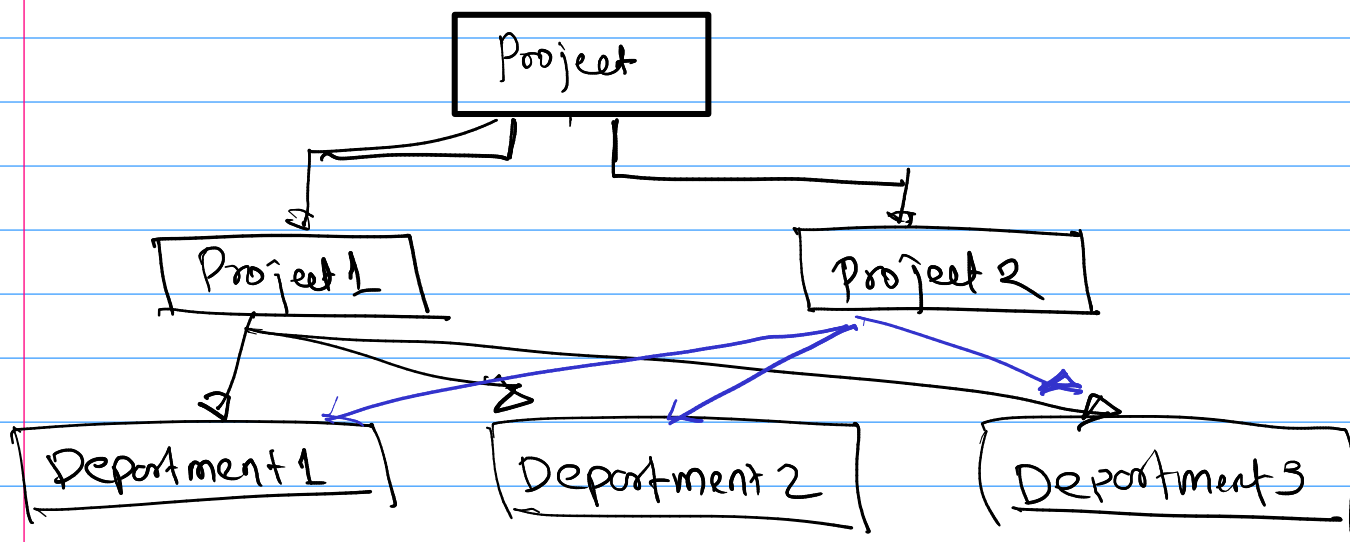③ Relationship :→ How entities are connected with each other.

④ Reference Table :→ It is used to resolve relationship between entities.
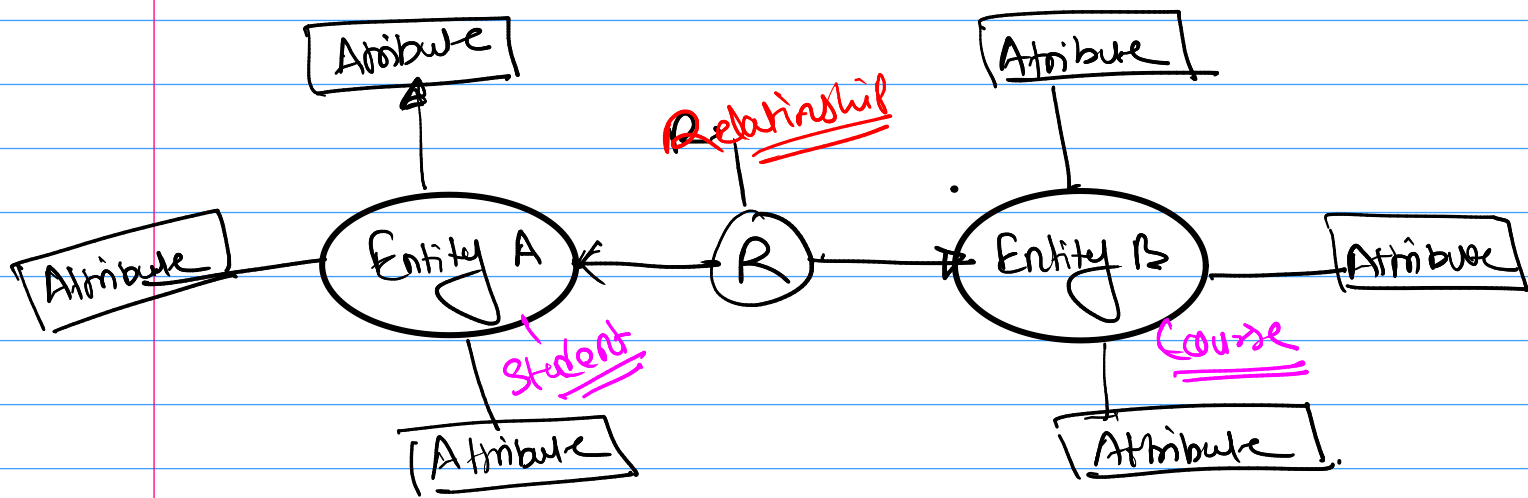
⑤ Schema :→ It refers to complete description or blueprint of the database.

⑥ Database :→ The storage space to store the entities.

———————×———————.

┌─────────────────────────┐
│ ① Network Model.   │
└─────────────────────────┘

┌──────────┐
│ Project │
└──────────┘

┌──────────┐   ┌──────────┐
│ Project 1 │   │ Project 2 │
└──────────┘   └──────────┘

┌────────────────┐ ┌────────────────┐ ┌────────────────┐
│ Department 1   │ │ Department 2   │ │ Department 3   │
└────────────────┘ └────────────────┘ └────────────────┘

2. ER-model → Entity Relationship Model.

Attribute
Attribute
Relationship
Entity A
R
Entity B
Attribute
Attribute
Student
Course
Attribute
Attribute

3. Hierarchical Model :-

Root (Parents)

Level 1 (child)   Level 1 (child)   Level 1 (child)

Level 2   Level 2   Level 2   L2   L2   L2   L2

L3   L3   L3

④ Relationship Model

Roll No	Name	DOB	Contact no	Fees
01				
02				
03				
04				

Row wise
Relationship

Library

Roll no	Name	Book
01		
02		
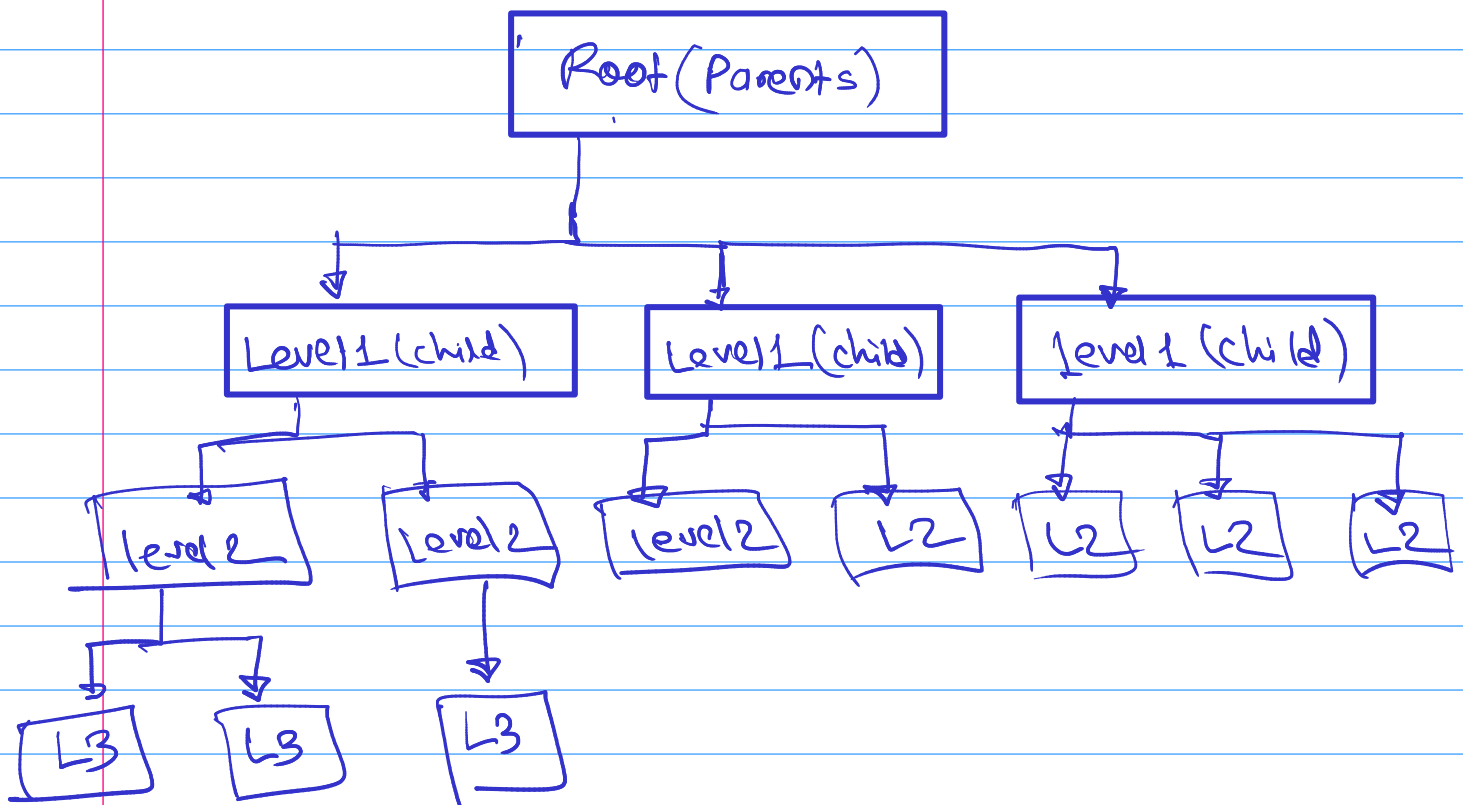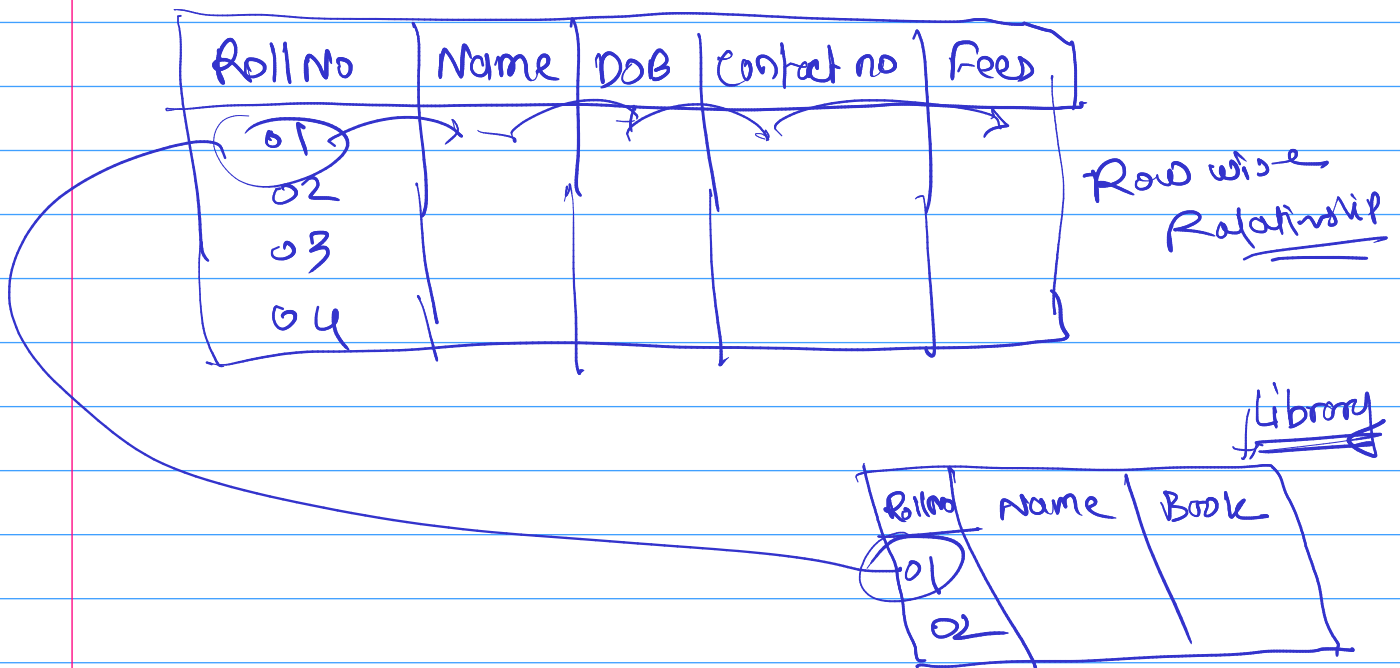
What is Database?
A database is like a digital warehouse where data is stored, organized, and managed efficiently. Database is a physical or digital storage system that implements a specific data model. Database is the actual implementation of that design, where the data is stored and managed.

Data :→ fact, piece of Information Store in the table or entity.

Queries :→

Queries are like search commands that allow users to extract specific data from the database. Users can search, filter, and sort data based on the criteria they specify. For example, a query can be used to find all customers who made a purchase in the last month

① **RDBMS** :→ Relational Data Base Management System.

↳ Relational Database Sperated data into rows & Columns and Table., & Tables relationship depends on keys.

- SQL - Structured Query Language.

- Oracle   - Microsoft SQL.

- MySQL -

② **NOSQL Database** :→ No relational database

dose not have rows & Columns . not using fix shema model.

= MongoDB   , Cassandra,

= Couchbase . .

③ Object Oriented Database :→ Store data in object form.

↳ ObjectDB   , db4o

—— Share Market

④ Time Series Database :→

↳ Influx DB