SQL

STRUCTURED QUERY LANGUAGE

1.) SQL is used to communicate with the database

DATA:

Data is an Rawfact which describes properties of an object (or) Entity

(or)
Attributes

"Properties" is nothing but an "Attributes" - Example : 1

"Entity" is different from "object" - Example : 2

Rawfact ⟶ Raw / fact

Raw → Irreplaceable

fact → Truth

Irreplaceable + Truth → unchanged

Example : 1

Laptop (object)	Properties		
	Processor	- i7	Values (or) data
	Ram	- 8 GB	
	GPU	- 8 GB	
	Mother board	- Asus G17	

Note : Here we used the word object to an laptop because it is an non-living things

Example : 2

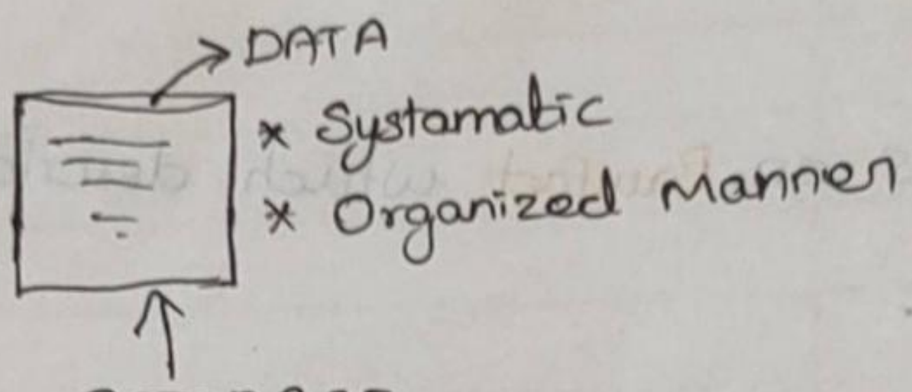
Student (Entity)	Properties		
	Name	- Siva	value or data
	Age	- 22	
	Height	- 7.1	
	Grender	- Male	

Note : Here we use the word "Entity" to an person because it is an living thing which is an physically present in the Universe

For Student the word Entity is must"

Database :

Database is a place (or) Medium which is used to store the data in Systamatic and Organized Manner



Example

i) Bikes parked in Random position

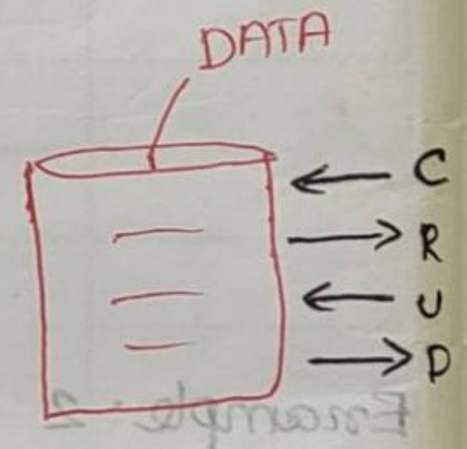

→ (Hard to Access)

ii) Bikes parked in systamatic and Organized


→ (Easy to Access)

CRUD Operation :

The basic operation that we perform on the database that is CRUD Operation



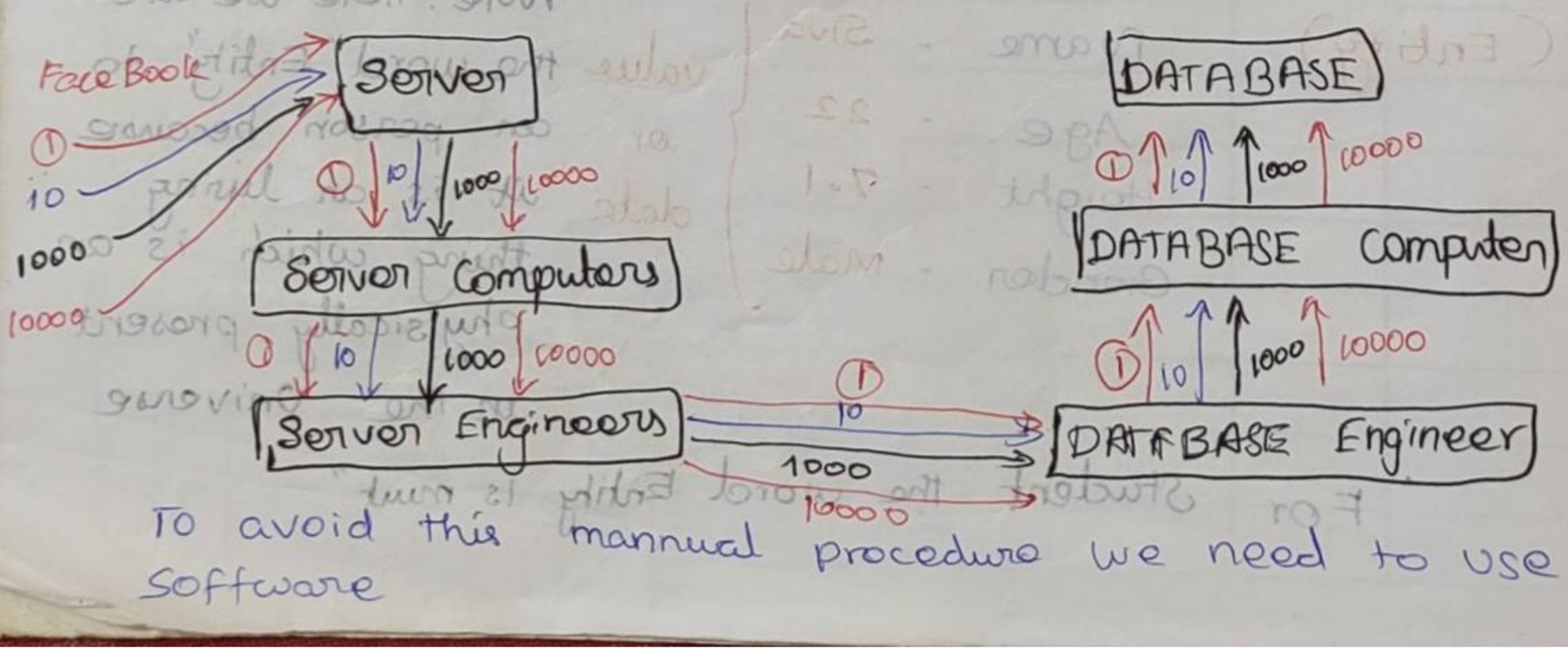
C → Create / Insert

R → Read / Retrieve

U → Update / Modify

D → Delete / Drop

Example :



To avoid this mannual procedure we need to use software

DBMS DATABASE MANAGEMENT SYSTEM

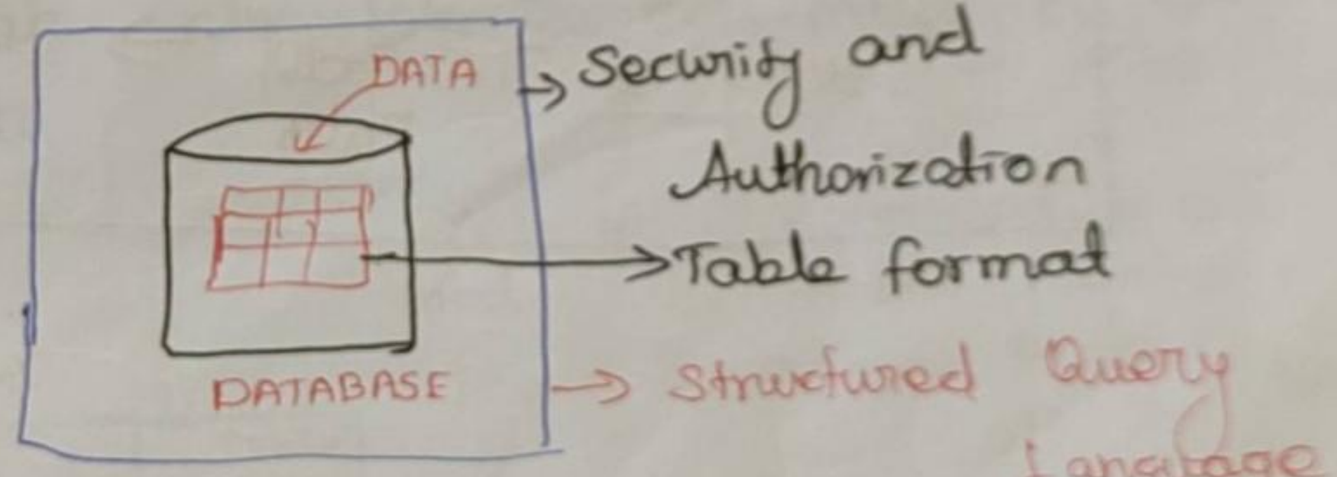
i) DBMS is a software which is used to maintain and manage the database

ii) DBMS Provide two main features
Security and Authorization

iii) we use Query Language to Communicate or Interact with DBMS

iv) DBMS store the DATA is File Formet

RDBMS RELATIONAL DATABASE MANAGEMENT SYSTEM



i) RDBMS is a type of DBMS software which is used to Maintain and Manage the database

ii) RDBMS provides two main feautures

i) Security

ii) Authorization

iii) We use Structured Query Language to Communicate (or) Interact with RDBMS

iv) RDBMS store the data is Table format.

Relational Model

1) It is used to store the data in the form of Rows and Column

2) Relational Model is designed by a Data Scientist called E.F codd (Edger Frank codd)

3) Any DBMS which follows relational model it becomes RDBMS

(DBMS → R.M → RDBMS)

(or)

(DBMS → E.F.Codd Rules → RDBMS)

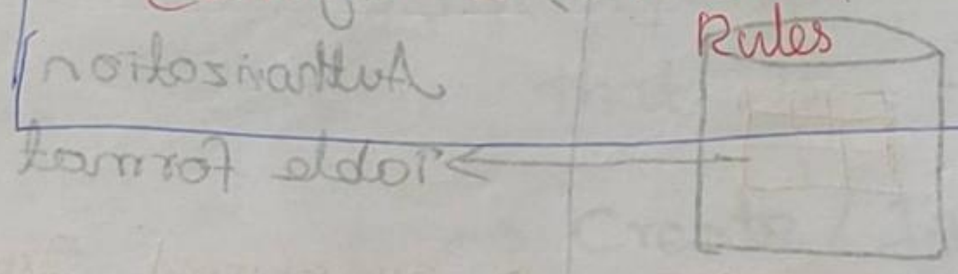


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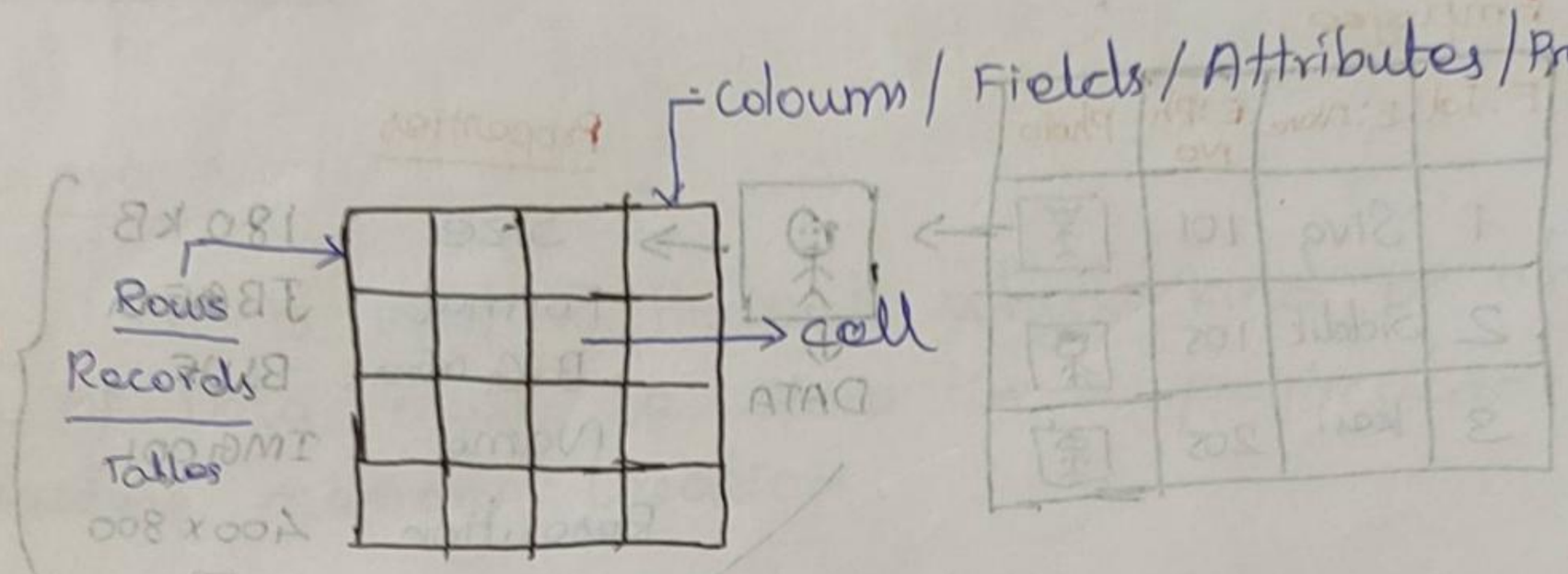
Table:

It is a logical organization of Rows and Colourns or It is a combination of Rows and Colourns.



CELL:

* It is the smallest unit of this table
* The intersection of Rows and Colourns will create a space, that space is known as CELL

Rules of EF Codd:

Rule 1.) The data Enter into the cell must be a Single value data

Example

Employe

E:Id	E: Name	E: Mobile number
1	Siva	101
2	Siddik	102,201
3	kasi	103,205

You will try to update or modify the mobile number It will be chance to loose all the multiple data.

To prevent the Data Base:

Employee

E:Id	E:Name	E mobile number	E Alternate mobile number
1	Sive	101	
2	siddik	201	102
3	kasi	205	103

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Rule 2: In RDBMS we stored everything in the form of Tables Including "META DATA"

Example:

Employee

E:Id	E:Name	E:Ph No	Photo
1	Siva	101	
2	Siddik	105	
3	kasi	205	

DATA

Properties

Size	180 kB
Format	JBEG
B.G Colour	BLUE
Name	IMG001
Resolution	400 x 800

META DATA

Details

META TABLE

Size	Format	BG	Name	Resolution
180	JBEG	BLUE	IMG001	400 x 800
190	JBEG	RED	IMG002	500 x 900
570	JBEG	White	IMG003	720 x 1080

→ METATABLE is Automatically Created.

METADATA:

The details of the table is known as METADATA

The Table consist of META DATA As known as METATABLE.

Rule:3:

According to EF codd we can Store the data in multiple Tables, If Necessary, we establish a connection between the tables with the help of Key Attribute.

Rule:4:

Data Enterd into table must be Validated in two steps

Step : 1 : BY ASSIGNING DATATYBES , -> Mandatory

Step : 2 : BY ASSIGNING CONSTRAINTS -> Not Mandatory (Optional)