Lecture :- 1 [Introduction to DBMS]

→ **Data:-** • These are the collection of raw, unorganized facts, observations, figures and symbols.

• Data doesn't have any meaning unless it is processed. It is of form of bits and bytes.

→ **Types of Data**

• Quantitative : (i) Numerical form, (ii) Weight, volume.

• Qualitative : (i) Descriptive, but not numerical
(ii) Name, gender, hair color.

→ **Information :**

• processed data, organized and structured form.
• It provides context of the data and enables decision making.

E.g. = We have collected the data of all the people living in our locality, When we analyze and interpret it, some insights are come below :-

1. There are "80" senior citizens.
2. The sex ratio "1:1"
3. New born babies are "50".

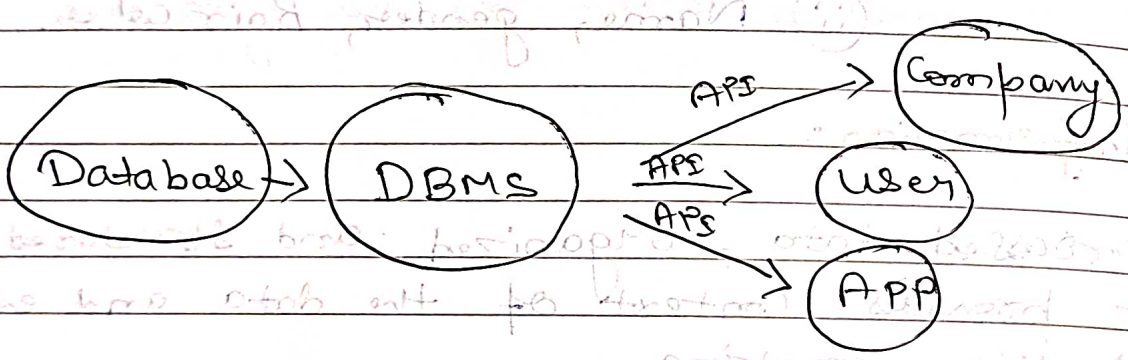
→ Database

- An electronic place/System where data is stored in a way that it can be easily accessed, managed and updated.
- To make use of data, we need DBMS.

→ DBMS

- A database-Management System is a collection of interrelated data and a set of program to access the data.
- It performs all the operations like addition, access, updating and deletion of the data.

→



→ DBMS vs File System

- File-System have given below major disadvantages:-

① Data redundancy and inconsistency:

:- Redundancy = duplicates which are not required.

inconsistency = not synchronized.

E.g. ⇒ Taking an example of an bank; where old file-system is use like manually making files & folders), it may be possible that for a same person two different files are there as after getting new features in the bank.

For any particular account many transactions are happening at the same time; inconsistency can be arise if the changes are not properly managed.

(2) Difficulty in accessing data:

For a very large data collection, it's very time taking procis to find particular file.

(3) Data isolation:
Data isolation means that a particular part of an project should be completed before any other person view or edit that part.
It's hard to do in a file-system.

(4) Integrity problem:
After every new feature comes in a company; it's very hard to manage it in the file-system to integrate.

(5) Atomicity problem:
There are some processes which are either fully completed or not completed but should never be in state of half-completed.

⑥ Concurrent - access anomalies :

Concurrent - access => a ability to read or write the same data by many users. It's very hard to implement this features in file - System.

⑦ Security problems :

There are some files which are confidential that need to hide from accessing by any common person.

→ All the 7 - major disadvantages of the file - System are the advantages of the "DBMS."