**I.**

DBMS

```
Data   Base   Management   System.
```

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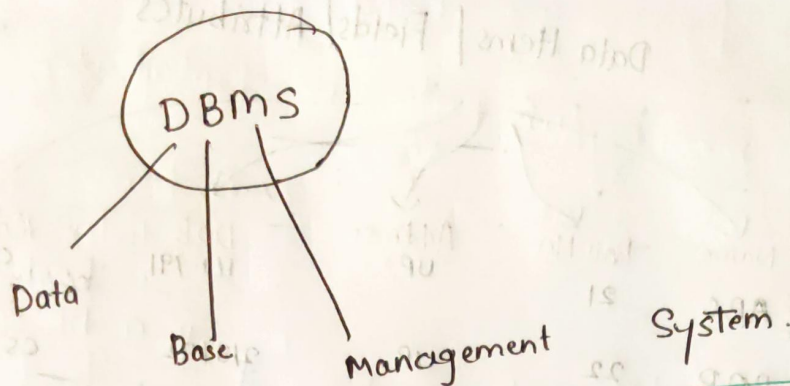**III**

Ch1.

1. Basic Concepts
2. Advantages of DBMS
   over file Processing
   System
   FPS

3. Data Abstraction
4. Database Languages
5. Data Independence
6. Components of DBMS
7. Overall Structure of
   DBMS
8. Three Views of Data
   External Views.
   Conceptual View
   Internal View

9. 3 Level Architecture of DBMS
10. Data Independence
11. Client Server Architecture

**II**

DataBase System Concept

Data Modeling.

Data Model

Relational Model

Relational DB Design

MYSQL / SQL

PL SQL

NO SQL

SECURITY

DataBase.

Data

**Data Items | Fields | Attributes**

| Name | Roll No | Address | DOB | Course Code |
|------|---------|---------|-----|-------------|
| | | UP | 1/1/91 | CS 2 |
| ABC | 21 | | | |
| | | UP | 2/3/92 | CS 3 |
| PQR | 22 | | | |
| | | MP | 4/4/95 | CS 5 |
| UVW | 23 | | | |
| | | Delhi | 8/9/98 | CS 6 |
| XYZ | 24 | | | |

Data Item

Fields

Records    ← Record

File

**Student File**

It is flat DB.

↓

which are
having
Single Table

2D array.

MySQL

FL

No SQL

SECURITY

(T₁)   (T₂)

(Relatable)
a common field or
**key field**.

Bit ← Binary Digit  0 or 1
byte → logical collection of Bits
      → logical collection of bytes
Data Item | field → logical collection of bytes
Record → Collection of Relevent fields
DB [ File ] → Collection of Similar Records.

# Uses of DBMS.

Banking ———→ transaction

✓ ticket Booking System

✓ E-commerce

✓ messangers

Any Type of Record System ——— Home KDA
House Tax.

Internet —— Web pages ——— wikipedia

Digital Maps

☑ taxual DB
☑ Multimedia DB
☑ Geographic Info System — ( google map )

Weather DB

Front End
GUI

Back End
Program Lan
s/w
+
DataBase
Ms

handling of Information

• Creation
• Modification
• deletion.

E-commerce
MEDICINE
LAW
LIBRARY SCIENCE

Gout. Sites.

Ex: Navik.
भू लेख

NIC

National Informatics
Center

MNC ☑ Decision making
☑ Analysation
☑ DataWareHouses ——— ( Google )
☑ OLAP [ Online Analytical Processing System ]

Real time
Active DB Technology.

Raw facts or figures are Data.

I " Collection of meaningful Data is Database "

Ex!

Index Address
Book
is a DB Record.

II " group of similar Records is DB "

which can be stored as a computer file on any secondary storage device or disk via specific file organization.

logical group of characters/bytes. are data.

Data →

Data Item → Smallest unit of Information in a DB.
Ex Name, Roll No Address etc.

Field → group of character that are pre defined in DB & which stores the value of any Data item.

Student is a entity.

'XYZ' named student is instance

RAJ

Name, Roll No, Address, DOB are Student entity's Attributes

**Record** : group of relatable fields or data Items.

**File** — group of similar Records.

" Data of the Database is managed by a general purpose software i.e called Data Base Management System. "

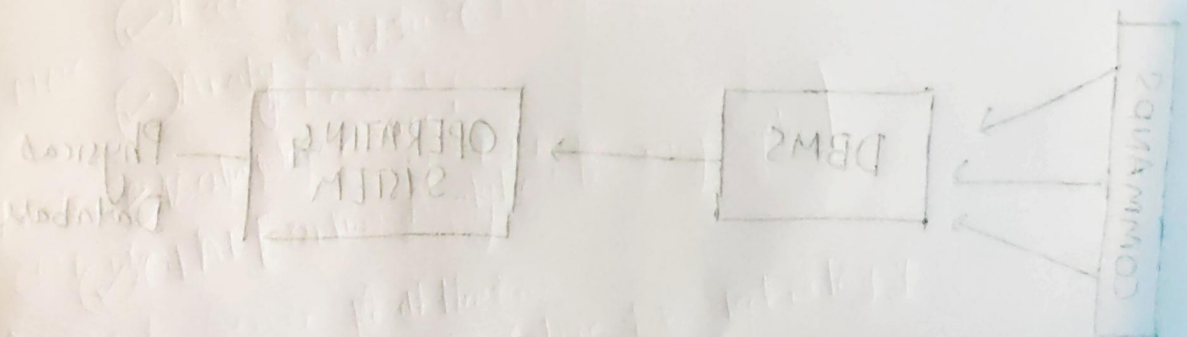Ex : dBase
FoxBase
FoxFro
Sybase
MS Access
Ingress
SQL Server
Oracle

## DBMS

66 Collection of various programs that allows
the user to <u>Create</u> or <u>Maintain</u> the
Database.??

and also It gives permission to the
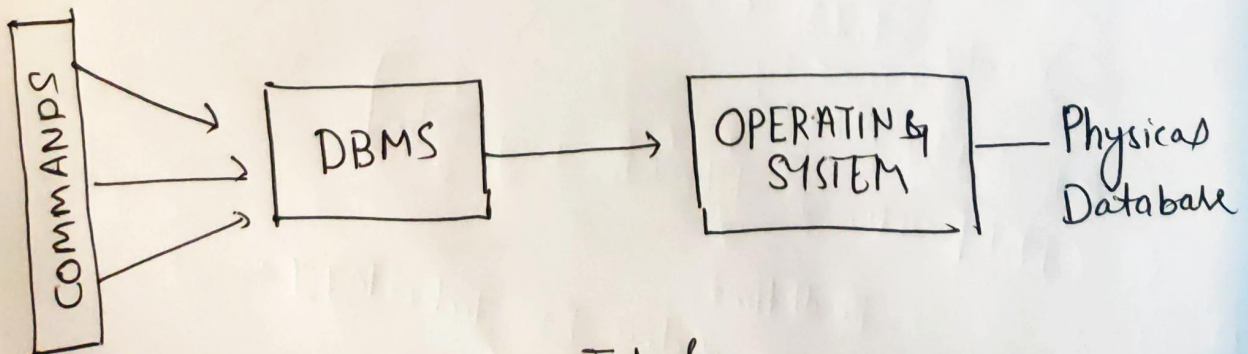user to <u>retrieve</u> the Data.

user can:

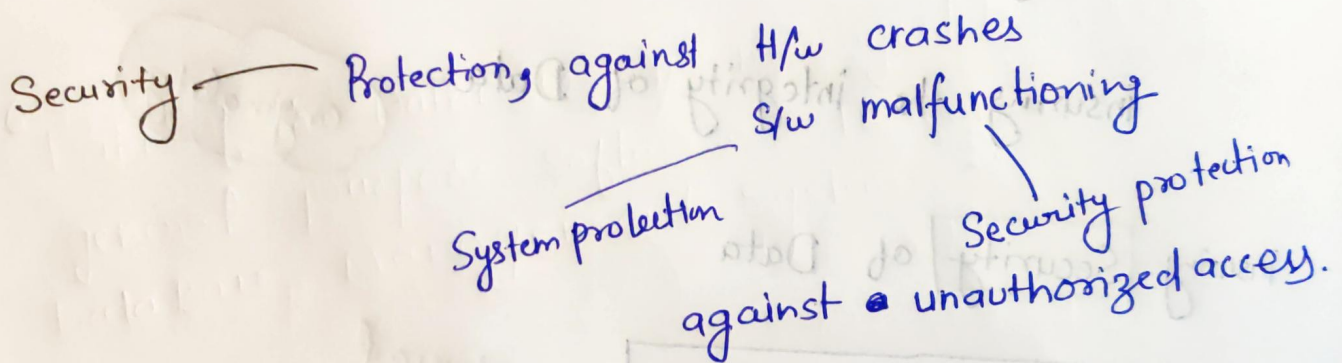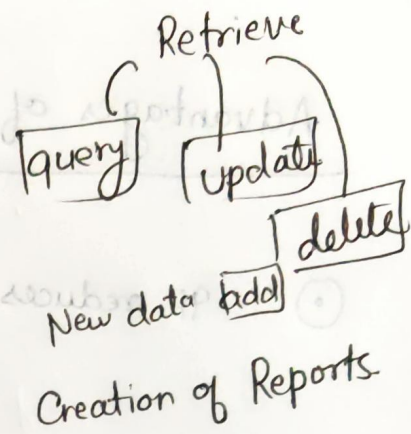✓ Create DB
✓ delete DB
✓ [ADD] [DELETE] [MODIFY] Data in DB

✓ extract data from the DB

{ define
{ Construct
{ Manipulate ___data



```
COMMANDS → DBMS → OPERATING SYSTEM ── Physical Database
```

DBMS an an Interface.

Retrieve

query | update |

delete

New data add

Creation of Reports

Security ——— Protection against H/w crashes
S/w malfunctioning

System protection | Security protection
against unauthorized accey.

## User of DBMS

DBA — who create modify maintain.

Programmer — who develop application Program and User Interface
for naive users / OneHw Users

OnLine User — can manipulate DB.

Naive User → who interacts with DB via any application
program.
↳ Ex ATM

# Advantages of DBMS

⊙ It reduces the | Data Redundancy |

→ Data Duplicacy.
End — inconsistancy.

Sharing of Data.

insuring the integrity of Data — (Originality)

insuring | Security | of Data

| Data Independence | → physical

— logical