**Day 6: 23 February 2025**

**Database :**

Programs : program is use to perform a specific task.

Input -🡪 initialization, taking value through keyboard using console or browser etc

Process 🡪 apply some logic

Output -> we display that data on console or browser.

If we want to store the data permanently we can use two approach

1. File base system
2. Database system

File base system

Using any language like java, python, node js, C or C++ we can store the data in file system.

Limitation of file base system

1. In file base system data can data redundancy(in file system we can store duplicate records)
2. Data inconsistency :
   1. Extension of the file.
   2. Format of the data inside a file

cid,cname,age

1,steven,25

1. Doing CRUD Operation : Create or insert, read, update and delete more complex.
2. Security : we can apply read or read/write mode security.

Data : raw fact.

Information : processed data or meaningful data.

Database : Storing the data in proper format using table. (Note : if database is SQL Database)

DBMS : Database Management system : it is a software which help to store the data in table format with help of row and columns.

Limitation of DBMS

1. It doesn’t allow to make relationship between two or more table. Means we need to store all information in single table.
2. We can store duplicate records.
3. Data integrity (means we can store invalidate data).

RDBMS : Relational database management system.

Trainer --🡪Table

PK 🡪 Primary key

PK

TID TName Course

1 Steven Python

2 Lex Node JS

Student -🡪Table

PK FK (Foreign key)

Sid SName age TID

100 Leena 23 1

101 Meeta 24 1

102 Keeta 25 2

105 Veena 26 null

RDBMS :

MySQL, Oracle, Db2, Sql Server, Postgres. These all are type of RDBMS databases.

MySQL is one of the type of RDBMS database. It is an open source database part of Oracle.

To interact with any RDMBS database we need to use SQL language

Structured Query Language. This language help use to interact with database to store, retrieve update and delete the data.

This language mainly divided into 5 sub types.

1. DDL (Data Definition language) : it is use to work with structure of a table.
   1. Create, drop, rename, truncate, alter etc.
2. DML (Data Manipulation language): we deal with data.
   1. Insert, delete, and update etc.
3. DRL (Data retrieval language) or DQL (Data Query language).
   1. The query start with select
4. TCL (Transaction control language)
   1. Commit, rollback and save point etc.
5. DCL (Data control language)
   1. Grant providing the permission and revoke remove the permission