Computer is a machine made of 2 major components

-> Hardware (physical components of a computer)

-> Software (set of programs used to automate a task)

Software classification

|

---------------------------------

| |

System software Application software

| |

---------------------- -------------------------

| | | |

O/S utilities Languages Packages

----- --------- --------- --------

windows, msdos Device drivers C C++ java MS office, tally

solaris, unix, a/v players python html photoshop, flash

linux, MAC anti-virus SQL Ruby R Oracle, SAP, maya

O/S : It control all activities of the computer

--> command interprettation

--> device management

--> memory management

-----------------------------------------------------------------------------------------

DBMS Concepts

DBMS stands for Data Base Management System

(It is a process of creating and maintain databases)

Data : Collection of raw facts and figures (alphabet, symbols and numbers)

Data is a value without any identity. It is also called as Raw Data.

Ex: 50, David, 10-jun-2020

Information : Data given with an identity is called Information.

Information is always meaningful.

Age=50, Emp\_name="David", Joining date="10-jun-2020"

DataBase : Information given in an organized format

It is also called as Table (combination of rows and columns)

These databases are of 2 types

--> Manual database

-is slow in processing

-suitable for small amount of data

-it occupies lot of space

--> Electronic database

-they are created and maintained using a software

-is fast in processing

-suitable for small or large quantities of data

-it occupies very less space

Database Management : The process of creating, adding, deleting, updating and searching data is called

database management. It is generally done using software

DBMS : The software used for database management is called DBMS package.

Ex: Dbase, foxbase, foxpro, sybase, oracle, MS sql server, mysql, mongo db, PostgrySQL

----------------------------------------------------------------------------------------------------

Data Models :

-------------

These are the various methods used to create and maintain data from olden times to the latest time

FMS : File Management System

Data is create and stored in a flat file (text file format)

Limitations:

- data is stored in a unsecured file

- data creating standards are not fixed

- data is accessed sequentially, so very slow in processing

DBMS : Database Management System

Advantages:

- data is stored in a secured login that is protected with username and password

- data creating standards are fixed. we use the datatypes for each column

- data is accessed sequentially or randomly, so very fast in processing

Types of DBMS:

--------------

HDBMS : Hierarchical Database Management System

This type of data is stored in the form of levels and sub levels

NDBMS : Network Database Management System

Data is created and stored in a network server.

So, it can be accessed from many client systems

RDBMS : Relational Database Management System

Data is created in different tables and these tables are linked by using

primary key - foreign key relation

Ex: In below example 'ccode' of courses table is related to 'course\_no' of students table

courses

ccode cname fees

101 oracle 5000

102 java 10000

103 aws 15000

students

idno stud\_name course\_no paid\_amt

1 ramu 101 1000

2 shyam 101 500

3 swamy 103 3000

4 raju 103 9000

ORDBMS: Object Relational Database Management System

OOPS features + RDBMS Features --> ORDBMS