**Assignment - APRIL 7**

**1.What is Computer Network?**

 computer network is a group of computers linked to each other that enables the computer to communicate with another computer and share their resources, data, and applications.

**2.Types of CN?**

* LAN(Local Area Network)
* PAN(Personal Area Network)
* MAN(Metropolitan Area Network)
* WAN(Wide Area Network)

**3.What is an IP address?**

An IP address is a unique address that identifies a device on the internet or a local network. IP stands for "Internet Protocol," which is the set of rules governing the format of data sent via the internet or local network.

**4.What is IPV4 and IPV6?**

IPv4 & IPv6 are **both IP addresses that are binary numbers**. IPv4 is a 32-bit binary number, and IPv6 is a 128-bit binary number address. IPv4 addresses are separated by periods, while IPv6 addresses are separated by colons. Both IP addresses are used to identify machines connected to a network.

**5.What are softwares?**

Software is a set of instructions, data or programs used to operate computers and execute specific tasks. It is the opposite of hardware, which describes the physical aspects of a computer.

**6.Different Types of Softwares?**

### \*Application Software

Application software is a software program or group of programs designed for end-users. There are many types of application software.

* Word Processing Software: Google Docs, Microsoft Word, WordPad and Notepad
* Database Software: MySQL, Microsoft SQL Server, Microsoft Access, Oracle, IBM DB2 and FoxPro
* Spreadsheet Software: Google Sheets, Apple Numbers and Microsoft Excel.

**\*System Software**

System software is designed to run a computer's hardware and provides a platform for applications to run on top of.

* Microsoft Windows
* MacOS (for Apple devices)
* GNU/Linux  
  **\*Firmware**

Firmware is software that’s stored on a computer’s motherboard or chipset.

Its job is to ensure the device works directly. When you switch on your laptop, the [Basic Input Output System (BIOS)](https://www.lifewire.com/bios-basic-input-output-system-2625820) wakes everything up.

### \*Programming Software

Programming software, also known as a programming tool or software development tool, is a program that assists software developers or programmers with creating, debugging and maintaining other programs and applications.

* GitHub
* GitLab
* Visual Studio Code
* Eclipse
* Notepad++

**Assignment - APRIL 8**

**1.What is a Database?**

A database is an organized collection of structured information, or data, typically stored electronically in a computer system. A database is usually controlled by a [database management system (DBMS)](https://www.oracle.com/in/database/what-is-database/" \l "WhatIsDBMS).

**2.What is DBMS?**

Database Management Systems (DBMS) are software systems used to store, retrieve, and run queries on data. A DBMS serves as an interface between an end-user and a database, allowing users to create, read, update, and delete data in the database.

DBMS manage the data, the database engine, and the database schema, allowing for data to be manipulated or extracted by users and other programs. This helps provide data security, data integrity, concurrency, and uniform data administration procedures

**3.Types of DBMS?**

### Distributed database management system

A distributed DBMS is a set of logically interrelated databases distributed over a network that is managed by a centralized database application. This type of DBMS synchronizes data periodically and ensures that any change to data is universally updated in the database.

### Hierarchical database management system

Hierarchical databases organize model data in a tree-like structure. Data storage is either a top-down or bottom-up format and is represented using a parent-child relationship.

### Network database management system

The network database model addresses the need for more complex relationships by allowing each child to have multiple parents. Entities are organized in a graph that can be accessed through several paths.

### Relational database management system

Relational database management systems (RDBMS) are the most popular data model because of its user-friendly interface. It is based on normalizing data in the rows and columns of the tables. This is a viable option when you need a data storage system that is scalable, flexible, and able to manage lots of information.

### Object-oriented database management system

Object-oriented models store data in objects instead of rows and columns. It is based on object-oriented programming (OOP) that allows objects to have members such as fields, properties, and methods.

**4.What is Client Server Architecture?**

Client/server architecture is a computing model in which multiple components work in strictly defined roles to communicate. The server hosts, delivers and manages most of the resources and services to be consumed by the client. This type of shared resources architecture has one or more client computers connected to a central server over a network or internet connection.

Client/server architecture is also known as a networking computing model or client/server network because all the requests and services are delivered over a network. It’s considered a form of distributed computing system because the components are doing their work independently of one another.