Java With DSA & System Design

Assignment Day – 01

Name- Rohit Dutta

Computer Basics Assignment 1

(1) What is a computer ?

A computer is an electronic device that is capable of performing a variety of tasks, including storing, retrieving, and processing data. It can also be used for communication, entertainment, and other purposes. A common example of a computer in everyday use is a desktop or laptop computer that is used for tasks such as browsing the internet, creating documents, and running software applications. Another example of a computer is a smartphone, which is also an electronic device that is capable of performing a variety of tasks such as browsing the internet, making phone calls, and running software applications.

(2) What is RAM ?

RAM (Random Access Memory) is a type of computer memory that is used to temporarily store data that is actively being used by the computer's operating system and applications.

It is called "random access" because any location in the memory can be accessed directly, rather than having to access the data in a linear or sequential order.

A real-life example of how RAM works would be a person trying to remember multiple phone numbers. In this example, the person's brain would act as the computer and the phone numbers would be stored in the person's short-term memory, similar to how data is stored in RAM. The person can easily recall any of the phone numbers they have stored in their short-term memory without having to go through all the numbers they have stored in order. However, the person's short-term memory is limited, just like RAM, so they can only remember a certain amount of phone numbers at a time.

Another example would be when you open multiple tabs on your web browser and you can easily switch between them without waiting for them to reload, that is due to the role of RAM in keeping the data of those tabs to make it available quickly.

(3) where is data stored in a computer?

Data in a computer is stored in various locations depending on its purpose and usage. Some common places where data is stored include:

Hard Drive: Also known as a hard disk, a hard drive is a non-volatile storage device that stores data permanently. It is used to store the operating system, software applications, and user data such as documents, photos, and videos.

Solid State Drive (SSD): An SSD is a newer type of storage device that uses flash memory to store data. It is faster and more reliable than a traditional hard drive. Some newer computers are using SSD as the primary storage device.

RAM: RAM (Random Access Memory) is a type of computer memory that is used to temporarily store data that is actively being used by the computer's operating system and applications. RAM is volatile memory, which means that it is wiped clean when the computer is turned off.

USB drive or External Hard drive: These are portable storage devices that can be connected to a computer via USB port to store data, they are useful when you want to take your data with you or to backup some important data.

(4) what is that input device used to type text and numbers a document in the computer system?

The input device used to type text and numbers into a document in a computer system is a keyboard. A keyboard is a peripheral device that is used to input text, numbers, and other characters into a computer. It has keys that correspond to letters, numbers, and special characters, which when pressed, sends a signal to the computer's operating system, which then interprets the signal and displays the corresponding character on the screen. Keyboards can also have additional function keys, multimedia keys, and programmable keys

that can perform different functions depending on the software being used.

(5) What are the output devices?

Output devices are devices that are used to display or output information from a computer system. Some common examples of output devices include:

Monitor: A monitor is a visual output device that displays text, images, and videos on a screen. It is connected to the computer via a cable, such as HDMI, VGA, or DisplayPort.

Printer: A printer is an output device that produces a hard copy of a document or image. There are several types of printers, including inkjet, laser, and thermal printers.

Speakers: Speakers are audio output devices that produce sound. They can be built-in to a computer or connected to the computer via a cable, such as USB or 3.5mm audio jack.

Headphones: Headphones are also audio output devices that produce sound. They are similar to speakers but are used for personal listening as they cover the ear and isolate the sound.

(6) What is the input device that allows a user to move the cursor or pointer on the screen?

The input device that allows a user to move the cursor or pointer on the screen is a mouse:

A mouse is a small, handheld device that is connected to a computer via a USB cable or wirelessly. It has one or more buttons that can be pressed to perform different actions, such as left-clicking and right-clicking.

(7) Which language is directly understood by the computer without a translation program?

The language that is directly understood by a computer without the need for a translation program is machine language or machine code.

Machine language is a set of binary instructions that a computer's central processing unit (CPU) can execute directly. It consists of a series of 0's and 1's, also known as binary digits, that represent different instructions or operations that the CPU can perform.

Machine language is the most basic programming language and it is specific to a particular type of computer or CPU architecture. It is not human-readable and is difficult for humans to write and understand, that's why higher-level programming languages like C, Python, Java and many others have been developed to make it easier for programmers to write and understand code.

(8) What are input devices?

Some common examples of input devices include:

Keyboard: A keyboard is a peripheral device that is used to input text, numbers, and other characters into a computer.

Mouse: A mouse is a small, handheld device that is connected to a computer via a USB cable or wirelessly. It has one or more buttons that can be pressed to perform different actions, such as left-clicking and right-clicking.

Touchpad: A touchpad is a flat surface that is integrated into laptops, the user can move their finger over the touchpad to move the cursor or pointer.

Trackball: A trackball is an input device that is used to move the cursor or pointer on the screen by rotating a ball with the fingers.

Scanner: A scanner is an input device that captures digital images of documents or photos and converts them into digital