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Assignment of A+ N+ Assignment

Module 1 (Hardware And Its Comonents

Topic: The Visible Computer

**Basic:**

1. What is Hardware?

Ans: Hardware is Collection of all parts you can physically touch.

1. What is the purpose of Hardware?

Ans: The purpose of hardware is to provide the physical components and device necessary for a computer for a computer system function

**Intermediate :**

1. list out two types of hardware.

Ans: Input and Output Device

Important input devices which are used in a computer:

i Keyboard

ii Mouse

iii Joy Stick

iv Light pen

Important Outputdevices which are used in a computer:

i Monitor

ii Printer

Advance:

1. What is Core Hardware?

Ans: Computer hardware system consists of different types of devices. Each device is connected directly or indirectly to the motherboard. These are classified into three basic categories:

1. Input/OutPut device

2. System Unit

3. Storage Unit

Description Input/Output Devices:

User enters the commands and data through the keyboard or mouse, these data are translated into a form that computer can process. After processing the data, output devices converts it into human understandable format. Commonly used input/output devices are keyboard, mouse, monitor and printer.

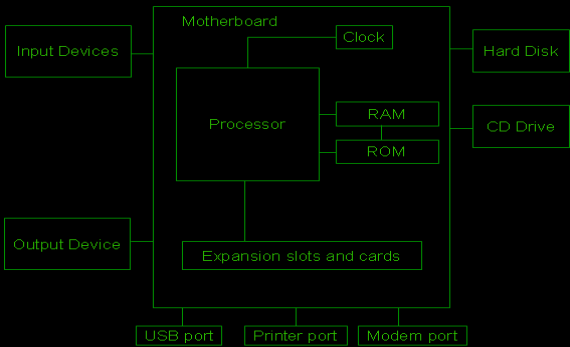
System Unit:

Also called as system cabinet contains the most of the electronic components that make up a computer system. Important component is processor, which controls and manipulates data to produce information. Clock is used to synchronize the whole circuitry of the system. RAM (Random Access Memory) use to store temporarily data to read or write data onto the disk/memory. ROM (Read Only Memory) contains permanently stored programs such as monitor programs. Expansion slots are available on motherboard to enhance computer system by using graphics cards, sound cards, TV tuner card etc. Ports are connecting sockets on the system unit like monitor port, printer port, USB port, RJ45 port and audio port.

Storage Unit:

Attached hard disk inside the cabinet is mainly used as storage device, as it can store more data and faster than CD drive. But still CD (Compact disc) and DVD (Digital Video Disc) are used to store and transfer data from one pc to another

Q.2 Do a practical of identifying hardware.

Ans: 

Topic: Category of components

**Basic:**

Q.1 What are the category of components in hardware?

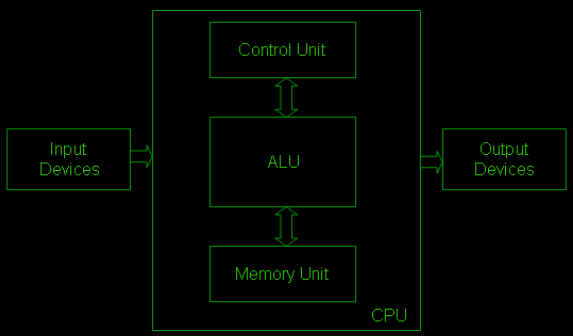
Ans: Hardware Devices:

Keyboard, Mouse, Monitor, Printer, Ram, Rom, Graphic Card, CD, DVD

Intermediate

1. Do a practical to identify the components in which category they come

Ans:



Topic : Input Device

• Assignment Level Basic

1. What is input device?

Ans. User enters the commands and data through the keyboard or mouse, these data are translated into a form that computer can process. After processing the data, output devices converts it into human understandable format.

Commonly used input/output devices are keyboard, mouse, monitor and printer

1. Why input device needed?

Ans. Input devices are essential components of computer hardware because they enable users to interact with and provide information to the computer system. These device serves as the means for users to input data, commands ,and other information into the computer .

• Assignment Level Intermediate

1. List out the input device.

Ans: Input and Output Device Following are few of the important input devices which are used in a computer:

• Keyboard

• Mouse

• Joy Stick

• Light pen

• Track Ball

Topic: Output Device

• Assignment Level Basic

1. What are output device?

Ans: An output device is any piece of computer hardware that converts information or data into a form that can be perceived by humans or other devices. For example, a monitor is an output device that displays text, graphics, and videos on a screen. A printer is an output device that produces a hard copy of the information on paper. A speaker is an output device that plays sound or music.

2. how does output device work?

Ans: An output device works by receiving a signal from the computer and using that signal to perform a task to display the output. For example, if you type “H” on your keyboard, which is an input device, the keyboard sends a signal to the computer. The computer processes the input and sends a signal to the monitor, which is an output device.

• Assignment Level Intermediate

1. List out the output device.

Ans:

• Scanner

• Graphic Tablet

• Microphone

• Magnetic Ink Card Reader(MICR)

• Optical Character Reader(OCR)

• Bar Code Reader

• Optical Mark Reader(OMR)

Topic: Motherboard

• Assignment Level Basic

1. What is motherboard?

Ans: A motherboard is the main circuit board that connects and allows communication between the different components of a computer or other electronic device. It contains the CPU (central processing unit), the memory, and various connectors for peripherals such as keyboard, mouse, monitor, printer, etc. The motherboard also controls the power supply and regulates the voltage and current of the system.

2. Why it is called motherboard?

Ans: The term “motherboard” is used to refer to the main circuit board of a computer because it is the central hub that connects and communicates with all the other components of the system, much like a mother is the central figure in a family.

• Assignment Level Intermediate

1. What it is called if we remove all components from the motherboard?

Ans: If you remove all components from the motherboard, you will end up with a bare motherboard, which is just a circuit board with no functional parts attached to it. A bare motherboard is usually not useful for anything, unless you want to use it as a decoration, a coaster, or a frisbee.

2. Describe types of motherboard

Ans : There are different types and sizes of motherboards, depending on the design and purpose of the device. For example, a desktop computer may have a large motherboard with multiple expansion slots and ports, while a laptop or smartphone may have a smaller and simpler motherboard with fewer features. Each motherboard is designed to work with specific types of processors and memory, so they are not compatible with every device. Some common motherboard form factors are ATX, microATX, mini-ITX, and E-ATX .

Topic: CPU

• Assignment Level Basic

1. What is CPU.

Ans: CPU is short for Central Processing Unit. It is also known as a processor or microporcessor.

It's one of the most important pieces of hardware in any digital computing system

2. Write the full form of CPU.

Ans. Full form of CPU is Control Processing Unit.

• Assignment Level Intermediate

1. What are the types of CPU?

Ans: There are multiple versions for some of these CPU types.

1. AMD processors
2. Intel processors
3. What do we need to keep the CPU Healthy?

Ans: 1) Keep your computer clean

2) Keep your computer cool

3) Keep your computer up to date

4) Use antivirus program

Topic: Monitor

• Assignment Level Basic

1. What is Monitor?

Ans: A monitor is a piece of computer hardware that display the video and graphics information generated by a connected computer through the computer’s video card.

• Assignment Level Intermediate

1. List out the types of monitor.

Ans: 1) Cathode Ray Tube

2) LED

3) LCD

1. What are the Technologies used in monitor.

Ans: 1) Cathod-Ray tube.

2) Liquid-crystel display

3) Organic light-emitting diode.

• Assignment Level Advance

1. Describe how does the crt monitor works.

Ans: CRTs are lit using Electron Beams

The CRT in a TV is a glass vaccum tube . the inner suface of the screen is coated with tiny phosphor dots that emit light in the three primary colors . these Phosphor dots glow when struck by an electron beam,resulting in the image we see on screen.

Topic : Memory

• Assignment Level Basic

1. What is memory?

Ans: Memory in computer is the storage space where data and instructions are stored temporarily or permanently. There are different types of memory in computer, such as primary memory, secondary memory, and cache memory. Primary memory is the main memory of the computer, where data and programs are loaded for processing. Secondary memory is the external storage device, such as hard disk, flash drive, or CD-ROM, where data and programs are stored permanently or for backup. Cache memory is a small and fast memory that stores frequently used data and instructions for faster access by the processor.

2. What are the types of memory?

Ans: Memory is primarily of three types

1. Cache Memory
2. Primary Memory/Main Memory
3. Secondary Memory

• Assignment Level Intermediate

1. Describe memory in detail.

Ans: RAM and ROM

RAM(Random Access Memory) is the internal memory of the CPU for storing data, program and program result. It is read/write memory which stores data until the machine is working. As soon as the machine is switched off, data is erased.

RAM is of two types

1. Static RAM (SRAM)
2. Dynamic RAM (DRAM)

ROM stands for Read Only Memory. The memory from which we can only read but cannot write on it. This type of memory is non-volatile. The information is stored permanently in such memories during manufacture. A ROM, stores such instructions that are required to start a computer. This operation is referred to as bootstrap. ROM chips are not only used in the computer but also in other electronic items like washing machine and microwave oven. Following are the various types of ROM

Topic: System Unit

• Assignment Level Basic

1. What is System Unit?

Ans: System Unit: Also called as system cabinet contains the most of the electronic components that make up a computer system. Important component is processor, which controls and manipulates data to produce information.

• Assignment Level Intermediate

1. How does system unit work?

Ans: RAM (Random Access Memory) use to store temporarily data to read or write data onto the disk/memory. ROM (Read Only Memory) contains permanently stored programs such as monitor programs. Expansion slots are available on motherboard to enhance computer system by using graphics cards, sound cards, TV tuner card etc. Ports are connecting sockets on the system unit like monitor port, printer port, USB port, RJ45 port and audio port.

1. What are the components and system units?

Ans: The components and system units are the parts of a computer that work together to perform various tasks. The system unit is the case that contains the main components of the computer, such as the motherboard, CPU, RAM, hard disk, power supply, etc. The components of the system unit are connected to the motherboard, which is the main circuit board of the computer. The motherboard has slots and sockets for attaching other components, such as the CPU, RAM, video card, sound card, etc. The motherboard also has ports for connecting external devices, such as the keyboard, mouse, monitor, printer, etc.

Some of the main components of the system unit are:

* CPU or Processor: This is the hardware component that executes the instructions of the computer programs. It is also called the brain of the computer. The CPU has two parts: the control unit and the arithmetic logic unit. The control unit fetches and decodes the instructions from the memory, while the arithmetic logic unit performs the calculations and logical operations. The speed of the CPU is measured in megahertz (MHz) or gigahertz (GHz).
* RAM or Random Access Memory: This is the main memory of the computer, where the data and programs are temporarily stored. The RAM is volatile, which means it loses its contents when the power is turned off. The RAM allows the CPU to access the data randomly, which means in any order. The more RAM a computer has, the faster it can run multiple programs at the same time. The capacity of the RAM is measured in megabytes (MB) or gigabytes (GB).
* Hard Disk or Hard Drive: This is the permanent storage device of the computer, where the data and programs are permanently stored. The hard disk is non-volatile, which means it retains its contents even when the power is turned off. The hard disk has one or more platters that spin at high speed, and a read/write head that moves across the platters to read or write the data. The capacity of the hard disk is measured in gigabytes (GB) or terabytes (TB).

Topic: BIOS

• Assignment Level Basic

1. What is bios.

Ans: BIOS (basic input/output system) is the program a personal computer'smicroprocessor uses to get the computer system started after you turn it on. It also manages data flow between the computer's operating system and attached devices such as the hard disk, video adapter, keyboard, mouse and printer

• Assignment Level Intermediate

1. What is the full form of bios

Ans: Basic Input Output System.

2.Describe working process of BIOS

Ans: As with any software, your computer or motherboard manufacturer periodicallyupdates the BIOS to fix bugs, add compatibility with new devices, improve caching functions, and make several other hardware tweaks that can speed up your boot time and fix annoying issues

Topic: SMPS

• Assignment Level Basic

1. What is SMPS?

Ans: The switched mode power supply too converts the available unregulated ac or dc input voltage to a regulated dc output voltage. However in case of SMPS with input supply drawn from the ac mains, the input voltage is first rectified and filtered using a capacitor at the rectifier output.

1. What is the process of SMPS?

Ans: • To convert analog current to direct current using rectifiers and vice-versa using invertors. Similarly AC-AC using frequency changer and DC-DC using convertors.

• To step up or step down unregulated dc input voltage to produce regulated dc output voltage.

• To inverting and producing multiple dc output voltage for required parts using various converter.

• Protection from short circuit and over load

• Assignment Level Intermediate

1. How many sata connectors are there in normal smps?

Ans: The 4 pin connector and connect a 10 Ohms 10 Watt resistor across the yellow (+ 12V) and black (Gnd) pins of the connector.

• Assignment Level Advance

1. How many pins does atx power connector have?

Ans: The ATX power connector have 24 pins.

Topic: RAM

• Assignment Level Basic

1. What is RAM?

Ans: RAM(Random Access Memory) is the internal memory of the CPU for storing data, program and program result. It is read/write memory which stores data until the machine is working. As soon as the machine is switched off, data is erased.

1. What is the full form of RAM?

Ans: Full form of RAM is Random Access Memory.

• Assignment Level Intermediate

1. What are the types of ram?

Ans: RAM is of two types

• Static RAM (SRAM)

• Dynamic RAM (DRAM)

Topic: Device and cable

• Assignment Level Basic

1. What are the types of devices?

Ans: There are two types of Device:

1. Input Device.
2. Output Device.
3. What are the types of cable?

Ans: 1) Twisted Pair cables

2) Coaxial cables

3) Optical fiber cables

4) Power cables

5) Ribbon cables

• Assignment Level Intermediate

1. What cables are used to connect printer?

Ans: There are various cables which can be connect to computer:

1. USB Cable
2. Ethernet Cable
3. Parallel Cable
4. Wireless Connection
5. What was the first cable founded by Apple for data transfer?

Ans: The cable developed by apple for data transfer was “Apple Desktop Bus”

Topic: Expansion card and slots

• Assignment Level Basic

1. Why expansion card needed?

Ans: Expansion cards are printed circuit boards that can be inserted into an electrical connector or expansion slot on a computer’s motherboard to add functionality to a computer system.

2. Why expansion slots needed?

Ans: A slot is also a connection used with computers that can either describe a CPU slot or an expansion. Today, CPU sockets are used instead of CPU slots, but expansion slots are still used to connect expansion cards to the computer

• Assignment Level Intermediate

1. What are the types of expansion card?

Ans: There are 6 types of expansion card:

1. Graphics card
2. Sound card
3. Network interface card
4. Tv tuner card
5. Video capture card
6. Interface card

• Assignment Level Intermediate

1. What is I/O ports?

Ans: Input/Output (I/O) ports are connection points that act as an interface between a computer and external devices like printers, modems, and more . There are two types of I/O ports: internal and external . Internal ports connect the system’s motherboard to internal devices like hard disks, CD drives, and internal Bluetooth, while external ports connect the system’s motherboard to external devices like a mouse, printer, USB, and more .

1. List out the I/O ports available.

Ans:

Serial Port

• Used for external modems and older computer mouse

• Two versions : 9 pin, 25 pin model • Data travels at 115 kilobits per second

Parallel Port

• Used for scanners and printers Networking • Also called printer port

• 25 pin model

• Also known as IEEE 1284-compliant Centronics

port PS/2 Port

• Used for old computer keyboard and mouse

• Also called mouse port

• Most of the old computers provide two PS/2 port, each for mouse and keyboard • Also known as IEEE 1284-compliant Centronics port

Universal Serial Bus (or USB) Port

• It can connect all kinds of external USB devices such as external hard disk, printer, scanner, mouse, keyboard etc.

• It was introduced in 1997.

• Most of the computers provide two USB ports as minimum.

• Data travels at 12 megabits per seconds

• USB compliant devices can get power from a USB port

VGA Port

• Connects monitor to a computer's video card.

• Has 15 holes.

• Similar to serial port connector but serial port connector has pins, it has holes.

Power Connector

• Three-pronged plug

• Connects to the computer's power cable that plugs into a power bar or wall socket

Firewire Port

• Transfers large amount of data at very fast speed.

• Connects camcorders and video equipment’s to the computer

• Data travels at 400 to 800 megabits per seconds • Invented by Apple

• Three variants : 4-Pin FireWire 400 connector, 6-Pin FireWire 400 connector and 9-Pin FireWire 800 connector

Modem Port

• Connects a PC's modem to the telephone network Ethernet Port

• Connects to a network and high speed Internet.

• Connect network cable to a computer. • This port resides on an Ethernet Card.

• Data travels at 10 megabits to 1000 megabits per seconds depending upon the network bandwidth.

Game Port

• Connect a joystick to a PC

• Now replaced by USB. Digital Video Interface, DVI port

Topic: Laptop & storage

• Assignment Level Basic

1. What is laptop?

Ans:

2. Why laptop is used widely now a days?

• Assignment Level Intermediate

1. Describe the working process of laptop?

Ans: A laptop is a type of personal computer that is portable and designed for mobile use.

2. What is storage?

Ans: Storage is a mechanism that enables a computer to retain data, either temporarily or permanently.

1. List out the types of storage.

Ans: There are two types of Storage:

1. Volatile Storage

2) Non-volatile Storage

Topic: Printer

• Assignment Level Basic

1. What is printer?

Ans: A printer is an external hardware output device that takes the electronic data stored on a computer or other device and generates a hard copy.

2. Why is printer needed?

Ans: 1) Convenience.

1. Cost-Effective.
2. Accessbillity.
3. Customization.
4. Hard Copy.

• Assignment Level Intermediate

1. Describe the working process of printer.

Ans: The working process of a printer depends on the type of printer. However, most printers work by converting digital data into a physical copy. The data is sent to the printer from a computer or other device and is then recreated on paper using a series of minuscule dots .

Inkjet printers work by spraying tiny droplets of ink onto paper to create an image or text . Laser printers, on the other hand, use toner to create an image or text on paper . Dot matrix printers use a series of pins to create an image or text on paper . They are generally slower and less efficient than inkjet or laser printers but are suitable for printing multipart forms . 3D printers are a type of printer that can create three-dimensional objects by adding layers of material on top of each other ⁴.

2. What are the types of printer ?

Ans: 1) Inkjet Printers

2) Laser Printers

3) Dot matrix printers

4) 3D printers

5) Photo printers

6) All in one printers

7) Large Format printers

Topic: ATA

• Assignment Level Intermediate

1. What is ATA?

Ans: In the context of computers, ATA stands for Advanced Technology Attachment. It is an interface that connects hard drives, CD-ROM drives, and other drives to a computer.

• Assignment Level intermediate

1. Describe working of ATA.

Ans: The ATA standard is backward compatible, which means new ATA drives (excluding SATA) can be used with older ATA interfaces. Additionally, any new feature introduced is in all future releases. For example, ATA-4 has support for PIO (programmed input/output) modes 0, 1, 2, 3, and 4, even though these were introduced in ATA-1 and ATA-2.

Below is a listing of each ATA standard to help provide a better understanding of the history behind this interface and each standards capability.

Topic: SATA •

Assignment Level Basic

1.What is SATA?

Ans: SATA stands for Serial Advanced Technology Attachment. It is a computer bus interface that connects host bus adapters to mass storage devices such as hard disk drives, optical drives, and solid-state drives .

Assignment Level Advance

1. Describe the working of SATA.

Ans: SATA has several advantages over PATA, such as reduced cable size and cost (seven conductors instead of 40 or 80), native hot swapping, faster data transfer through higher signaling rates, and more efficient transfer through an optional I/O queuing protocol 21. SATA host adapters and devices communicate via a high-speed serial cable over two pairs of conductors .

1. Where does SATA is used.

Ans: SATA is used to connect storage devices such as hard disk drives, solid-state drives, and optical drives to a computer’s motherboard .

Topic: SCSI •

Assignment Basic

1. What is SCSI?

Ans: SCSI stands for Small Computer System Interface. It is a set of standards for physically connecting and transferring data between computers and peripheral devices, best known for its use with storage devices such as hard disk drives .

1. WHy SCSI needed?

Ans: For Defining commands ,protocol,electrical,optical and logical interfaces. The SCSI needed in situation where high -speed data transfer is required such as in servers and high-end workstations.

• Assignment level Intermediate:

1. What is the rpm of SCSI?

Ans: