Hardware Networking

TERM-1 Comptia A+ N+ Assignment

Module 1 [Hardware and its components]

Topic: The Visible Computer

- **Assignment Level Basic**
  1. **What is hardware?**
     Hardware is the physical computer equipment. This includes add ons like cables, flash memory, LEDs, floppies, CD-ROMs etc. If you can touch it, it's hardware.
  2. **What is the purpose of Hardware?**
     Without any hardware, your computer would not exist, and software could not be used.

- **Assignment Level Intermediate**
  1. **list out two types of hardware.**
     Keyboard and Mouse

The keyboard is helping foe type any things in side the computer

And the mouse is using for open any things like touch.

- ## Assignment Level Advance
  1. What is core hardware

     The Motherboard, CPU, and the Core Processer
  2. Do a practical of identifying hardware

     Yes

Topic: Category of components

- ## Assignment Level Basic
  1. What are the category of components in hardware?

     There are Four Categories of Computer Hardware

     Input devices, Processing devices, Output devices and Storage devices.
  2. Why category is needed?

- ## Assignment Level Intermediate
  1. Do a practical to identify the components in which category they come.

     Yes

Topic: Input Device

- ## Assignment Level Basic
  1. What is input device?

     Keyboard and Mouse
  2. Why input device needed?

     An input device is any hardware device that sends data to a computer, allowing you to interact with and control it. The picture shows a Logitech trackball mouse, which is an example of an input device.

- ## Assignment Level Intermediate
  1. List out the input device.
  2. Do a practical to identify input device and describe how it works.

     Yes

Topic: Output Device

- ## Assignment Level Basic
  1. ### What are output device?
     3D Printer, Monitor, Braille reader, COM, GPS And Headphone etc.

  2. ### how does output device work?
     The output device works by receiving a signal from the computer and using that signal to perform a task to display the output.

- ## Assignment Level Intermediate
  1. ### List out the output device.
     Monitor Screens, Printers, Plotters And Projectors.
  2. ### Do a practical to identify the output device and describe its working process.
     Yes

Topic: Motherboard

- ## Assignment Level Basic
  1. ### What is motherboard?
     A motherboard is the main printed circuit board. It holds and allows communication between many of the crucial electronic components of a system, such as the central processing unit.

  2. ### Why it is called motherboard?
     A motherboard is the main printed circuit board (PCB) found in general purpose microcomputers and other expandable systems. It holds and allows communication between many of the crucial electronic components of a system, such as the central processing unit (CPU) and memory and provides connectors for other peripherals.

- ## Assignment Level Intermediate
  1. ### What it is called if we remove all components from the motherboard?
     Motherbord
  2. ### Describe types of motherboard.
     There are 6 Different Types of Motherboards.
     1. AT Motherboard 2. ATX Motherboard 3. LPX Motherboard 4. BTX Motherboard 5. Pico BTX Motherboard 6. Mini TX Motherboard.

- ## Assignments level Advance:
  1. ### Do a practical by identifying parts of motherboard.
     Yes
  2. ### Do a practical by describing the data flow in motherboard
     Yes
  3. ### Do a practical by removing all removable parts from the motherboard.
     Yes

Topic: CPU

- ## Assignment Level Basic

  1. What is CPU.

     Alternately referred to as a processor, central processor, or microprocessor, the CPU is the central processing unit of the computer. A computer's CPU handles all instructions it receives from hardware and software running on the computer.

  2. Write the full form of CPU.

     central processing unit

- ## Assignment Level Intermediate

  1. What are the types of CPU?

     There are 6 type of CPU

     Single-core CPU, Dual-core CPU, Quad-core CPU, Hexa Core processors, Octa-core processors
      and Deca-core processor

  2. What do we need to keep the CPU Healthy?

     There are 9 trips for mention CPU Healthy

     1. Watch your surroundings, 2. Avoid any obstructions, 3. Clean the ventilation,
      4. Watch out for liquids, 5. Handle cords carefully, 6. Label your power adapters,
      7. Dispose of batteries properly, 8. Protect from malware, 9. Keep your boxes

- ## Assignment Level Advance

  1. Do a practical to remove processor and apply thermal paste in it and install it again.

     Yes

  2. Do a practical to Identify CPU and its Sockets.

     Yes

Topic: Monitor

- ## Assignment Level Basic

  1. What is Monitor?

     Alternatively referred to as a VDT and VDU. A monitor is an output device that displays video images and text. A monitor is made up of circuitry, a screen, a power supply, buttons to adjust screen settings, and casing that holds all of these components.

- ## Assignment Level Intermediate

  1. List out the types of monitor.

     There are 8 type of monitor

     LCD Monitor, CRT Monitor, TFT Monitor, LED Monitor, DLP Monitor, Touchscreens Monitor,
      Plasma Screen Monitor, And OLED Monitor

  2. Do a practical to identify monitor Technology.

Yes

3. What are the Technologies used in monitor.

Most desktop displays use liquid crystal display (LCD) or cathode ray tube (CRT) technology, while nearly all portable computing devices such as laptops incorporate LCD technology.

- ## Assignment Level Advance

  1. Describe how does the crt monitor works.

  The CRT monitor contains millions of tiny red, green, and blue phosphor dots that glow when struck by an electron beam that travels across the screen to create a visible image. The illustration below shows how this works inside a CRT.

Topic: system bus

- ## Assignment Level Basic

  1. What is system bus

  The system bus is a single computer bus that connects the major components of a computer system, combining the functions of a data bus to carry information, an address bus to determine where it should be sent, and a control bus to determine its operation.

- ## Assignment Level Intermediate

  1. List out the types of system bus.

  Mainly, Computer's BUS can be divided into two types : Internal Bus External Bus

  2. Describe the working of system bus.

  The bus provides a communication path for the data and control signals moving between the major components of the computer system.

  3. Do a practical to identify the system bus.

  Yes

Topic: Chipset

- ## Assignment Level Basic

  1. What is chipset

  A chipset is a set of electronic components on an integrated circuit that manages the transfer of data

between the CPU, RAM, storage, and I/O devices.

- ## Assignment Level Intermediate
  1. What are the types of chipset?

     There Are 2 type of chips

     NVIDIA and ATI
  2. Which chipset does have direct contact with the CPU.

     North Bridge Chipset does have direct contact with CPU.
  3. Do a practical to identify the chipset

     Yes

- ## Assignment Level Advance
  1. Describe how does the Northbridge chipset work
     A motherboard has a two chipest i.e., Northbridge and Southridge. The northbridge chipset is placed on Northen side of motherboard whereas Southbridge is place south side on the motherboard that's why its called a Southbridge and it is not directly connect with CPU.

Topic:Memory

- ## Assignment Level Basic

  1. What is memory?

     Computer memory is any physical device capable of storing information temporarily, like RAM, or permanently, like ROM.
  2. What are the types of memory?

     There are 8 type of memory

     SRAM, DRAM, Masked ROM, PROM, EPROM, EEPROM, flash memory, and NVRAM

- ## Assignment Level Intermediate
  1. Describe memory in detail.
     In the computer system the devices used for store the data is known as Memory System. The data and instruction before processing i.e., going to the CPU is stored in the Memory.
  2. What are memory types.

     SRAM, DRAM, Masked ROM, PROM, EPROM, EEPROM, flash memory, and NVRAM

- ## Assignment Level Advance
  1. Do a practical to identify memory types.

     Yas
  2. Do a practical to install memories in system

     Yes
  3. Do a practical to identify main memory frequencies.

     Yes

Topic: System Unit

- ## Assignment Level Basic
  1. What is System Unit?

     System unit is also called as main unit or system box. A system unit is the case which contains all main the part of computer system. The parts are Motherboard, SMPS, HDD, CPU, RAM and other component.

- ## Assignment Level Intermediate
  1. How does system unit work?

     Computer system unit is the enclosure for all other main interior component of a system. It is also known as computer cases, computer chassis or computer tower. It is typically made of steel or aluminum but plastic can also be used while most computers are rather dull black metal boxes.
  2. What are the components and system unity?

- ## Assignment Level Advance
  1. Do a practical to identify system unit.

     Yes
  2. Do a practical to assemble and disassemble system unit.

     Yes

Topic: BIOS

- ## Assignment Level Basic

1. What is bios.
BIOS is stand for Basic Input Output System. The BIOS is system utility program which loads the system operating system when power on of computer system. It is also called a ROMBIOS.

- ## Assignment Level Intermediate

    1. What is the full form of bios.

        The full form of BIOS is Basic Input Output System.

    2.Describe working process of BIOS.

    BIOS (Basic Input Output System) and CMOS of computers work together to handle essential process, they set up the computer and boot operation system.

- ## Assignment Level Advance

    1. Do a practical to reset bios when system is on.
       Yes

    2. Do a practical of Hard resetting the BIOS.

        Yes

    3. Do a practical of identifying BIOS chip from the motherboard
       Yes

Topic: CMOS

- ## Assignment Level Basic

    1.What is CMOS?

    CMOS is the stand for Complementary Metal Oxide Semiconductor. CMOS is the battery of computer system it gives the constant power to the chip.

- ## Assignment Level Intermediate

    1. What is the full form of CMOS?
       The full form of CMOS is Complementary Metal- Oxide Semiconductor.
    2. Describe the working process of CMOS.
       The CMOS used in computer system as a battery. It gives the constant power to the chip.
        The BIOS and CMOS are work together.
       When computer boot then BIOS takes the information from CMOS chip to take the information about all the hardware components are properly work and connected or not.

And also take the information about time and anything else that stored in it. When date and time of computer system is display the wrong not current then we know that CMOS battery is not working.
The time and date are wrong then internet not works in the computer system.

- ## Assignment Level Advance
  1. Do a practical of identifying cmos.
     Yes
  2. Do a practical of installing cmos
     Yes
  3. How do we know that cmos is not working.
     We know that CMOS is not working on basis of date and time display on monitor is change and not according to current date and time.

Topic: Boot process

- ## Assignment Level Basic

  1.What is Boot Process?

- ## Assignment Level Intermediate
  1. What is the first process of boot?
  2. What is the final stage in the boot process?
  3. Describe the boot process in Linux?

- ## Assignment Level Advance
  1. Describe about working with the grub bootloader.
  2. Describe working process of boot loader.

Topic: SMPS

- ## Assignment Level Basic
  1. What is SMPS?
     SMPS is stand for Switched Mode Power Supply which hardware component gives the power supply to the component of computer system which installed on Motherboard

with various different range volts required by the component in form DC voltage.

2. What is the process of SMPS?

   We know that SMPS is Switched Mode Power Supply which is convert AC voltage into DC voltage.

- ## Assignment Level Intermediate

  1. DO a practical to install SMPS.
     Yes

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

     Two (2) SATA connectors are there in normal SMPS.

- ## Assignment Level Advance

  1. Do a practical to troubleshoot a smps without plugging it to the system.
     Yes

  2. How many pins does atx power connector have?

     ATX power connector has 24 pins.

Topic: RAM

- ## Assignment Level Basic

  1. What is RAM?
     RAM is stand for Random Access Memory which read and write memory. RAM is volatile memory. Without RAM computer system does not operate.

  2. What is the full form of RAM?

     The full form of the RAM is Random Access Memory.

- ## Assignment Level Intermediate

  1. What are the types of ram?
     There are different types of RAM are follows:
     1. Static RAM (SRAM)
      (i) EDO (External Data Out)
      (ii) SDRAM (Synchronous DRAM)
      (iii)DDR SDRAM (Double Data Rate SDRAM)
     2. Dynamic RAM (DRAM)
      (i)DDR (Double Data Rate)
      (ii)DDR 2
      (iii)DDR 3

(iv)DDR 4

2. Do a practical to identify RAM.
   Yes

- ## Assignment Level Advance
  1. Do a Practical to identify ram and install it in a proper system.
     Yes

Topic: Device and cable

- ## Assignment Level Basic
  1. What are the types of devices?
  2. What are the types of cable?

- ## Assignment Level Intermediate
  1. What cables are used to connect printer?
     The cables used to connect printer are Serial cable, Parallel cable, USB cable and also Fire wire.
  2. What was the first cable founded by Apple for data transfer?

- ## Assignment Level Advance
  1. Do a practical to identify the sata cables.
     Yes
  2. Do a practical to identify and install the cables in the system.
     Yes

Topic: Expansion card and slots

- ## Assignment Level Basic
  1. Why expansion card needed?
     The expansion card needed because of expansion card gives a additional setting to the computer system. Using graphics card an enhanced video perform. It is also called Daughter board.
  2. Why expansion slots needed?
     Expansion slot are needed because it is installation point to be hardware expansion card fixed. For example for play game in computer like white city they need a video

graphics card for better resolution video. After that the gamer use expansion slot to installed video graphics card.

- ## Assignment Level Intermediate
    1. What are the types of expansion card?
    a) Sound Card
    b) Graphics Card
    c) Network Interface Card and
    d) Modem
    2. What are the types of expansion cards?
    a) PCI (Peripheral Card Interface) Slot
    b) ISA (Industrial Standard Architecture) Slot
    c) AGP (Accelerated Graphics Port)
    d) Memory slot

- ## Assignment Level Advance
    1. Do a practical to identify the types of expansion slots
    Yes
    2. Do a practical to install the Graphics card.
    Yes
    3. Do a practical to install LAN card
    Yes

Topic: I/O Ports

- ## Assignment Level Intermediate
    1. What is I/O ports?
    The I/O ports stand for Input-Output Ports which is used for connecting peripheral devices and for transfer data.
    2. List out the I/O ports available
    a. PS/2 Port (Personal System Port 2)
    b. Serial port
    c. Parallel port
    d. VGA (Video Graphic Array) port
    e. USB (Universal Serial Bus) port
    f. Ethernet/ LAN (Local Area Network) port
    g. Audio Port

3. Do a practical to identify the I/O ports.
    Yes

- ## Assignment Level Intermediate
    1. What is I/O ports?
    2. List out the I/O ports available
    3. Do a practical to identify the I/O ports.

Topic: BIOS & CMOS

- ## Assignment Level Basic
    1. What is BIOS?
        BIOS is stand for Basic Input Output System. The BIOS is system utility program which loads the system operating system when power on of computer system. It is also called a ROMBIOS.
    2. What is CMOS?

        CMOS is the stand for Complementary Metal Oxide Semiconctor. CMOS is the battery of computer system it gives the constant power to the chip.

- ## Assignment Level Intermediate
    1. What is the role of BIOS in i/o?
        The role of BIOS in I/O is when monitor is does not connect with any component and power on monitor at this time BIOS is display on the memory. It is inbuilt in system. The BIOS gives the information about the connection of hardware components is proper connect or not and take the information about date and time from the CMOS.
    2. What is the role of i/o in CMOS?

        The role of CMOS battery is that when first boots the system it gives the power supply to the RAM for booting the system properly. The CMOS gives the right information of the date and time.

- ## Assignment Level Advance
    1. Do a practical to reset BIOS
        Yes
    2. Do a practical to remove cmos.
        Yes

Topic: Laptop & storage

- ## Assignment Level Basic
    1. What is laptop?
       Laptop is the one type of movable computer in which all the parts of computer system scaled to small size.
    2. Why laptop is used widely now a days?

       Now a day laptop is used widely now because of it is movable device. Laptop has low weight and easy to pick while we travel one place to another.

- ## Assignment Level Intermediate
    1. Describe the working process of laptop?
    2. What is storage?

       Storage is the device which can permanently store the data and information of the system.
    3. List out the types of storage.

       PATA/IDE

       SATA

       SCSI

       SSD

- ## Assignment Level Advance
  1. Do a practical to identify types of storage.
     Yes
  2. Do a practical to disassemble and assemble the storage.
     Yes
  3. Do a practical to install the storage devices.
     Yes

Topic: Printer

- ## Assignment Level Basic
  1. What is printer?
     Printer is an output device which used to print information on paper. The printers work to converting digital images and text into Physical copies.
  2. Why is printer needed?
     We need a printer because of the computer system gives the information in digital form display on monitor screen. The printer does not use driver and any software that has been convert file into the language that can be understood by printer.

- ## Assignment Level Intermediate
  1. Describe the working process of printer.

     1) Character printers

      a) Dot Matrix

      b) Daisy Wheel Printer

     2. Line Printer

      a) Laser Printers

      b) Inkjet Printer

  2. What are the types of printer.

     1. Impact Printer

      i. Character printer

      ii. Dot Matrix printer

iii. Daisy wheel

iv. Line printer

2. Non-Impact Printer

i. Inject Printer

ii. Laser printer

- ## Assignment Level Advance

  3. Do a practical to install the printer
     Yes

  4. Do a practical to Troubleshoot the improper printing.

     Yes

Topic: Storage devices

- ## Assignment Level Basic

  1. What is storage device?
     The Storage device is a device used to store digital data on magnetic surface of rigid plate by using read/write head. It is an external memory or non-volatile. These are used for storing data or information permanently.

  2. Why we need storage device

     We need storage devices because it can be store data or information permanently. After power off of the computer they will be store the data. It is a secondary memory of the computer system.

- ## Assignment Level Intermediate

  1. List out the types of storage devices.
     a) PATA/IDE
     b) SATA
     c) SCSI
     d) SSD

  2. Describe the working process of storage devices.

     The storage devices work as secondary memory in a computer system. It is also called external memory or non-volatile. These are optical and optical memory.

- ## Assignment Level Advance

1. Do a practical to Remove storage devices and reinstall it and make a gpt disk.

   Yes

Topic: ATA

- ## Assignment Level Intermediate

1. What is ATA?

   ATA is stand for Advanced Technology Attachment which is an interface to connect CD-ROM drives, Hard Drives and other drives to computer system.

- ## Assignment Level intermediate:

1. Describe working of ATA.

   The Advanced Technology Attachment (IDE) is also known as IDE (Integrated Device Enhanced). It is an implementation of disk drive that integrates the controller on the disk drive itself.

   It is used to connect hard drives and peripherals.

   It supports 8 or 16 bit interface that transfer up to 8.3 MMB/s ATA-2 to up to 100MB/s (ATA-6)

- ## Assignment level Advanced:

1. Do a practical to identify and install ATA cables.

   Yes

Topic: SATA

- ## Assignment Level Basic

1.What is SATA?

SATA is stand for Serial Signaling Advanced Technology Attachment which an interface to connect hard drive to computer system.

- ## Assignment Level Advance

    1. Describe the working of SATA.
       SATA is Serial ATA which is computer bus interface for hard drives, optical drives and SSDs. An interface has multiple forms this interface developed for allow increasing capacity and bandwidth. The motherboard of computer system has two SATA port: SATA port-I: it is used for connect hard drive with fast speed port. SATA port-II: It is second generation SATA port which running at 3.0 GB/s and up to 300 MB/s.
    2. Do a practical to identify sata.

       Yes
    3. Do a practical to install SATA.

       Yes
    4. Where does SATA is used.

       SATA is used for desktop computer, laptops apart from those it also be found inside video game console, including play Station 3 and 4, the Xbox 360 and etc.

Topic: SCSI

- ## Assignment Basic

    1. What is SCSI?
       SCSI is stand for Small Computer System Interface. SCSI is a set of standards for physically connecting and transferring data between computers and hard drive and also other peripheral devices.
    2. WHy SCSI needed?

       SCSI needed because lower priced IBM PC world. It is at lower price and acceptable quality performance of ATA hard disk standard. SCSI drives and even SCSI RAID s become common in PC workstations for video or audio production.

- ## Assignment level Intermediate:

    1. What is the rpm of SCSI?
       The rpm of SCSI is 10,000 to 15,000.
    2. Do a Practical to install scsi.
       Yes

Topic: Laptop

- ## Assignment Level Basic:
    1. What is laptop?

Laptop is the one type of movable computer in which all the parts of computer system scaled to small size.

2. What are the types of laptop?

The types of laptop are follows:

a) Ultrabooks

b) Notebook

c) Tablet

d) Desktop Laptop

3. Diffrent names of laptop.

The different names of laptop given by the manufacture company:

Lenovo

Asus

HP

Mack book

Sony and etc…

• Assignment level Intermediate:

1. What are the parts of laptop?
   a) Display screen
   b) Keyboardc) Touch pad
   d) Palm rest assembly
   e) Top panel
   f) Base panel
   g) Cooling fan
   h) RAM
   i) Hard drive
   j) Battery
   k) Hinges
   l) Speaker
   m) Optical drive
   n) Antenna
   o) Modem and network connector
2. Do a practical of identifying parts of the laptop.
   Yes

• Assignment level Advance.

1. Do a practical to disassemble the laptop.
   Yes
2. Do a practical to change the RAM in the laptop.
   Yes

TOPIC: PRINTER

- ## ASSIGNMENT LEVEL BASIC:

  1. WHAT IS PRINTER?
     A printer is the hardware component of the computer system which is the device used for the print information/data on paper.
  2. IS IT A INPUT DEVICE OR OUTPUT DEVICE?

     A printer is an output device.

- ## Assignment level intermediate:

  1. Describe the types of printer.
     The types of printers are
     A. Impact printer and
     B. Non-impact printer
  2. Describe inkjet printer.

     An inkjet printer is the type of Non-Impact printers. It cannot use the ribbon between the ink of printer and paper. It is new technology. It works with the ink spray. For taking print form this printer they print characters (it support all the fonts and different character size also) by spraying small droplet ink onto the paper.

- ## Assignment level Advanced:

  1. Do a practical of network installation of the printer.
     Yes
  2. do a practical to troubleshoot the printer of no cartridge error
     Yes