NETWORKING & SYSTEM ADMINISTRATION LAB

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Roll No: 53

Batch: B

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Experiment No.: 2

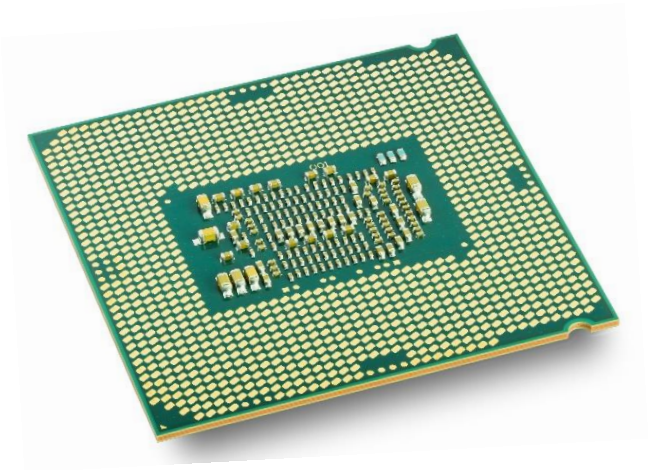
Aim

Hardware components

Procedure

1. CPU (Central Processing/Processor Unit)

Central processing unit (CPU), principal part of any digital computer system, generally composed of the main memory, control unit, and arithmetic-logic unit. It constitutes the physical heart of the entire computer system; to it is linked various peripheral equipment, including input/output devices and auxiliary storage units. In modern computers, the CPU is contained on an integrated circuit chip called a microprocessor.



2. Hard drive

A computer hard drive (or a hard disk or HDD) is one kind of technology that stores the operating system, applications, and data files such a documents, pictures and music that your computer uses. The rest of the

components in your computer work together to show you the applications and files stored on your hard drive.

3. Graphics Processing Unit (GPU)

Graphics processing technology has evolved to deliver unique benefits in the world of computing. The latest graphics processing units (GPUs) unlock new possibilities in gaming, content creation, machine learning, and more.

4. Power Supply Unit (PSU)

A power supply unit (PSU) converts mains AC to low-voltage regulated DC power for the internal components of a computer. Modern personal computers universally use switched-mode power supplies. Some power supplies have a manual switch for selecting input voltage, while others automatically adapt to the mains voltage.

5. SSD: Solid State Drive

SSDs got their name—solid state—because they use solidstate devices under the hood. In an SSD, all data is stored in integrated circuits. This difference from HDDs has a lot of implications, especially in size and performance. Without the need for a spinning disk, SSDs can reduce to the shape and size of a stick of gum (what's known as the M.2 form factor) or even as small as a postage stamp. Their capacity—or how much data they can hold—varies, making them flexible for smaller devices, such as slim laptops, convertibles, or 2 in 1s. And SSDs dramatically reduce access time since users don't have to wait for platter rotation to start up.

SSDs are more expensive than HDDs per amount of storage (in gigabytes (GB) and terabytes (TB)), but the gap is closing as SSD prices decline at a faster pace that HDD prices year over year.

6. Printers

A printer is basically an output device which prints a hard copy of the electronic data that is stored in the computer or any other devices. The electronic data may include documents, text, images or even the combination of all three. Particular printers are available for printing particular data types.

7. Scanner

Scanner, also called optical scanner, computer input device that uses a light beam to scan codes, text, or graphic images directly into a computer or computer system. Bar-code scanners are used widely at point-of-sale terminals in retail stores.

8. Optical Disc Drive

Optical Disc Drive (ODD) An optical disc drive (ODD) in a computer system allows you to use CDs, DVDs, and Blu-ray discs to listen to music or watch a movie. Most drives also allow you to write data to a disc, so you can create your own music CDs, video DVDs or even create of back-up copy of your important data files.

9.Motherboard

A motherboard is the main printed circuit board in general-purpose computers 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 and memory, and provides connectors for other peripherals

Parts

1. **Back Panel Connectors & Ports**
   Connectors and ports for connecting the computer to external devices such as display ports, audio ports, USB ports, Ethernet ports, PS/2 ports etc.

2. **PCI Slots**
   PCI: Peripheral Component Interconnect

   Slot for older expansion cards such as sound cards, network cards, connector cards.

3. **PCI Express x1 Slots**
   Slot for modern expansion cards such as sound cards, network cards (Wi-Fi, Ethernet, Bluetooth), connector cards (USB, FireWire, eSATA) and certain low-end graphics cards.

4. **PCI Express x16 Slot**

Slot for discrete graphic cards and high bandwidth devices such as top-end solid state drives.

5. **Northbridge**

Also known as Memory Controller Hub (MCH).

Chipset that allows the CPU to communicate with the RAM and graphics card.

Beginning from Intel Sandy Bridge in 2011, this motherboard component is no longer present as it has been integrated within the CPU itself.

6. **CPU Socket**

Insert CPU here.

7. **ATX 12V Power Connector**

Connects to the 4-pin power cable of a power supply unit which supplies power to the CPU.

8. **Front Panel USB 2.0 Connectors**

Connects to USB 2.0 ports at the front or top of a computer case.

9. **Front Panel Connectors**

Connects to the power switch, reset switch, power LED, hard drive LED and

front audio ports of a computer case.

10. **IDE Connector**

Connects to older hard drive disks and optical drives for data transfer.

11. **CMOS Battery**

Supplies power to store BIOS settings and keep the real-time clock running.

12. **Southbridge**

Also known as the Input/Output Controller Hub (ICH).

Chipset that allows the CPU to communicate with PCI slots, PCI-Express x 1 slots (expansion cards), SATA connectors (hard drives, optical drives), USB ports (USB devices), Ethernet ports and on-board audio.

13. **SATA Connectors**

Connects to modern hard disk drives, solid state drives and optical drives for data transfer.

14. Fan Headers

Supplies power to the CPU heat sink fan and computer case fans.

15.RAM Slots

Insert RAM here.

16. ATX Power Connector

Connects to the 24-pin ATX power cable of a power supply unit which supplies power to the motherboard.

17.mSATA Connector

Connects to a mSATA solid state drive. In most cases, this SSD is used as cache to speed up hard disk drives, but it's possible to re-purpose it as a regular hard drive.

18.Front Panel USB 3.0 Connector

Connects to USB 3.0 ports at the front or top of the computer case.

19.Power & Reset Button

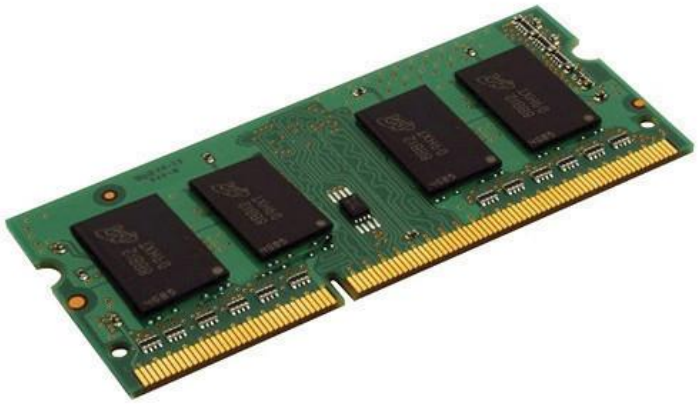
Onboard button to turn on, turn off and reboot the computer.

This motherboard component is more common among high end boards.

10.RAM

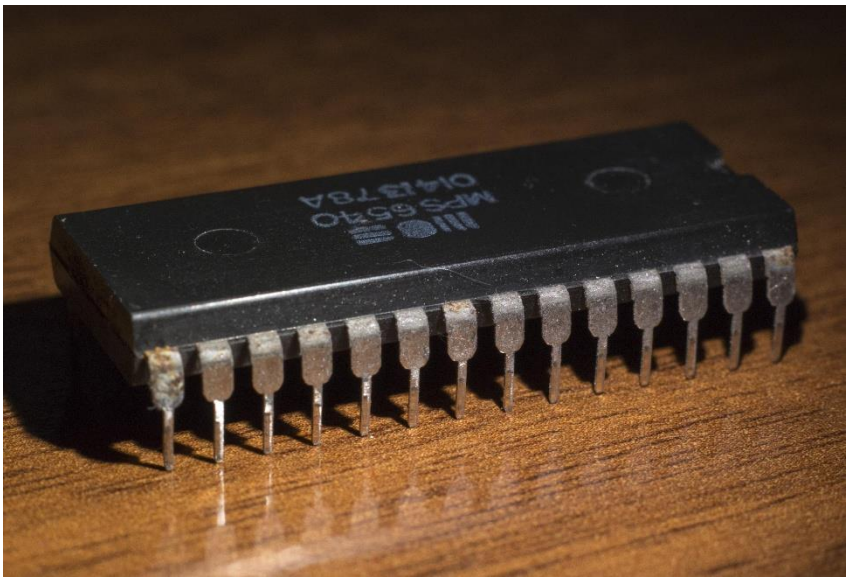
Computer memory or random access memory (RAM) is your system's short-term data storage; it stores the information your computer is actively using so that it can be accessed quickly. The more programs your system is running, the more memory you'll need.

RAM allows your computer to perform many of its everyday tasks, such as loading applications, browsing the internet, editing a spreadsheet, or experiencing the latest game. Memory also allows you to switch quickly among these tasks, remembering where you are in one task when you switch to another task. As a rule, the more memory you have, the better.



11.ROM

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.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