LAB#1
Introduction to Computer's hardware

Objective

To learn about different parts of computer hardware

Apparatus:

Personal PC

Software: MS office

Background

Software:
Computer software, or just software, is a collection of computer programs and related data that provides the instructions for telling a computer what to do and how to do it. In other words, software is a set of programs, procedures, algorithms and its documentation concerned with the operation of a data processing system. Program software performs the function of the program it implements, either by directly providing instructions to the computer hardware or by serving as input to another piece of software. The term was coined to contrast to the old term hardware (meaning physical devices). In contrast to hardware, software "cannot be touched".

Operating system:
An operating system (OS) is a collection of software that manages computer hardware resources and provides common services for computer programs. The operating system is a vital component of the system software in a computer system. Application programs require an operating system to function.

Examples:
Microsoft Windows

Linux

Macintosh

Hardware:
Computer hardware is the collection of physical elements that comprise a computer system. Computer hardware refers to the physical parts or components of computer such as monitor, keyboard, hard disk, mouse, etc., refers to objects that you can actually touch, like disks, disk drives, display screens, keyboards, printers, boards, and chips. In contrast, software is untouchable. Software exists as ideas, application, concepts, and symbols, but it has no substance. A combination of hardware and software forms a usable computing system. This allows it for computer run better than normally faster.

Figure 1. Components of CPU

Processor:

A central processing unit (CPU), also referred to as a central processor unit, is the hardware within a computer system which carries out the instructions of a computer program by performing the basic arithmetical, logical, and input/output operations of the system. The form,
design, and implementation of CPUs have changed over the course of their history, but their fundamental operation remains much the same.

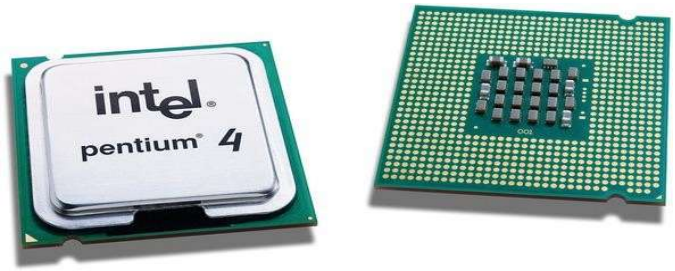


Figure 2. Processor chip

Two typical components of a CPU are the arithmetic logic unit (ALU), which performs arithmetic and logical operations, and the control unit (CU), which extracts instructions from memory and decodes and executes them, calling on the ALU when necessary.

Motherboard:

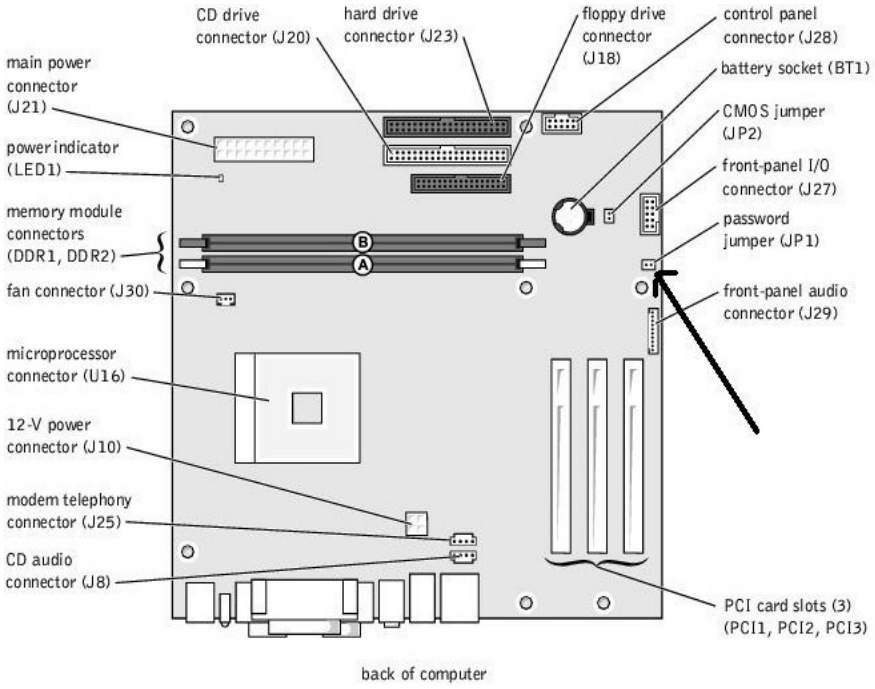


Figure 3. MotherBroad

The motherboard serves to connect all of the parts of a computer together. The CPU, memory, hard drives, optical drives, video card, sound card and other ports and expansion cards all connect to the motherboard directly or via cables.

The motherboard can be thought of as the "back bone" of the computer.

Motherboards, cases and power supplies all come in different sizes called form factors. All three must be compatible to work properly together.

Motherboards vary greatly in respect to the types of components they support. For example, each motherboard supports a single type of CPU and a short list of memory types.

Hard disk drives:

A hard disk drive (HDD also hard drive, hard disk, or disk drive) is a device for storing and retrieving digital information. It consists of one or more rigid ("hard") rapidly rotating discs (platters) coated with magnetic material, with magnetic heads arranged to read and write data to the surfaces.

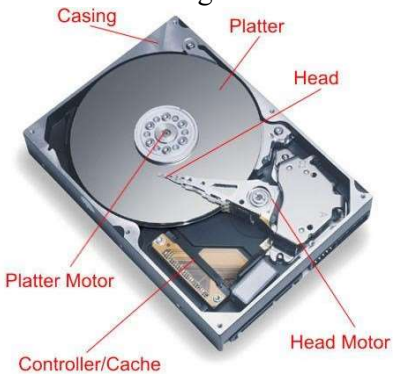


Figure 4. Hard disk

RAM (random access memory) is the place in a computer where the operating system, application programs, and data in current use are kept so that they can be quickly reached by the computer's processor. RAM is much faster to read from and write

to than the other kinds of storage in a computer, the hard disk, floppy disk, and CD-ROM. However, the data in RAM stays there only as long as your computer is running. When you turn the computer off, RAM loses its data. When you turn your computer on again, your operating system and other files are once again loaded into RAM, usually from your hard disk.

Figure 5. RAM Random access memory

Keyboard	
Mouse Touchpad	

Input devices:

☐ Scanner	
☐ Microphone	

The devices that use to enter data and instructions in a computer. **For Example:**

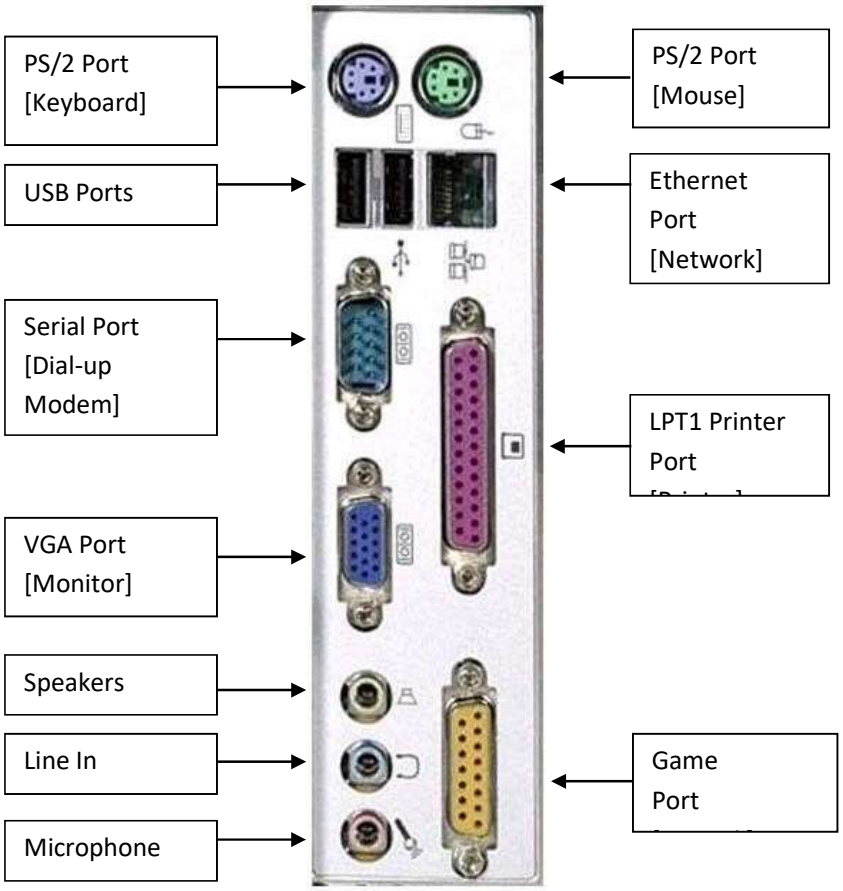
Output devices:
The devices that allow information to be represented (that is, given out) to the user. For Example:

☐ Monitor LCD	 
☐ Printer	

☐ Speakers	

Ports:
Ports are the socket at the back of the computer that allows different peripheral devices to connect to the computer

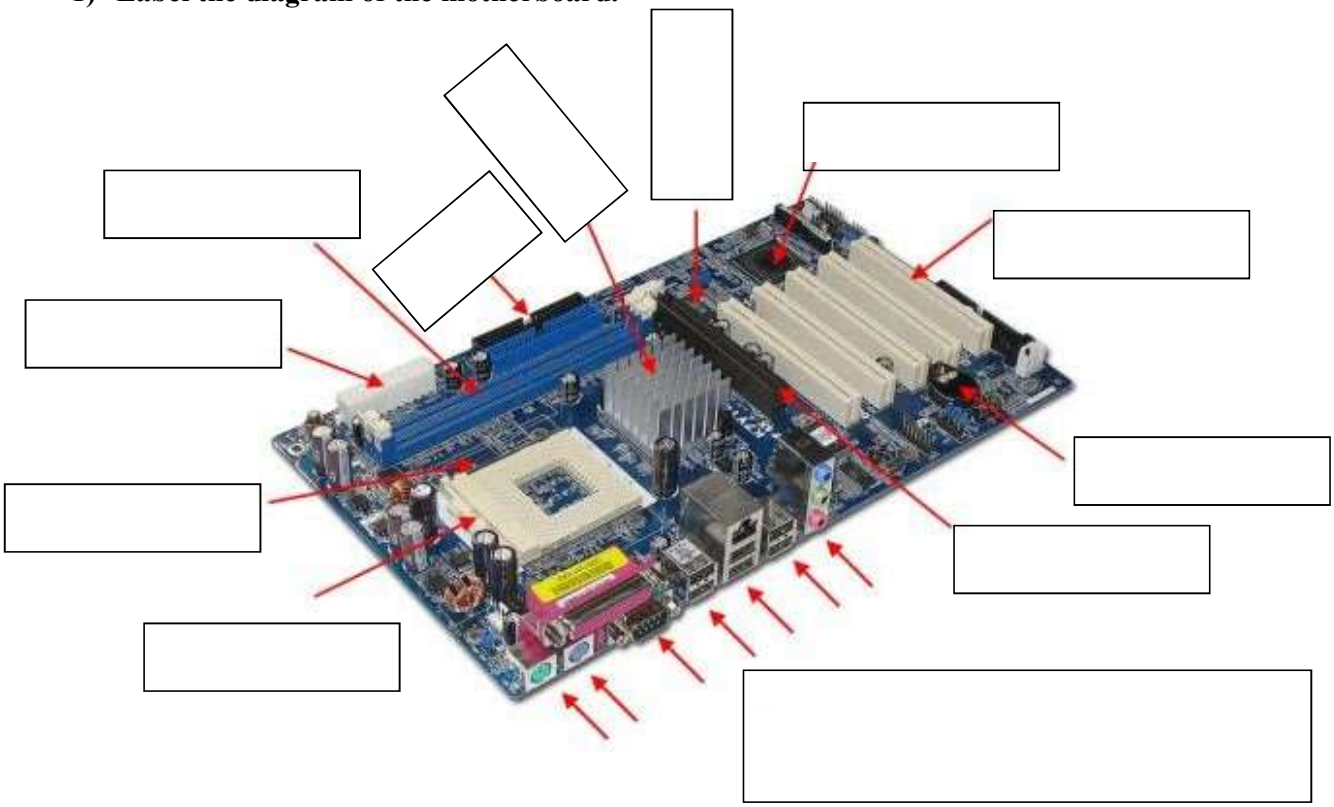
Microsoft Word:



Conclusion:

Lab Exercise:

1) Label the diagram of the motherboard.



2) Where is OS stored and installed on a computer?

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3) Write the specifications of the computer that is provided in lab

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4) Write down the names of microprocessor companies with their latest model and speed

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5) How do you Log Off the computer from the Desktop?

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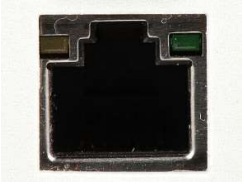
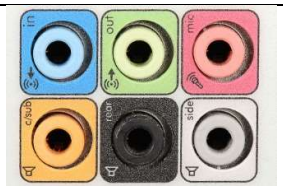
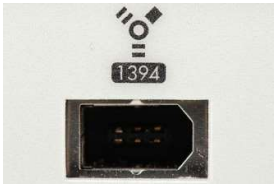
6) Recognize and Name the following Different Computer ports:

	
	 1394