

Computer : Computer is an electronic device that is designed to work with Information. The term [computer](#) is derived from the Latin term '**computare**', this means to *calculate* or *programmable machine*. **Computer can not do anything without a Program.** It represents the decimal numbers through a string of [binary digits](#).

A classification of computer:

Computers differ based on their data processing abilities. They are classified according to purpose, data handling and functionality.

According to functionality, computers are classified as:

- **Analog Computer:** A computer that represents numbers by some continuously variable physical quantity, whose variations mimic the properties of some system being modeled.
- **Personal computer:** A [personal computer](#) is a computer small and low cost. The term "personal computer" is used to describe desktop computers (desktops).
- **Workstation:** A terminal or desktop computer in a network. In this context, workstation is just a generic term for a user's machine (client machine) in contrast to a "server" or "[mainframe](#)."
- **Minicomputer:** A **minicomputer** isn't very mini. At least, not in the way most of us think of mini. You know how big your personal computer is and its related family.
- **Mainframe:** It refers to the kind of large computer that runs an entire corporation.
- **Supercomputer:** It is the biggest, fastest, and most expensive computers on earth.
- **Microcomputer:** Your *personal computer* is a **microcomputer**.

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Basic concept of computer:

Computer is an electronic device which is used to store the data, as per given instructions it gives results quickly and accurately.

- **Data** : Data is a raw material of information.
- **Information** : Proper collection of the data is called information.

Characteristics/features of Computer:

- **SPEED** : In general, no human being can compete to solving the complex computation, faster than computer.
- **ACCURACY** : Since Computer is programmed, so what ever input we give it gives result with accuratly.
- **STORAGE** : Computer can store mass storage of data with appropriate formate.
- **DILIGENCE** : Computer can work for hours without any break and creating error.
- **VERSATILITY** : We can use computer to perform completely different type of work at the same time.
- **POWER OF REMEMBERING** : It can remember data for us.
- **NO IQ** : Computer does not work without instruction.
- **NO FEELING** : Computer does not have emotions, knowledge, experience, feeling.

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Uses of computer :

Computer is used for most of the things in our life and in the upcoming time of future, computer gonna be everything in everyone's life on which life will badly depend. There are the following uses of computer are:

1. For filling online forms
2. For banking purpose
3. In hospitals like ICU
4. In coding and programming
5. For communication
6. For playing games
7. For designing
8. For education purpose
9. Uses in business and marketing
10. For storing important data
11. For getting information using internet
12. For multi-purpose use like video, songs, photos, etc.

History of computers:

read 7,8,9,10 pages of book.....rubel.

Uses of computers in education:

computers are being used to perform many tasks in educational institutions, easily and quickly:

- o Keeping Records of students (admission records, attendance and leave records, fee collection, examination records of students)
- o Storing Records of employees(payroll, attendance, assignments, project) of school / college
- o Managing Accounts of the institution
- o Fees collection and maintenance of fees record.
- o Circulation of instruction/notices and getting it in printed form
- o Preparation of school/ college magazine, etc.

The defferences between desktop and laptop computer:

Topic	Desktop	Laptop
Cost	There is a wide variety of component options available for desktops, allowing for a large range of prices, but the starting point is relatively cheap. Desktops can start as low as \$400 for a full package (computer & monitor) and still be a pretty powerful system.	Laptops can have a fairly wide variety of component options, but they are more limited than desktops. To get a more powerful laptop (higher speed, better graphics, more storage space, etc.), the price can be considerably higher, ranging up to \$1500 or more, depending on the brand.
Portability	Desktops are large in size and have a separate monitor. While it's possible to take a desktop from place to place, it's cumbersome and not the choice for portability. They are designed to be used in a single location and not moved	Laptops are very portable due to their compact size. They were designed to be taken from place to place, carried in a backpack or laptop carrying case. They are great for on-the-go use.

	around much, if at all.	
Processor	Desktop processors are a little bit larger in size, but this also means the desktop processors can be more powerful than laptop processors. New, advanced processors on the market are often available in desktop computers first.	Laptop processors have nearly caught up to desktop processors, but are still limited when compared to desktop processors. Gaming laptops can have an equal performance, but have a much higher price.
Ease of assembly	Setting up a desktop takes a bit of extra work to hook everything up, start it up, and begin to use. It also requires more space to set up. While it's not difficult to connect everything together, it is still more cumbersome than a laptop.	Laptops are built to be easy to use, requiring little time to get running. Take it out of the box, plug it in and press the power button. Within minutes, the laptop is ready to use.
Keyboard	Desktops can make use of full-size keyboards, including a number pad. There are really no limitations.	Smaller laptops with the 14" and 15" screens have smaller keyboards and don't feature a number pad on the right side. Larger laptops with 17" screens do have larger keyboards and may include a number pad, but the laptops are bulkier and heavier.
Screen size	Desktop monitors can be 19" or larger. It is even possible to hook up a desktop to a TV, so screen sizes could be as large as a TV. This provides for great flexibility on what the desktop is used for and in what environment.	Since portability is a big feature of laptops, smaller screen sizes are necessary and screen sizes often range from 10" to 17". However, a laptop can still connect to an external display and support any size of monitor, screen, or projector.
Power Usage	Desktop computers use more power than a laptop. They have to power a higher wattage power supply, multiple components inside the computer, and a monitor. If the power fluctuates or goes out, including brown outs, any documents being worked on and not saved can be lost.	Laptop computers use less power than a desktop computer. Smaller components means less power is needed to make them work. Laptops also have a battery, so power fluctuations and outages will not cost any unsaved work to be lost. The battery kicks in immediately when power fluctuates or goes out.
Upgrading	Most components in a desktop are easily removable, making it easier to upgrade and since desktop cases are usually much bigger they're easier to work in when doing any upgrading.	Memory and hard drive are about the only components that can be upgraded in a laptop. The remaining components are either built-in and not removable or the laptop is not designed to work with an upgraded version of a component. A need to upgrade anything other than the hard drive and memory usually requires a new laptop.

Gaming

Desktops are capable of using high-powered video cards that have higher power requirements and require better heat reduction/dissipation. Virtually any video card could be used in a desktop, including two or more video cards at the same time. Thus, they'll always yield better performance for gaming.

Physical space is limited in a laptop, which can limit the graphics capabilities. While higher-end laptops can provide better than average graphics for gaming and CAD-based applications, the heat reduction/dissipation is limited by the space in the laptop case. Power is also limited which doesn't allow for video cards needing those higher amounts of wattage to run.

Repair

Repairing a desktop computer is much easier since most of the hardware can be easily purchased off the shelf of any local computer retail store.

For most users, opening a laptop to repair a part can be difficult and finding a replacement part often requires calling the computer manufacturer or ordering from another online site.

Difference between Hardware and Software

Computer Hardware:

Hardware refers to the physical components of a computer. Computer Hardware is any part of the computer that we can touch these parts. These are the primary electronic devices used to build up the computer. Examples of hardware in a computer are the Processor, Memory Devices, Monitor, Printer, Keyboard, Mouse, and the Central Processing Unit.

Computer Software:

Software is a collection of instructions, procedures, documentation that performs different tasks on a computer system. we can say also Computer Software is a programming code executed on a computer processor. The code can be machine-level code or the code written for an operating system. Examples of software are Ms Word, Excel, Power Point, Google Chrome, Photoshop, MySQL etc.

Difference Between Hardware and Software:

Hardware	Software
Hardware is a physical parts computer that cause processing of data.	Software is a set of instruction that tells a computer exactly what to do.
It is manufactured.	It is developed and engineered.
Hardware can not perform any task without software.	software can not be executed without hardware.
As Hardware are physical electronic	We can see and also use the software but

Hardware	Software
devices, we can see and touch hardware.	can't actually touch them.
It has four main categories: input device, output devices, storage, and internal components.	It is mainly divided into System software, Programming software and Application software.
Hardware is not affected by computer viruses.	Software is affected by computer viruses.
It can not be transferred from one place to another electrically through network.	But, it can be transferred.
If hardware is damaged, it is replaced with new one.	If software is damaged, its backup copy can be reinstalled.
Ex: Keyboard, Mouse, Monitor, Printer, CPU, Hard disk, RAM, ROM etc.	Ex: Ms Word, Excel, Power Point, Photoshop, MySQL etc.

Few Advantages of Laptop computers

- Mobility. The first and main **advantage** of a **laptop**, in comparison with a stationary **computer**, is its mobility. ...
- Finished product. ...
- Internet access. ...
- Sensitivity. ...
- Unpredictable battery. ...
- Reinstalling the native operating system. ...
- Portability: ...
- The convenience of assembly:

Difference between mainframe and supercomputers

Besides raw speed, one big difference between a supercomputer and a mainframe is that a mainframe serves many people at once or runs several programs concurrently, whereas a supercomputer funnels its power into executing a few programs at high speeds. Mainframes are mostly used for large data storage and manipulation tasks, not for computationally-intensive tasks.

Mainframe Computers	Supercomputers
It is a large computer which is used as a large server and for intensive business applications.	It is an extremely fast compute capable of performing hundreds of millions of instructions per second.
Its components are: multiple input/output devices , magnetic disk, tape storage and many banks of internal storage.	A supercomputer usually includes more than one CPU.
Ex: IBM ES/9000	Ex: cray Supercomputer
It can typically run a variant of linux as an operating system .	It can run many types of operating system.
It can do millions of instructions per second.	It can do floating point operations per second.
It is used for bulk data processing like consumer statistics, ERP and financial transaction processing.	It is used for nuclear weapon development, weather forecasting, host processes for a local computer.

Expansion/elaborate of ENIVAC, ABC, EDVAC, EDSAC and UNIVAC

ENIAC – Electronic Numerical Integrator and Calculator

ABC – Atanasoff and Berry Computer

EDVAC – Electronic Discrete Variable Automatic Calculator

EDSAC – Electronic Delay Storage Automatic Calculator

UNIVAC – UNiversal Automatic Computer.

PC –personal computer

MIPS -Million instructions per second

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***ENIAC, in full **Electronic** Numerical Integrator and **Computer**, the **first** programmable general-purpose **electronic** digital **computer**, built during World War II by the United States.

***A PC is a computer that is used by one person at a time in a [business](#), a [school](#), or at [home](#). It is not usually a [portable](#) computer. PC is an abbreviation for 'personal computer'.

***. [Million instructions per second](#), a measure of a computer's central processing unit performance

Million instructions per second (MIPS) is an older, obsolete measure of a [computer's](#) speed and power, MIPS measures roughly the number of machine [instructions](#) that a computer can [execute](#) in one second.

***EDVAC (Electronic Discrete Variable Automatic Computer) was one of the earliest electronic computers. Unlike its predecessor the ENIAC, it was binary rather than decimal, and was a stored program machine.

***Electronic Delay Storage Automatic Calculator (EDSAC) was an early British computer. The machine, having been inspired by John von Neumann's seminal First Draft of a Report on the EDVAC, was constructed by Maurice Wilkes and his team at the University of Cambridge Mathematical Laboratory in England. EDSAC was the first prac

****UNIVAC* (Universal Automatic Computer) is a line of electronic digital stored-program computers starting with the products of the Eckert–Mauchly Computer

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***The **Atanasoff–Berry computer (ABC)** was the first automatic electronic [digital computer](#).^[1] Limited by the technology of the day, and execution, the device has remained somewhat obscure.

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