

# Introduction to Computers



What is a computer?

A computer is an automatic electronic machine that can store, recall, and process data. It is a machine that will not function until its operator tells it to.

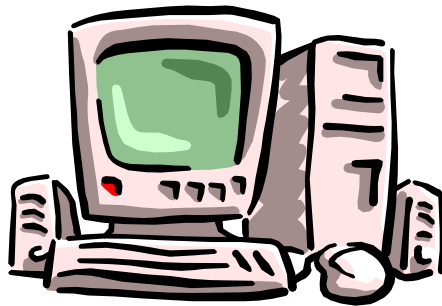
There are some basic characteristics that separate computers from other information-processing devices (i.e. calculators). A computer can:

1. Create data
2. Convert data into information
3. Store information
4. Communicate with other computers

Breaking it up further!

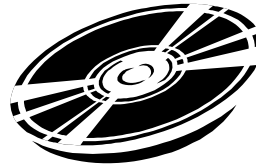
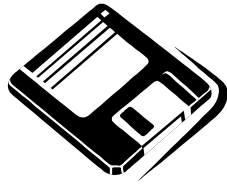
A computer has two parts:

1. hardware
2. software.



1. **Hardware** – The physical components of a computer. These are anything you can touch. Hardware is nothing by itself. It needs software to tell it what to do.
  - a. CPU – (Central Processing Unit) This is the heart of the computer where everything happens. It contains internal memory, an arithmetic/logic unit, and control circuitry. It performs data processing, timing, and controlling functions.
  - b. Monitor – shows what is happening in the CPU. This TV like screen usually sets on top, or beside the console.
  - c. Keyboard – issues commands to the CPU. This is where you type.
  - d. Mouse – acts like a keyboard – issues commands.
  - e. Printer – Where the document typed is put on paper. The printed page is called the hard copy.
  - f. Speakers – Most computers have speakers that allow the owner to listen to music, etc.
  - g. Connectors & cables – At the back of a computer are numerous holes where cables are entered, connecting the console to the monitor, printer, and the mouse, etc.

2. **Software** - is the brain of the computer. It tells the hardware what to do and how to work. You must have software to make a computer work.
- a. The computer's most important piece of software is the operating system. The operating system is a linked series of programs that controls, assists, and supervises all other programs on a computer system.



- b. Although computer software comes on disks (CDs or floppy disks), the disks aren't the software. Software is stored on disks just as music is stored on cassettes and CD ROMs.
- ✓ A diskette is a floppy disk or flexible disk with a magnetic coating on which computer data can be stored.
  - ✓ A disk or CD ROM is a round flat plate coated with a magnetic substance on which data for a computer is stored. It can contain hundreds, if not thousands of files.

### Input:

Input is data to be processed that is entered into the computer from a keyboard, disk drive, or other input device.

### Output:

Output is data that has been processed by the computer and sent to a screen, printer, or other output device.

### Memory:

The memory of the computer is a storage area in which it saves data and from which it retrieves data.

### Arithmetic/logic unit:

The arithmetic/logic unit is the section of the central processing unit that performs mathematical and logical operations.

### Programs:

A computer is also programmable. Most other machines perform a single function or a limited range of functions. A person can instruct a computer to do a variety of tasks. A program is a step-by-step series of instructions directing the computer to carry out a sequence of actions in order to perform an operation or to solve a problem.

A program is like a filing cabinet. Inside are many folders where you can store information. Each folder will have a different name, just like when you open a drawer in the filing cabinet; the files are arranged by name or type. A folder can have your name on it, and you can electronically place information inside to be stored. Then later when you need the information, you can go to the folder with your name on it, open it, and there will be the information you put there.

## Files:

A file is a collection of information (data) stored by the computer. There are different types of files, each storing different types of data.

Program files contain instructions for the computer to do something useful, like balance a checkbook.

Data files contain the data you create, like a letter to Mr. Who.

## Database:

A database is a collection of information organized for rapid search and retrieval.

## Data Processing:

Data processing is the converting of raw data to machine-readable form and its subsequent processing (as storing, updating, combining, rearranging, or printing) by a computer.

## Folders:

Files are stored on disk in special places called folders. Folders are for organization.

## Word Processing:

Word processing is a programmed means of creating and editing text. Some things the Word processor does:

- a. It uses computer programs that accept input (text) from a keyboard or from computer memory,
- b. It allows the user to change the text,
- c. It sends the original or revised text to a display screen or printer.

## Documents:

Documents are special types of files created by word processors. They are written data you can print out on paper (hard copy) and send to people. (i.e. letters, memos)

## Saving:

Saving is the process of telling the computer to transfer the information you just created to a disk for storage and safekeeping. When you save something (on a floppy diskette, CD ROM, or hard drive), you can reload it later to work on it again. If you don't save, you will have to re-create your document. If you don't tell the computer to save your work, it will not do it automatically.

## Some parts of the console or CPU:

The console is the most important part of your computer. It is considered to be the "Big Box". Every part of your computer either lives inside the console or plugs into it.

1. **Disk Drive:** a device that rotates a magnetic storage disk and that can record data on the disk and read data from the disk.
2. **CD-ROM or DVD drive:** this high-capacity disc looks exactly like a musical CD ROM but contains computer information instead of music.

3. **Floppy Drive:** This is where you put the 3-½ inch diskette into the computer. Most computers have at least one drive, named “Drive A”. Some models may have two floppy diskette drives (A and B).
4. **Air vents:** Do not block the air vents! Your computer needs to breathe.
5. **Buttons and lights:** Most of the computer’s buttons are on the keyboard. A few of the more important ones are located on the console.
  - a. **On/off button:** the computer’s main power button. A small light usually indicates that the computer is on.
  - b. **Reset button:** Allows you to restart the computer without turning it off and on again.
  - c. **Hard drive light:** Flashes when the hard drive is working. The hard drive lives inside the console, this tells you that the computer is all right and working fine. The lights can be red, green, or yellow.

The console is not the only thing that has an on/off button. The monitor and printer also have power buttons.

### The Keyboard:

The keyboard is the direct line of communication between you and the computer. The computer has no ears. It will only do what you type and tell it to do. There are many different keys on the keyboard.

1. Typewriter keys: these keys are located in the center of the keyboard and they include letters, numbers, and punctuation.
2. Function keys: these keys are positioned on the top row of the keyboard and are labeled F1, F2, F3, to F12.
3. Cursor-control keys: these keys are often called arrow keys. These four keys move the text cursor in the direction of the arrows.
4. Numeric keys: these keys are used to type numbers. They are lined across the top of the Typewriter keys and some keyboards also have a section on the right hand side.

### The Internet:

The Internet is not a piece of software. It’s not a computer. Instead, the Internet is thousands of computers all over the world. The computers send, receive, and store information. The idea behind the Internet is to get at the information.

As long as you have the Internet connection, you can run any programs that access information on the Internet. Internet programs are like any other program on the computer, however, you must be connected to access it.

### Browse:

Browsing is the time-consuming act of reading information on the Internet, specially the World Wide Web. With the browser, you can visit various Web pages on the Internet and collect information.

## E-Mail:

What is e-mail? E-mail is mail that is sent electronically. Instead of going to the post office, the mail is sent by computer.

## E-Mail Address:

[AfricaAflame@aol.com](mailto:AfricaAflame@aol.com) is the type of address a person or organization must have before they can be a part of electronic mail. Your address must be secured with a password. A password is something only you know. It can be a word, series of numbers, or a mixture of letters and numbers. However, it needs to be something you can remember or you will not be able to access your mail.

To write e-mail, the person writing must know the e-mail address of the person they want to write to. Typing in their name and home address will not work. The computer wants you to be specific.

There are many different servers for e-mail. @aol.com is only one that is commonly used. It means, "At America Online". The server address needs to be a part of the address in order for the right person to receive your mail.

## History of the Computer:

The ideas and inventions of many mathematicians, scientists, and engineers paved the way for the development of the modern computer. In a sense, the computer actually has three birth dates.

1. as a mechanical computing device, in about 500 BC,
2. as a concept (1833),
3. as the modern electronic digital computer (1946).

## Beyond the Adding Machine:

The concept of the modern computer was first outlined in 1833 by the British mathematician Charles Babbage. His design of an "analytical (thinking) engine" contained all of the necessary elements of a modern computer:

1. input devices,
2. a store (memory),
3. a mill (computing unit),
4. a control unit,
5. and output devices.

The design called for more than 50,000 moving parts in a steam-driven machine as large as a locomotive.

## Electronic Digital Computers:

The modern computer grew out of intense research efforts mounted during World War II. As early as 1941 the German inventor Konrad Zuse produced an operational computer that was used in aircraft and missile design. The German government refused to help him refine the machine, however, and the computer never achieved its full potential.

The first fully electronic computer, which used vacuum tubes rather than mechanical relays, was so secret that its existence was not revealed until decades after it was built. Invented by the English mathematician, Alan Turing, and in operation by 1943, "The Colossus", was the computer

British cryptographers (someone who creates or breaks codes) used to break secret German military codes.

### **Multimedia:**

In the early 1990s, manufacturers began producing inexpensive CD-ROM drives that could access more data. This development started a multimedia revolution that may continue for decades. The term multimedia involves the computer's ability to merge sounds, video, text, music, animations, charts, maps, etc., into colorful, interactive presentations.

Audio and video clips require large amounts of storage space, and for this reason, until recently, programs could not use any but the most elementary animations and sounds. Floppy and hard disks were just too small to hold the required data. The large storage potential of CD-ROMs changed all that.

Faster computers and production of multimedia programs will probably forever change the way people get information. The computer's ability to instantly retrieve a tiny piece of information from the midst of a huge mass of data has always been one of its most important uses. Since video and audio clips can be stored alongside text on a single CD-ROM disc, a whole new way of exploring a subject is possible.

### **Some Advice:**

There is a correct and incorrect way of sitting at the computer. Be nice to your body. Sit up straight, keep your eyes level with the screen and make sure your feet are flat on the floor. Place your fingers on the keys and keep your wrists parallel to the keyboard.

<p>This section of notes were taken from "PC's for Dummies" 6<sup>th</sup> Edition, and Compton's Interactive Encyclopedia for Windows 3.1 &amp; 95</p>
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