

Types of Computers & Computer Hardware

Computer Technology

Basic Terminology

- Computer
 - A device that accepts input, processes data, stores data, and produces output, all according to a series of stored instructions.
- Hardware
 - Includes the electronic and mechanical devices that process the data; refers to the computer as well as peripheral devices.

Basic Terminology

- Software
 - A computer program that tells the computer how to perform particular tasks.
- Network
 - Two or more computers and other devices that are connected, for the purpose of sharing data and programs.
- Peripheral devices
 - Used to expand the computer's input, output and storage capabilities

Basic Terminology

- Input
 - Whatever is put into a computer system.
- Data
 - Refers to the symbols that represent facts, objects, or ideas.
- Information
 - The results of the computer storing data as bits and bytes; the words, numbers, sounds, and graphics.
- Output
 - Consists of the processing results produced by a computer.

Basic Terminology

- Processing
 - Manipulation of the data in many ways.
- Memory
 - Area of the computer that temporarily holds data waiting to be processed, stored, or output. It is also known as Random Access Memory, or RAM
- Storage
 - Area of the computer that holds data on a permanent basis when it is not immediately needed for processing.

Types of Computers



Desktop Microcomputer



- A microcomputer that fits on a desk and runs on power from an electrical wall outlet.
- The CPU can be housed in either a vertical or a horizontal case.
- May have separate components (keyboard, mouse, etc.) that are each plugged into the computer.

Laptop Computer



- A portable, compact computer that can run on an electrical wall outlet or a battery unit.
- All components (keyboard, mouse, etc.) are in one compact unit.
- Usually more expensive than a comparable desktop.
- Sometimes called a Notebook.

Workstation

- Powerful desktop computer designed for specialized tasks.
- Can tackle tasks that require a lot of processing speed.
- Can also be an ordinary personal computer attached to a LAN (local area network).

Supercomputer

- A computer that was the fastest in the world at the time it was constructed.
- Can tackle tasks that would not be practical for other computers.
 - Typical uses
 - Breaking codes (government)
 - Weather systems



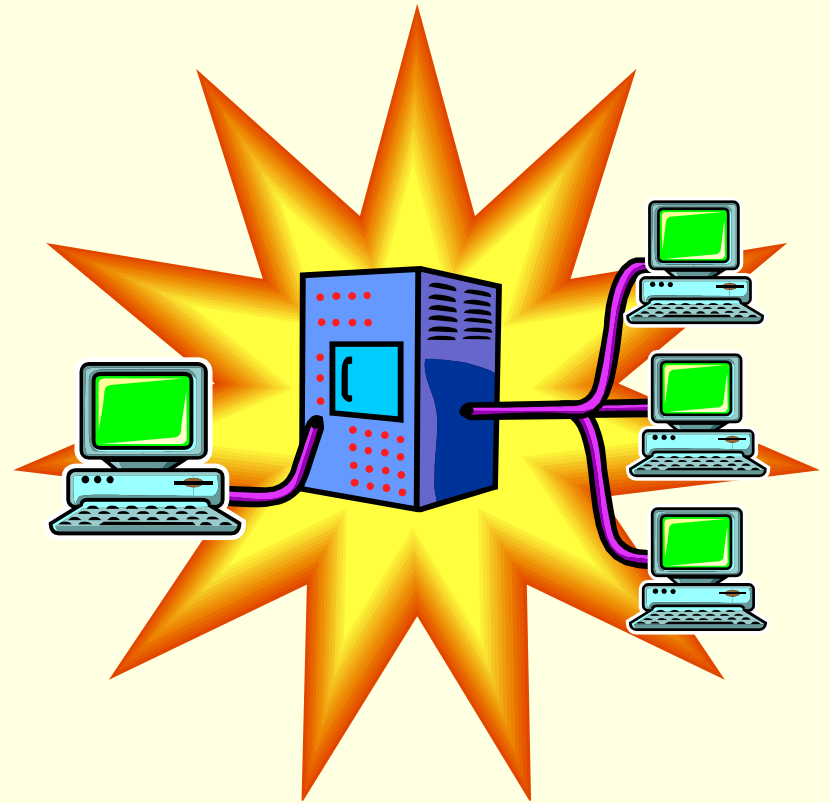
Mainframe



- Large expensive computer capable of simultaneously processing data for hundreds or thousands of users.
- Used to store, manage, and process large amounts of data that need to be reliable, secure, and centralized.
- Usually housed in a closet sized cabinet.

Server

- Purpose is to “serve.”
- A computer that has the purpose of supplying its users with data; usually through the use of a LAN (local area network).



Smartphone



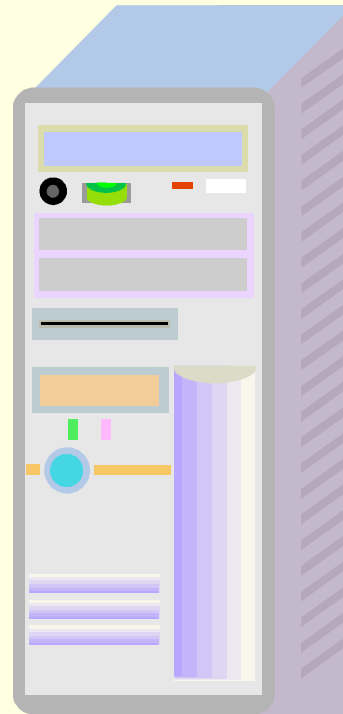
- A handheld computer integrated within a mobile telephone.
- Allows the user to install and run applications.
- Can be synchronized with a personal microcomputer as a backup.

Computer Hardware – The Physical Devices of the Computer

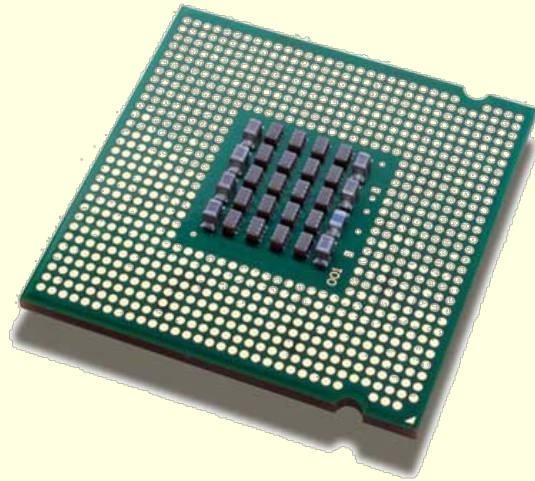


System unit

- Case that holds the power supply, storage devices, and the circuit boards (including the motherboard).



CPU (Central Processing Unit)



- Where the processing in a computer takes place, often called the “brain” of the computer.

Input Devices

- Units that gather information and transform that information into a series of electronic signals for the computer.



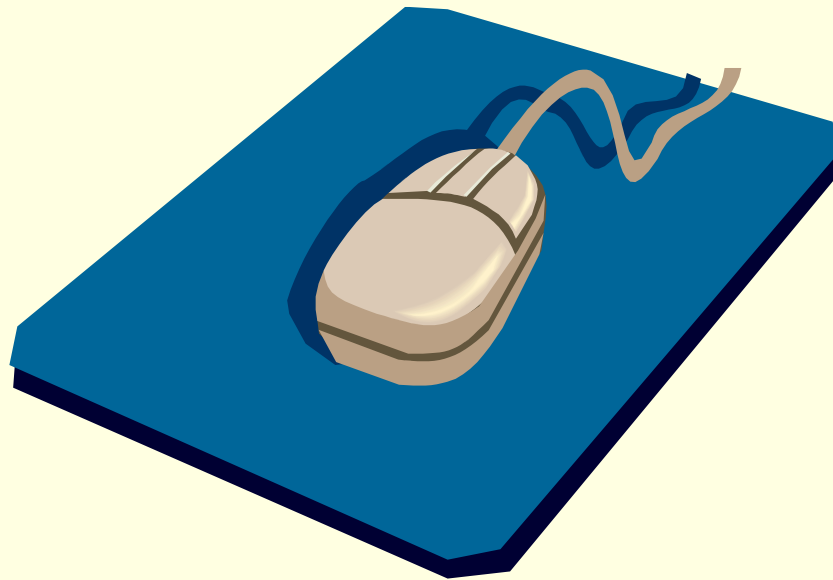
Keyboard



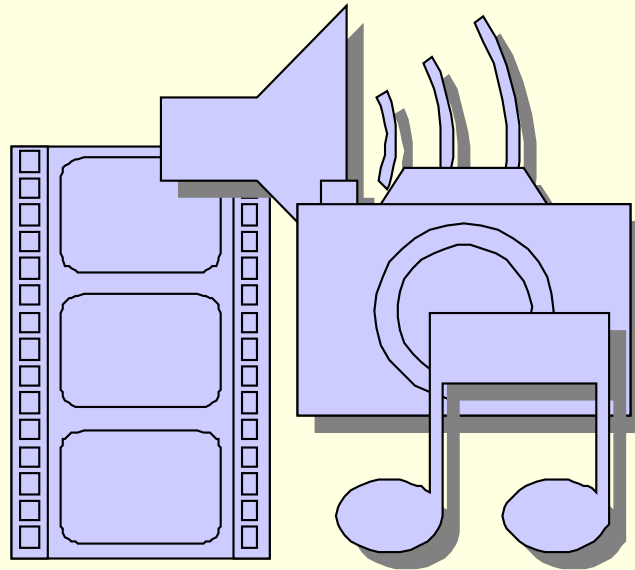
- An arrangement of letters, numbers, and special function keys that act as the primary input device to the computer.

Mouse

- An input device that allows the user to manipulate objects on the screen by moving the device along the surface of a desk.



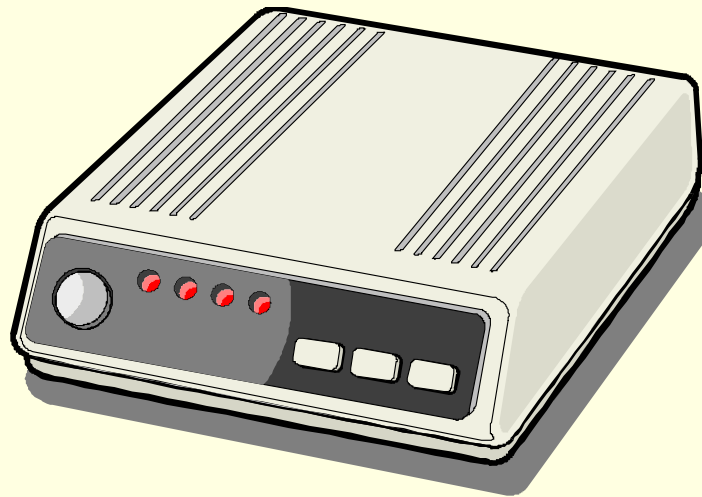
Sound Card



- A circuit board that gives the computer the ability to accept audio input, play sound files, and produce audio output through speakers or headphones.

Modem

- A device that sends and receives data to and from computers over telephone lines.



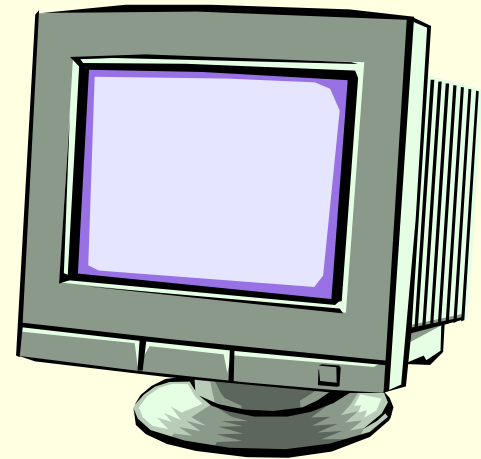
Output Devices

- Devices that display, print, or transmit the results of processing from the computer's memory.



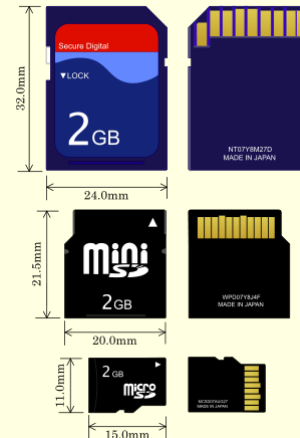
Monitor

- Display device that forms an image by converting electrical signals from the computer into points of colored light on the screen.
 - Resolution
 - The density of the grid used to display or print text and graphics; the greater the horizontal and vertical density, the higher the resolution.
 - Pixels
 - The smallest unit in a graphic image; computer display devices use a matrix of pixels to display text and graphics.



Storage Devices

- Used to keep data when the power to the computer is turned off.
- Different forms
 - Internal hard drive
 - Thumb drive or Jump drive
 - External hard drive
 - SD cards



Printer

- Output device that produces text or graphical images on paper.



Speakers



- Output devices that receive signals from the computer's sound card to play music, narration, or sound effects.

Resource

Google Images

Parsons, June Jamrich, and Dan Oja. Computer Concepts. Boston: Course Technology - Thompson Learning, 2002.