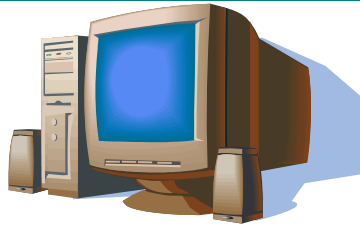


# Computer Basics

## General Concepts

### Understanding Hardware, Software, and Information Technology (IT)

A computer's *hardware* is a computer item you can physically see or touch. The *software* is a computer program that tells computer hardware how to operate. *Information Technology (IT)*, is the broad subject related to computers and managing and processing information.



### Main Parts of a Personal Computer

**Central Processing Unit (CPU):** The computer's brain or heart, the CPU is a computer's main chip. It calculates and processes information, and its speed is measured in Megahertz (MHz) and Gigahertz (GHz).

**Hard Disk:** The computer's main, long-term storage device.

#### Common Input Devices:



**Mouse:** Acts as a handheld pointing device and controls the actions of that blinking item on your computer screen known as a *cursor*.



**Keyboard:** Lets you enter information and commands into a computer.



**Digital camera:** Lets you take pictures and transfer them to a computer.

#### Common Output Devices:



**Monitors:** Looks and works a lot like a TV screen. The monitor is really only half of what makes text and images appear on the screen. The other half is the graphics card. The monitor plugs into the graphics card in the back of the computer.



**Printers:** Transfers processed information to printed page. Main types of printers are: InkJet; Laser and color laser; Multifunction; Dot matrix; and Plotter.



**Speakers:** Allow you to hear the sounds produced by the sound card.

**Memory:** A computer's temporary storage place, where it gets its work done. There are two main types of memory on your computer:

**RAM (random-access memory):** Computer's main memory, which is used to process information (example: work with a file). This memory is volatile, which means unsaved data disappears when you shut off the computer.

**ROM (read-only memory):** Computer's low-level memory, which is used to perform its most basic functions (example: start the computer). This memory is nonvolatile, which means data remains even when you shut off the computer.

#### Measuring Memory:

**Bit:** Short for *binary digit*, a bit is the smallest memory unit. Eight bits equal one byte.

**Byte:** Short for *binary digits eight*, one byte equals one character (letter, number, or symbol).

**Kilobyte (K or KB):** 1,024 bytes  
**Megabyte (M or MB):** 1,048,576 bytes  
**Gigabyte (G or GB):** 1,073,741,824 bytes  
**Terabyte (TB):** 1,099, 511,627,776 bytes

## Computer Performance

**CPU Speed:** Arguably the single most important factor that determines a computer's performance is the speed of its CPU.

**RAM:** Generally, the more RAM a computer has the better its performance.

**Multitasking:** Microsoft Windows can run more than one program at a time. The more programs or tasks being done at a time, the longer it takes to complete each one, and hence a drop in computer performance.

## Software

**Graphical User Interface (GUI):** Makes computers easier to operate by using pictures and icons to represent files and programs.

**An Operating System:** Loads automatically and controls just about everything on your computer.

**An Application Program:** Helps you accomplish a certain task, such as writing a letter, browsing the Internet, or playing a game.

**New Software Versions and Releases:** Come out periodically and add new features and improve components of a program. New versions also take advantage of ever-improving technology.

## Networks and the Internet

**LAN:** Stands for Local Area Network and connects computers in the same geographic area or building, using cables.

**Internet:** The Internet is the largest computer network in the world, connecting millions of computers. People use it for many reasons, such as to make purchases, research information, or send e-mail.

**World Wide Web:** The World Wide Web is a hypertext system that operates over the Internet. The hypertext is read by browsers, which display the web pages from web servers.

## Storage Devices

**Memory Devices:** Memory devices are very useful for sharing or transporting information. They are also useful for backing up your information. A comparison of some of the most common storage devices appears below.

Device	Speed	Capacity	Cost
Zip disk	Significantly slower than most hard disks.	100 to 250 Megabytes (MB).	Expensive when compared to costs of other storage devices.
CD-ROM	Much slower than a hard disk.	About 650 Megabytes (MB).	Very inexpensive.
DVD	Faster than a CD-ROM drive, but not as fast as a hard disk.	About 4 Gigabytes (GB), although future DVDs are rumored to hold up to 17 (GB).	Slightly more than a CD-ROM but still very inexpensive.
Internal Hard Disk	Very fast. Most hard disks have an average access speed of between 8 to 15 milliseconds (ms).	Enormous. Many hard disks have more than 200 Gigabytes (GB) of storage.	Byte for byte they are the most inexpensive way to store data.
External Hard Disk	Very fast, though normally slower than internal hard disks.	Enormous – same as internal hard disks.	Slightly more expensive than internal hard disks.

## Parts of a Typical Window

**Title bar**  
Click and drag to move the window.

**Minimize button**  
Click to shrink or minimize the window.

**Maximize button**  
Click to make the window fill the entire screen.

**Close button**  
Click to close the window.

**Menu bar**  
Click these words to display commands.

**Toolbar**  
Controls for commonly used commands.

Move the pointer over a control for a couple seconds to see what it does.

Click and drag to move up and down the page.

Click and drag to change the window's size.

Click: Press the left mouse button once. Click to use a program's menus and toolbars and to select items.

Double-click: Press the mouse button twice in rapid succession. Double-click to open items.

Right-click: Press the right mouse button. Right-click an item to display a list of commands that you can do to the item.

For Help, press F1

## Windows Tips

- The Windows XP Start menu displays your most frequently used programs. You can find your other programs under "All Programs".
- Not sure what a toolbar button does?** Place the pointer over the button for a second; a helpful description will usually appear.
- Want to do something to an object?** Try clicking the object with the right mouse button. A list of what you can do to the object will appear in a shortcut menu.
- Make a mistake?** Try using the undo command by selecting **Edit** → **Undo** from the menu, or by pressing **<Ctrl> + <Z>**.
- Need to use the menu without using the mouse?** Press **<Alt>** and the underlined letters of the menu item you want to open.
- In a dialog box you can press **<Enter>** instead of clicking OK, and you can press **<Esc>** instead of clicking Cancel.
- Need help?** Press **<F1>**. A help window will appear with information about the program.
- Not sure what a control in a dialog box does?** Click the **What is this button** in the upper right corner of the window and then click the control with the **?** pointer.
- Not sure what programs are running?** Look at the names on the taskbar along the bottom of the screen.

## Internet Explorer

- To Connect to the Internet:** Click the **Start button** and select **Internet Explorer** from the menu, or click the **Internet Explorer** icon on the Quick Launch bar.
- To Display a Specific Web Page:** Type the Web address in the **Address** bar and press **<Enter>**, or press **<Ctrl> + <L>**, type the Web address, and click **OK**.
- To Use a Hyperlink:** Click the hyperlink with the **hand** pointer.
- To Go Back to the Previous Page:** Click the **Back button** on the toolbar.
- To Return to a Web Address you Typed in the Address Bar:** Click the Address bar list arrow and select the Web address.
- To Refresh a Web Page:** Click the **Refresh button** on the toolbar.
- To Stop the Transfer of Information:** Click the **Stop button** on the toolbar.

## File Management

### The Folder Pane

Click a folder in the left pane... ..to view its contents in the right pane.

This folder contains hidden sub folders. Click to display those hidden folders.

- To Open a File or Folder:** Double-click the file or folder.
- To Create a Folder:** Select **Make a new folder** task from the File and Folder Tasks panel, or, right-click any empty area in the window and select **New** → **Folder** from the shortcut menu. Type a name for the folder and press **<Enter>**.
- To Rename a File or Folder:** Click the folder to select it, select **Rename this folder** from the Files and Folders Tasks panel, type a name for the folder and press **<Enter>**.
- To Delete a File or Folder:** Select the file or folder and press the **<Delete>** key.
- To Restore a Deleted File:** Double-click the Recycle Bin to open it. Select the file and click **Restore this file** from the Recycle Bin Tasks menu.
- To Empty the Recycle Bin:** Right-click the Recycle Bin and select **Empty Recycle Bin** from the shortcut menu.
- Move/Copy a File or Folder (Drag and Drop Method):** Move a file or folder by clicking it and dragging it to the desired location. Hold down the **<Ctrl>** key while you drag to copy the file or folder.
- Move/Copy a File or Folder (Toolbar Method):** Select the file or folder, select **Move this file** or **Copy this file** from the File and Folder Tasks panel, and select a destination for the file or folder from the dialog box.
- To Copy a File or Folder to a Floppy Disk:** Right-click the file or folder and select **Send To** → **3½ Floppy (A:)** from the shortcut menu.
- To Change How Items are Displayed:** Select **View** from the menu and select one of the four view modes, or select a view from the **View button list arrow** on the toolbar.
- To Select Multiple Files:** Hold down the **<Ctrl>** key while you click the files you want to select.
- To Find a File:** Click the **Start button** and select **Search** from the Start menu. Enter the search conditions and where to look. Click **Search** to start searching for the file(s).
- To Display the Folders Pane:** Click the **Folders button** on the toolbar from any folder.
- To View a File or Folder's Properties:** Right-click the file or folder and select **Properties** from the shortcut menu.

