Computer Basics

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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



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 bvte.

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.

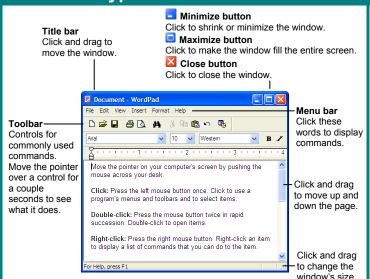
World Wide Web: The World Wide Web is a hypertext system that operates over the Internet. The hypertext is read by browsers, which display the web pages from web servers.

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



Windows Tips

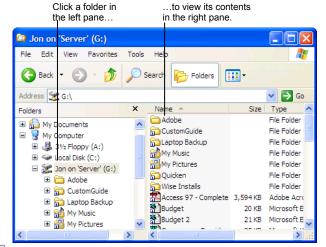
- The Windows XP Start menu displays your most frequently used programs. You can find your other programs under "All Programs".
- Not sure what a toolbar button does? Place the pointer over the button for a second; a helpful description will usually appear.
- Want to do something to an object? Try clicking 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 <al>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 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



- This folder contains hidden sub folders. Click to display those hidden folders. This folder's subfolders are displayed. Click to hide subfolders.
- 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
- 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
- To Copy a File or Folder to a Floppy Disk: Right-click the file or folder and select **Send To** \rightarrow **3**½ **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 Wiew 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.

