

Revision sheet:

Lesson 1,2,4,5,7 and 8

Name: _____

Section: _____

Date: _____



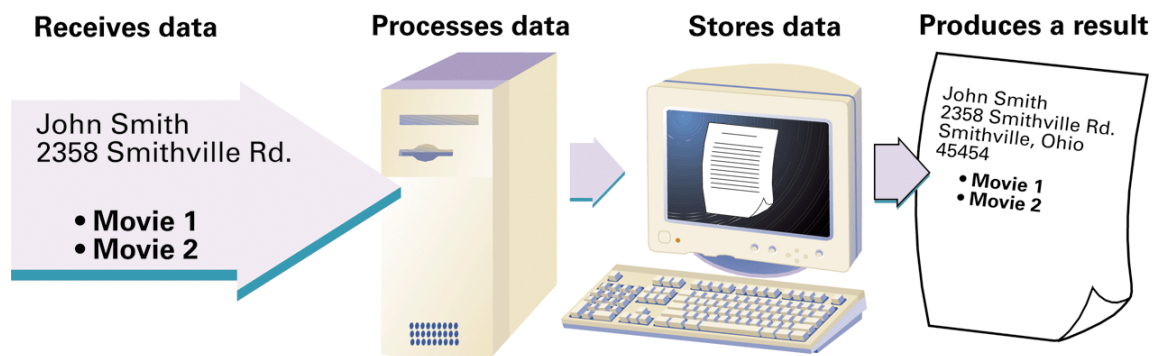
Important note: for best understanding perform all the step by steps in relation to the material presented in this revision paper

Lesson one: Introducing computers

The computer

A computer is an electronic device that

- **Receives data:** Information, such as text, numbers, or graphic images, is entered into the computer.
- **Processes data:** The computer will change the data from what was entered into the result the user wants.
- **Stores data:** The information is stored in the computer's memory.
- **Produces a result:** A final display of the information that was entered can be printed or displayed on a monitor.



Types of computers:

- **Supercomputers:** The largest and fastest computers that are used by government agencies and large corporations to process tremendous volumes of data.
- **Mainframes:** Large, very expensive machines that can support thousands of users; used by large corporations.

- **Minicomputers:** Larger than a desktop and much more expensive, but can support many users
- **Microcomputers:** Commonly called personal computers or desktop computers. Personal computers also include
- **Notebook computers:** Smaller and more portable than a desktop; commonly called a laptop
- **PDAs:** Personal Digital Assistants are very small and fit in the palm of your hand.

The computer System:

A computer system is a combination of parts working together:

- **Hardware:** The physical devices such as keyboard, monitor, CPU, and so on
- **Software:** Operating systems and application programs
- **Data:** The facts entered into a computer to be processed
- **People:** The users who enter the data and use the resulting output

Data communication:

Data communications is the technology that enables computers to communicate.

The four components of data communications are

- **Sender:** The computer that is sending the message
- **Receiver:** The computer receiving the message
- **Channel:** The media that carries or transports the message. This could be telephone wire, coaxial cable, microwave signal, or fiber optic.
- **Protocol:** The rules that govern the orderly transfer of the data sent

Networks:

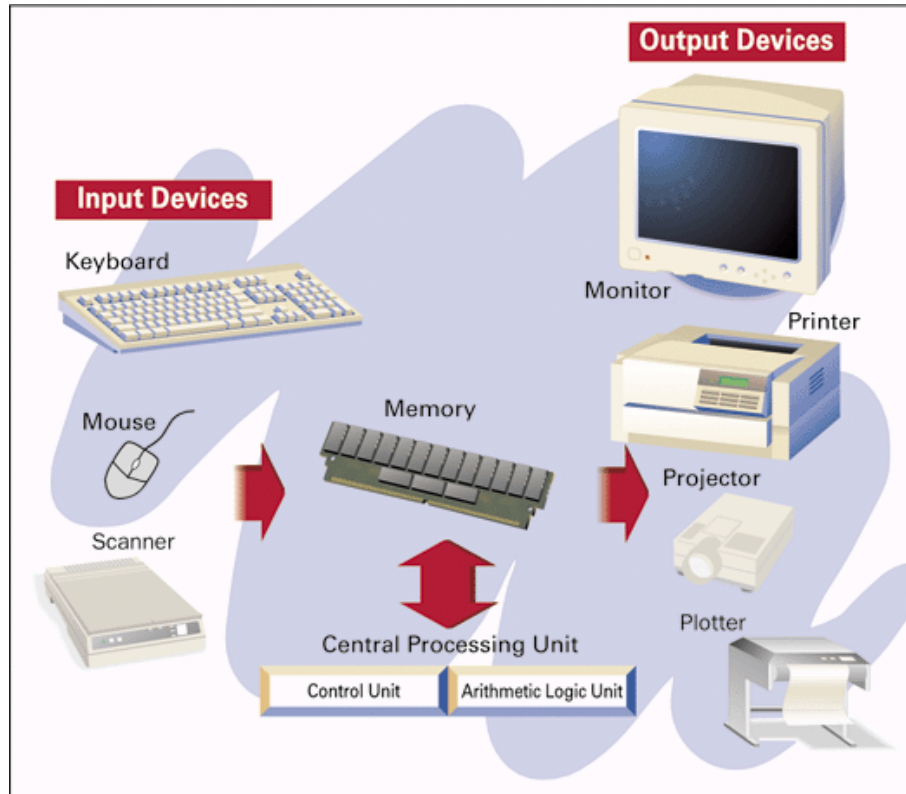
A network consists of multiple computers connected to each other to share data and resources.

- A computer network located in a small geographical area, such as one building or department, is called a **local area network or LAN**.
- A network made up of several local networks in a city, region, or across the world is called a **wide area network or WAN**.
- **Internet** was developed for government research projects to share information quickly and easily. Today it is the largest network in the world. It is used daily by millions of computer users.

Lesson two: Computer Hardware

System components:

The following Figure shows the components of the computer system.



The mother board

The motherboard is a circuit board inside the microcomputer's plastic case. It contains integral components including

- The central processing unit or CPU
- Basic controllers
- Expansion ports and slots
- Memory

The Central Processing Unit

The CPU is a tiny silicon chip that acts as the brains of a computer system.

The CPU has two primary sections:

- The Arithmetic/Logic Unit (ALU)
 - This section performs arithmetic and logical operations.
- The Control Unit

This section coordinates all activity within the CPU. It uses programming instructions to control what actions the CPU performs and when it performs them

The system clock determines the speed of the processor.

The CPU understands characters using the standardized coding systems (such as ASCII) to determine what character or number is represented by what series of binary digits. Data is stored in a series of 8-bit combinations called a byte. Every character, such as a letter, number, or punctuation mark, is a byte created from a unique combination of ones and zeros (bits).

Memory

Data being processed by a CPU is stored in system memory.

There are two types of memory found on a motherboard:

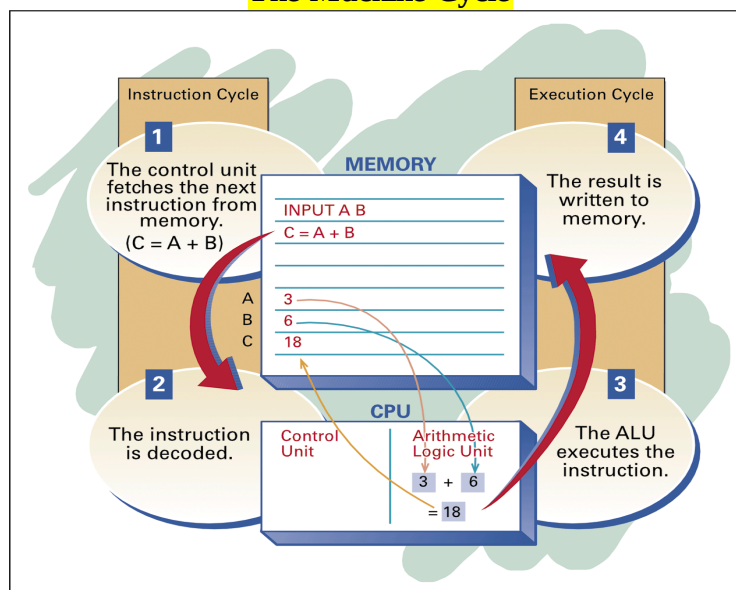
RAM: Random Access Memory

- RAM is short-term memory where data is processed while a program is running.
- Data stored here can be accessed and modified as needed.
- This type of memory loses any data it holds if the computer is shut down.
- RAM is also called *main memory*.

ROM: Read-Only Memory

- ROM is memory placed on the motherboard by the manufacturer and contains instructions, such as BIOS ROM, that tell the computer how to start itself.
- This data cannot be accessed or modified by application programs.
- The contents of this memory are not lost when the computer is shut down.

The Machine Cycle



Results of the machine cycle are stored in the RAM

Input devices

Input devices enable a user to input data and commands to the computer to be processed. The following are examples of input devices:

- Keyboard
- Mouse
- Voice recognition devices
- Scanners
- Joysticks
- Trackballs

Input devices

Output devices enable the computer to give or show you the results of its processing.

- Monitors
- Printers: Laser printers, Inkjet printers, dot matrix printers.
- Plotters
- Projectors.

Some devices, such as a modem, can perform both input and output operations.

Storage Devices

Storage media are permanent. The following are examples of storage devices

- **Floppy Diskettes**
- **Hard disk**
- **Optical storage devices:**
 - CD-ROMs (Compact Disk Read-Only Memory)
 - WORM disks (Write Once, Read Many)
 - CD-R drives allow you to record your own CD-ROM disks. After information is written to a CD-ROM disk, it cannot be changed.
 - DVD (Digital Versatile Disk)
- **Flash Memory and Memory Cards**
- **Network drives**
- **Virtual or Internet Storage.**

Lesson four: Computer Software

Computer systems consist of both hardware and software.

Hardware refers to anything you can physically touch

Software consists of the instructions issued to the computer to perform specific tasks

Software can be grouped into one of two categories:

- Applications software:
- Systems software

Application software consists of programs that were created to perform a specific task. Used by the end user. The most common types of application software are

- Word-processing programs
- Spreadsheet software
- Presentation software
- Database software
- Web browsers
- Games
-

Systems software refers to the programs that are used to manage computer system resources. Systems software coordinates and controls the resources and operations of the computer itself. The three categories of systems software are

- Operating systems
- Utility programs
- Language translators

User Interfaces

- There are two commonly used types of operating system interfaces, **command-line interfaces** and **graphical user interfaces**.

The following picture is an example of Command- line interfaces.

```

C:\>dir
Volume in drive C has no label.
Volume Serial Number is E81A-F77B

Directory of C:\

05/17/2004  07:47 PM  <DIR>          ARCSOFT
05/07/2004  02:04 PM          0 AUTOEXEC.BAT
05/07/2004  02:04 PM          0 CONFIG.SYS
05/07/2004  03:30 PM  <DIR>          DOCS
07/14/2004  09:42 PM  <DIR>          Documents and Settings
05/07/2004  03:25 PM  <DIR>          EZFirewall
07/13/2004  05:18 PM  <DIR>          My Documents
08/16/2004  12:31 PM  <DIR>          Program Files
05/07/2004  03:25 PM  <DIR>          Toshiba
08/05/2004  07:07 PM  <DIR>          unzipped
08/16/2004  12:34 PM  <DIR>          WINDOWS
05/07/2004  02:20 PM  <DIR>          WORKSSETUP
                2 File(s)          0 bytes
               10 Dir(s)  52,593,602,560 bytes free

C:\>_

```

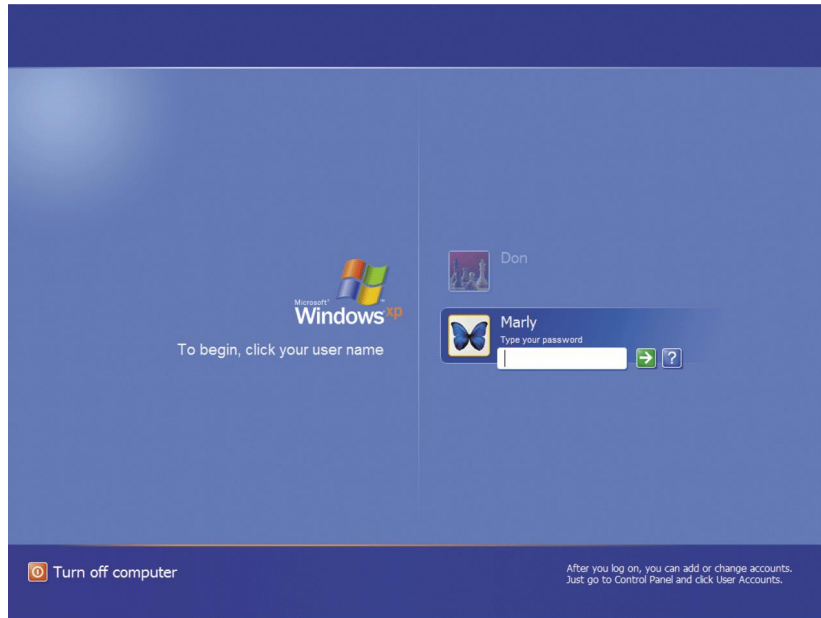
The following picture shows part of a GUI- Interface.



Lesson Five and Seven: Essential Computer Skills & the Windows Operating System

Starting a computer is simple. Just turn it on and wait for the operating system to do all the work.

The **Welcome Screen** will appear, Shown in the figure below.

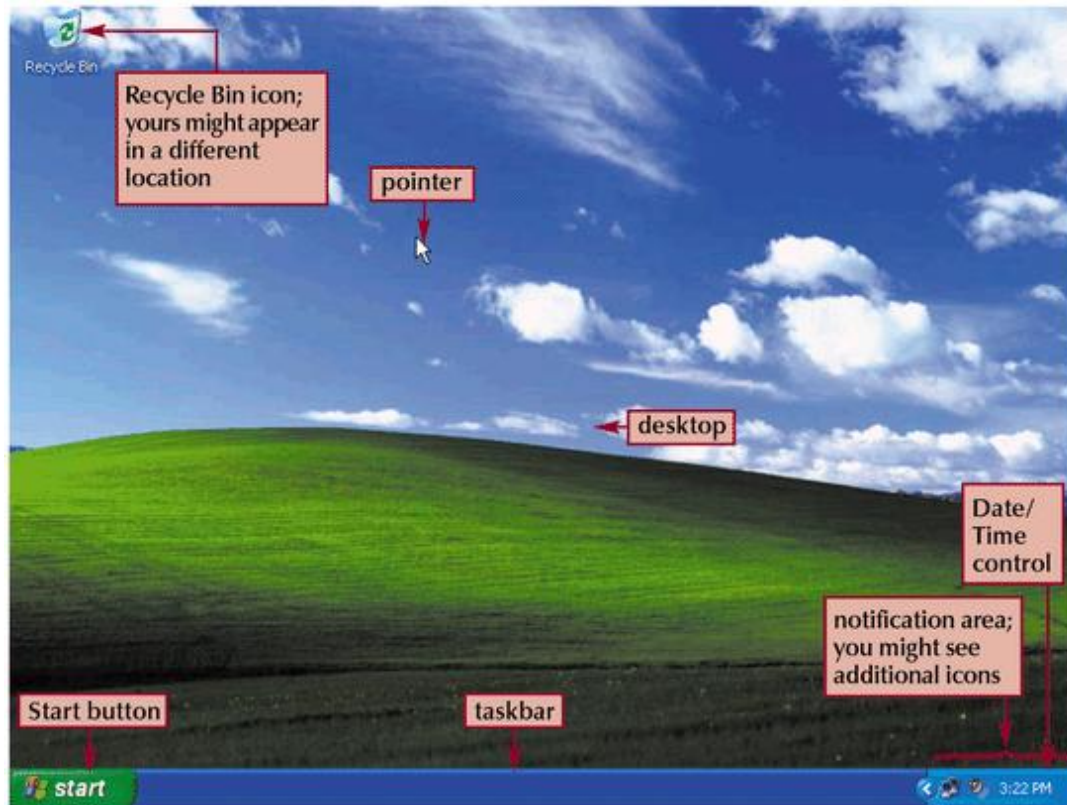


Logging on

- Windows may ask you to click a user name before you can access the computer.
- Windows XP lets many different users create their own accounts with personalized settings.
- When you log on, you may be prompted to enter a password.

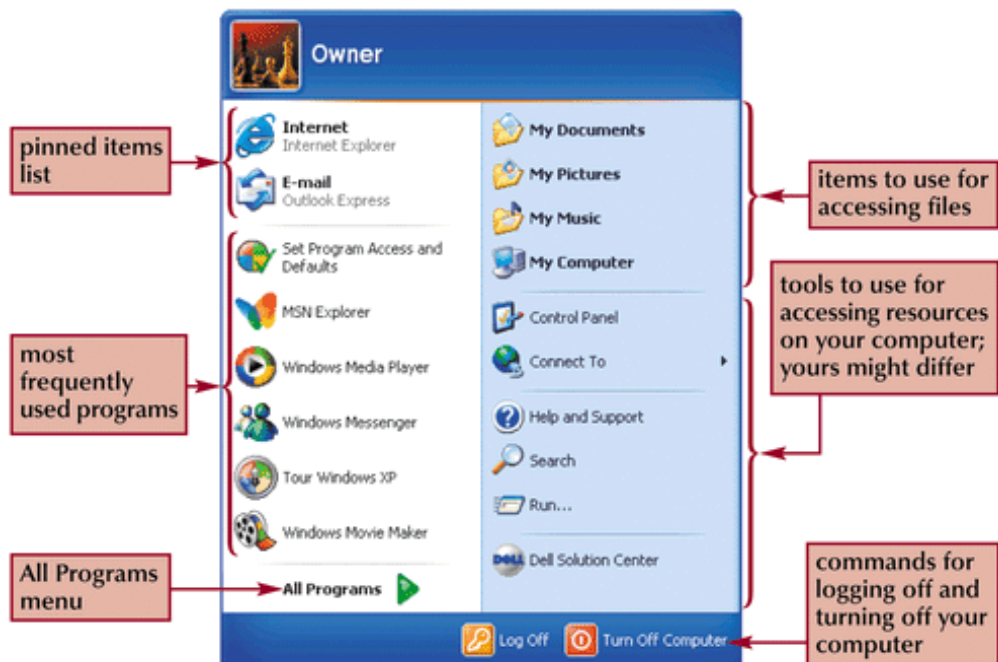
The Desktop

- When the GUI is up, you will be looking at the desktop.
- Windows XP Starts when computer is turned on
 - Elements of the desktop shown in the following figure.
 - Icon
 - Pointer
 - Desktop
 - Date/Time control
 - Taskbar
 - Start button
 - Notification area (system tray)



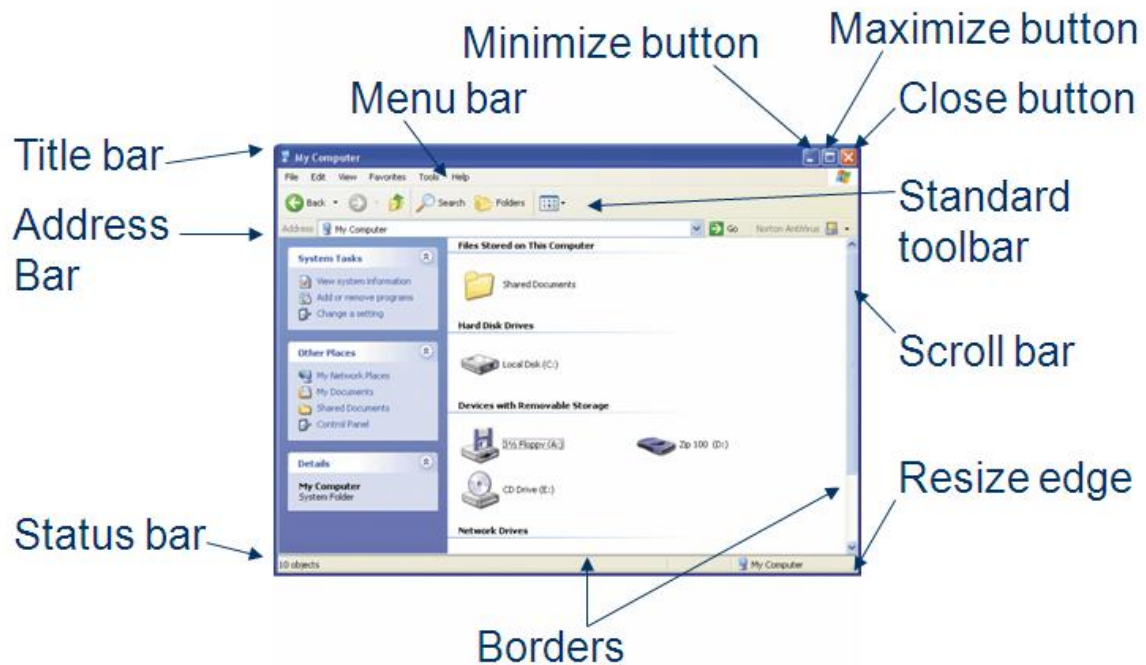
The start menu

Click the start button and the menu below will appear.

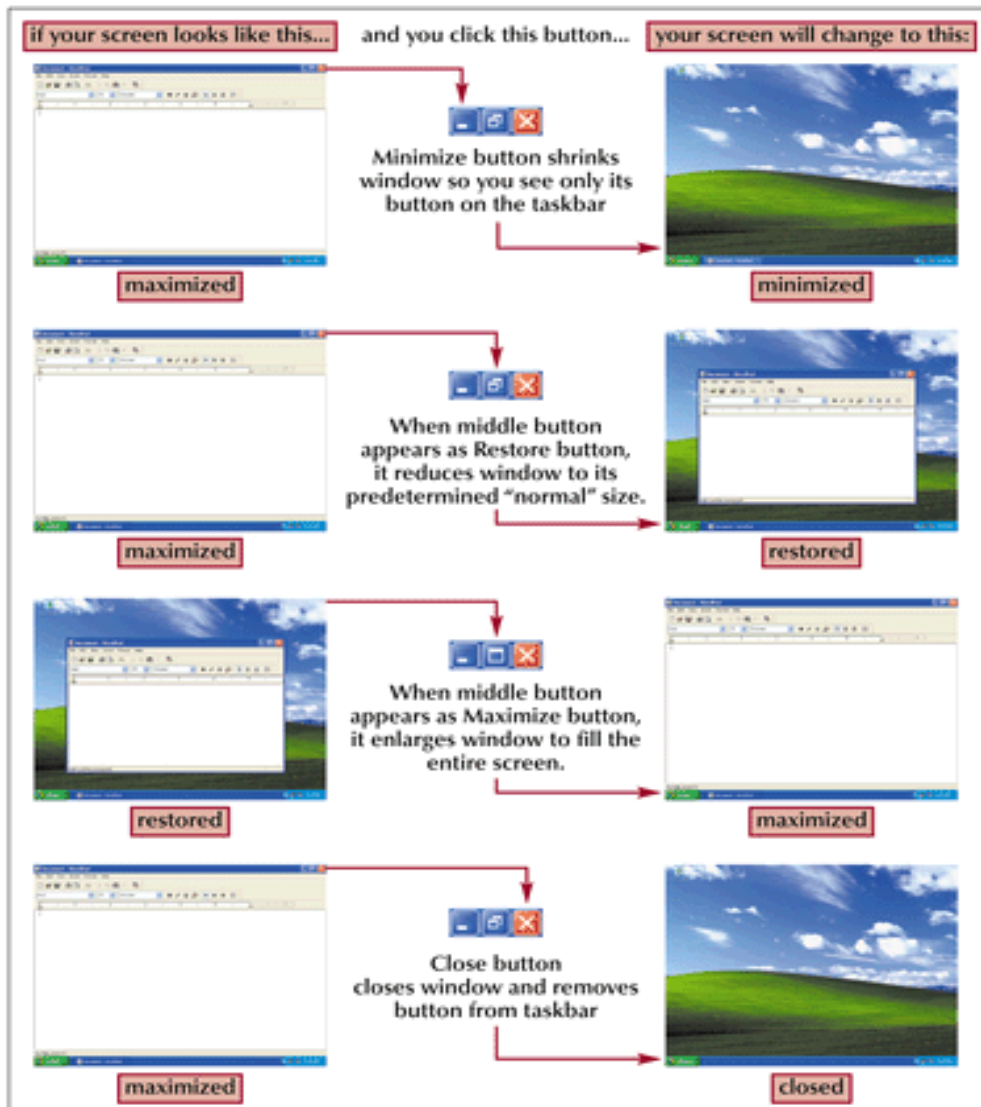


Window Anatomy (parts of a window)

Double clicking an icon will open a window. The parts of the window are shown in the figure below.

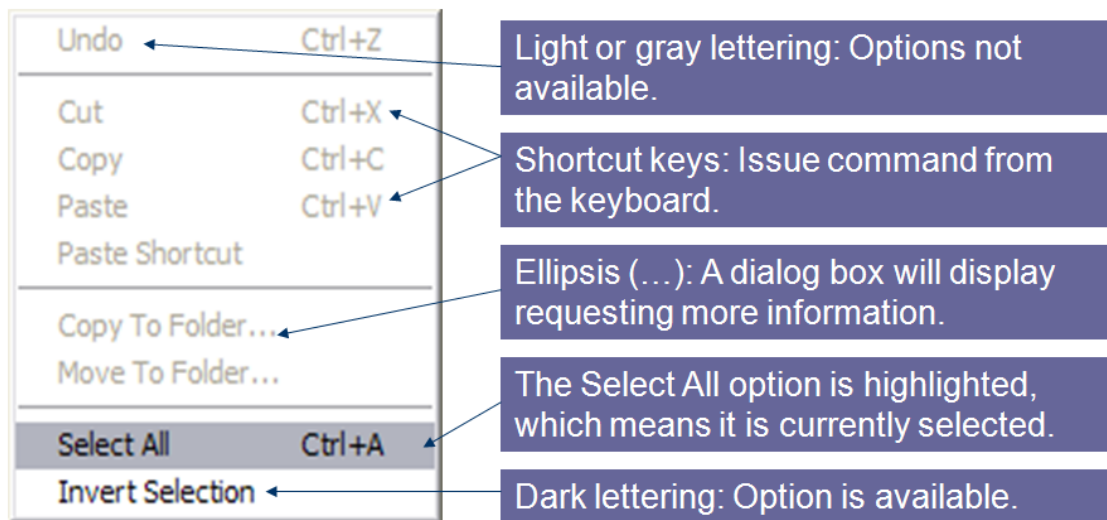


The following picture demonstrates the use of maximize, minimize, restore and close buttons on the corner of the window.



Working with menus

The following two figures explain then different information we can get from the menus visual elements.



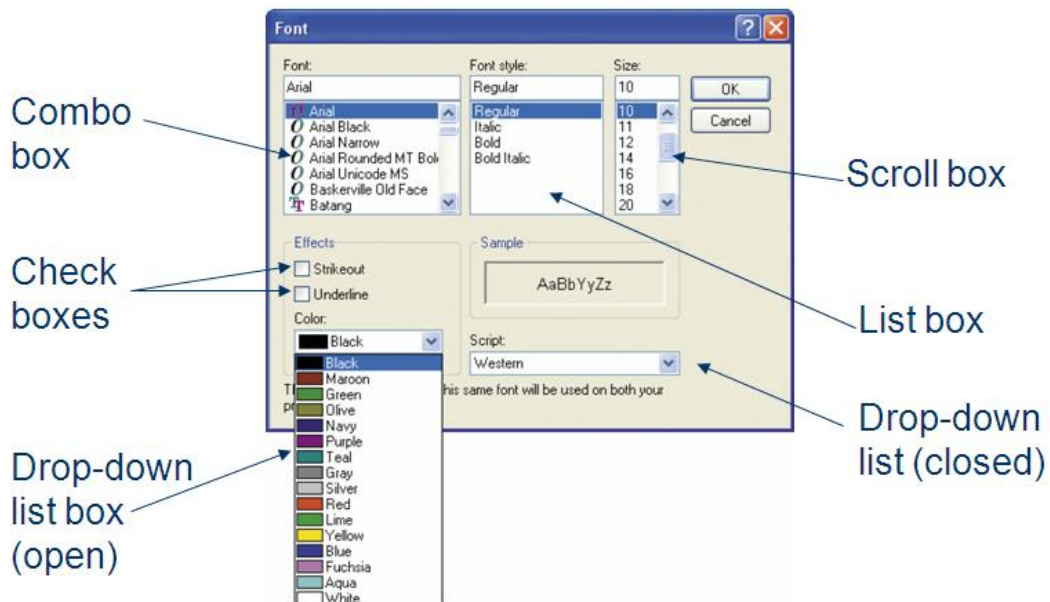
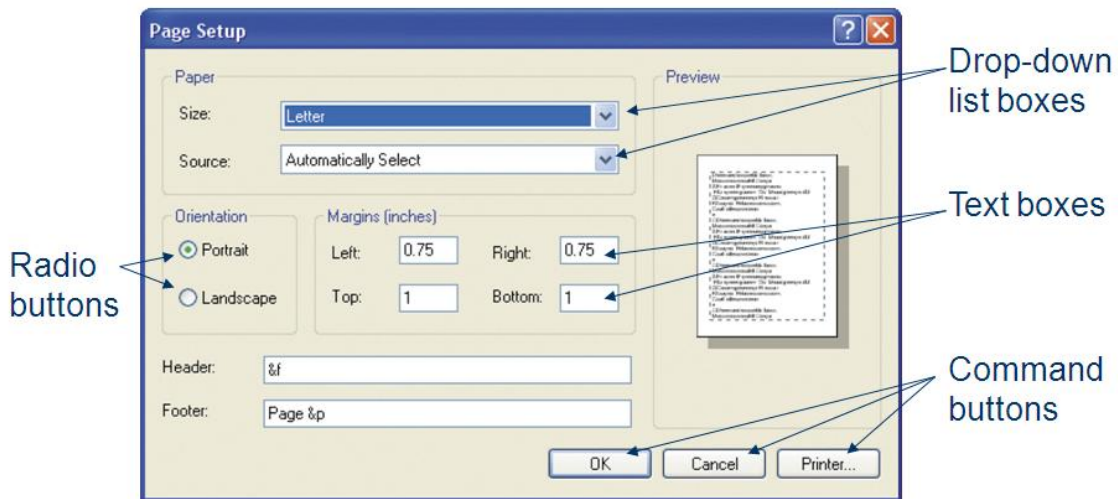
Convention	Description
Check mark	Indicates a toggle, or "on-off" switch (like a light switch) that is either checked (turned on) or not checked (turned off).
Ellipsis	Three dots that indicate you must make additional selections after you select that command. Commands without dots do not require additional choices—they take effect as soon as you click them. If a command is followed by an ellipsis, a dialog box opens that allows you to enter specifications for how you want a task carried out.
Triangular arrow	Indicates the presence of a submenu. When you point at a menu option that has a triangular arrow, a submenu automatically appears.
Grayed-out command	Command that is not currently available. For example, a graphics program might display the Text Toolbar command in gray if there is no text in the graphic to work with.
Keyboard shortcut	A key or combination of keys that you can press to select the menu command without actually opening the menu.

Selection letters

To open a menu using selection letters press ALT & (the underlined letter on the menu name). Once the menu is open selection letters can be used alone (press only the underlined letter to perform a certain task)

Dialogue boxes

The following picture shows the dialogue box controls.



Arranging Windows on the Desktop

Right click the task bar and the following options will appear

- The Cascade Windows option cascades the open windows into a stack with title bars showing. The active window is always at the front of the stack.
- The Tile Windows Horizontally option tiles the open windows across the desktop from top to bottom, without overlapping any portion of any window.
- The Tile Windows Vertically option divides the desktop evenly among the open windows and aligns the windows across the screen, left to right, without overlapping any window.

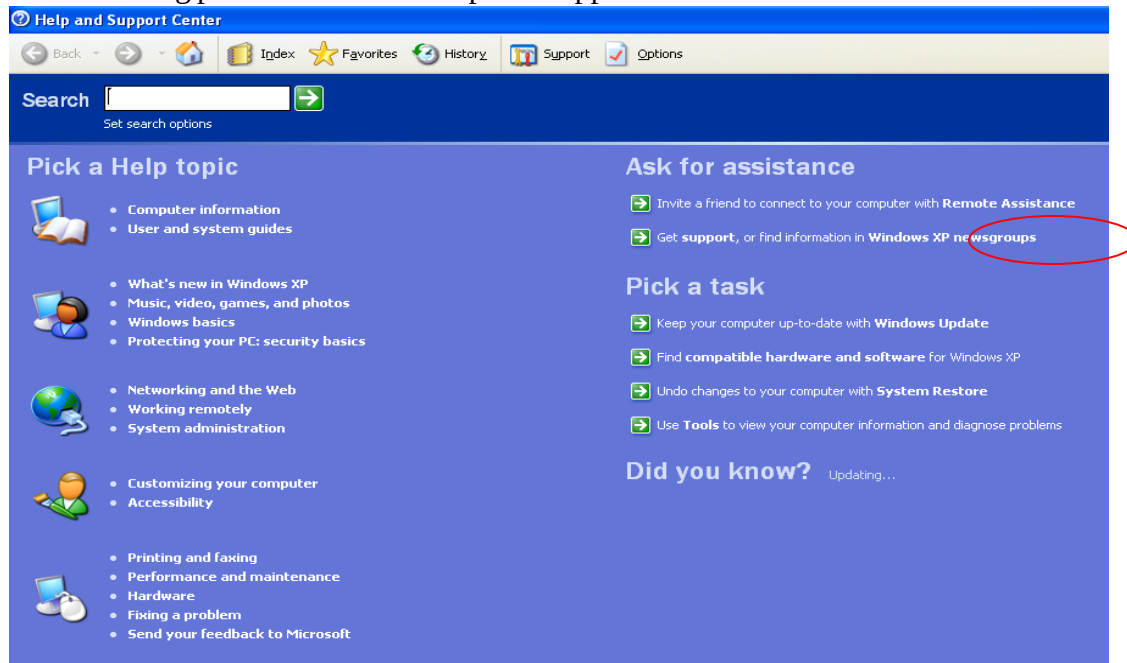
Switching Between Windows

Press and hold down the Alt key and then press Tab. A small window in the center of the screen displays icons for all windows currently open. This is called the fast Alt + Tab method for switching windows.

Getting Help

- Windows provides a Help and Support feature on the Start menu.
- There are four categories of assistance:
 - *Pick a Help topic*
 - *Ask for assistance*
 - *Pick a task*
 - *Did you know?*

The following picture shows the help and support center.

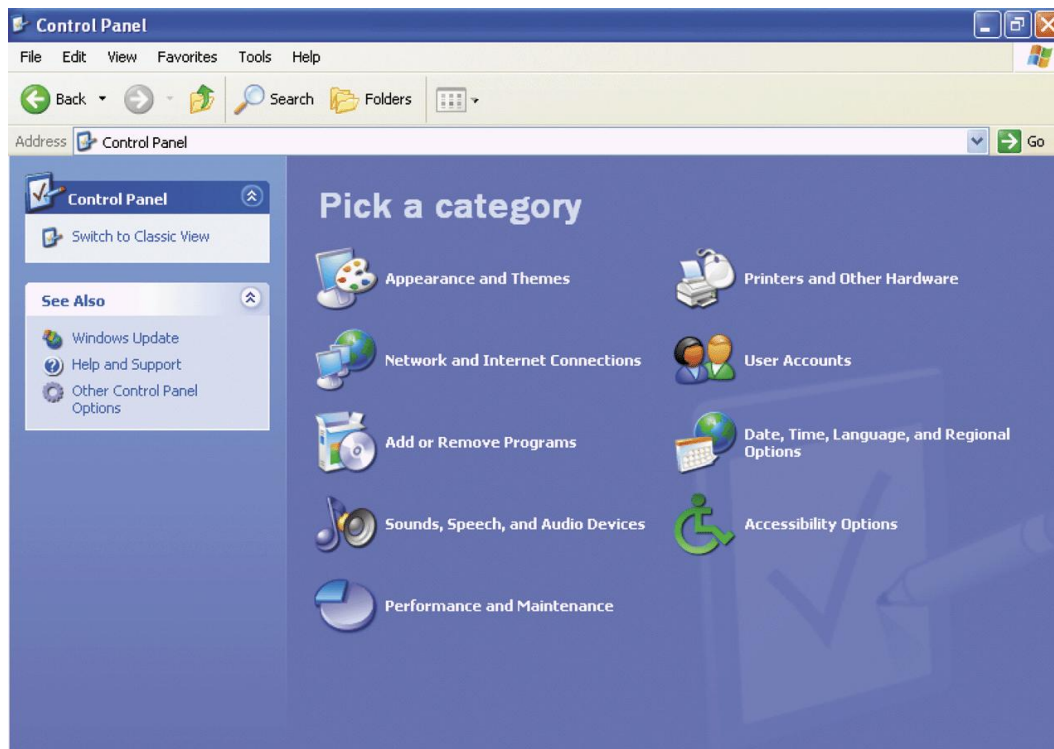


In the picture above **Remote Assistance** is circled. Remote Assistance option allows someone you know to connect to your computer from another computer running Windows XP to observe your computer screen as you work. You can also receive the remote user's keystrokes to watch the remote user demonstrate the solution to your problem.

Lesson 8: Changing Settings and Customizing the desktop

The Control Panel

- You open the Control Panel by selecting it on the Start menu.
- In Category view (the default view), the Control Panel window has two panes:
 - The left pane includes a list of tasks you can choose quickly, plus other places you can look for information about the Control Panel and Windows.
 - The right pane has nine categories you can pick to change settings and display options. The categories are shown in the picture below



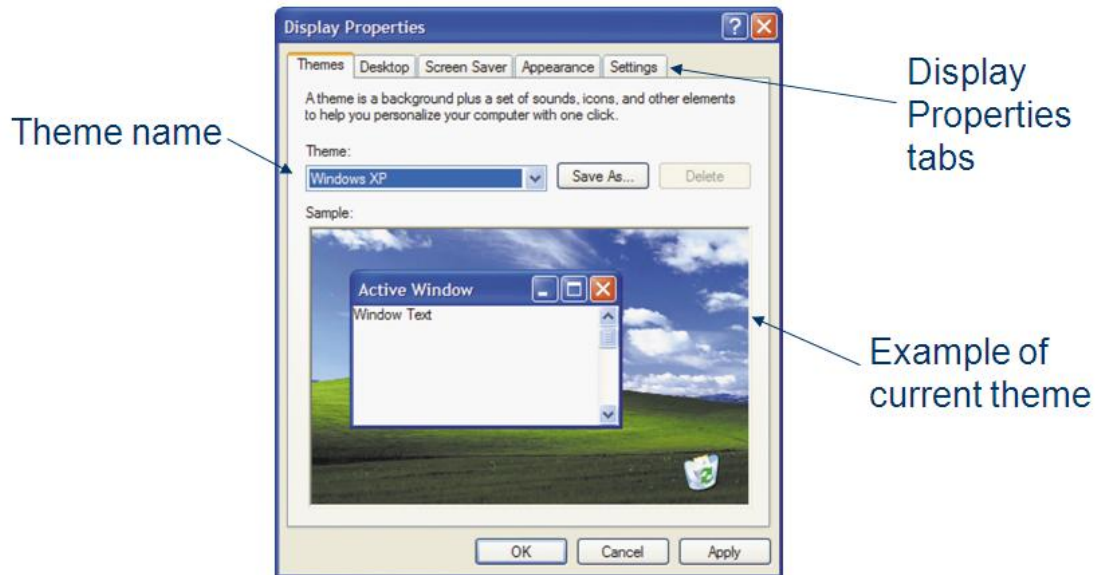
Many settings can be configured using the Control Panel. You change settings by selecting a category and then a task or Control Panel icon. You then customize the settings using the Wizard or dialog box that opens.

Customizing the Desktop

You can change the appearance of the Windows desktop via the Control Panel.

- Click the Start button and then click Control Panel.
- Select the Appearance and Themes category and then click the Display Control Panel icon.

The Display Properties dialog box contains several tabs (shown in the figure below) that can be accessed to change your desktop's appearance and behavior.

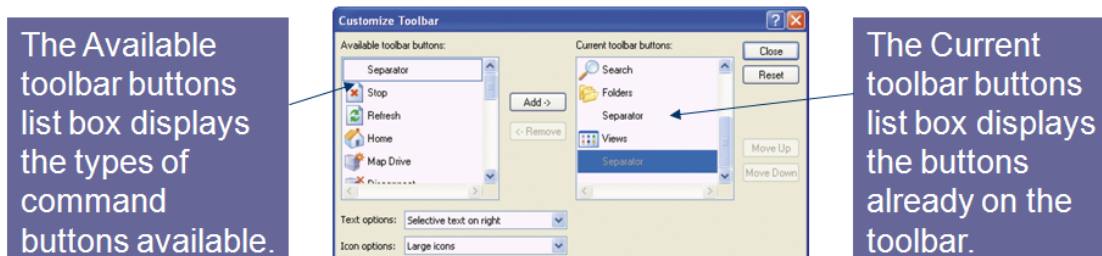


The Display properties dialogue box tabs

- **Themes tab:** Lets you assign predefined themes including icons, fonts, colors, and other elements to your desktop.
- **Desktop tab:** Offers pictures and graphics you can use as a background for the desktop.
- **Screen Saver tab:** Selects a screen saver to use.
- **Appearance tab:** Controls fonts and colors for various screen elements.
- **Settings tab:** Sets resolution and color settings for your computer monitor.

Customizing a Toolbar

- Click on the View menu and then select the Toolbars option. (The right-pointing arrow tells you a submenu will open.)
- Select the Customize option on the Toolbars submenu to open the Customize Toolbar dialog box.



Shortcuts

- Shortcuts are represented by icons on your desktop.
- Double-clicking a shortcut opens the actual item to which the shortcut is pointing.

A small arrow in the lower-left corner of an icon identifies it as a shortcut.



Creating shortcuts

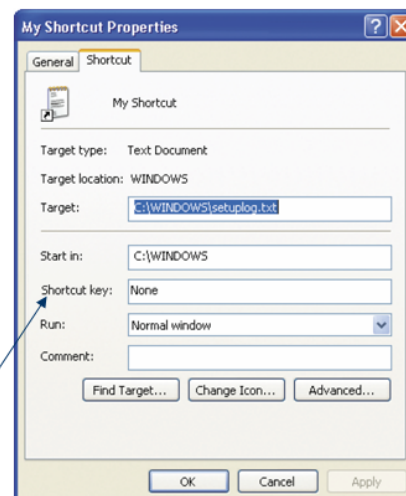
Select file → right click → create shortcut

Select file → right click + drag → create shortcut here

Windows explorer → select file → file → create shortcut

Assigning a Shortcut Key

- Right-click the shortcut and select Properties to open the My Shortcut Properties dialog box.
- Select the Shortcut tab.
- Click in the Shortcut key text box.
- Press and hold down the Ctrl key and enter the letter or number key you want to use for the shortcut.
- Click OK to save your shortcut key.



The Shortcut key text box in the My Shortcut Properties dialog box

Quick Launch Bar Shortcuts

- You can also add a shortcut to the Quick Launch bar on the taskbar.
- If you don't see the Quick Launch bar, right-click in an empty part of the taskbar, point to Toolbars, and then click Quick Launch.
- To add an icon to the Quick Launch bar, drag a program, document, or desktop shortcut icon to the Quick Launch bar.
- To remove an icon from the Quick Launch bar, right-click the shortcut and then select Delete from the shortcut menu that displays.