Computer Literacy

6th Grade Technology

Modern Computers

Digital Devices

Read and process information as a series of individual bits of data rather than as a continuous stream

Digital vs. Analog

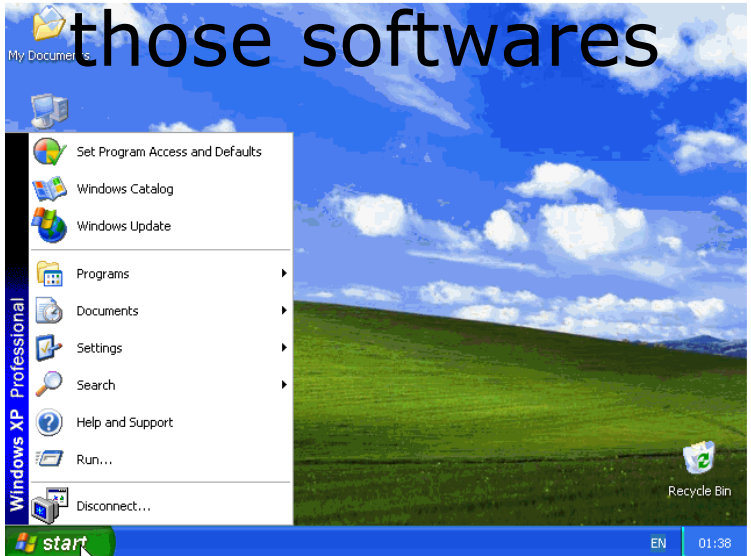
- Analog Devices
  - Tape recorders
  - Televisions
- Work with continuous stream

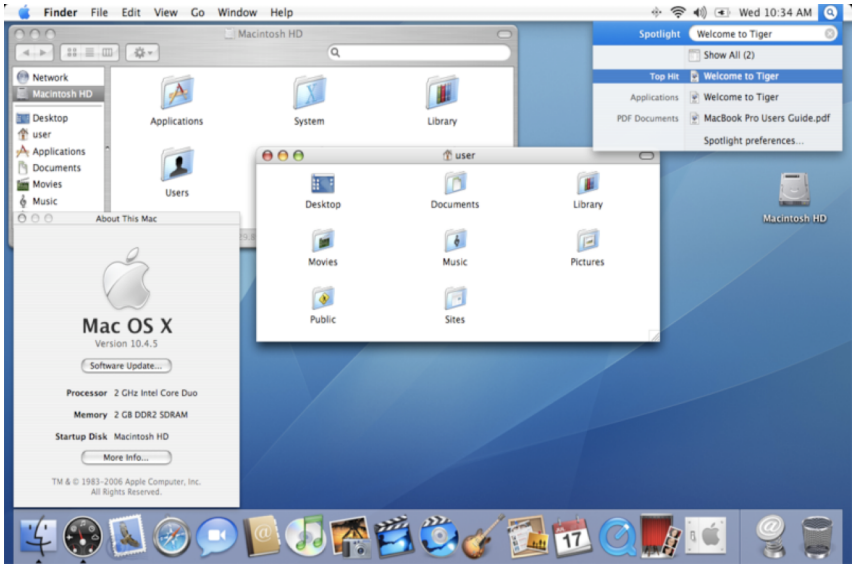
Personal Computers (PCs)

- Computers used in everyday life
  - At home
  - School
  - Your job
- Windows & Macintosh Computers

Windows vs. Macinitosh

- Principal difference
  - the operating system (OS)
- Operating System
  - Software enables computers to run other software and run basic tasks of those softwares





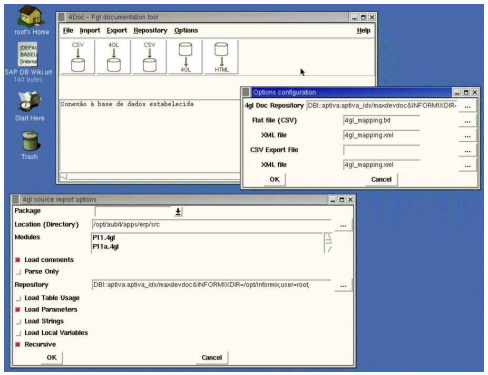
Windows vs. Macintosh

- Windows
  - Microsoft Windows OS
- Macintosh
  - Made only by Apple Computers
  - Use an OS called Mac OS that only runs on Macintosh computers and is different from Windows.

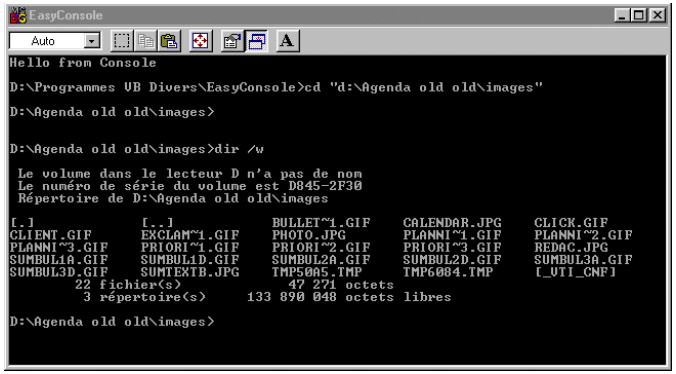
Windows & Macintosh OS

- Systems are not compatible
- They cannot run the same software
- Software may be found now to run in both versions
- Latest:
  - Boot Camp
    - Mac lets you run Windows OS

Different Operating Systems



- Based on GUI system
  - Graphical user interface
  - Software interface
  - Allows user to interact with a piece of software by selecting items from a screen to execute a command rather than typing in commands to perform tasks
  - Easier to use
  - As your working on a document, can see what it looks like before printing it
  - Not true before



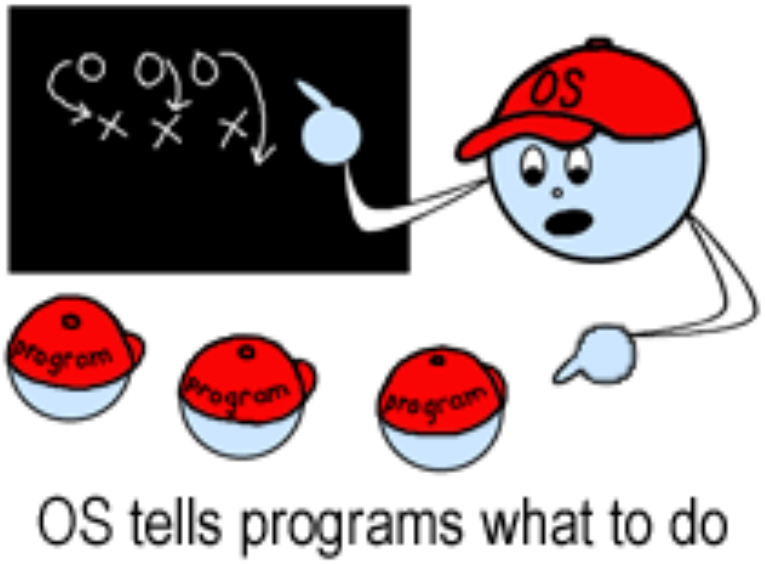
Operating Systems are constantly being improved or upgraded as technology advances

2 Most Popular OS Today

Both built around GUIs

- Windows Operating System
  - Windows was developed by Microsoft
    - Windows 98-extension of Windows 95-better at multitasking: running more than one application at the same time.
    - Windows 2000-easier to use
    - Windows XP-business and home versions
    - Windows CE-handheld (PDAs) version
- MAC OS
  - Primary OS for Apple Computers “Macs”
  - iMac desktop PCs
  - PowerBook, iBook laptops
  - Power MacG4 servers
  - Macs favored by artists and designers for their multimedia and graphics capabilities
    - OS 9
    - OS X, OS 10.1.3
    - OS 10.4
    - OS X Tiger
- Cross Platform
  - Ability to run on both types of OSs –Mac and Windows

Operating Systems | OS

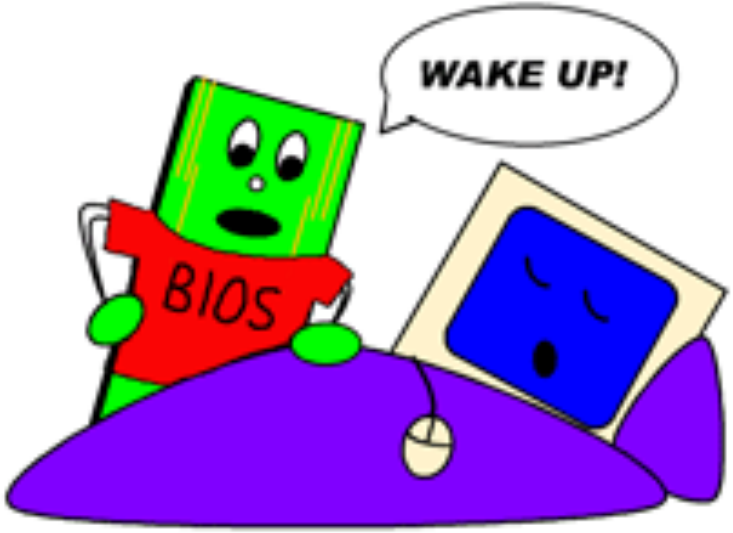


OS tells programs what to do

- Most important program on any computer
- A large program made up of smaller programs
- Controls how CPU communicates with other hardware

CPU (central processing unit)
Brain of computer-controls info and tells other parts what to do

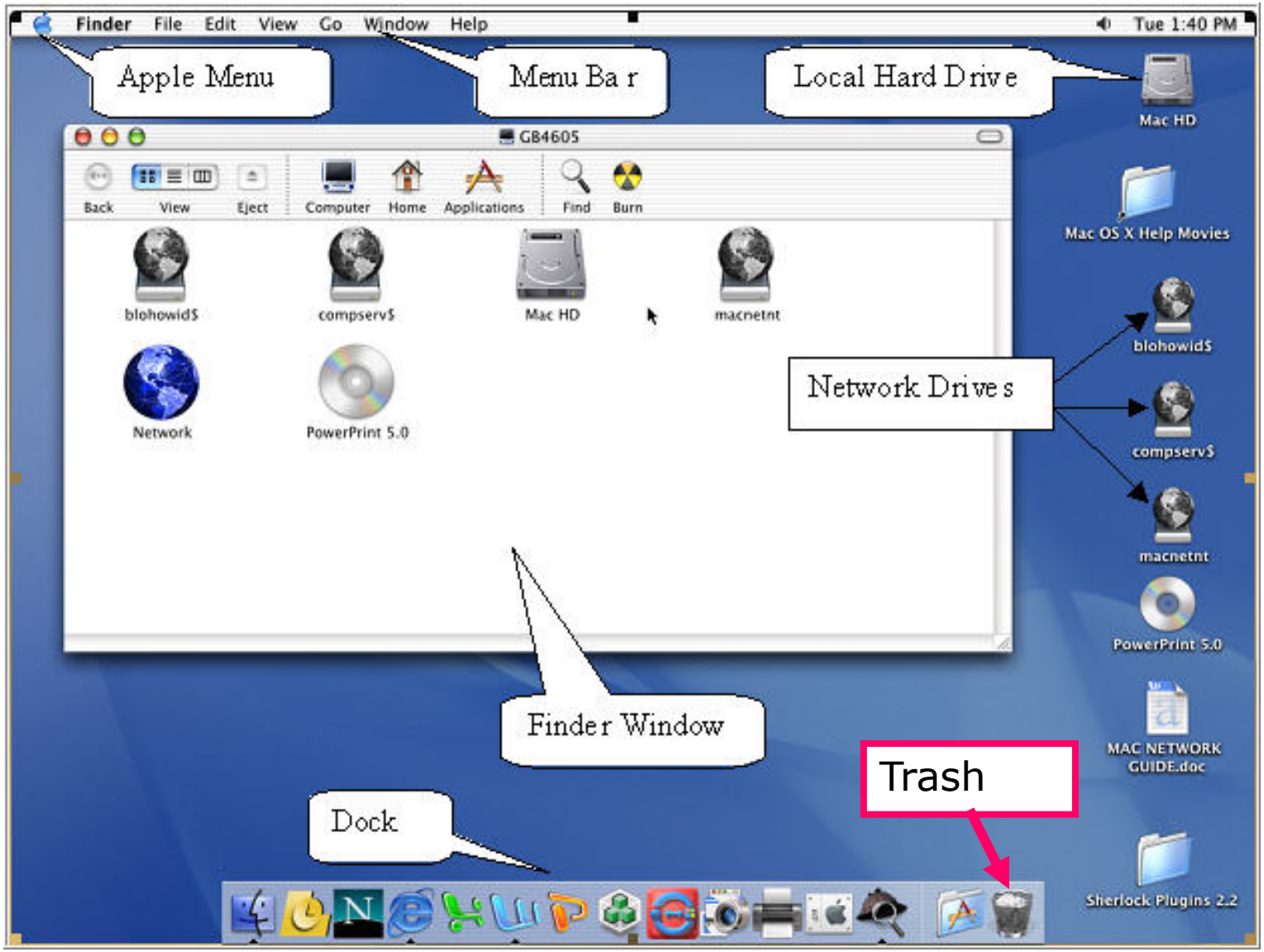
OS continued…



BIOS wakes up the computer

- BIOS-Basic Input Output System
  - Responsible for waking up the computer when you turn it on
  - Reminds it of all the parts it has and what they do.
- DOS-Disk based Operating System
  - OS contains other programs not as important but necessary

Mac Desktop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Apple Menu
Menu Bar
Local Hard Drive
Mac HD
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Back View Eject Computer Home Applications Find Burn
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Mac HD
macnetnt
Network
PowerPrint 5.0
Mac OS X Help Movies
Network Drives
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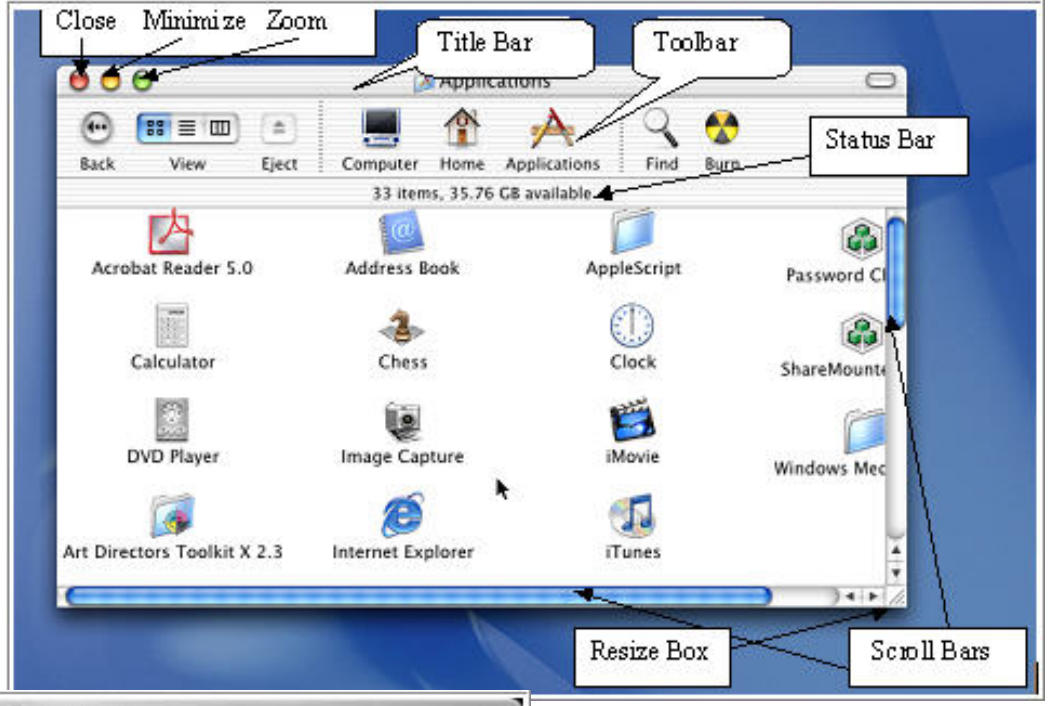
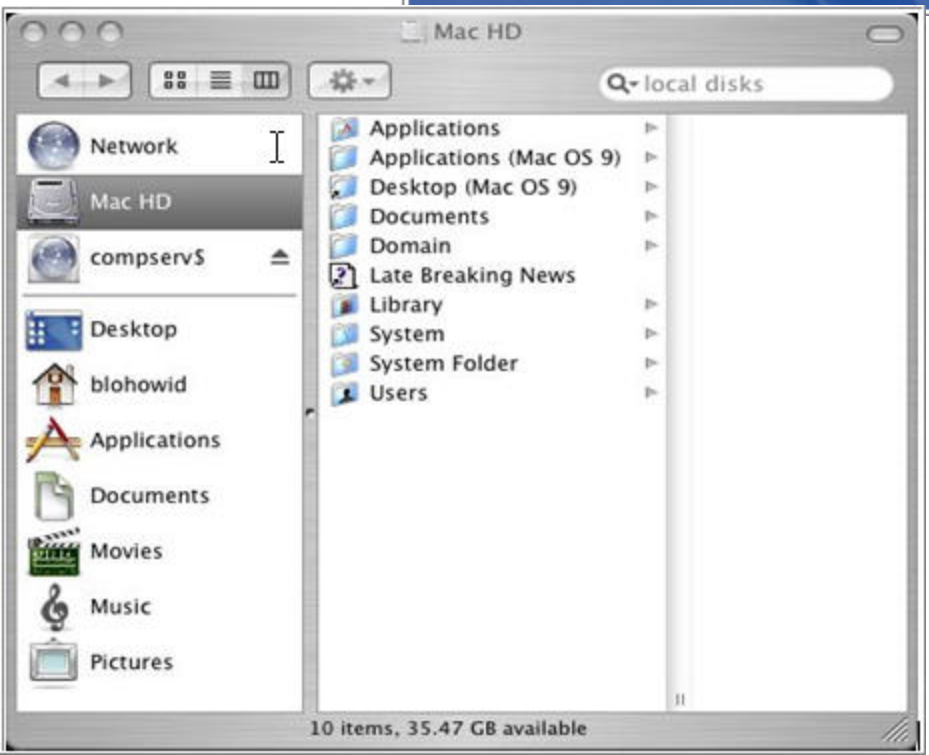
MAC NETWORK GUIDE.doc
Finder Window
Trash
Dock
Sherlock Plugins 2.2


Close
Minimize
Zoom
Title Bar
Toolbar
Status Bar
Applications
Back
View
Eject
Computer
Home
Applications
Find
Burn
33 items, 35.76 GB available
Acrobat Reader 5.0
Address Book
AppleScript
Calculator
Chess
Clock
DVD Player
Image Capture
iMovie
Art Directors Toolkit X 2.3
Internet Explorer
iTunes
Resize Box
Scroll Bars


Mac HD
local disks
Network
Mac HD
compserv$
Desktop
blohowid
Applications
Documents
Movies
Music
Pictures
Applications
Applications (Mac OS 9)
Desktop (Mac OS 9)
Documents
Domain
Late Breaking News
Library
System
System Folder
Users
10 items, 35.47 GB available

blohowid
selection
Network
Mac HD
compserv$
Desktop
blohowid
Applications
Documents
Movies
Music
Pictures
Library
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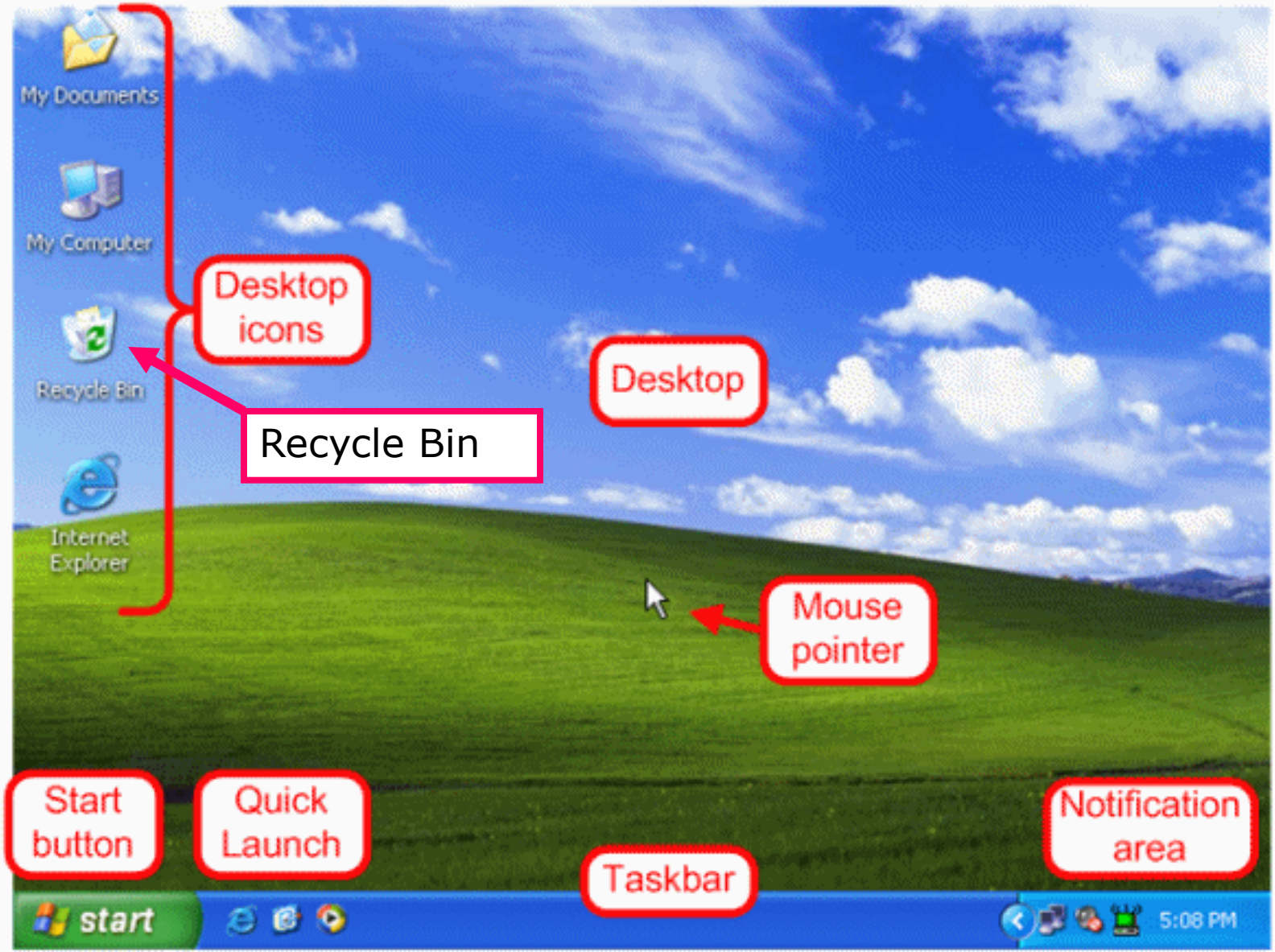
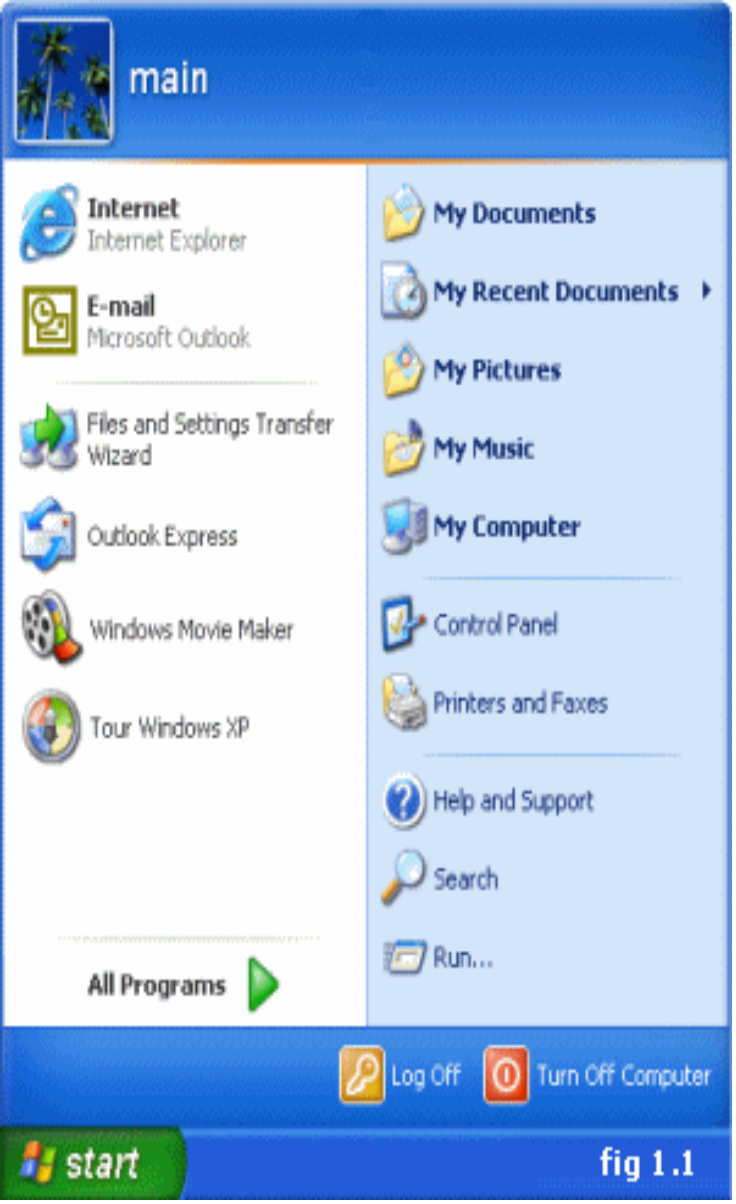
Music
classdoc
Pictures
Public
Documents
_private
AdobeWeb.log
Backup-Do Not Delete!
56 items, 90.24 GB available

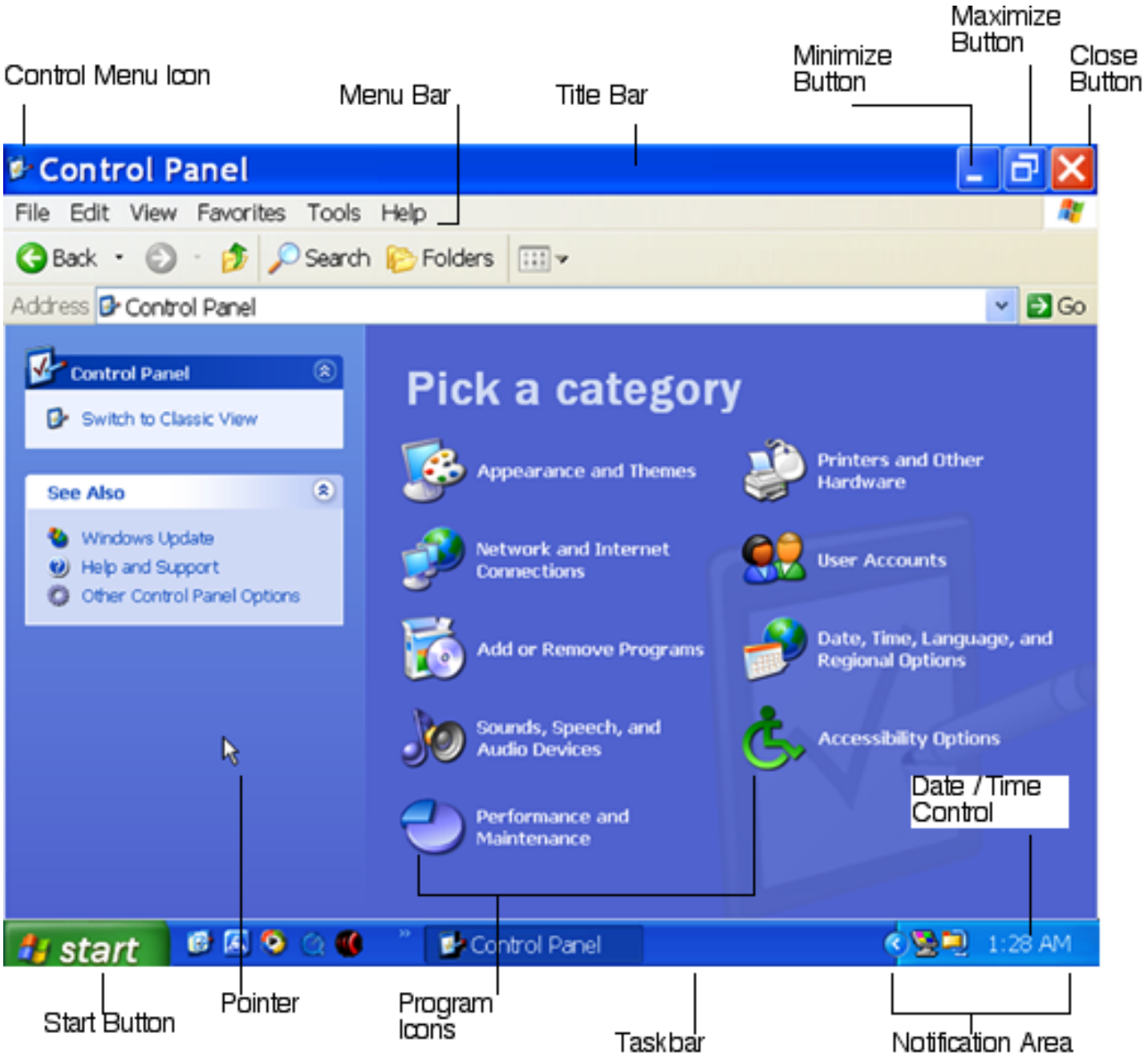
Windows Desktop





Log off - Log off the current user.
Turn Off Computer - shutdown, restart and standby.
All Programs - Access installed programs.
Run - Used to manually start executable files (programs).
Search - Search your PC for files and folders.
Help and Support - Opens the built-in help
Control Panel - The control panel is used to configure various Windows XP settings, we will be looking at the Win XP control panel in detail later in the tutorial.
My Computer - Gives you access to your computer's disk drives and files

My Music - Links to a folder which is used (by default) to store any music files on your hard drive.
My Pictures - Links to a folder used (by default) to store any pictures/images on your hard drive.
My Recent Documents - folder contains recently viewed documents.
My Documents - Gives access to a folder which is used (by default) to store any documents on your hard drive.


Control Menu Icon
Menu Bar
Title Bar
Minimize Button
Maximize Button
Close Button
Control Panel
File Edit View Favorites Tools Help
Back Search Folders
Address Control Panel
Go
Control Panel
Switch to Classic View
See Also
Windows Update
Help and Support
Other Control Panel Options
Pick a category
Appearance and Themes
Printers and Other Hardware
Network and Internet Connections
User Accounts
Add or Remove Programs
Date, Time, Language, and Regional Options
Sounds, Speech, and Audio Devices
Accessibility Options
Performance and Maintenance
Date / Time Control
start
Control Panel
1:28 AM
Start Button
Pointer
Program Icons
Taskbar
Notification Area

Desktop vs. Laptop PCs

- Desktop computers
  - Easier to upgrade
  - Designed to be left in one location
  - Can add more memory
  - Full size keyboard
  - Larger monitor

Laptop Computers

- Portable
- Smaller screens
- More powerful before
- Compact keyboard
- Cost more
- Upgrading more difficult

Hand Held Devices (PDAs)

- Computers small enough to hold in your hand
- Personal digital assistants
- Most popular PDAs are made by PalmOne and Blackberry
  - Don’t have all features or power of PC
  - Keyboards too small
  - Only type a few words
  - Write w/stylus via a touch screen
  - Can’t store large amounts of information

Anyone have a PDA?

What Features?

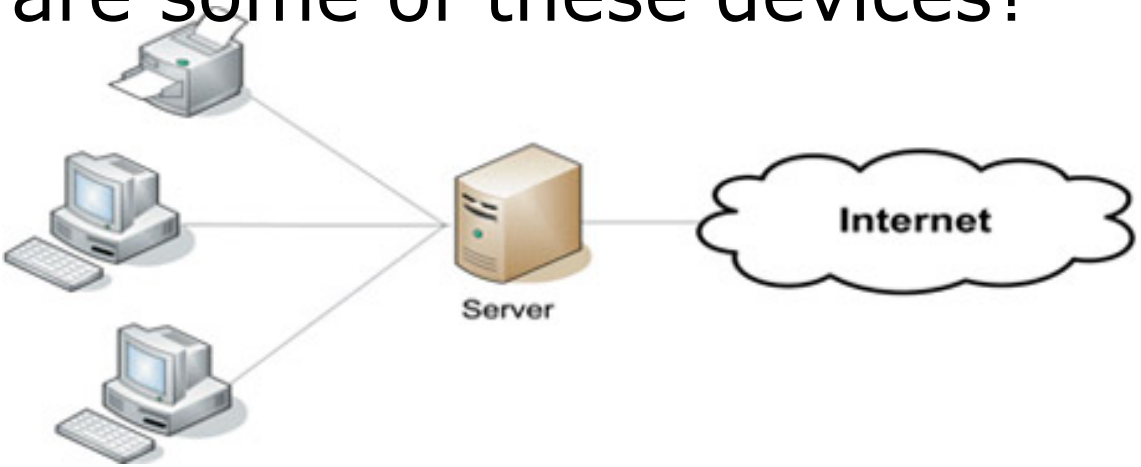
Uses of PDAs

- Appointment calendars
- Address books
- Calculators
- Saving short notes
- Games
- Connect to PC
- Synchronize PDA calendar to update PC’s
- PDA has modem-send / receive e-mails
- Connect to WWW
- PDAs and wireless telephones combining features
- Distinction between both may not exist in future
- Future: More powerful storage device

Servers

- A computer that manages files and other resources for a network
- Network: several PCs connected to a single server
- Some servers no bigger than a PC others are much larger and more powerful
- Other devices are also connected to a server so that many people can share them
- What are some of these devices?

Printer
Scanner
Internet
E-mail



Input / Output Devices

6th Grade Technology

Input Devices

- Any info you enter into a computer is input

Name 2 input devices on a PC

keyboard-enter text

mouse- select options

entering commands by selecting items

Other Input Devices

- Mice
  - Two buttons on Windows PC
  - Single button mouse Mac
- Small wheel helps to scroll
- Right click on Mac = Ctrl key + mouse click
- Trackball
  - Move ball to move curser
- Trackpoint
  - b/n the G and H keys
  - Found on a laptops keyboard
    - Press and move finger on touchpad to move cursor

- Touchpad
  - Flat, built in pad
  - Press and move finger on touchpad to move cursor
- Sound Input Devices
  - Record voices or music
- Microphones
  - Record sounds to create audio files
  - Audio cards enable computer to process sounds

- Digital recorders
  - Save sounds in a format you can use with computers
  - Handheld devices come w/ cables that connect to computers
- Synthesizers and Musical Keyboards
  - Create music w/ digital synthesizers
  - Can record music as you play it
  - Able to edit music recording
  - Digital recording edited w/ audio editing software
  - Can be connected to computers by cables

- Digital Still Cameras & Digital Camcorders
  - Digital files that can be uploaded to a computer
  - Pictures and videos (images and sounds)

- Web Cams
  - Digital video camera connected to the www
  - Allow live broadcast over the web
  - Quality not as good
  - Inexpensive
  - Good for teleconferences

- Graphics Tablet
  - “Digitizing tablet” or “digitizer”
  - Create sketches
  - Drawings in digital format
  - Displays on a computer screen
  - Draw on tablet with pointing device
  - Tablet translates movement into digital signals
  - Sends them to the computer

- Scanners
  - Converts printed pictures or documents to a digital file that you can upload to a computer
- Game controllers
  - Game pads (both hands)
    - race car wheels
  - Joysticks
    - Use them to send instructions to the computer

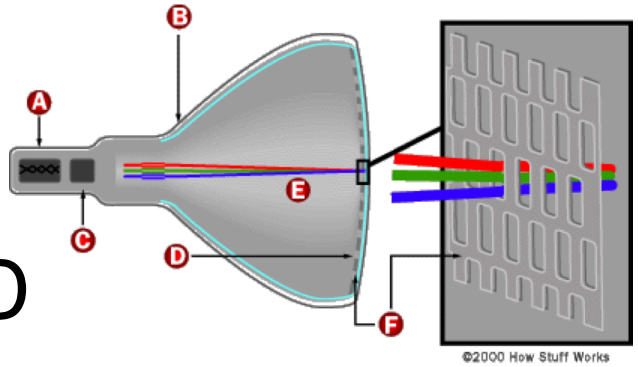
Output & Display Devices

- Any information a computer produces is called output
- Can see or hear output

- Monitors -2 most common kinds
  - See text, graphic input
  - Shows you computers output
- CRT
  - Cathode ray tube-desktop computer
- LCD
  - Liquid crystal display-laptops

CRT vs. LCD

- CRT
  - Use display technology that beams signals against the back of a screen



A Cathode
B Conductive coating
C Anode
D Phosphor-coated screen
E Electron beams
F Shadow mask

- LCD
  - Use technology that displays text and images by passing electricity through a liquid crystal solution sandwiched b/n 2 magnetic sheets

- Touch screens
  - Output device, display, and an input device
  - Touch an item instead of using keyboard or mouse

Where do you see them?

ATMS

PDA's

Kiosks-purchase ticktes, airports, hotels

Interactive computer terminals

- Plasma Display (flat screens)
  - Flat panel display that creates images by passing electrical impulses through a neon/xenon gas mixture sandwiched b/n two sealed glass plates with electrodes on their surfaces
  - High color depth
  - Wide viewing angle

- Projectors
  - Connect to computer to display what's on your computer screen on a wall or screen

- **Printers**
  - Produce a hard copy of what is on your computer
  - ***Inkjet printer***: spray ink at paper through tiny nozzles
    - Inexpensive
    - Color
    - Produce high quality text and graphics
    - Slower
  - ***Lazer printers***: use laser beam and magnetism to transfer fine powder called toner to the paper
    - More expensive
    - Color
    - Print quality better
- **Speakers**
  - Most PCs come with speakers
  - Allows you to hear sound files
  - Laptops: built in
  - Desktops: usually detachable

Digital Storage Devices & File/Folders

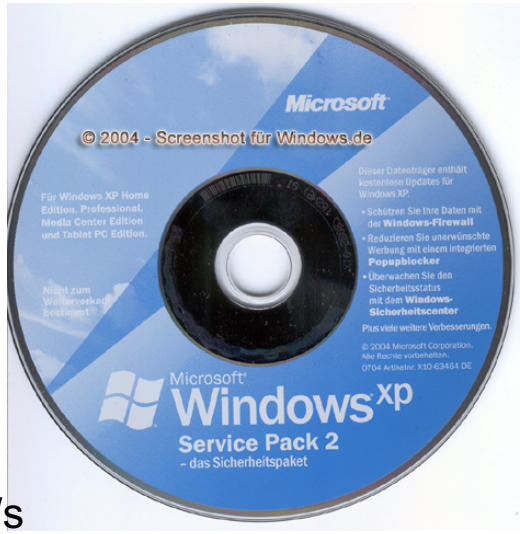
6th Grade Technology

Storage Devices

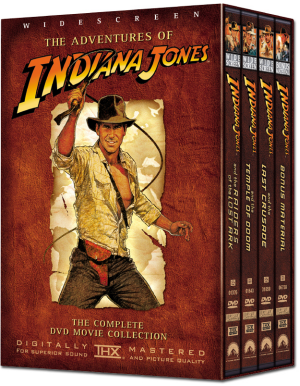
- Important for saving and storing software you use
- Help to provide a means for saving your work
- Save frequently
- Some devices are built in
- Others are removable- mobility
- All computers have a hard drive (hard disk)
  - Built in for storing software and information
  - Has a disk that spins and stores data magnetically
  - Not recommended to save work on the computer
  - Cannot access it throughout the building

- Portable hard drives
  - Helps to store files that can be used on more than one computer-external hard drive, carts
- Removable Storage Disks
  - Computers come with drives that can read and write information from removable disks
  - What are some of these disks?
    - Cd roms
    - DVDs
    - Floppy disks
    - Flash drives
  - Why would you save or store files on these kinds of disks?
    - Save space on hard drive of computer
    - Take home
    - Keep for future use
    - Use on any computer

- CDs (compact disks)
  - Software and music is sold on CDs
  - CD Rom (compact disc-read only memory)
    - Computers can read data from them
    - Cannot write to them
    - Why?
      - What do you need to be able to write a CD? (cd burner and its software)
      - Your drive needs to be able to write to cds
      - Large capacity – more storage space = 433 floppy disks
    - CD R
      - Can only write data once
      - Software and music publishers use them
      - Cannot erase the material
    - CD RW (compact disc -read / write)
      - Stores data
      - Erases it
      - Replaces it with new data
      - Sometimes called “erasable” or “rewritable” cds
      - Replacing a file on it erases the entire disk
      - CD RW drives can write to both CD-R and CD RWs



- DVDs (digital video disks)
  - Optical disks- more space than a CD ROM
  - 3 kinds:
    - DVD ROM: digital video disk read-only
      - Memory –can only read data on disk
    - DVD Rs and DVD +R (DVD recordable)
      - Can record data on to the disk
    - DVD RW and DVD1RWs (DVD rewritable)
      - Can record and rerecord to the disk many times
    - Floppy Disks-replaced by CDs (floppies)
      - Flexible magnetic disk which is sealed in a plastic casing
      - Still found on PCs since customers may have old data still stored on them
      - Convenient for backing up
      - Storing and transporting small files



- Memory Cards
  - Cameras and audio recorders use them for storage.
  - Take a lot of pictures-use memory card for the rest

Files and Folders

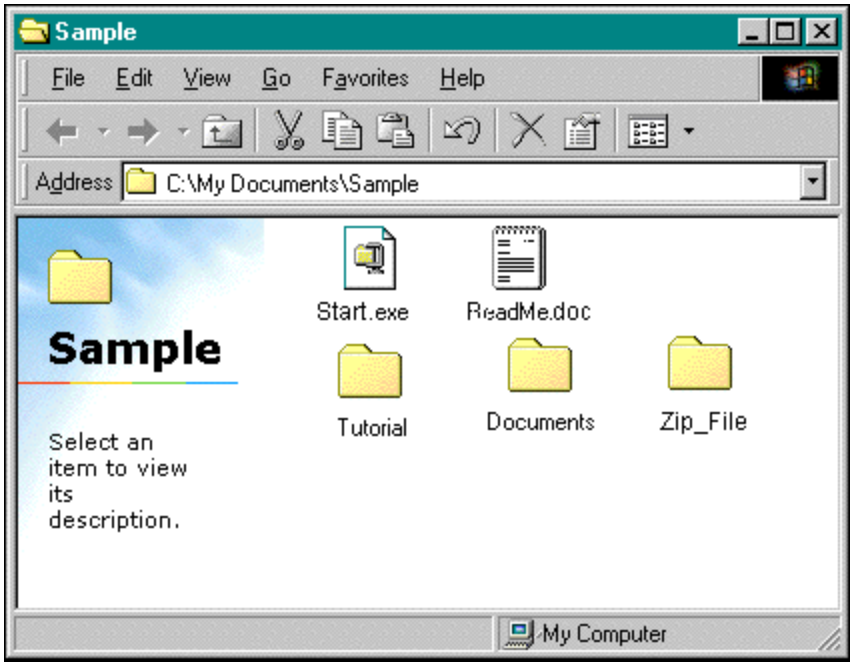
- You can do lots of things with files:
  - Create them
  - Rename them
  - Save them
  - Or delete them
- Common File Extensions:

.cwk (Appleworks)	.doc (Microsoft Word)
.jpg(Photo)	.gif (graphic/animation)
.htm/.html (webpage)	.pdf (Acrobat/Adobe)
.xls(Excel spreadsheet)	.ppt (PowerPoint)
.mp3 (Sound file)	.aif/.aiff (Sound file)
.wav (Sound file)	.mov (movie file) .avi (audio/video file)
.zip/.sit/.hqx(compressed file reduced in size)	

File Address

- A file's address always includes:

Drive\Folder (s)\File name

MacintoshHD:\Users\Adam\stories\AlienTapDancing.txt

DPME_Students:\6Maroon\smithj\technology\techpoem.doc