

C:\>ommand Line

WORKBOOK

Operating Systems from UNIX to DOS to Windows and beyond; A 'would be' Power Users Guide to Modern Operating Systems Includes Windows 3 to Windows 10/11 and Unix like operating systems

R. CRAIG COLLINS

12th Edition

R. Craig Collins, © 2008-2023

Note: Much of this book is general in nature; general to the point that on occasion I have oversimplified. It is not that I want to lie to you; I just don't want your head to explode. Future books, classes, and experience will refine the topics introduced here.

To paraphrase a Jack Nicholson character, "You can't handle the truth."

Well, not just yet.

For Classes taught by R. Craig Collins

Labs 1-9 are due at Noon Friday
Some labs require all related files to be zipped
You will use the following model to name those files *yourname*-labx.zip
(ie *My* lab 1 would be zipped as craig-lab1.zip)

Lab 10 is due the last Wednesday of the regular semester, at Noon. This original term paper will be submitted unzipped for plagiarism detections. Late work is barely tolerated, and *if* accepted, will be penalized.

Tests are conducted in class, no make up tests.

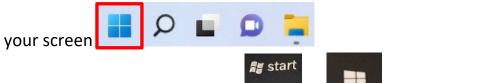
Check your email on a regular basis for updates.

Check D2L for the course syllabus and syllabus appendix, as well as for exact due dates, directions on how to submit items, and class related tutorials and orientations

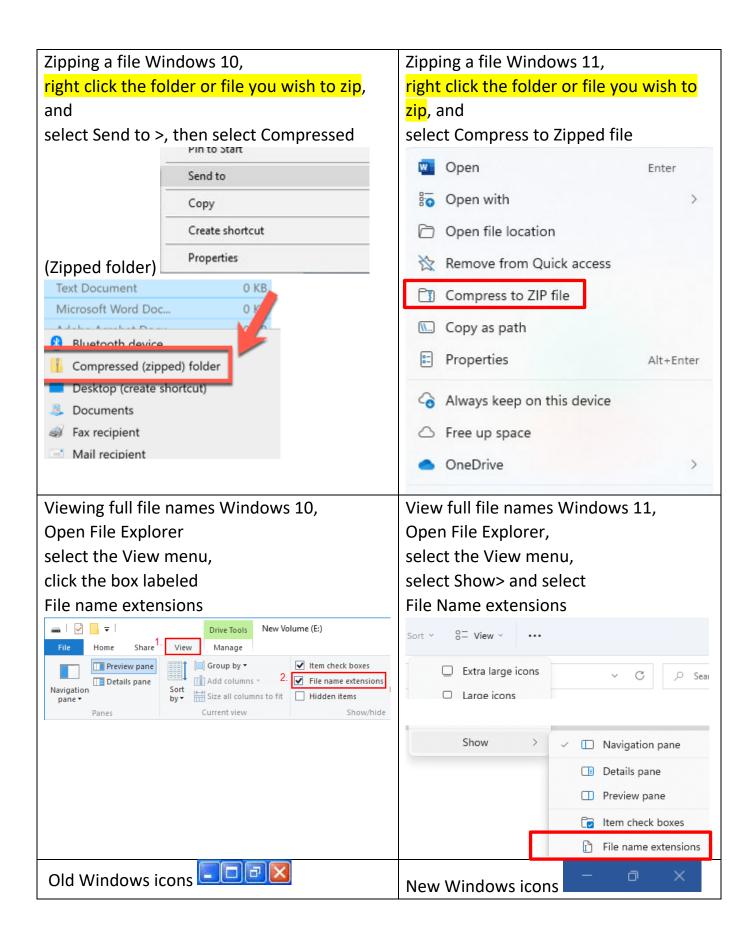
Windows 10→Windows 11 Cheat sheet

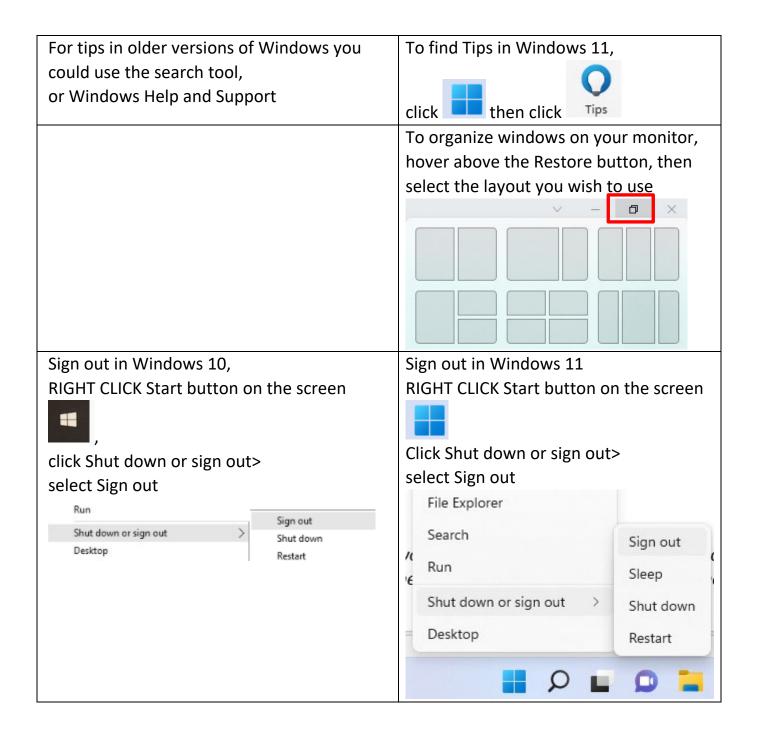
Windows 11 functions just as Windows 10 did, though visually there are a few minor differences, like the centered task bar

But starting a program is still the same: hit the Windows Start button on



or press the Windows Start key or on your keyboard, then start typing the name of the program you want to start.





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DOS 1 Part One: Other Resources

Lab Summaries

DOS 1 Part Two: Interacting with the computer

Controlling file names

Locating Files

Zipping

Command Prompt at Home

DOS 1 Part Three: Big Picture and Basics

Why use the command line?

Big Picture

Terms

Definitions

Hardware

Input

Process (CPU + memory)

Measuring memory

Output

*Storage

Optional Advanced Topics

Motherboard

Software

System

Operating Systems

Utilities and Programming

Applications

DOS 1 Part One: Other Resources

While this text might be of interest to anyone interested in using a computer to manage files, those people using it as a text book for a class should be aware that quite a bit of addition material will be made available to you, including the syllabus, video examples, and instruction on how to use your Classroom Management system. These are kept separate from the text book in order to keep these other resources current and up to date. Check your student email for information on where there resources are, and start reviewing them as part of your class, if applicable.

Note: while the book implies use of DOS, the Windows CMD program is a great way to master command line skills without actually using an OS (Operating System) from 1994.

The command prompt is often how 'Power Users' quickly take care of tasks; just because DOS went away does not mean the command line, and its versatility, did.

Lab Summaries.

Just reading a book is not the best way to master operating systems, it is also best if you practice the skills described, and then quiz yourself. If using this book as part of a class, the lab activities and quizzes are part of the class, but everyone should take advantage. Here is a list of the labs to be covered

Command Line

- Lab 1: Learning basic commands to get help, to create and navigate directories (also known as folders), and to create and display documents (also called files).
- Lab 2: File Management; duplicating files, renaming files, changing file attributes, plus coverage of deleting files and directories.
- Lab 3: Managing hard drives, automation (Recording a series of commands to accomplish multiple tasks, in sequence).

Windows

- Lab 4: File and folder creation, basic navigation, word processing and graphics, as well as copying and renaming files.
- Lab 5: Customization of Windows, managing hard drives and programs, automation, and recovering from problems.
- Lab 6: Navigation over networks, sharing information between users and programs.

Linux/Unix

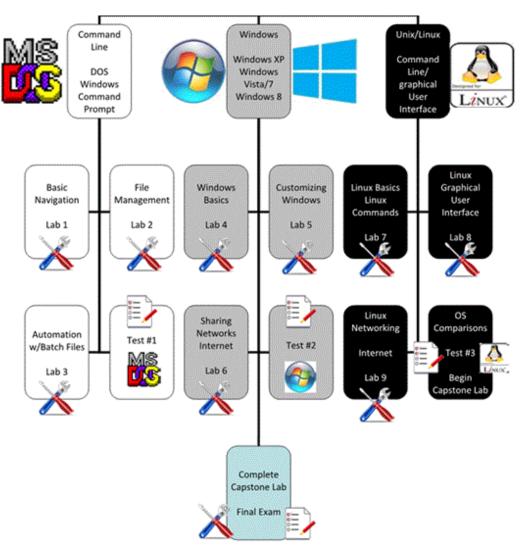
Lab 7: Basic commands to get help, to create and navigate directories, to create and display documents, plus file management; duplicating files, renaming files, changing file properties, as well as deleting files and directories.

Lab 8: Graphical user interfaces for Linux; comparison of the Windows interface and various Linux distros

(Note: many distros can be downloaded, and the computer can boot to the OS on the download device... and when finished the computer can boot normally to its original OS.

Lab 9: Many Linux systems are used as Web Servers, so Lab 9 discusses networks and the Internet, and creation of web pages.

Capstone Lab:
Comparison of Operating Systems



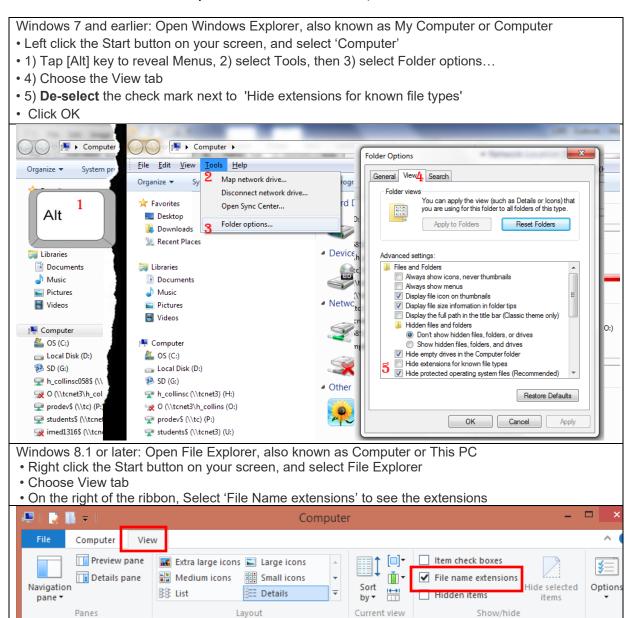
DOS 1 Part Two: Interacting with the computer

Controlling file names Locating Files Zipping Command Prompt at Home

Before we start with the Command Prompt, there are a few things you need to do and understand about your Windows computer.

Controlling File Names

While the reasons for this are covered later, you really need to understand how to tell Windows to show you the FULL file name, and extension.



Locating Files

Again, the tool used to locate files has different names:

Windows XP: Windows Explorer or My Computer

Windows Vista or Windows 7: Windows Explorer or Computer

Windows 8.1 or 10: File Explorer or This PC

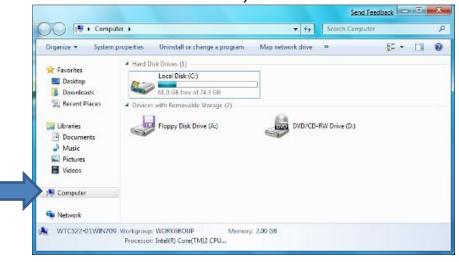
... but they all refer to the same tool.

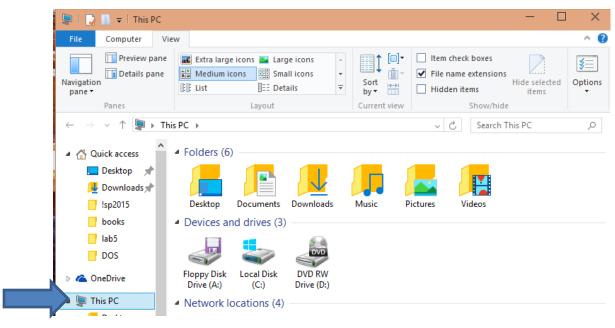
Typically you start selecting a file by first scrolling down the left hand window until you see

Computer (Windows 7 and earlier)

or

This PC Windows 8 and later) and





then choose the hard drive, network drive, or thumb drive you wish to open.

Zipping

You cannot email folders, nor can you submit folders to most Classroom Management systems.

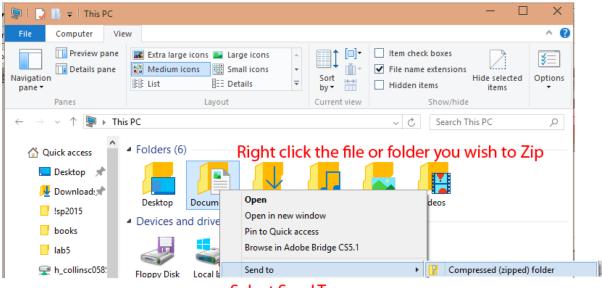
However, you can *zip* files or folders to email, or submit.

Zipping compresses an item or items into a small package which can be emailed or submitted...

To do this

- 1) right click the file or folder,
- 2) select Send to >
- 3) choose Compressed (Zipped) folder

The resulting new item will have a zipper icon to let you know you succeeded.



Select Send To

Choose Compressed (Zipped) folder



test.zip

Your zipped icon may vary in appearance.

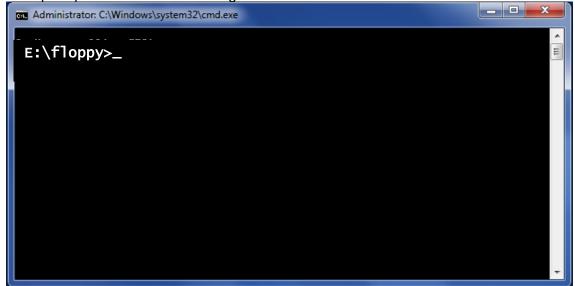
Never change the extension from .zip

Using the Command Prompt

While the best way to practice the Command Prompt is to use DOS and a floppy disk (A:\>), this is not always an option.

Instead, you could use the Windows Command Prompt, and a Thumb Drive or network drive.

- 1. Insert your Thumb Drive
- 2. note the drive letter assigned, such as E:\
 if you miss the notification of which letter is being use, open Computer or This PC
 and look to see what icon has been added.
- 3. Click Start and type **cmd** to search for the command prompt
- 4. DO NOT FORMAT your thumb drive, hard drive, or network drive.
- 5. Change to the thumb drive by typing the drive letter, followed by a colon (:) example E: press the enter key
- 6. If you have other items on the thumb drive, you might create a folder for this class example **md floppy**
- 7. Change to the new folder, using **cd floppy**
- 8. Your prompt should look something like below



9. Continue your lab as directed, knowing that your prompt will display as E:\floppy> instead of A:\>

More on use of the command prompt shortly.

Notes

DOS 1 Part Three: **Big Picture and Basics** Why use the command line? Big Picture Terms Definitions Hardware Input Process (CPU + memory) Measuring memory Output *Storage Optional Advanced Topics Motherboard Software System Operating Systems Utilities and Programming Applications

Why learn Command Line?

Question: How do you rename a file in Windows?

Right click, select rename, type in the new name, and then hit enter.

Question: How do you rename a million files in Windows?

Right click, select rename, type in the new name, hit enter...then repeat 999,999,999 times

OR drop to the command prompt and do it with ONE command.

Windows can show you all the files in ONE folder; the command prompt can show you EVERY file in EVERY folder.

Premise: folks who can drive a manual transmission car can drive an automatic better than people who don't understand what the transmission is trying to do.

So, the command line is often the fastest way to accomplish a job, and sometimes the ONLY way to apply a command to multiple objects... such as renaming hundreds of files at once. In some environments, the command line is the only method of taking control of the task at hand, such as troubleshooting, or advanced networking. Plus, learning 'paths' from a command line is of great benefit when writing HTML, so these skills apply to many advanced classes or computer topics to come.

Why use DOS instead of the Windows Command Prompt?

The command prompt is the full power of Windows, implemented with commands instead of menus and dialog boxes. When modern users open the command line, they are not faced with the limitations of DOS, just a different way to accomplish a task. So, why use DOS if it is available, instead of the command prompt?

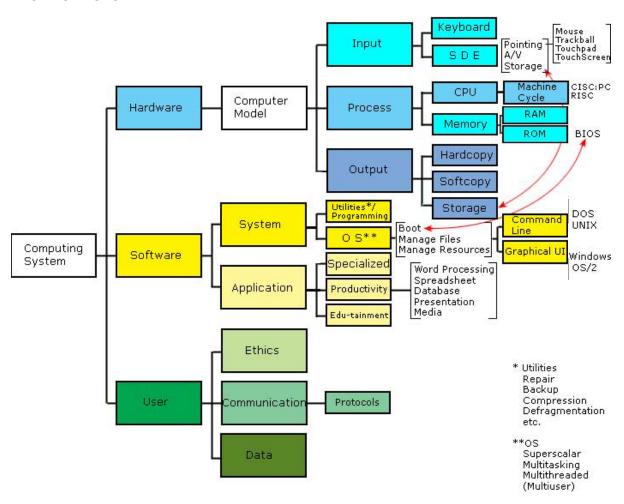
Well, it is not because major differences in the commands or what they do. Most DOS and Windows commands are identical in purpose and usage; for our purposes there are only two commands in DOS mentioned that do not occur in Windows, simply because Windows provides a different solution. (Most of the commands that occur in Windows, and not in DOS, are advanced networking commands and are beyond the scope of this introduction.)

So why use real DOS if it is available? While learning the command line, it would be too simple for students to simply switch to a Window to rename files, copy documents, create folders, or use the Windows clipboard. Students learn the tool if that is the only tool available.

So, DOS is an instructional, pedagogical, choice. Once mastered, you may implement the exact same syntax in the Windows command prompt, and later, with minor tweaks, to the Linux Terminal. But the best way to learn command line is to use it.

Having said all that, most of you, most of the time, will use the Windows Command prompt.

The BIG PICTURE



You are part of the computing system: Hardware+Software+the User But what is meant by hardware and software?

Hardware is what you can touch and used to be: Input+Processing+Output but modern computers go a step further with: Input+Processing+Output+Store that is, saving something so it doesn't disappear when the computer is turned off.

Software is the part of the computer you can't touch, the data and instructions zipping around the computer's RAM until they are STORED as a file. But, what is RAM? And, are there different kinds of software, just like there are different kinds of hardware?

It turns out, before we can start talking about computers, we need to understand some of the terms computer folks use. So, we'll take a little time to discuss some terms.

Don't worry, the definitions follow.

Glossary

BIOS
Bit
Boot
Byte
CPU
Disk
Giga
Hardware
Hertz
Input
Kilo
Mega
Monitor
Output
Peripheral
RAM
ROM
Software
Zip
Next are <i>my</i> definitions, which are explained a little differently than your books do. Hopefully the combination of my definitions, and the book definitions, will help you master the terms.

Definitions

Location of ile	
Locating a file Random access, like disks or memory, is like a music, CD, you may skip to a favorite song; Sequential Access, like backup tapes, is like a music cassette, you have to go through songs to get to your favorite	
Transmission capacity, often incorrectly referred to as transmission speed	
Basic Input/Output System, a ROM chip used at boot up, as the OS loads	
Binary Digit, a 1 or a 0, the only item a computer can understand	
Binary Term, usually 8 bits, enough information to represent a typed character	
Central Processing Unit, the brains of the computer a type of Microprocessor made up of the Control Unit (CU) and the Arithmetic Logic Unit (ALU)	
In order to use a computer, you don't have to be an expert, just proficient Being able to do basic functions with a computer	
Cathode Ray Tube, a old fashioned boxy TV style monitor	
Facts that can be processed into useful information, input (the user communicating with the computer, such as entering items on the keyboard)	
The metaphor used in a Windows computer to show what files and programs you may use, and how they are organized	
Disk Operating System, a command line OS that came before Windows	
In databases, a collection of related records; in computers in general, the name given to a collection of stored data / instructions	
Long memory that keeps content even when the computer is turned off Auxiliary or Secondary Storage	
The part of the computer you can touch, if outside the case it is a 'peripheral'	

Hertz	Repetitions, or cycles; often related as cycles per second, as in megahertz , about a million cycles	
Icon	A graphical element on a desktop that represents an object, such as a file or program	
I/O	Input/Output, typically a used as a hardware term.	
Information	Data that has been processed info something useful; output (the computer communicating with the user, such as results displayed on a monitor)	
Kilo	about 1000, exactly 1024; can be used with bits, bytes, or hertz	
Mega	about a million, exactly 1024 ² ; can be used with bits, bytes, or hertz	
Microprocessor	another name for CPU	
O/S	Operating System; a subset of System software; the OS provides the interface between the hardware, application software, and the user; i.e. DOS or Windows	
Program	A file that contains instructions, such as a word processor, Application	
RAM	Random Access Memory, (should've been Read Write Memory) Main Memory Short term Memory that can hold new information RAM is erased when the computer is turned off	
ROM	Read Only Memory, memory that holds unchanging information	
Software	Instructions or data in RAM; the part of the computer you can't touch; includes System software (manages the computer, such as the Operating System, or Utilities, or Programming) and Application software (does something useful for the user, such as word processing)	
User Interface	How the user interacts with the system software; Windows is a Graphical UI	
www	World wide web; the area of the Internet that uses http protocol to transfer files written in html; also, the normal host name assigned to a web site, such as the www in http://www.templejc.edu	

Zip	ZIP: A file that can contain multiple files, or more importantly, a file that is compressed to take up less space; useful for emailing attachments, or for uploading. (See page 10) NOTE: the ZIP contents are not always usable as is. Thus, you should not try to read or edit zip files until you download them and extract them. If redoing a lab, delete the zip, and edit the original files.
	until you download them and extract them. If redoing a lab, delete the zip, and edit the original files.

Hardware

Computer System

Hardware → Software → You, the user

Computer Model

Input → Process → Output

Fast Food Restaurant

→ Process → Output

Raw Meat → Cook → packaged Hamburger

Computer

Input → Process → Output

Raw Data → Manipulated → Useful Information

Input

The user communicating with the computer

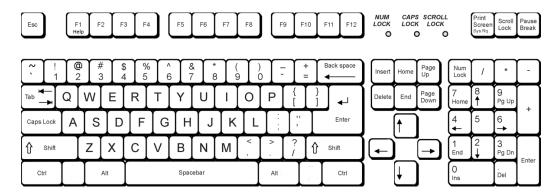
Input: Raw Data

Keyboards and/or Source Data Entry

→ Keyboards

Typewriter differences

- Note: Function Keys may be used as shortcuts for commands
- Note: [Ctrl] modifies a keyboard selection into a command
- Note: [Alt] allows you to choose an alternative



Reserved Device Name: CON Console (keyboard)

MPORTANT! Write this down!

Input

Keyboard, Continued

Enter Execute Ctrl + Brk Cancel

Ctrl + S Pause screen

F3 Re-type last DOS command

Print screen Sends the screen to the default printer

or shift print screen

→Source Data Entry

MAY NOT BE AVAILABLE IN DOS*

Source Data Entry basically refers to any input that is not a keyboard.

Source Date Entry devices include the Mouse, Track balls, and/or touch pads; modern devices include scanners, digital cameras, microphones, etc.)

Left mouse button: select



Right mouse button: execute

(*many source date entry devices require a driver. Drivers are the instructions to the operating system on how a device works. Drivers are often loaded and configured during boot; see DOS 9, Batch files, for details on autoexec.bat and config.sys)

Reserved Device Name AUX Auxiliary Serial Port COMx Serial Port, x= 1, 2, 3 or 4

Serial ports move information a bit at a time, in sequence

Process

CPU + Memory

CPU

Control Unit + Arithmetic Logic Unit

Manager + Workers

Scheduling + Math and Comparisons

+ - * / < = >

Machine Cycle: Fetch Decode Execute Store

Fetch: retrieve and load information

Decode: convert 1s and 0s into computer usable instructions

Execute: carry out the instructions

Store: place results of execution where it can be used

→ Measuring CPU speed. The number of times a computer can repeat the machine cycle process is roughly how fast the computer is, also known as the Clock rate, measured in Megahertz (MHz., millions of repetitions) or Gigahertz (GHz., billions of repetitions) See page 29 for CPU comparisons.

Memory

Just as a person may use a white board for a complicated math problem or keep a book of instructions, a computer needs two kinds of memory to keep up with things... one changeable, and on fixed.

→ROM

Read Only Memory

The contents normally don't change.

Example: the BIOS is a ROM chip, used to boot the computer.

(Transferring the OS from disk to working memory; these direction don't normally change, and must always be available)

ROM is similar to a book; if you close a book; all the words will still be there, in the same order, tomorrow, or in three years.

→RAM

Random Access Memory,

perhaps should have been called Read/Write Memory

(Working memory, like a white board... new material can be added or removed when no longer needed. RAM is typically volatile, or temporary)

RAM is like a white board; you may add a new math problem, or remove an old math problem when solved... but it is not permanent. In most computers, when you turn off the system, everything in RAM goes away.

→Measuring RAM

Consider a horizontal line, - .

By itself, it conveys no meaning. But if you string together /, then the -, then a \... you can form a typed character... / - \ together forms an A.

It is the same with an operating system... a single one or zero conveys no meaning, but if you put together a series of 1s and 0s... you can form a typed character.

A single 1 or 0 is called a bit, short for \underline{B} inary \underline{D} in \underline{B} in

Typically, a single word does not convey a story. You need sentences, paragraphs, and chapters. In RAM, we signify a number of bits or bytes using the prefixes of kilo, mega, and giga. (There are more, but these will meet our needs for the moment.

Kilo in computer terms is 1024.

(Roughly a thousand, but that is not precise enough for this class)
So a kilobyte is 1024 typed characters.

Mega in computer terms is 1024 times 1024, or 1024². (Roughly a million, but that is not precise enough for this class) So a megabyte is 1024² typed characters.

A floppy disk is 1.44 MB or 1.44 Megabytes
A compact disk is 600-800 MB or 800 Megabytes

Giga in computer terms is 1024 times 1024 times, or 1024³. (Roughly a billion, but that is not precise enough for this class) So a gigabyte is 1024³ typed characters.

A DVD is 2-17 GB or 17 Gigabytes

A hard disk is 80+ GB or often in excess of 80 Gigabytes

→DOS and RAM

DOS natively can only use 640 KB of RAM In the old days, 1 MB of RAM was installed; DOS used the first 640 KB, and the video system used the rest, called upper memory.

As more memory was needed for video, video memory was moved to the video card, leaving more RAM available for DOS. New utilities allowed DOS to use upper memory, and any additional memory, called extended.

Output

The computer communicating with the user.

→Soft copy

Soft copy is computer dependent, as in video on the monitor

A Monitor works with a video card to display images; The image is a series of glowing dots of light called pixels

Monitor terms

Refresh rate: how often pixels are lit, often measure in Megahertz (that is, each pixel is re-lit millions of times per second)
Resolution: the number of pixels across or up and down (the more dots, the smoother the image, more pixels requires more video memory;
DOS typically works at 640 wide by 480 high, called VGA)
Color depth: the number of colors that can be displayed (the more colors, the more video memory is needed)

Other softcopy output

Speakers, or computer controlled devices such as lathes or auto welders

→ Hard copy

Hard copy is tangible (touchable) without a computer, as print on paper

A Printer often places dots of ink on paper to form typed characters, so the term resolution, measure in dots per inch, or dpi, applies to printers.

Reserved Device Name LPTx parallel Port, x= 1, 2, or 3 PRN Printer (if attached to LPT1)

Parallel ports move information one byte at a time.

Storage

Four Functions of a Modern Computer

Input → Process → Output → Store

Since material cannot be added to ROM, and since RAM is volatile and may go away, storage is needed to save data or instructions long term.

Further, storage devices may be used as an input, or an output.

RAM is primary, so storage devices are often called Auxiliary or Secondary Storage. Most often, these devices are Disks.

→ Magnetic Disks, such as floppy disks or hard drives
Positive magnetic charge can be a 1, a negative charge can be a 0.
Formatting prepares a disk for use; adds organizational storage areas

A hard disk is a metal or glass disk coated with a magnetic material. As an area of the disk could have a positive or a negative charge, this could be interpreted as a 1 or a 0, suitable for computers to record data on.

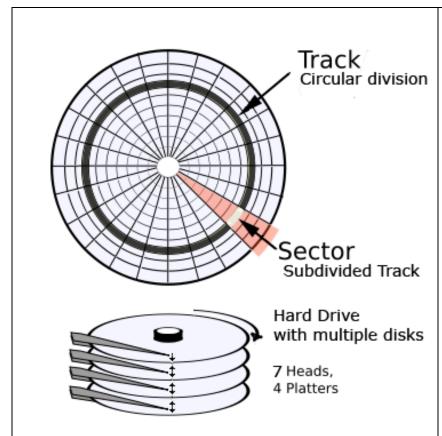


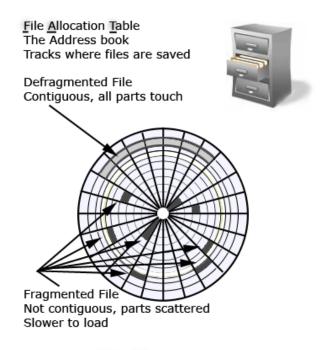
Diagram of a disc showing the invisible tracks and sectors created during formatting.

(Actually there are many more tracks and sectors than shown).

Tracks are the circular lines, similar to a bulls eye. The tracks are divided into sectors, which act as 'buckets' that can hold information.

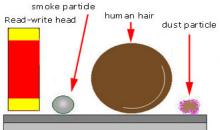
Sectors typically are too small to hold an entire file.

The very first sector on the very first track is often used for record keeping, an address book of sorts; in DOS, the system is called FAT.



Fragmented files take longer to locate and load into memory, so many DOS and Windows disks need a defragmentation utility to optimize disk access.

Sectors from time to time lose the ability to reliably store data. This is called a bad sector; bad sectors on a disc volume may be repaired with DOS's chkdsk or scandisk, or the Windows Error Checking tool.



Note: the gap between the read-write head is smaller than smoke, hair, and even dust. If something gets lodged in the gap, magnetic material is removed, destroying the data

Floppy disks, if present, are typically called the A: and the B: drive. The first hard drive, if present, is typically called the C: drive.

→Optical Disks, such as CDs or DVDs (May not be read by DOS)
Light reflected one way can be a 1, light reflected the other can be a 0.
The first optical drive, if present, is typically called the D: drive.

NOTE: Many computers that run both DOS and Windows place DOS on the C: drive, and Windows on the D: drive. Therefore, any optical disk assignment may start with E:

→Disk Capacity

Recall, from the discussion on bits and bytes and kilo, mega, and giga:

Floppy Disk 1.44 MB

CD 800-600 MB and DVD 1.2-17 GB

Hard disk 10 MB-80 GB (old) or 80 GB and up.

1024⁴ (Terabyte, trillions of bytes) are common, but unusable by DOS)

ADVANCED TOPICS

Note: the following items may apply to Non-DOS command prompt operating systems.

→Non-disk storage (May not be read by DOS)

Flash drives, thumb drives, jump drives, etc. are all versions of a solid state (no moving parts) storage concept that doesn't require electricity (non-volatile). Typically these devices are treated as a disk drive, and are assigned drive letters following any hard disk and optical disks.

→Other storage devices (prior to DOS)

Recall, computer storage simply requires one of two possible states that can be read as a 1 or a 0... such as positive charge or not positive charge; light bounced here or light did not bounce here.

An early storage method was punch card, as in 1s and 0s being assigned as hole punched here or no hole punched here.

Magnetic tape preceded magnetic disks.

→ Remote Disk access: Networks

Computers read storage devices, and it doesn't matter if the disk is in the computer or not.

A series of computers that share information are called a Network.

LAN: If the computers are close together, they may form a Local Area Network. Typically these computers connect via a Network Interface Card (NIC) and cable.

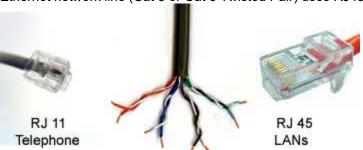
WAN: If the computers are not close together, they may form a Wide Area Network. Typically these computers connect via telephone or wireless access.

Older systems used analog phone lines, which required a modem to modulate or demodulate the binary signals to analog.

Note: a 4 lane freeway can move more cars that a single lane road, even if the speed limit is the same. So often fast networks are called broadband networks, which actually measures capacity... or how much information is moved per second, rather than how fast it is being moved.

Note: Hardware continues with the Motherboard, beginning on page 28.

Dial up Phone line (Cat 3 Twisted Pair) uses RJ11 connectors Ethernet network line (Cat 5 or Cat 6 Twisted Pair) uses RJ45 connectors



Cable TV networking implement Coax (coaxial) cable and BNC connectors



Fiber Optic cable (normally many cables bundled) and FDDI connector



An analog phone line's 'speed' is measured from about 28 kilobits to 56 kilobits per second. A digital phone line can be about 128 kilobits per second. But most **broadband** connections all can move at about 1.544 megabits per second. What separates DSL from T1 and T3 broadband connections is the additional capacity... a T1 has perhaps the capacity of about 24 ISDN 'hoses' while a T3 has the capacity of perhaps 28 T1 'hoses.'

Connection	Capacity	Time to download 3 MB	Time to download 30 MB
Dial Up	14.4 to 56 Kb	7 minutes to 31 minutes	69 minutes to 5 hours
ISDN	~128 Kb	3 minutes	30 minutes
DSL/Cable	128 Kb~1.544 Mb	37 seconds at 640Kb	6 minutes at 640Kb
T1	1.544 Kb	15 seconds	2 minutes 30 seconds
Wireless LAN	to 10 Mb	1 second	24 seconds
T3	44.736 Mb	less than one second	5 seconds
Wired LAN	100 Mb	less than one second	2 seconds
Fiber Optic	to 2.488 Gb	less than one second	less than one second

Notes:

Motherboard

In its most simple terms, the motherboard connects the CPU and memory to all the other input, output, and storage devices.

The motherboard typically is stored inside a system case.

Other items typically found on a motherboard:

ROM BIOS	The ROM BIOS is the chip responsible for booting the computer. That is, loading the operating system from disk to RAM. THE ROM BIOS is a Read Only Memory chip that contains the Basic Input Output System that allows the computer to interface with the keyboard, monitor, etc.
CPU	The <u>Central Processing Unit</u> , the brains of the computer.
RAM	Working memory, RAM is changeable read/write memory for short term use. RAM is volatile, and the contents are lost when power is removed.
CMOS	The Complementary Metal Oxide Semiconductor Think of the CMOS as a little chunk of RAM that is kept current by a battery, and keeps track of certain settings when the computer is off. The battery also powers the clock. Reserved Device Name CLOCK\$ the system clock

Devices that reside outside the system case (often called peripherals) connect to the motherboard through slots or ports.

Slots hold adapter cards for non-standard or specialized devices. Ports connect standard devices to the motherboard.

Typical Ports:

Typical Forts:		
Serial Ports	(obsolete) for 1 st generation keyboard, mouse or	
	modem	
Parallel Ports	For 1 st generation printer	
PS/2 Ports	For 2 nd generation keyboard or mouse	
USB or	For 3 rd generation keyboard and mouse	
IEEE 1394	Can also provide high speed access to printers and	
Firewire Ports	(Non-DOS) devices such as cameras, networks, and	
	removable storage devices	

CMOS RAM Modules -----CPU (under fan) Video Card Slot (connects to video port) --PCI upgrade slots--(remove knockouts on outside of case) Side view of PS/2 USB Modem NIC Video Printer Port

Typical Motherboard Layout

Note: The egg crate looking items are where cables are connected.

Aside from the video port connected to the video adapter, many modern computers don't have any of the above ports. They instead use multiple USB ports for the mouse, keyboard, printer, and network card.

Many laptop computers used to use PCMCIA PC-cards, but now use USB.

The term often used for non-USB peripheral devices is legacy. Legacy slots used to include ISA, EISA, and VESA... each slot was a different shape and color, and accepted different kinds of adapter cards. Currently, if a computer has any slots, they typically are PCI.

BONUS : Brief Intel CPU History		Clock Speed
4004-8088 class	1971-1979	400 KHz (.4 MHZ) -5 MHz
80286 class	1982	8-16 MHz
80386 class	1985	16-40 MHz
80486 class	1989	20-100 MHz
Pentium class (1-4)	1993-2000	60MHz - 1.5 GHz (~1500 MHz)
Multiple Core (i3-i7)	2007-	2.5 GHz and up, per core

Software

Software is the part of the computer you can't touch. True, you can touch a disk on which an instruction or data is saved; this is called a file. But touching a saved file is NOT touching software in the true meaning.

Software is the *intangible* data and instructions a computer *is processing*. People alone can't manipulate software. A user directs hardware to process software.

Software is typically classified as system software or application software.

System Software

System software doesn't really do much for users; it runs the computer.

System software includes Operating Systems, Utilities and Programming.

→Operating Systems Software (OS)

Texas is part of the US, not the other way around. The OS, the topic of this class, is a member of the larger System software family.

Hardware

OS role in the computer system:

User - Operating System <

Application **Software**

Aside from Operating systems provide the user access to hardware and applications, they also provide housekeeping tools, such file location, and the ability to create, edit, rename, copy, move, or delete files.

A user can interact with the Operating System through a command line which, while exacting, offers the most control.

A user can also interact with the Operating System via a Graphical User Interface (GUI). A GUI typically is easier to use, but is limited in what it can do.

OPERATING SYTEM	INTERFACE
DOS	Command line only*
Windows	Graphical user interface with Command line access
Mac X	Graphical user interface with Command line access
UNIX\Linux	Command Line or
	Graphical user interface with Command line access

^{*}While there were tools that gave DOS a graphical look, DOS Shell and Windows 3.1 had all the limits of DOS. These limits are covered in Chapter 2 and 3.

Reminder: While DOS is a very simple, and limited command line OS, many of the commands are identical to the Windows command prompt.

And both DOS and the Windows command prompt can do things that CANNOT be done through Windows Graphical User Interface.

Thus this workbook: in order to extend Windows to its full capabilities you need to understand the command line. In order to get the most out of UNIX, Linux, or the Mac, you need to understand the command line.

You can learn the command line using DOS, or the Windows command line, but using DOS sort of forces you to learn the command line... Windows lets you bail out to the GUI. Use DOS if it is available.

→Utility Software

Tools that provide *computer support* beyond the interface and file management are often called utilities. Again these programs don't really do anything for the user, at least not directly... they keep the computer running so the user can use it. Some utilities are purchased separately, such as anti-virus software. However some utilities come with the operating system; a few of these are covered in Chapter 7.

→ Programming support

The tools used to create operating systems, or other programs, falls in this area. Again, these programs don't really do anything for the user. Programming is well beyond the scope of this book, but at the lowest level, programming is giving the computer instructions... a simple way to deliver a series of instructions is a Batch files, covered in Chapter 8.

Application software

Application software does some real world task *for* the user, such as typing a letter, adding numbers, or listening to music. Many times applications are called programs.

Note: a program file contains the instructions to make your word processor work, for example. The letter you create *with* the word processor can be saved in a data file.

This workbook will discuss applications only in passing, to illustrate operating system concepts: operating systems start applications, operating systems send what you are typing on the keyboard to the application, and the operating system take information from the application and delivers it to monitor or printer

Notes



Command Prompt; Lab 1

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NOTE: IF YOU ARE NOT USING A FLOPPY DISK, PAY ATTENTION TO EXTRA NOTES IN THE LABS

DOS 4

Lab 1 Commands Lab 1 Activities

Limits of DOS

Lab 1 Questions

To Start the WINDOWS Command Prompt: Press Start (or), then type CMD

The big three jobs of the OS are input/output (I/O), starting programs or applications (also known as command execution), and file management.

Booting

While the ROM BIOS provides a POST (Power On Self Test) to verify the minimum required I/O devices are present, and the BIOS has enough control of basic I/O devices to use a disk as an input and direct the OS files to RAM, at some point the BIOS is no longer up to the job; however, by then there is enough of the OS in memory to control the rest of the job, and load specific files designed to handle configuration and setup. This is often called Real mode. Even Windows starts life just like a DOS computer going from BIOS to Real mode... as more of the OS gets loaded into RAM, more features become available, and Windows shifts into Protected mode.

If the computer is completely off, the start up is called a cold boot, and RAM is blank.

If for some reason you want or need to restart the computer (Control+Alt+Delete can force a reboot if the computer is hung), this is called a warm boot. There is still information in RAM, which may or may not be a good thing.

Warm boots are easier on the computer mechanically; cold boots ensure nothing troublesome in RAM is there to interfere with the computer.

I/O

Again, while the ROM BIOS provides basic access to the keyboard, monitor, etc., the BIOS cannot provide access to individual applications... that is the job of the OS. Further, there are many devices that the OS can recognize and use that the BIOS does not understand. So, some of the files DOS loads during the end of the boot process are specifically to deal with input and output and allows the OS to act as middleman between hardware and applications; these files include MSDOS.SYS and IO.SYS.

Further setup and configuration will be dealt with in Chapter 8, Batch files. Batch files don't change the operating system, they simply automate any tweaking a user may wish to make to the system.

Advanced topic: You may view what the BIOS can control by using the BIOS setup. Newer BIOS chips support power saving, etc., that may not be supported by your OS; the BIOS setup can let you turn some features on and off... and your choices are saved in the motherboard CMOS.

Command Execution

Starting programs is another domain of the OS. As a matter of fact, the whole boot process is about starting a program... the OS itself. In DOS, the main program file is named COMMAND.COM. But, there are other small programs that are part of the OS, too, and they are called commands.

A command is just a small program that carries out a specific task of the operating system. And, of course, there are the larger application program files that the OS can start as well.

The model typically used to describe starting a program is 'Select, then do.'

In DOS, this means type out the command that starts the program or application, and press the Enter key to let DOS know you are ready to execute.

Commands are typed at a flashing cursor on the monitor called the command prompt or the system prompt; the flashing cursor indicates DOS is ready. More about the command prompt in Chapter 3.

In Windows, 'select, then do' may mean to click on an icon to select it, then press the Enter key... or double click... basically the first click selects and the second click replaces the enter key function.

File Management

When you save a file, the OS usually wants to know three things:

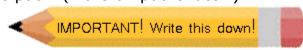
- 1) where you will save the file 2) what you want to name the file, and
- 3) what type of file it is. Then the File Allocation Table, or something similar, for that disk will record where the parts of the file are stored.

These pieces, the location, file name, and file type are all assembled using a combination of back slashes '\' and periods '.', called a path.

Location\File name.File type such as C:\test.txt

C: is the *location*, a '\' connects the drive to the file name. Test is the *file name*, and it is connect to the *file type* txt using a '.'

There is NEVER a space within a file path. (More on paths later.)



Full file names include the file name and the file type. File types are also called the extension, and are for DOS typically three characters, such as the .SYS extensions for MSDOS.SYS and IO.SYS mentioned in the IO section.

Common file type extensions

```
Executable files (commands and programs) end with:
bat
com or
exe
Text files that may be read by DOS, and displayed on the screen
txt
ltr
     (perhaps used for backup copies of a text file)
bak
     (was used as documentation... now used by Microsoft Word )
doc
     (initialization files)
ini
hlp
     (help files)
Proprietary extensions used by applications or operating systems
sys for DOS system files
pdf (Adobe acrobat file)
     (graphic file)
gif
     (image file)
jpg
htm (web page file)
rtf
     (word processing file)
     (Zipped, compressed file)
zip
     (Microsoft Word word processing file, now docx)
doc
     (Microsoft Excel spreadsheet file, now xlsx)
xls
     (Microsoft PowerPoint presentation file, now pptx)
ppt
```

Directories (Folders)

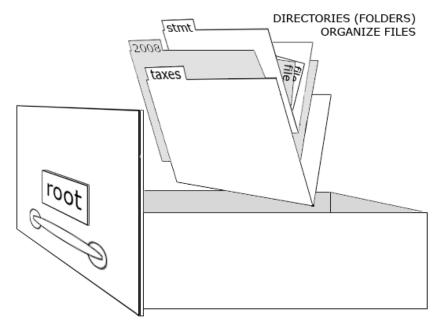
Just as you wouldn't dump all of your tax receipts into one shoe box, you shouldn't throw all of your program and data files randomly onto a disk.

DOS uses directories to organize files. Windows calls these folders, but they are the same thing.

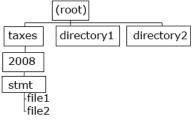
When you format a disk, part of the process is to create the 'root directory.' The root directory become your filing cabinet, and will then hold any directories or files you wish to create and store there.

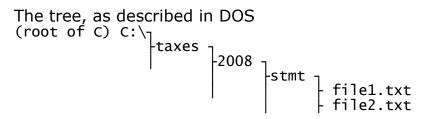
Think how paper files are organized. You open a filing cabinet drawer, and flip though folders until you locate the logical place to drop your file. Just as you can place a folder inside of another folder, you can place a directory inside another directory. This is called a subdirectory.

Perhaps you are doing your taxes. After looking through your file cabinet, you have no good place for all the receipts. You make a directory called Taxes, and in that directory create a subdirectory called 2008 for the year. In that directory, perhaps you create subdirectories to hold tax forms, another for bank statements, and perhaps another for receipts.



A graphical representation of above, using a tree structured chart





Path to file1.txt c:\taxes\2008\stmt\file1.txt

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NOTE: IF YOU ARE NOT USING A FLOPPY DISK, PAY ATTENTION TO EXTRA NOTES IN THE LABS
To Start the WINDOWS Command Prompt: Press Start ( or ), then type CMD
A note about the command prompt:
The command prompt is two things
1) an indicator or what the computer is looking at
and
2) a place to enter commands.
Everything to the left of the > is the path to which drive and directory the
computer is looking at...
You enter commands at the flashing line to the right of the >
Path
         Where commands are entered
 \downarrow

◀ IMPORTANT! Write this down!

C:\DOS>_
```

Your prompt may differ from that shown in the book, as your path may differ

HELP

The first command you need to remember is HELP.

Type in HELP at the command prompt; then press the Enter key to start a small program that lists all the commands that are available.

DOS Help

Choose the command and press the Enter key; a description of the command is displayed.

Note: This workbook focuses on only a few of the available commands

DOS 6.22 Help Window

```
File Search
                                                                                            Help
                              MS-DOS Help: Command Reference
Use the scroll bars to see more commands. Or, press the PAGE DOWN key. For more information about using MS-DOS Help, choose How to Use MS-DOS Help from the Help menu, or press F1. To exit MS-DOS Help, press Alt, F, X.
<What's New in MS-DOS 6.22?>
<ANSI.SYS>
                                          <EMM386.EXE>
                                                                                    <Multi-config>
<Append>
<Attrib>
                                                                                    <Nlsfunc><Numlock>
                                          <Erase>
<Batch commands>
                                          <Expand>
                                                                                    <Path>
<Break>
<Buffers>
                                          <Fasthelp>
                                                                                    <Pause>
                                          <Fastopen>
                                                                                    <Power>
<Call>
                                                                                    <POWER.EXE>
<Cd>
                                                                                    <Print>
<Chcp>
                                                                                    <Prompt>
                                                                                    <Qbasic>
<Chdir>
                                          <Files>
<Chkdsk>
                                          <Find>
                                                                                    <RAMDRIVE.SYS>
<CHKSTATE.SYS>
                                          <For>
<Choice>
                                          <Format>
                                                                                    <Rem>
<C1s>
                                                                                    <Ren>
                                          <Goto>
<Command>
                                          <Graphics>
                                                                                    <Rename>
<Alt+C=Contents> <Alt+N=Nest> <Alt+B=Back>
```

There are many more commands than will fit on the screen. If you are using DOS with no mouse, you use the arrow keys to move into the command you wish to find out about, and then press the enter key.

DOS and Windows HELP alternative

If you know the command you wish to find out about, instead of starting HELP, you may type out the command followed by a space, then /?

Example (Note: do not type the C:\>... that part of the prompt is the current path) C:\>FORMAT /?

This will display HELP for just this command, including optional parameters and syntax, then return to the command prompt.

More on optional parameters and syntax after the Windows HELP screen, in FORMAT.

Windows Help

If using Windows command prompt, the HELP screen will look similar to:

```
C:\>help
For more information on a specific command, type HELP command-name
ASSOC Displays or modifies file extension associations.
AT Schedules commands and programs to run on a computer.
ATTRIB Displays or changes file attributes.
BREAK Sets or clears extended CTRL+C checking.
CACLS Displays or modifies access control lists (ACLs) of files.
Calls one batch program from another.
                                 Displays or modifies access control lists (ACLs) of files.
Calls one batch program from another.
Displays the name of or changes the current directory.
Displays or sets the active code page number.
Displays the name of or changes the current directory.
Checks a disk and displays a status report.
Displays or modifies the checking of disk at boot time.
Clears the screen.
Starts a new instance of the Windows command interpreter.
Sets the default console foreground and background colors.
Compares the contents of two files or sets of files.
Displays or alters the compression of files on NTFS partitions.
Converts FAT volumes to NTFS. You cannot convert the
 CD
 CHCP
 CHDIR
 CHKDSK
 CHKNTFS
 CLS
 CMD
 COLOR
 COMP
 COMPACT
                                   Converts FAT volumes to NTFS. You cannot convert the
 CONVERT
                                 Converts FAT volumes to NTFS. You cannot convert the current drive.

Copies one or more files to another location.

Displays or sets the date.

Deletes one or more files.

Displays a list of files and subdirectories in a directory.

Compares the contents of two floppy disks.

Copies the contents of one floppy disk to another.

Edits command lines, recalls Windows commands, and creates
 COPY
 DATE
 DEL
 DIR
 DISKCOMP
 DISKCOPY
 DOSKEY
 macros.
ECHO Displays messages, or turns command echoing on or off.
ENDLOCAL Ends localization of environment changes in a batch file.
ERASE Deletes one or more files.
EXIT Quits the CMD.EXE program (command interpreter).
FC Compares the files or sets of files, and displays the differences
                                   between them.
                                   Searches for a text string in a file or files.
Searches for strings in files.
Runs a specified command for each file in a set of files.
 FIND
 FINDSTR
 FOR
 FORMAT
                                   Formats a disk for use with Windows.
```

Again, this is not the full list, just what may fit on the screen. To find Windows usage, use HELP command-name or command-name /?

Note: You may use lower case or upper case when typing commands. A list of all the DOS commands & usage is in the DOS Appendix, near end of book

FORMAT (Not to be used on hard disk or thumb drive)

Since it is not a good idea to mess around with files on the hard drive, it would be a good idea to use a floppy disk, if available. To prepare a floppy disk for use with DOS or Windows, it needs to be formatted.

The way this workbook will relay information on commands will following this model: Command Name:

Purpose:

Syntax, including common parameters.

Example of command, purpose, and syntax:

Command Name	FORMAT
Purpose	To prepare a disk for use
Syntax	FORMAT drive:
Common parameters	/q (quick format on a previously formatted disk)
Example	FORMAT A: or FORMAT A: /q
	Note: you have the option to label the disk
Note	Make sure your prompt is NOT A:\> You can't format a disk that is in use

→What is syntax?

Syntax the rules of using a command; that is, **how** a command can be used, but using generalities or place holders instead of specifics... it should be more of a guide, or a fill in the blank starting point.

In the format command above, the syntax includes the required elements, but uses the word *drive* as a place holder for an actual drive letter. Later, items in brackets are optional.

In this workbook, the syntax is similar to what HELP would provide; future syntax examples will include optional items that *may* be included.

→What are common parameters?

Common parameters *may* be added at the end of the command to tweak the command.

In the example above, you *may* add /q IF the disk has previously been formatted, and IF you prefer to do the quick format instead of the regular format.

Other brief examples of syntax and common parameters **md**

md makes directories... but you can't just type in md by itself;
the syntax is md foldername, indicating you need to use the command,
and provide the name of the directory you are making
an example would be md lab1

dir

dir generates a directory listing

you can use dir by itself, but you can also do

dir /w for a wide directory listing

or

dir /p for a directory listing that pauses after each full screen; so you might put the syntax as

dir [/w] [/p]

with the bracket items being optional



Changing Drives

To tell the computer to begin paying attention to a different drive is to change drives; type in the drive letter and a `:', then press the enter key.

Example (Note: do not type the C:\>... that part of the prompt is the current path)

C:\>A:

If using a thumb drive, use the drive letter it was assigned when inserted such as e:

IMPORTANT! Write this down!

You will know your computer is now paying attention to the floppy disk as the system prompt will change to reflect the current drive and directory A:\>_

Note: in the above example, the current drive is A: and the current directory is the root... recall, you connect drives to directories using the '\' If no other directory is showing, you must be viewing the root... so read A:\ as the root of the A drive.

Exploring and using Directories

Now that the computer is paying attention to the A: drive, we need to see what is on the A: drive... this is done using the DIR command.

Command Name	DIR
Purpose	Generates a directory listing
Syntax	DIR [drive:\][directory-name]
Common parameters	/w (wide directory listing)
	/p (directory listing pauses after each full screen)
Example	DIR
_	or
	DIR /W
	or DIR /p

Go ahead and try DIR.

Example (Note: do not type the A:\>... that part of the prompt is the current path)

A:\>DIR

If you do not specify a drive or directory, DOS used the path in the prompt, in this case A:\
You should get a message that no files were found... this shouldn't be a surprise as the disk was just formatted. If using a thumb drive, or network drive, you may see some items added previously to the drive.

Let's make a directory named test.

Command Name	MD (or MKDIR)
Purpose	Makes a directory
Syntax	MD [drive:\][directory-name\] directory-name
Common parameters	n/a
Example	MD TEST

Example (Note: do not type the A:\>... that part of the prompt is the current path)

A:∖>MD test

No news at the system prompt is usually good news... as we often do not get confirmation that anything happened.

To verify the directory was created run DIR again... you should see something like the following:

You should see buried in all the information: <DIR> test.

This verifies a directory named test exists. Let's see what is inside

Command Name	CD
Purpose	To change directories
Syntax	CD [drive:\][directory-name\] directory name
Common parameters	n/a
Example	CD TEST

A:\>CD test

Should yield the new system prompt

A:\TEST>_

Indicating the computer is now paying attention to the test directory on the root of A: (Your results may differ if using a different drive letter.)

Fire off a DIR. You may expect to see an empty directory, but instead you see something like:

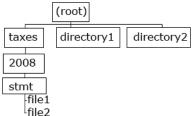
For now, ignore the . Try the following

A:\TEST>CD ..

Your system prompt should show the root of your drive, A: in my case.

So, **CD** *directory-name* changes us **into** a directory, and **CD** .. changes us **back out** of the directory.

If we had something like the following:



And our prompt indicated we are in the stmt directory

A:\taxes\2008\STMT>_

Then CD .. would back us out of STMT to 2008

A:\taxes\2008\STMT>CD ..

Changing the system prompt to

A:\taxes\2008\>_

What if we quickly wanted to change to the root directory?

Recall, the root directory of A: is indicates as A:\
So to change directories to the root, use CD \

A:\taxes\2008\STMT>CD \

Careful, cd \ on a hard drive would change to where important files are. You may need to use cd .. repeatedly to get back to where you started. And our prompt will then indicates we are now in the root directory

A:\>_

Let's modify our CD syntax to include the following

Command Name	CD
Purpose	To change directories
Syntax	CD [drive:\][directory-name\] directory name
Common parameters	n/a
Example	CD TEST
·	CD to change out of the current directory
	CD \ to change to the root directory

Now, let's get rid of that empty directory; but first, an analogy. If a farmer has an old barn that may fall over, he may instead decide to demolish the barn. So, he loads up the barn with TNT. Do you suppose he wants to be in that barn when he blows it up? No.

The same logic is applied to formatting drives and removing directories... your system prompt MUST indicate you are NOT in the directory... so use CD .. first

Command Name	RD (or RMDIR)
Purpose	To remove an empty directory
Syntax	RD [drive:\][directory-name\] directory name
Common parameters	n/a
Example	RD TEST

Up until now, all we have dealt with are directories, and directories are only used to organize files. We need some files to look at. The problem is of course, a newly formatted disk has no files. Our solution is to use copy.

Note: a more detailed discussion of copy will follow.

Intro to COPY

Command Name	COPY
Purpose	Duplicates files
Syntax	COPY [drive:][\directory-name\]source [drive:][\directory-name\]destination COPY source destination
Common parameters	n/a
Example	COPY file1.txt file2.txt

Any place you see **Source** in this book, it means the path to "where is the file now, and what is it called?". (more on paths on p. 48) **Destination** means the path to

"where is the file going, and what will it be called?" You may specify exactly where the file is, but you may omit anything that is part of your prompt... so from here on out I'll use COPY source destination instead of

COPY [drive:][\directory-name\]source [drive:][\directory-name\]destination with the understanding that I can include specifics, if needed.

At first glance, the syntax seems lacking. Let's say for the time being source simply tells the computer where to find the data to be copied and destination tells the computer where you want the file to be copied, and what you want to call it.

But this still seems to leave us short, as now we don't have data to copy.

The magic solution? The keyboard can be a source; recall the reserved device name for the keyboard, (in the Hardware section of Orientation) is CON.

Now we can plug in CON for source, and let's call the file we are copying from the keyboard to the disk test.txt.

Change the syntax of

COPY source destination to

COPY CON test.txt

When the command is entered, you get a flashing cursor without a prompt... this is where you type the source data.

A special keyboard sequence will be used to signal the end of typing.

Example

A:\>COPY CON TEST.TXT

At the flashing cursor, type in something like your name

A:\>COPY CON TEST.TXT

A:\>COPY CON TEST.TXT Craig

When finished, press and hold the Control key, press the Z key, and let go.

Recall, the Control key turns other keys into commands.

One way to remember this sequence is to say you are finished typing in your data from A to \mathbf{Z} ... Control+Z

Note: The computer displays ^Z, but you can't type ^Z... it is [Control]+Z

When finished you should see something similar to

A:\>COPY CON TEST.TXT Craig ^Z

One file copied

A:\>

To verify the file was created, at the flashing system prompt type in DIR

A:\>DIR

03/19/2008 11:29 AM 1 File(s)

5 test.txt 5 bytes

Recall, a byte is a typed character.

Craig has 5 typed characters, hence 5 bytes for my example.

But how can we read the contents of the file, to verify it contains what we typed?

Command Name	TYPE
Purpose	To display the contents of a text file
Syntax	TYPE [drive:\][directory-name\] file-name
Common parameters	n/a
Example	TYPE TEST.TXT

To verify the file, at the flashing system prompt type TYPE TEST.TXT The contents of the text file will display, then return to the prompt

A:\>TYPE TEST.TXT Craig A:\>_

Finally to wrap up our introduction to commands, let's get rid of the test.txt file

Command Name	DEL
Purpose	To delete a file
Syntax	DEL [drive:\][directory-name\] file-name
Common parameters	n/a
Example	DEL TEST.TXT

A:\>DEL TEST.TXT

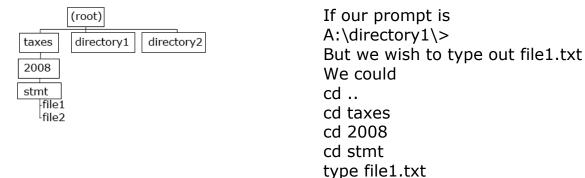
A quick DIR should verify the file is gone... and your disk should be back the way it was before you began.

Paths

Any place you encounter

[drive:\][directory-name\] *file-name*

in syntax, this means you **may** supply a drive letter, or directory names.



Or we could simply use the path, and tell the computer where to look in on statement by suppling the drive and directories info type a:\taxes\2008\stmt\file1.txt

Anything that is part of the system prompt may be left out of the command.

Visualizing a path in Windows using 'My Computer or This PC'

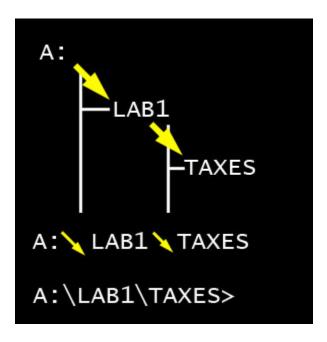
If you were to do the above example in Windows

- Open My Computer, also called Computer or This PC
- Select (double click) the 3 1/2 Floppy (A:) to see the lab1,.
- Select (double click) the lab1 folder to see the taxes folder
- Select (double click) the taxes folder to see file1.txt, and file2.txt

As you do double click to open drives and folders, the address bar keeps track of where the computer is looking...

The \ (backslash) is used to connect the drive to a folder, a folder to another folder, or a folder to a file. The full path for file1.txt would be: A:\LAB1\TAXES\file1.txt





Limits of DOS

While for pedagogical reasons, DOS is a great way to start command lines, DOS went away for a reason... it was limited in what it could do.

DOS can only do one thing at a time.

DOS file names are limited to 8 characters, with 3 characters for the extension... no spaces allowed.

DOS cannot efficiently use more than 640KB RAM

DOS cannot efficiently use large hard drives

DOS cannot use many modern input and output devices

No modern software is designed to run on DOS.

None of these limits prevents one from using DOS as a learning tool.

The Windows command prompt does not have the above limits, but really doesn't add anything from a learning point of view.

Notes

DOS 4

Lab 1 Commands

Lab 1 Activities

Lab 1 Questions

To Start the WINDOWS Command Prompt: Press Start (or), then type CMD

At the end of this process, there is a quiz based on the following questions and activities. So, to get the best score, fill in all the answers in this document first.

1. FORMAT

What does the command do?
What is the syntax for the command?
(Syntax does not include specific drives or directories)
Write out one example of how the command is entered into DOS

2. MKDIR or MD

What does the command do? What is the syntax for the command? (Syntax does not include specific drives or directories) Write out one example of how the command is entered into DOS

3. CD

What does the command do?
What is the syntax for the command?
(Syntax does not include specific drives or directories)
What does cd .. mean? What does cd \ mean?
Write out one example of how the command is entered into DOS

4. DIR

What does the command do?
What is the syntax for the command?
(Syntax does not include specific drives or directories)
Are there any common parameters mentioned in class? List them
Write out one example of how the command is entered into DOS

While we haven't used this command yet, get help by typing tree /?

What does the command do?

What is the syntax for the command?

(Syntax does not include specific drives or directories)

Are there any common parameters mentioned in class? List them

Write out one example of how the command is entered into DOS

More on the TREE command in the following Overview.

A list of all the DOS commands & usage is in the DOS Appendix, near end of book

See Overview 3 for other useful commands, such as copy and type. Check Class website or YouTube for a short video similar to Lab1



Activity

Recreate the following in DOS or the Windows command prompt, using these steps.

```
A:\>tree /f
Folder PATH listing for volume
Volume serial number is
A:.

—lab1
—taxes
—2007
—qtr1
—qtr2
—qtr3
—qtr4
—bankstmt.txt
```

Don't type the part of the instruction that represents the prompt, such as C:\> or A:\>

Optional: Format your floppy disk, if needed; DO NOT FORMAT C: or thumbdrives

C:\> format a:

1. Change to your drive (any available drive; examples use A:, If working with no floppy

C:\> a: use network drive, or USB drive, ie f:or 0:,perhaps md floppy, then cd floppy)

Once you have accessed where you will be doing your work:

☐ 2. Make a Directory (folder) named lab1

A:\>md lab1 (Again A:\> is not part of the command, your prompt may differ.)

☐ 3. Verify the Directory was created by requested a Directory Listing

A:\>dir

☐ 4. Change into the Directory named lab1

A:\>cd lab1

☐ 5. Make a Directory (folder) named taxes

A:\lab1>md taxes

☐ 6. Verify the Directory was created by requested a Directory Listing

A:\lab1>dir

☐ 7. Change into the Directory named taxes

A:\lab1>cd taxes

□ 8. Make a Directory named 2007

A:\lab1\taxes>md 2007

□ 9. Make a Directory named 2008

A:\lab1\taxes>md 2008

☐ 10. Change into the Directory named 2007

A:\lab1\taxes>cd 2007

☐ 11. Make a directory for Quarter 1

A:\lab1\taxes\2007>md qtr1

```
(continued)
□ 12. Make a directory for Quarter 2
A:\lab1\taxes\2007>md qtr2
☐ 13. Make a directory for Quarter 3
A:\lab1\taxes\2007>md atr3
☐ 14. Make a directory for Quarter 4
A:\lab1\taxes\2007>md qtr4
□ 15. Change into the Directory named qtr4
A:\lab1\taxes\2007>cd atr4
☐ 16. Copy data from the Console to a file named bankstmt.txt
A:\lab1\taxes\2007\gtr4>copy con bankstmt.txt (then Enter)
Type your name
Press [Ct1]+Z to end the file, and return to DOS
1 file(s) copied.
□ 17. To read the contents of the file
A:\lab1\taxes\2007\qtr4>type bankstmt.txt
□ 18. Change into the directory one step higher than gtr 4
A:\lab1\taxes\2007\qtr4>cd ...
\square 19. If using a floppy, change to the root directory (\) in one step
A:\lab1\taxes\2007>cd \
(if not using floppy, cd .. and repeat until at the starting point, such as e:\floppy>)
□ 20. Display the entire disk structure with files
<mark>A:\></mark>tree /f
```

Your screen should look like the image.

```
A:\>tree /f
Folder PATH listing for volume
Volume serial number is
A:.

— lab1
— taxes
— — qtr1
— qtr2
— qtr2
— qtr3
— qtr4
— bankstmt.txt
```

Quiz on Hands On Activity (the Quiz in D2L is 60% of your grade)

Answer the following questions based on this lab to prepare you for the D2L quiz

Question 1 (2 points)

The format command

- a) displays the contents of a directory, including sub-directories
- b) prepares a disk for use
- c) changes into to a directory
- d) generates a listing of the specified directory
- e) creates a directory

Question 2 (2 points) Syntax: format a) format source destination b) format [drive]: c) format directoryname d) format source Question 3 (2 points) What is typed after the C:\> prompt to format the floppy? a) a: format b) a:\ format c) format a: d) format a:\ Question 4 (2 points) The MD (or MKDIR) command: a) changes into to a directory b) prepares a disk for use d) generates a listing of the specified directory c) displays the contents of a directory, including sub-directories e) creates a directory Question 5 (2 points) Syntax: MD a) md/w b) md directoryname c) md source destination d) md [drive]: Question 6 (2 points) What would you enter after the prompt to make or create a directory named junk? a) md a: b) rd junk d) cd junk d) md junk Question 7 (2 points) The command CD a) creates a directory b) changes into to a directory c) displays the contents of a directory, including sub-directories d) prepares a disk for use e) generates a listing of the specified directory Question 8 (2 points) Syntax: CD a) cd /w b) cd source destination d) cd directoryname d) cd [drive]: Question 9 (2 points) The following is the correct use of change directory **cd a:** a) True b) False Question 10 (2 points) The DIR command a) creates a directory b) displays the contents of a directory, including contents of sub-directories c) changes into to a directory d) generates a listing of the specified directory e) prepares a disk for use Question 11 (2 points) Svntax: DIR a) dir [directoryname] [/w] [/p] b) dir source destination d) dir [drive]: c) dir **Question 12 (2 points)**

To get your directory listing in columns across the whole screen is

a) dir /p b) dir /w c) dir d) p /dir

e) w /dir

Question 13 (2 points) The tree command a) displays the contents of a directory, including sub-directories b) creates a directory c) generates a listing of the specified directory d) changes into to a directory e) prepares a disk for use Question 14 (2 points) Syntax: TREE a) tree [directoryname] [/f] b) tree /w c) tree [drive]: d) tree source destination Question 15 (2 points) Which DOS command shows the contents of a directory, as well as the file contents of any sub-directory? a) tree /f b) dir c) tree d) dir /f Question 16 (3 points) What would be typed after the prompt to get help with all the DOS commands? a) man b) DOS /? c) help d) F1 **Question 17 (3 points)** What is the command you would enter in DOS to format the floppy, if needed? Not just the command but what needs to be typed after the prompt to actually format the floppy c:\> Question 18 (3 points) Enter what would be typed after the prompt change from the C drive to the A drive c:\> Question 19 (3 points) Enter what would be typed after the prompt to generate a directory listing c:\> The remaining questions assume you are using the floppy disk to complete the activity DO NOT INCLUDE THE A:\> prompt when choosing your responses. Question 20 (1.5 points) What would be typed after the A:\> prompt to change from the root to the lab 1 directory? a) md lab 1 b) cd lab 1 c) rd lab 1 d) lab1 **Question 21 (1.5 points)** What would be typed after the A:\lab1> prompt to change from the lab1 directory to the taxes directory? a) md taxes b) cd taxes c) rd taxes d) taxes Question 22 (1.5 points) What would be typed after the A:\lab1\taxes> prompt to change from the taxes directory to the 2007 directory? a) cd taxes\2007 b) cd 2007 c) 2007 d) md taxes\2007 Question 23 (1.5 points) What would be typed after the A:\lab1\taxes\2007> prompt to change from the 2007 directory to the atr4 directory? a) cd atr4 b) md taxes $\2007$ qtr4 c) cd taxes $\2007$ qtr4 d) qtr4 **Question 24 (3 points)** What would be typed after the prompt to display the contents of the bankstmt.txt file? a:\lab1\2007\qtr4>____ bankstmt.txt Only supply the missing command. Question 25 (3 points) Enter what would be typed after the prompt to change from the atr4 directory to the 2007 directory NOTE: the cd command is already there... what goes after cd? $a: \lambda 1 = 1.2007$ Question 26 (3 points) Enter what would be typed after the prompt to change from the 2007 directory to the root

directory Note: the cd is already there, what goes after the cd?

a:\lab1\2007\>cd ___

This page is for Collins classes, check with other faculty if this book is used for a class; In Windows, zip the entire lab1 directory & rename in the form of yourname-labx.zip. ie craig-lab1.zip

Zipping files, if required to turn in, zip as follows:

When you wish to email or upload several files and folders, the best way to do this is to 'zip' them.

Using My Computer or This PC in Windows:

- 1. select the file(s) you wish to zip (hold down the control key to select multiple files)
- 1. Right click the selected item (if you have selected several items, right click one of them)
- 2. Choose Send To
- 3. Choose Compressed (zipped) Folder
- 4. The new file will be created in the same location
- 5. Rename the file to the form *yourname*-labx.zip

Renaming files

When you wish rename a file:

- 1. Select the file you wish to rename
- 2. Right click the file
- 3. Choose Rename

(Note the three character extension if visible, before proceeding)

- 4. Once the name is selected you type in the new filename to replace the old
- 5. Make sure the extension, if visible, remains the same
- 6. When finished, press the [Enter] key.

Submitting Files and/or Folders

- 1. If using D2L, Choose the class for which you want to drop off an assignment.
- 2. Find the Dropbox tool, click on it.
- 3. Choose the appropriate Dropbox folder, click on it.
- 4. Choose [Add a File], then choose [Browse] or [Upload] Button You then may need to choose *Computer* to browse for your file
- 5. Find the file that you would like to upload and click [Open], then choose [Add]
- 6. Type in a short description or comment about the file, if you like.
- 7. Select [Add] for any additional files that may be pertinent, and repeat
- 8. After your files have been selected, click [Submit].
- 9. Some files may take a long time to upload (especially if graphics are in the file). Check your class web site for specifics on how to upload files and or take quizzes.

Submitting the Quiz

- 1. If using D2L, Choose the class for which you want to take the quiz.
- 2. Choose the Quizzes menu, and locate Lab 1.
- 3. Answer the guestions based on this documentation.. SAVE EACH ANSWER.
- 4. WHEN FINISHED, PRESS SUBMIT



DOS 5 Internal and External Commands

Internal Commands External Commands TREE Wildcards

DOS 6

Lab 2 Commands

Lab 2 Activities

Lab 2 Cheat Sheet

Lab 2 Questions

End chapter 3

To Start the WINDOWS Command Prompt: Press Start (or =), then type CMD

Note: Command Reference in Appendix A

DOS 5

Internal Commands External Commands

As DOS must fit in a very small chunk of RAM, it probably is not surprising that not all DOS commands get loaded into memory during the boot process. Only the commands that are a part of command.com are in RAM at all times. The remaining DOS commands typically reside in a directory on the C: drive called DOS (C:\DOS), and are loaded into RAM when the command is actually used.

For all practical purposes, the most common commands are internal, and the newer or less frequently used commands are external. As far as usage goes, however, there is no difference.

INTERNAL DOS COMMANDS

A short list of the most frequently used internal commands, many of which were covered in Chapter 3.

CLS, used to clear the screen

Syntax CLS

COPY, used to duplicate files

Syntax, see Chapter 3

DATE, used to display or change the system calendar

Syntax DATE [mm-dd-yy]

DEL, used to remove a file

Syntax, see Chapter 3

MD, used to make an empty directory (may use MKDIR)

Syntax, see Chapter 3

RD, used to remove an empty directory (may use RMDIR)

Syntax, see Chapter 3

DIR, used to generate a directory listing

Syntax, see Chapter 3

REN (RENAME), used to rename a file

Syntax REN source destination

TIME, used to display or change the system clock

Syntax TIME [hh:[mm:[ss]]]

TYPE, used to display the contents of a text file

Syntax, see Chapter 3

VER, used to display the DOS or Windows version

Syntax VER

VOL, used to display the volume label

(labels are normally set with FORMAT, and changed with LABEL)

Syntax VOL [drive:]

Really useful 'new' Internal commands.

After entering a lot of DOS commands, your screen is junked up with a record of previous commands given; to wipe the screen clean and get back to a pristine system prompt, use CLS

Command Name	CLS
Purpose	Clears the screen
Syntax	CLS
Common parameters	n/a
Example	CLS

While COPY technically was introduced in lab 1, we used a very limited subset of COPY... copying from the keyboard (CON).

Command Name	COPY
Purpose	Duplicates files
Syntax	COPY [path\]source [path]destination
Common parameters	n/a
Example	COPY file1.txt file2.txt

A few rules.

- 1. Memorize *copy source destination*, you will use it often.
- 2. If no path is specified, it is assumed you mean the path shown in the system prompt.
- 3. No files can have the same full filename in the same directory, but files in different directories may have the same full file name.

Some examples of COPY

A:\> COPY file1.txt file2.txt

copies **file1.txt** in the current directory (A:\), to the same directory (A:\) and calls the duplicated file **file2.txt** (the full file name is different)

A:\> COPY file1.txt file1.ltr

copies **file1.txt** in the current directory (A:\), to the same directory (A:\) and calls the duplicated file **file1.ltr** (the full file name is different)

A:\> COPY file1.txt C:\file1.txt

copies **file1.txt** in the current directory, (A:\), to C:'s root (C:\) and calls the duplicated file **file1.txt**

A:\> COPY C:\file1.txt file1.txt

copies **file1.txt** in C:'s root (C:\) to the current directory (A:\), and calls the duplicated file **file1.txt**

Rename behaviors in a similar fashion, REN source destination, but there is one caveat... you identify where the file is with the source, so no path is allowed for the destination... just what it will be called.

Command Name	REN or RENAME
Purpose	Renames files
Syntax	REN [path\]source destination
Common parameters	n/a
Example	REN file1.txt file2.txt

Some examples of REN

A:\> REN file1.txt file2.ltr

takes **file1.txt** in the current directory (A:\), and renames the file to **file2.ltr**

A:\> REN C:\file1.txt file2.ltr

takes **file1.txt** in the C:'s root (C:\), and renames the file that is the previously specified directory to **file2.ltr**

EXTERNAL DOS COMMANDS

Available commands not loaded into RAM at boot include the following:

ATTRIB, used to display or change attributes

Syntax ATTRIB [±R or A or S or H] [filename]

CHKDSK, used to display a status report of a disk, or

Fix errors in the File Allocation table

Syntax CHKDSK [drive:] [/f]

Replaced by SCANDISK

*DELTREE, not available in all versions of Windows, used to remove non-empty directories DANGEROUS, use with caution Syntax DELTREE [path]

DISKCOPY, used to copy a floppy

Syntax DISKCOPY source destination

LABEL, used to change a disk's volume label

Syntax LABEL [drive:] [new volume label]

TREE, used to display directories, but unlike DIR,

Tree can also display the contents of subdirectories (files) Syntax TREE [path] [/f]

*UNDELETE, not available in Windows (replaced by the recycle bin)

May be able to recover recently deleted files

Syntax UNDELETE [path\] [filename]

XCOPY, used to copy files and directories, including empty directories Syntax XCOPY source destination [/e]

Attrib is for attributes. The attributes a file can have are

Read Only: the file cannot be deleted nor existing material changed Archive: the file has never been backed up and is in need of archiving

System: a DOS file

Hidden: the file is not visible to any DOS command aside from ATTRIB

Neither read only or hidden files can be deleted, so if you are getting an error, check attrib.

Command Name	ATTRIB
Purpose	used to display or change attributes
Syntax	ATTRIB [±R or A or S or H] [path\][filename]
Common parameters	n/a
Example	ATTRIB +R file1.txt

Some examples of ATTRIB

A:\> ATTRIB

RA file1.txt

Displays all the attributes of files in the current directory; In this case file1.txt is Read Only, and has never been backed up.

A:\> ATTRIB -R file1.txt

Removes the Read Only attribute from file1.txt

A:\> ATTRIB +H file1.txt

Adds the Hidden attribute to **file1.txt**

Not only is the file protected from deletion, it will not list using DIR, etc.

DELTREE is worth mentioning, even if it is no longer used in Windows. As RD will not delete a directory with contents, DELTREE was how you could quickly delete a bunch of stuff... and perhaps including items you didn't want to get rid of.

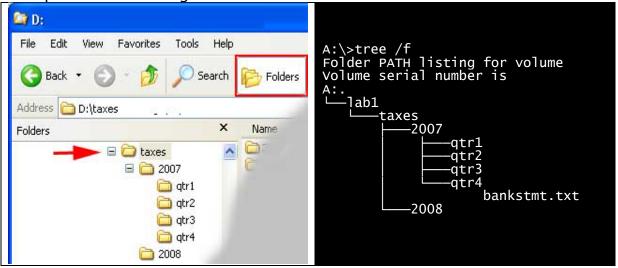
DISKCOPY is handy if you want to make copies of floppies. It is what is called a bit copy, that is, instead of copying files, it copies the pattern of 1s and 0s on the disk. The disks must match, as in 3.5 inch 1.44MB floppy and another 3.5 inch 1.44MB floppy. As many computers only have one drive, half way through you are prompted to replace the source with the destination... meaning the copy temporarily resides in RAM. If a disk has bad sectors and CHKDSK has marked those sectors to be avoided, the copy will also avoid the same sectors.

Command Name	DISKCOPY
Purpose	Duplicates floppy disks
Syntax	DISKCOPY source destination
Common parameters	n/a
Example	DISKCOPY A: A:

TRFF

A great command, snuck in to Lab 1, is TREE. By itself, it is little more than a glorified DIR... but jump to the root and add the /f, and this command can show you every directory on your disk, and every file in those directories... DIR can only show you the contents of the current directory. This command has no equal in Windows.

Compare the following:



In the Windows My Computer or This PC view, the folders button has been turned on to let you see all of the subdirectories stored in the 'taxes' folder... the problem is, that is all you can see... folders. You still must open each folder to see if there are any files.

Now look at the tree /f command results to the right. Not only can you see the directories in taxes, but you can also see the single file that is there.

Command Name	TREE
Purpose	To display a tree structure
Syntax	TREE [drive:\][directory-name\]
Common parameters	/f (will display directories and directory contents)
Example	Tree /F or tree a:\ /f

WILDCARDS

So while your GUI is handy, that TREE command is unequaled in Windows. And there is another trick in the command line that makes it a required skill for power users.

Before we begin discussing the next generation copy command, what if you wish to copy more than one file at a time, or for that matter, delete more than one file at a time, or perhaps rename more than one file at a time.

Windows finds it impossible to rename multiple files.

A wildcard can be used when a DOS command should be applied to multiple files.

The two wildcard are * and ?

- *, the asterisk (computer people call it star) can mean anything, or nothing, and range over multiple characters in a filename.
- ?, the question mark can mean something, for a specific character position in a filename or file type.

Some quick examples.

If you wish to delete all files in a directory DEL *.*

Read this as DEL any filename with any file type extension.

If you wish to delete all the files that end in .txt, use DEL *.txt

Read this as DEL any filename as long as it ends in .txt

IMPORTANT RULE: If using a wildcard for the source, duplicate the same wildcard pattern for the destination.

If you wish to copy file1.txt and file2.txt, but **not** file10.txt or file.txt use COPY a:\file?.txt c:\file?.txt

Note: the ? is in the 5^{th} character spot. ? wont get file10.txt as it doesn't cover the 6^{th} spot, and wont get file.txt because there is no 5^{th} spot in the filename.

Read **COPY a:\file?.txt c:\file?.txt** as copy from the root of A: anything that starts with **file** followed by **one character**, that ends with **.txt**, and copy it using the same names to C:

Wildcard scenarios

Scenario:	If you wished to select any file, as long as it ends with .txt you would use:
A:\	*.txt (could be read anything.txt)
file.txt	This would select
file1.txt	file.txt
file2.txt	file1.txt
file3.txt	file2.txt
file4.txt	file3.txt
file10.txt	file4.txt
fred.txt	file10.txt
file.doc	fred.txt
file1.doc	but not any file that ends with .doc
file2.doc	·
file3.doc	If you wished to select any txt file, as long as it starts with file you would use:
file4.doc	file*.txt (could be read fileanything.txt)
file10.doc	This would select
fred.doc	file.txt
	file1.txt
	file2.txt
	file3.txt
	file4.txt and file10.txt
	but not fred.txt or any file that ends with .doc
	·
Scenario:	If you wished to select any file, as long as it starts with the letters file you would use:
A:\	file*.* (could be read fileanything with any extension)
file.txt	This would select
file1.txt	file.txt
file2.txt	file1.txt
file3.txt	file2.txt
file4.txt	file3.txt
file10.txt	file4.txt
fred.txt	file10.txt
file.doc	file.doc
file1.doc	file1.doc
file2.doc	file2.doc
file3.doc	file3.doc
file4.doc	file4.doc
file10.doc	file10.doc
fred.doc	but not fred.txt or fred.doc
Scenario:	If you wished to select any text file, as long as it includes a single digit number you would
A:\	USE:
file.txt	file?.txt (could be read file something if only in space number 5.txt)
file1.txt	This would select
file2.txt	file1.txt
file3.txt	file2.txt
file4.txt	file3.txt
file10.txt	file4.txt
fred.txt	but not
file.doc	file.txt (no 5th character in the filename) or file10.txt (? works only for space 5, not space 6)
file1.doc	or any file that ends with .doc
file2.doc	
file3.doc	If you wished to select any file, with any extension, (all) you would use:
file4.doc	*.* (could be read <i>any</i> file with <i>any</i> extension)
file10.doc	. Toolia bo road any mo with any oxtendiony
fred.doc	
	П

Before we got sidetracked discussing wildcards, a newer version of the COPY command was mentioned. COPY is great at copying files, but not so good at copying directories, especially empty directories.

You never mess with an existing command, you come up with a new command that does what you want. That command is XCOPY.

This doesn't mean you abandon COPY. You don't drive a 2 penny nail with a 12 lb. sledge hammer... you use the appropriate tool for the job. When copying files, use COPY, when copying directory structures, use XCOPY.

And just as tree works best with /f, XCOPY works best with /e (think Everything, including Empty subdirectories).

XCOPY

Command Name	XCOPY
Purpose	Duplicates files and directories
Syntax	XCOPY [path\]source [path]destination
Common parameters	/e
Example	XCOPY dir1*.* dir2*.* /e

Note that the example above is copying dir1 AND all the files in dir1, using wildcards for the source; so the same wildcard pattern is used in the destination, followed by the /e.

DOS 6

Lab 2 Commands

Lab 2 Activities

Lab 2 Questions

Lab 2 Cheat sheet

To Start the WINDOWS Command Prompt: Press Start (or =), then type CMD

Make a folder named Lab2 on your floppy, thumb drive, or network drive, ie f: or o:

At the end of this process, you will be taking a quiz based on the following questions. So, to get the best score, fill in all the answers in this document first.

Documentation 30%

COPY

What does the command do?

What is the syntax for the command?

(Syntax does not include specific drives or directories)

Write out one example of how the command was entered in this lab

XCOPY

What does the command do?

What is the syntax for the command?

(Syntax does not include specific drives or directories)

Are there any common parameters mentioned in class? List them Write out one example of how the command was entered in this lab

ATTRIB

What does the command do?

What is the syntax for the command?

(Syntax does not include specific drives or directories)

Are there any common parameters mentioned in class? List them

Write out one example of how the command was entered in this lab

RENAME or REN

What does the command do?

What is the syntax for the command?

(Syntax does not include specific drives or directories)

Write out one example of how the command was entered in this lab

UNDELETE (DOS ONLY)

What does the command do?

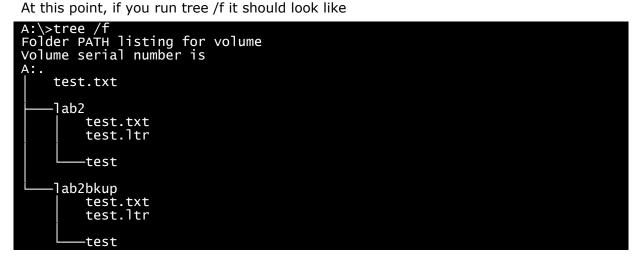
What is the syntax for the command?

(Syntax does not include specific drives or directories)

Write out one example of how the command was entered in this lab

DOS Activity (There is a cheatsheet on the next page...)

□ 1. Create a file called test.txt (put your name for the file contents)
Refer to Lab 1, for a reminder on creating a file.
□ 2. Create a directory named LAB2
□ 3. Create a directory named TEST inside of LAB2
□ 4. Copy test.txt from the root of A: to inside LAB2
□ 5. Copy test.txt from the root of A: to inside LAB2, but call the new copy test.ltr
□ 6. XCOPY LAB2, and its files, to a new folder named LAB2BKUP
Verify the empty TEST folder was copied as well



- \square 7. Set a:\test.txt to be a hidden file
- □ 8. Generate a directory listing to verify the file is hidden
- □ 9. Set a:\test.txt to no longer be a hidden file
- \square 10. Type out the contents of test.txt
- \Box 11. Rename all of the files in LAB2 from test. something to homework. something, but leave the extensions the same (ONE command, using a wildcard)
- ☐ 12. Rename a:\test.txt to test.doc
- * DOS only, skip if using command prompt: Delete test.doc then undelete test.doc Clear your screen, then run a tree /f to see if your screen is similar to mine

If you are required to submit items for grading, Select ALL items created: test.doc, lab2, and lab2bkup. Zip them together & submit as instructed.

Lab 2 Cheat sheet

\Box 1. In lab 1, we created a FILE by misusing the copy command. Instead of copying from one file, we can also copy from the keyboard, called con.
Copy syntax copy source destination In lab one, we did copy con bankstmt.txt, so for lab two it would be copy contxt
☐ 2. After Making a Directory md
\square 3. if we wish to make another directory <i>inside</i> of it, we should first open, or Change Directors, or specify where it is going, and what it would be called md lab2\
☐ 4. To copy your file from the root directory to a spot inside the lab2 directory, again consider the Copy
<pre>syntax: copy source destination which could be expanded to copy [path\]source [path\]destination</pre>
The path is the where we look, perhaps starting with the drive, and directories, in order to point to a file. Now look at what we are trying to make
A:\>tree /f Folder PATH listing for volume Volume serial number is A:. test.txt lab2 test.txt test.ltr test lab2bkup test.xt test.txt test.txt
To locate the source, take your finger, and start at the upper left. That gives us the beginning of the path: A: Remember, the directory that holds everything is the root directory, and it is represented with $\$ so, the root of the A drive is A: $\$
Every time you want to connect a drive to a directory, a directory to a directory or a directory to a file, you are moving down the tree, sort of like so use \
So, the path to our source, where test.txt is right now, is A:\test.txt
So, the path to where we want to copy that file would be A: + \ + lab2 + \ or A: \lab2 \ and since I didn't specify a different name, we would just reuse test.txt for a destination of A: \lab2\test.txt
Plug this in to our syntax, copy [path\]source [path\]destination and you get
copy a:\test.txt A:\lab2\test.txt
□ 5. If we want to rename the file as we copy it, plug the new name in to our syntax, copy [path\]source [path\]destination and you get
copy a:\test.txt A:\lab2\test.ltr
☐ 6. If we want to copy files and directories, including empty directories, the syntax is xcopy [path\] source [path\] destination /e, or with wildcards an example would be

Cheat Sheet, continued

```
xcopy lab2\*.* lab2bkup\*.* /e

☐ 7. ATTRIB [±R or A or S or H] [path\][filename] leads to ATTRIB +h test.txt

☐ 11/12. If we want to rename a single file, the syntax is
ren [path\] source destination

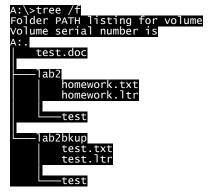
So to rename a single file in the lab2 folder from test to homework, you would use
ren A:\lab2\test.txt homework.txt

But, to rename multiple files, we need to use a wildcard.

The logic is "I am trying to rename test files, regardless of the extension", so the wild card pattern would be
test.*

The logic continues "I am trying to rename test to homework, regardless of the extension", homework.*

So, the command should be
ren A:\lab2\test.* homework.*
```



After completing the activity, answer the following to prepare for D2L quiz: Ouestion 1 (2 points)

O none of the above

The copy command

- O duplicates files and directories, even empty directories
- O renames files
- O displays or changes attributes
- O perhaps can retrieve an erased file
- O duplicates files

Question 2 (2 points)

Syntax: copy

[remember, items in brackets are optional]

- O copy [+r][-r][+a][-a][+s][-s][+h][-h] filename
- O copy /w
- O copy [filename]
- O copy [path\]source [path\]destination

Question 3 (2 points)

An example of the proper use of the copy command is

- O copy a:\test.txt a:\lab2\test.txt
- O copy a:\test.txt a:\lab2\test.ltr
- O All of the above

Question 4 (2 points)

The XCOPY command:

- O duplicates files and directories, even empty directories
- O renames files
- O perhaps can retrieve an erased file
- O displays or changes attributes
- O duplicates files

Question 5 (2 points)

Syntax: XCOPY
O xcopy /w

 $Q \times (-r)^{-r} + r^{-r} + a^{-a} + s^{-s} + h^{-h} = 0$

O xcopy [filename]

O xcopy [path\]source [path\]destination [/e]

Question 6 (2 points)

The command copy everything including empty subdirectories is

O xcopy lab2*.* lab2bkup*.* /f

O xcopy lab2*.* lab2bkup*.* /e

O xcopy lab2*.* lab2bkup*.*

O copy lab2*.* lab2bkup*.* /e

Question 7 (2 points)

The command ATTRIB

- O duplicates files
- O perhaps can retrieve an erased file
- O renames files
- O displays or changes attributes
- O duplicates files and directories, even empty directories

Question 8 (2 points)

Syntax: ATTRIB

- o attrib [path\]source destination
- O attrib [path\]source [path\]destination
- attrib [+r][-r][+a][-a][+s][-s][+h][-h] [filename]
- O attrib [filename]

Question 9 (2 points)

The following is the correct use of attribute command attrib +ra test.txt

- O True
- O False

Question 10 (2 points)

The REN command

- O renames files
- Q duplicates files
- O displays or changes attributes
- O perhaps can retrieve an erased file
- O duplicates files and directories, even empty directories

Question 11 (2 points)

Syntax: REN

- O ren [path\]source [path\]destination
- O ren [filename]
- O ren [path\]source destination
- O ren [+r][-r][+a][-a][+s][-s][+h][-h] filename

Question 12 (2 points)

To rename a:\red.txt to green.txt, you would type

- O rename a:\red.txt a:\green.txt
- ren a:\red.txt a:\green.txt
- O ren a:\red.txt green.txt
- O rename a:\red.txt green.txt

Question 13 (2 points)

The undelete command

- O displays or changes attributes
- O perhaps can retrieve an erased file
- O can retrieve any erased file
- O duplicates files
- renames files
- O duplicates files and directories, even empty directories

Question 14 (2 points)

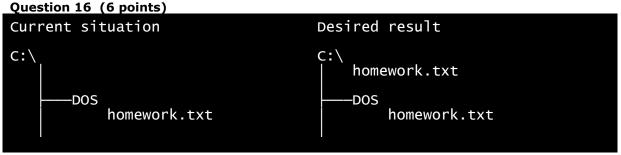
Syntax: undelete

- undelete [+r][-r][+a][-a][+s][-s][+h][-h] filename
- O undelete [path\][filename]
- O undelete [path\]source [path\]destination
- O undelete [path\]source destination

Question 15 (2 points)

The command to undelete a:\test.doc is

O undel O undelete



Scenario, your prompt is C:\>, there is a file called homework.txt in C:\DOS. Give the command to copy the file to the root of C without changing directories... that is, write out a copy command with a full path statement for the source and a full path statement for the destination.

- O copy c:\dos\homework.txt c:\homework.txt
- O copy c:\dos\homework.txt ..\homework.txt
- O copy c:\homework.txt c:\dos\homework.txt
- O This cannot be done with one command

Question 17 (6 points)

What is the command you would enter in DOS to copy all the files that are named homework in the lab2 directory to a lab3 directory, if that directory existed?

- O copy lab2\homework.txt>ltr lab3\homework.txt>ltr
- O copy lab2\homework.? lab3\homework.?
- O copy lab2\homework.* lab3\homework.*
- O copy lab2*.* lab3*.*

Question 18 (6 points)

What is the command you would enter in DOS to copy a directory and all its contents, as in from lab2 to lab2bkup?

Only fill in the missing command

A:\> lab2*.* lab3*.* /e

Question 19 (6 points)

What is the command you would enter in DOS to change the attributes of a file named fred.txt to hidden?

A:\>

Question 20 (6 points)

What is the command you would enter in DOS to rename a file from test.txt to test.doc? A:\>ren test.txt

Can you use a full path statement for the destination?

OYes

ONo?

Submit files and quizzes as directed

See page 57 for details if taking a Collins class. Again, select test.doc & lab2 & lab2bkup by holding down the Ctrl key, then right click and zip and save as yourname-lab2.zip



Check Class website or YouTube for a short video similar to Lab2

Note: Command Reference in Appendix A

End of chapter 3



DOS 7 Utilities

Hard Disk Management Utilities Redirection

DOS 8

Executable files
Batch files
Autoexec.bat
EDIT
ECHO
PAUSE
REM
mov.bat
(replaceable parameters)

DOS 9

Lab 3 Commands Lab 3 Activities

Lab 3 Questions

Note: Command Reference in Appendix A

DOS 7

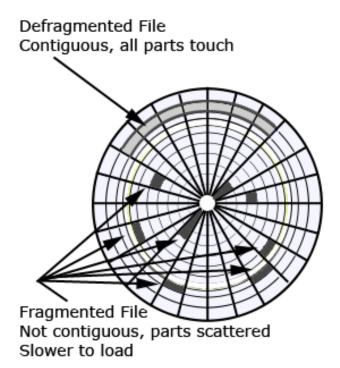
Utilities Hard Disk Management Redirection

To Start the WINDOWS Command Prompt: Press Start (or), then type CMD

Utilities

While utilities are a different family of System Software than Operating Systems, a few utilities should be covered in this discussion of the Operating System simply because these days a few of them are included when you install an Operating System. The following utilities address specific situations described earlier in the book.

Earlier in this book, defragmentation was described as parts of files scattered across the hard drive in non-adjacent sectors.



The solution for this situation is the DOS-included defrag command.

DEFRAG used to defragment files into contiguous (adjacent) sectors Syntax DEFRAG [drive:] Another previously mention item is CHKDSK, which technically is a utility. However, a better solution is available now, SCANDISK.

SCANDISK used to check and **repair** a drive Syntax SCANDISK [drive:] [autofix]

MSBACKUP © Symantec 1993, shipped with later versions of DOS to back up or restore files, but this was the era of 10 MB hard drives and floppies; Windows or 3rd party versions are much better suited to modern media.

Both of DEFRAG and SCANDISK tools are also available in Windows, along with the Windows backup or History utility. (Recall ATTRIB? One of the ways a backup utility locates files to archive is by looking for the A attribute).

Hard Disk Management

Hard disks are used to store files, but directories actually organize all of these files. COPY and DEL can actually manage all the files on your disk, including rearranging files in various directories.

If a file is in directory A, but the file should be in directory B,

- 1) COPY the file in directory A to directory B, and then
- 2) DEL the original file

The problem was, if you didn't pay attention the copy didn't get created and the original would be deleted, leaving nothing... so most careful users actually made this a three part process... checking to see if the copy was made before the deletion was executed; making the actual command sequence COPY-DIR or TREE-DEL.

In the early days of DOS, this was sufficient. But as the OS matured, a one step solution that took the guesswork out of it was made: MOVE

Command Name	MOVE
Purpose	To move a file from
Syntax	MOVE source destination
Common parameters	n/a
Example	MOVE A:\DIRA\file1.txt A:\DIRB\file1.txt

Full paths may be used for both the source and destination.

As this was a new command, it was not added to command.com, instead, the executable command MOVE was added to the DOS directory as an external command, move.exe.

But even though the move command is in C:\DOS, we did not type in A:\>C:\DOS\MOVE.EXE A:\DIRA\file1.txt A:\DIRB\file1.txt we simply typed in A:\>MOVE A:\DIRA\file1.txt A:\DIRB\file1.txt

This raises interesting questions. 1) How did the OS know where MOVE was, in order to execute it? The answer lies in a command DOS normally

executes when it first starts up (Windows too, for that matter). PATH

Don't confuse the PATH command with the generic term *path*, which tells the computer where to go for a source or destination. The PATH command tells the computer in advance where to find the DOS directory.

Command Name	PATH	
Purpose	Directs the OS to external commands.	
Syntax	PATH [external file storage location] [; other]	
Common parameters	n/a	
Example	PATH C:\DOS	

While we are at it... originally the system prompt would only show the flashing cursor.

Now the command prompts includes current drive, directory path, and the > to separate the system prompt from the cursor

A:\>_

This again is another command normally executed when the system first starts up: PROMPT

Command Name	PROMPT	
Purpose	Displays info in the system prompt	
Syntax	PROMPT [option 1] [option n]	
Common options	\$P Current Drive AND path	
	\$G > (greater than sign)	
Example	PROMPT \$p\$g	
-	includes the directory Path and a >	

Other PROMPT characters:

Q =

\$\$\$

\$N just the current drive

\$L <

\$_ start a new line

More on MOVE, PATH and PROMPT in Chapter 8, Batch files.

While the book has made constant reference to the notion that DOS could only do one thing at a time, let us think about something... when you run DIR for example... several things happen: locate the command execute the command display the results.

So actually, DOS can do a few things, but only one at a time. But still, we can start to leverage the fact that does can do a series of steps in a row to complete one task. One example is to change where the results go.

Redirection

→Redirection with the greater than sign (>)
If you enter the command DIR, the information is directed to the standard output device... in this case, the monitor.

Redirection simply over-rides the default devices by using the > (not to be confused with the > at the end of the system prompt... think of it as a pointer, as in **goes to**).

Example: DIR > PRN (think DIR **goes to** PRN) would redirect the output to the printer instead of the monitor.

You may also redirect to a file, using DIR > c:\dirA\dir.txt

Now what if instead of sending the output someplace, we just left it in RAM, then grabbed the contents to do a second, related command?

→Sequences, with the pipe: | (may also look like ¦)
A different way of redirecting output is to grab the output and use it as the input of a different command. This is called piping, as you use the pipe [|] or [¦] key... (often the shifted [\]).

About the best example of this is using ¦ MORE. The MORE command displays the contents of RAM, one page at a time.

DIR comes with a /p to pause, but TREE does not. But, if you enter

A:\> TREE /f | more

The output is redirected to a holding spot in RAM, and is then fed to the monitor a page at a time.

So you could think of this as TREE /f **goes to** 'MORE' 'MORE' goes to MONITOR, to display a page at a time.

DOS 8

Executable files

Batch files

Autoexec.bat

EDIT

ECHO

PAUSE

REM

mov.bat

(replaceable parameters)

To Start the WINDOWS Command Prompt: Press Start (or =), then type CMD

Executable files

If you have access to DOS, type in

C:\> DIR C:\DOS\help.*

to locate the external command HELP that we used earlier.

If using the Windows command line, type in

C:\> DIR C:\windows\system32\help.*

instead.

Either way, DIR will locate a program that starts with help, regardless of how it ends. But what you will see is not just HELP, but HELP.EXE

Recall, earlier in the book, there was a discussion of file type extensions, and the list started with .exe, .com, and .bat.

On page 76, we discovered MOVE was actually MOVE.EXE. All external commands actually have an extension.

These are the so called executable file types... so you don't need to include the extension as DOS or the command prompt **expects** when you type something in at the system prompt that it will be either an internal or external command, or an application. But for all practical purposes, an external command **IS** an application... albeit a small one.

Therefore, the OS is SO expecting a program that it assumes what you type in will end in .exe, .com, or .bat! So, if you type in HELP, the OS will append .exe and give it a try; if no luck, it will append .com and give it a try; if still no luck, it will append .bat and give it a try before it give up and flashes an error message.

EXE and COM files are not normally readable by people... they have been converted into the 1's and 0's that computers like. But batch files are different.

Batch files

A batch file is simply

a series of commands, listed in a text file, whose extension is bat.

When a batch file is executed, DOS or the COMMAND prompt reads one line of the file at a time, and does whatever it says. Again, DOS can only do one thing at a time, but earlier we learned we can build a *sequence* of single tasks for DOS to tackle, one at a time... such as with tree /f | more.

So, if you wanted to 'move' a file before DOS included the MOVE command, as mentioned in the last chapter, you could create a batch file named a:\MOV.bat with the following lines:

```
copy a:\dirA\file1.txt a:\dirB\file1.txt
del a:\dirA\file1.txt
```

At the command prompt A:\>, if you typed in MOV, file1 would be copied to dirB, once complete the file would then deleted... just like the MOVE command.

But it would be ridiculous to create a batch file unless you planned to reuse it. After all, it would take more time to type the batch file than it would to simply type in the two commands. So, batch files should be created when you plan to do the same thing over and over.

Recall in Chapter 7 how it was mentioned that PATH and PROMPT are normally executed when you start your system? Did you wonder how the C:\DOS argument for PATH was delivered, or how the \$p\$G argument was delivered for the PROMPT command? If you suspect it was done using a batch file, you are on the right track.

Autoexec.bat

As its name implies, autoexec.bat is automatically executed when a DOS computer is booted. The most common lines in autoexec.bat are:

@echo off
PATH C:\DOS
PROMPT \$P\$G

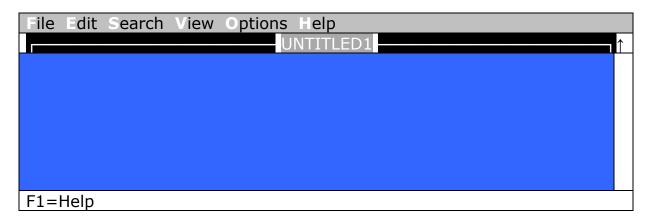
There are often other instructions, but this is the near universal standard.

If you are running a DOS system, run a DIR on the root of C:\, you'll probably see it. Run TYPE autoexec.bat to compare your system to the universal.

The next trick, how are batch files created? Well, as they are plain text files, you could use our lab 1 standby COPY with the CON as the source... but this solution gets tricky, as you can't go back for making changes... you'd have to retype the whole thing if you didn't like one item. The key is a small application that is available from the system prompt: EDIT.

EDIT

EDIT is like a small, plain text word processor... the DOS version of Notepad. (If your computer doesn't have edit, you'll use notepad.) As you may not have a mouse, press the [Alt] key to highlight menu items... just as in DOS help, when you are finished you choose [Alt]+[F]+[X] to open the File menu, and select the eXit command.



The advantage of using EDIT is you can change items anywhere by using the arrow keys or your mouse and save your change, rather than having to use COPY CON to retype the entire file. You can also edit an existing text or batch file. If EDIT is running, choose [Alt]+[F]+[O] to get to the open dialog box.

If EDIT is not running, type in EDIT [path\] filename, such as in

C:\> EDIT a:\test.bat or C:\> NOTEPAD a:\test.bat

to open test.bat

Even better, if test.bat does not exist, EDIT will create it, and then allow you to edit it.

Example

C:\> EDIT a:\test.bat or C:\> NOTEPAD a:\test.bat

to open test.bat Type in PROMPT \$P\$T\$G to add the time to the prompt.

File Edit Search View Options Help

TEST.BAT

PROMPT \$P\$T\$G

F1=Help

Type [Alt]+[F]+[S] to save the file, then [Alt]+[F]+[X] to close EDIT. Test the batch file with

A:\> TEST

to execute test.bat

Your prompt should change to include the time. Manually reset it with

A:\ 12:00:00:00> PROMPT \$P\$G

NOTE

Modern computers no longer run 16 or 32 bit programs such as EDIT. If not using real DOS, simply substitute NOTEPAD where ever you see EDIT.

IMPORTANT! Write this down!

Example: if the book says EDIT MOV.BAT at the command prompt in Windows enter NOTEPAD MOV.BAT

Building better batch files

The reason you probably never saw the PATH and PROMPT being set is in the first line of the most standard autoexec.bat.

@echo off
PATH C:\DOS
PROMPT \$P\$G

Command Name	ECHO
Purpose	To control what displays on the monitor
Syntax	ECHO [off] [message] [on]
Common parameters	n/a
Example	@ECHO OFF immediately suppresses display, not even @ECHO OFF will be seen
	ECHO OFF will suppress the batch file display immediately after the command ECHO off is run.
	ECHO HELLO will display HELLO, even if the ECHO is off
	ECHO ON reverses ECHO OFF

Another batch file command is PAUSE.

PAUSE, temporarily halts the batch file execution, and displays the message Press any key to continue. Once a key is pressed, execution continues.

I often use PAUSE immediately after a copy command, to give the system a chance to finish before attempting the next line in the batch file, or if I wish to inspect something on the screen during testing of a batch file.

The last batch file command is REM, for remark. This has two purposes... to temporarily skip a line in a batch file, or to leave yourself a note.

Let's say you want the screen to be wiped clear, but not during testing of the batch file. REM CLS leave the line in place, but the batch will skip that command. Take out the REM when finished testing.

Another use is to leave yourself notes... documenting part of the batch file.

REM \$T is to add time to the prompt

The above line is not executed by the computer; but you can read it a year later and understand what the \$T in the PROMPT command does.

Basically, any line that begins with REM is skipped by the computer, so it can be used to temporarily turn off part of a batch file, but most is there for you to be able to leave notes to yourself.

Command Name	REM	
Purpose	To prevent a line in a batch file from executing	
Syntax	REM [DOS command]	
Common parameters	n/a	
Example	REM CLS tells the batch file to skip CLS Or REM \$T is to add time to the prompt Can be a note to you to explain PROMPT \$T	

Mov.bat

Let's get back to that early attempt to create something that works like the MOVE command.

```
copy a:\dirA\file1.txt a:\dirB\file1.txt
del a:\dirA\file1.txt
```

The problem was, you specified the file names, making it a one time only batch file.

So, in DOS, how does COPY or REN work? These commands don't know what you are going to use for source, or for destination.

As a matter of fact, you cannot type COPY and hit the enter key... you get an error indicating you did not specify the source or destination.

There must be something built into these commands that basically is a place holder for source, and something that is a placeholder for destination. These place holders, or parameters, must be replaced at the time of execution... hence the name: replaceable parameters.

Replaceable parameters

"The user will provide a filename when the command is used".

Actually, this makes sense. Just as in COPY, you can't just type MOVE, hit the enter key, and expect it to work.

If you just type MOVE and hit the enter key, DOS tells you it was expecting a filename (source).

If you just type MOVE filename and hit the enter key, DOS tells you it was expecting a filename (destination).

What is used in DOS is:

%1 to act as a place holder for the first filename to be entered (source) and

%2 to act as a place holder for the first filename to be entered (destination).

So, we change our single use batch file from this

```
copy a:\dirA\file1.txt a:\dirB\file1.txt
del a:\dirA\file1.txt
```

to the following:



This batch file will now work for any file names you specify, WHEN you execute the command.

Here's how it works

If you have a file named a:\folder1\junk.txt, and you want to move it to a:\folder2, you could use the MOV.BAT command

Syntax for MOV

(recall, executable files don't require you to include the extension)

MOV source destination

Example of MOV

(recall, executable files don't require you to include the extension)

MOV a:\folder1\junk.txt a:\folder2\junk.txt

What happens

- 1) DOS grabs the first filename given (the source), a:\folder1\junk.txt, and replaces every %1 with a:\folder1\junk.txt
- 2) DOS grabs the second filename given (the destination), a:\folder2\junk.txt, and replaces every %2 with a:\folder2\junk.txt
- 3) DOS executes each line in the batch file, using the replaced filenames

 COPY %1 %2 turns into COPY a:\folder1\junk.txt a:\folder2\junk.txt

 DEL %1 turns into DEL a:\folder1\junk.txt

The result is the original file is copied, then that original file is deleted, leaving only the copy... net effect, moving the file.

Note: if you improperly state the destination, the first line of the batch file will not be able to make the copy, but the second line will still delete the original... leaving you with no file at all.

DOS 9

Lab 3 Commands

Lab 3 Activities

Lab 3 Questions

To Start the WINDOWS Command Prompt: Press Start (or), then type CMD

Make a folder named Lab3 on your floppy, thumb drive, or network drive; ie f: or o:

At the end of this process, you will be taking a quiz based on the following questions. So, to get the best score, fill in all the answers in this document first.

RD (RMDIR)

What does the command do?

What is the syntax for the command?

(Syntax does not include specific drives or directories)

Are there any common parameters mentioned in class? List them

Write out one example of how the command was entered in this lab

DELTREE (DOS Only, similar to the dangerous RD /S Windows command)

What does the command do?

What is the syntax for the command?

(Syntax does not include specific drives or directories)

Write out one example of how the command was entered in this lab

PROMPT

What does the command do?

What is the syntax for the command?

(Syntax does not include specific drives or directories)

Are there any common parameters mentioned in class? List them

Write out one example of how the command was entered in this lab

PATH (Usually in autoexec.bat)

What does the command do?

What is the syntax for the command?

(Syntax does not include specific drives or directories)

Are there any common parameters mentioned in class? List them

Write out one example of how the command was entered in autoexec.bat

ECHO

What does this BATCH file command do?

@ECHO OFF What is displayed?

ECHO OFF What is displayed after the line is processed?

ECHO ON What is displayed after the line is processed?

ECHO Message What is displayed?

PAUSE

What does this BATCH file command do? What is displayed?

REM

What does this BATCH file command do? What is displayed?

DOS Activity

(Examples use A:\, modify accordingly if not using A:\)

Using EDIT or Notepad, create a batch file setpromt.bat that does the following (edit a:\lab3\setpromt.bat or notepad a:\lab3\setprompt.bat or cd lab3

edit setpromt.bat *or* notepad setprompt.bat)

Turns the echo off immediately

Sets the prompt to include the time,

it should still start with the current path and end with the greater than sign Displays the text message, "Do you like my prompt?"

waits for you to continue

Clears the screen

Makes a directory called test

Copy your batch file to setpromt.bak

Optional, have your batch file run tree a:\/f to let you see what happened

IF YOU HAVE CODED THIS PROPERLY, YOU WILL BE ABLE TO SELECT A BATCH FILE CHOICE that accomplished the goal of setpromt.bat IN THE QUIZ

Using EDIT or Notepad, create another batch file named mymove.bat that does the following

(edit a:\lab3\mymove.bat or notepad a:\lab3\mymove.bat or

cd lab3

edit mymove.bat *or* notepad mymove.bat)

- Makes a copy of any file you specify (%1)
- Copies that to any filename or location you specify (%2)
- Deletes the original file (%1)

see page 84/85

IF YOU HAVE CODED THIS PROPERLY, YOU WILL BE ABLE TO SELECT A BATCH FILE CHOICE that accomplished the goal of mymove.bat IN THE QUIZ

I suggest you test your batch file
Example of a test: setpromt.bat is moved from lab3 to the root using
a:\lab3\>mymove a:\lab3\setpromt.bat a:\setpromt.bat
or if in lab 3,
a:\>mymove setpromt.bat a:\setpromt.bat

Check Class website or YouTube for a short video similar to Lab3



You will then submit your quiz and files as directed.

Qι	uestion 1 (2 points)
Th	e RD command
0	is used only in BATCH files
0	tells the computer where to locate the external DOS command directory
0	deletes a directory, and its contents
0	changes the tools displayed in the DOS prompt
0	deletes a single, empty directory
Qι	uestion 2 (2 points)
Th	e DELTREE command:
O	deletes a single, empty directory
O	deletes a directory, and its contents
O	is used only in BATCH files
O	changes the tools displayed in the DOS prompt
O	tells the computer where to locate the external DOS command directory
	uestion 3 (2 points)
	ntax: RD or DELTREE
	rd [path\]DOS or deltree [path\]DOS O rd \$[tool] or deltree \$[tool]
	rd [source] [destination] or deltree [source] [destination]
	rd [path\]directoryname or deltree [path\]directoryname
_	uestion 4 (1 point)
	e command to delete an empty directory named junk is
	format junk O rd junk
	deltree junk O del junk
_	uestion 5 (1 point)
	e command to delete a directory named junk AND its contents is
	deltree junk O del junk
	format junk O rd junk
_	uestion 6 (2 points)
	e command PROMPT
	deletes a directory, and its contents
	tells the computer where to locate the external DOS command directory
	changes the tools displayed in the DOS prompt
	is used only in BATCH files
	deletes a single, empty directory
	uestion 7 (2 points)
-	ntax: PROMPT
\mathbf{O}	prompt [path] DOS
	prompt [source] [destination] O prompt \$[tool]
	uestion 8 (2 points)
	e following is the correct use of attribute command: attrib \$p\$g
	True O False
	uestion 9 (2 points) e PATH command
	is used only in BATCH files O deletes a directory, and its contents
	deletes a single, empty directory O changes the tools displayed in the DOS prompt
	tells the computer where to locate the external DOS command directory
	uestion 10 (2 points) ntax: PATH
•	PATH [path\]random-directory O PATH [source] [destination]
	PATH [path\] DOS-directory PATH [path\] DOS-directory

Question 11 (2 points)			
To set the path to DOS on most cor	•		
o path c:\command.com	o path c:\DOS		
o prompt c:\DOS	O path %1	1 21 1 1 2 1	
Question 12 (10 points) Match t			
suppresses display after displa		1. @echo off	
lets you leave a remark that is		2. echo off	
immediately suppresses displa	У	3. echo [message]	
displays your message		4. pause	
interrupts the execution of the		5. rem	
Question 13 (20 points) Choose		ì	
copy %1 %2 del %1	move %1	', ' '	
del %1 copy %1 %2		del \$1	
Question 14 (20 points) Which			
@echo off	@echo d		
prompt \$p\$t\$g	prompt	· · · · ·	
echo Like prompt?		e prompt?	
cls	cls		
md test	rd test		
copy setpromt.bat setpromt.bak		promt.bat setpromt.bak	
@echo off	@echo d		
prompt %p%t%g	prompt		
echo Like prompt?		echo Like prompt?	
cls		cls	
md test		md test	
copy setpromt.bat setpromt.bak	move se	tpromt.bat setpromt.bak	
Question 15 (6 points)			
The actual command is tree.com, n			
automatically tests to see if the inst	truction ends with w	hat three extensions?	
(leave out the period)			
Question 16 (6 points)	1		
What is a batch file? A series of		ited in order, from a plain	
document whose extension is			
Question 17 (6 points)			
Where is the prompt and path typic	•	:1	
Ocommand.com	O A dumpster in Bi	azıı	
O config.sys	O autoexec.bat		
Question 18 (6 points)	sour the etendend nu	amost that includes noth and	
What is the prompt statement to sh	iow the standard pr	ompt that includes path and	
greater than sign? Example C:\>	O noth tota		
O prompt %p%g	O path \$p\$g		
O prompt \$p\$t\$g	O prompt \$p\$g		
Question 19 (6 points) What is the prompt statement to sh	you the prompt that	includes noth the time and	
greater than sign?	iow the prompt that	. includes path, the time, and	
	prompt ¢n¢a O pr	omnt ¢n¢t¢a	
O path \$p\$g O prompt %p%g O prompt \$p\$g O prompt \$p\$t\$g			
Submit files and quizzes as directed			
See page 57 for details if taking a Collins	s class. Only use the d	ropbox if you missed a big item on the	
quiz in that case zip all files and save			

Note: Command Reference in Appendix A End Chapter 4

Overview 5
DOS 10

Review

See class website for information on testing policies for your class A great way to further review for this test is to review all of your labs.

Directories and Files		
Path	[drive:\][directory\]filename.ext (8.3)	
Directory (Folder) Commands		
List contents	dir	
Show structure	tree /f	
Change directory focus (open another folder)	cd foldername	
Make a new directory	md foldername or mkdir foldername	
Remove an empty directory	rd foldername or rmdir foldername	
Delete directories, subdirectories, and files	deltree foldername	
File Commands		
Copy files	copy source destination	
»Example	<pre>copy a:\test.txt a:\class\test.txt</pre>	
»Example, destination renamed	copy a:\test.txt a:\class\test.ltr	
»Example, copy all .txt files, regardless of file name	copy a:*.txt a:\class*.txt	
»Example, copy all files named <i>homework</i> , regardless of extension	<pre>copy a:\homework.* a:\class\homework.*</pre>	
»Example, copy all files	copy a:*.* a:\class*.*	
»Example, create a text file	copy con filename.ext	
Copy files and folders	xcopy source destination /e	
»Example, copy all files, folders, and subdirectories	xcopy a:*.* c:\backup*.* /e	

Copy a diskette	diskcopy source destination
»Example	diskcopy a: a:
Move a file to a different folder	move source destination
Delete a file	del filename.ext
Undelete a file	undelete <i>filename.ext</i>
Set an attribute of a file	attrib action (±) target file
»Example	attrib +h a:\class\test.txt
Rename a file	ren oldname (no path)newname
View or change attributes	attrib [+][-] [r][a][s][h]target
Batch Files	
set the Prompt	prompt \$p\$g
set the Path to DOS	path c:\DOS
insert a comment	rem note to me
wait to continue	pause
display	@echo off nothing displays
display	echo off nothing displays after this
display	echo on next actions will display
display	echo this displays "this displays"
Utilities	
arrange files to a faster loading, contagious state	defrag
check for and repair, errors	chkdsk or scandisk
copies information for safekeeping	msbackup

96

Glossary
BIOS
Bit
Boot
Byte
CPU
Disk
Giga
Hardware
Hertz
Input
Kilo
Mega
Monitor
Output
Peripheral
RAM
ROM
Software
A list of all the DOS commands and usage is in the DOS Appendix
Lab 1, getting help, navigation, creating files and directories Lab 2, copying and renaming files, wild cards, changing attributes Lab 3, file management, utilities, batch files, replicable parameters

Note: Command Reference in Appendix A

End chapter 5

Preview of Windows Topics

Chapter 6

Windows A Booting and the Interface Windows B File/Folder Creation

Windows C File Management

windows C File Management

Windows Lab 4

Chapter 7

Windows D File Management parameters

Windows E Control Panel and Variations

Windows F Utilities

W Windows Lab 5

G, H, I Windows 3.1-XP-Vista/Windows 7-Windows 8-Windows 10

Comparison of Program Manager to My Computer to This PC Shifts in Customizing/Personalizing the Desktop

Chapter 8

Windows J Networks

Windows K OLE

Windows Lab 6

Chapter 9

Windows Bonus eMail/Web Browsing

Review

Preview of Windows Topics



Interface; Files/Folders; File Management; Lab 4

Windows A, Booting and the Interface

Logging In

Desktop

Mouse: left click to select, right click to open shortcut menu

Manage Windows\Menus\Shortcuts

Objects

Dialog Boxes

Help

Shutdown, Log Off, Sleep

Windows B File/Folder Creation

Executable Files

Directories → Folders

Edit → Notepad → WordPad

Create, Edit, Format

Graphics and Paint

Print Screen

Copy Source Destination → GUI

Printing

Windows C File Management

dir → tree → File Explorer and [Folders]

 $dir/w/p \rightarrow View options$

ren → rename

move or copy

undelete → recycle bin

paths → shortcuts

W Windows Lab 4

Lab 4 Activities

Lab 4 Questions

Note Information about new versions of Windows is in Appendix B

Windows A, Booting and the Interface

Logging In

Desktop

Mouse

Manage Windows\Menus\Shortcuts

Objects

Dialog Boxes

Help

Shutdown, Log Off, Sleep

Refer to page 8 for information on setting up your Windows computer.

Note: this book does not cover every single feature in Windows, nor does it cover every version of Windows; the focus is on full-on computers that use a keyboard and mouse, but I will touch on mobile systems.

Where appropriate I do include screenshots from

Windows XP, (VER Windows 5)

Windows Vista, (VER Windows 6)

Windows 7, (VER Windows 6.1)

Windows 8, (VER Windows 6.2)

Windows 8.1, (VER Windows 6.3)

Windows 10 (VER Windows 10) and

Windows 11 (VER Windows 11)







The reason I include old versions on occasion is because

- 1) old versions are still out there, and you may encounter them,
- 2) to show the progression of tools to explain the current version, and
- 3) to instill the idea that I am not teaching ONE version of Windows, but Windows itself... so if you encounter a new version in years to come you understand not "what button to click," but where to look for a tool.

Extending DOS to Windows, or, extending the command line to the GUI, the Graphical User Interface

All operating systems do basically the same thing, manage resources. To that end, all operating systems use basically the same kinds of tools... tools to select storage devices; tools to browse folders; tools to copy, paste, move, or rename files; tools to manage the computer; and tools to start and interface with programs. This section begins to bridge the command line of DOS or Windows to the graphical interface.

DIR was used to display the contents of an individual computer... In Windows, we now use the Start button to open the Start Menu, and from the Start button we can choose:

"My Computer" (XP) or "Computer" or "Windows Explorer" (Vista, Windows 7) or "File Explorer" and "This PC" (Win 8, Win 10/11) to locate storage devices accessible from the local machine, including hard drives, removable storage devices, and mapped network drives (Windows chapters J-K). If you right click the Start button in older versions of Windows, you'd see "My Computer" and "Computer" were actually called "Windows Explorer." If you right click the Start button in newer versions of Windows, you'll see "This PC," is now actually part of "File Explorer."

All of these are the same tool, they just changed the name.

As this tool works the same regardless of version, I will try to refer to the tool as *File Explorer/This PC*.

- "My Documents" (XP) or "Documents" (Vista or newer) is the default folder (directory) where files are saved, unless another location is specified. In a class or work environment, a mapped network drive is a better choice, as it is available to users regardless of which computer they are using.
 - As this tool works the same regardless of version, I will refer to the tool as (My) Documents.
- "My Network Places" (XP) or "Network" (Vista or newer) is used to locate resources saved on other computers within your domain.
 As this tool works the same regardless of version, I will refer to the tool as (My) Network (Places).
- Control Panel is used to modify the computer settings, giving Windows a
 graphical tool to upgrade config.sys and autoexec.bat, in order to
 inspect and modify the System, and regulate the computer and how it
 interacts with the mouse, cameras, network cards, USB devices, etc.
- Start/All Programs gives Windows XP-7 users the ability to browse for an installed program, then select and execute (start the program.) Windows 10/11 you can use Start/All Apps.
- A command line required you to name the program to select it, then hit the enter key to execute or to start a program, such as EDIT.

In Windows you can also start a program by naming it...

Press the Start on your keyboard or screen, and type the name of the program you wish to start. When the program displays, press the

Enter key to execute.

IMPORTANT! Write this down!

We can also use the mouse, if browsing files; A double click is actually the same as select (1^{st} click) and execute (2^{nd} click).

Some notes

Once a program has been started, we now have icons and buttons, in addition to menus. Recall in DOS HELP and EDIT, we first chose [Alt] to access a menu. In Windows, press [Alt] to expose hidden menus.

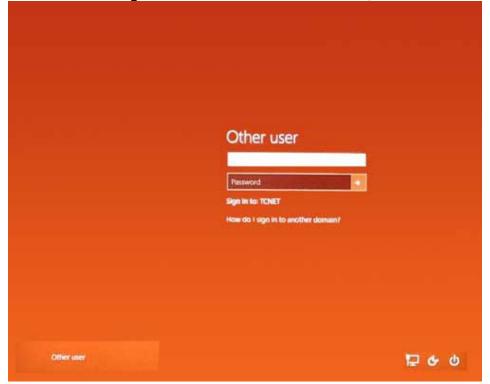


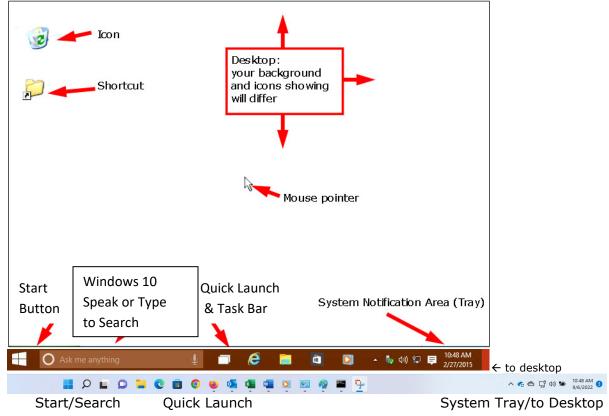
Arrows or Chevrons or Triangles, such as → or » or v or ▶ or v or normally mean **more options** are available.

... after a menu item such as Print... indicates a dialog box will open when the menu item is selected in order to pass the parameters needed to complete the command.

Logging In

Windows 10 Log in screen. See Windows G-H-I for log in screens for earlier versions of Windows.





Generic Windows Desktop See Windows G-H-I for taskbars of earlier versions of Windows.

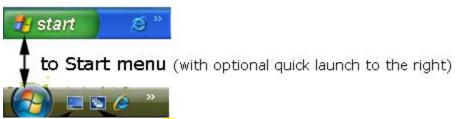
The desktop is your access point to all the computer can do.

- An icon represents an object, that is, a file, a folder, a device, or anything the computer can manipulate.
- A shortcut is a path to an object, a pointer. You may safely delete shortcuts without removing files or devices from your computer
- Start button opens the start menu, to browse your computer You may click the button or press the Heavy key on your keyboard.
- Right click the Start button for a shortcut menu of important tasks
- Quick Launch allows you to start frequently used programs by placing them on the task bar
- The Folder icon allows you to browse your computer by starting "File Explorer"/This PC" (formerly My Computer).
- Task bar show programs started by the user
- System notification area shows the clock, calendar, and programs started by Windows
- The box to the far right if hovered over will allow you to peek at the desktop; clicking the button switches to the desktop.
- While Windows versions may look a bit different, everything pretty much works the same... much like driving someone else's car... you probably can handle the minor differences.

Minor differences in the newer Windows interface

While newer versions of Windows are more robust and secure than older versions, the way the user interacts with the Operating system is not very different... but there are a few items worth pointing out. See Windows G-H-I for more views of earlier Windows versions

1. The Start button look has changed from a rectangle with the Windows icon and the word 'start' to a variations on the Windows icon the will pop up the word 'Start' if you point your mouse at it..



Remember, arrow like >>> means more options are available if you click on the arrows

Windows 8.1 had a 'interesting' Start Menu system, left click to open a "full screen" Start menu with access to Apps, or right click to access the useful shortcut menu that was similar to the old start screen.

Left click "Start" from the desktop Right click 'Start' on the desktop X Start Programs and Features Power Options **Event Viewer** System 湖 Device Manager Network Connections Disk Management Computer Management Command Prompt Command Prompt (Admin) Task Manager Control Panel File Explorer Search Shut down or sign out

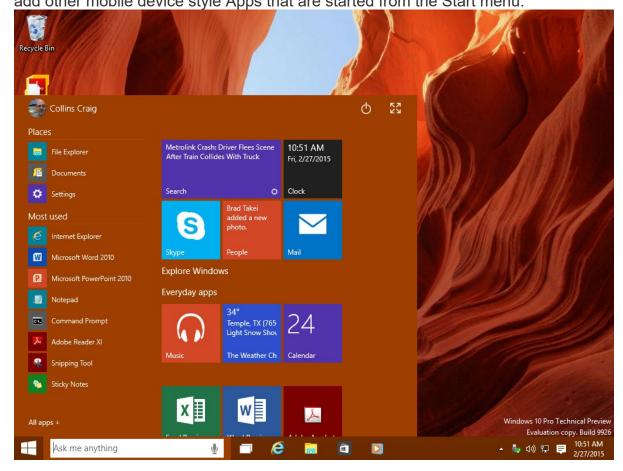
Windows 10/11 returns to the idea of a Start Menu when you left click the Start button, yet retains the right click to a fully featured menu functionality.

2. Gadgets on the Desktop to Apps on the Start menu

You could add gadgets like a clock, a sticky note, or performance monitor on the desktop in older versions of Windows....



In newer versions of Windows, you can place interactive Apps like news/ weather updates on the Start menu. Aside from full featured desktop programs, you can also add other mobile device style Apps that are started from the Start menu.



In Windows 8.0, running apps appeared on the desktop as a small window in the top left... swipe with finger or mouse from the top left to expose them... to switch or close. In newer versions of Windows, apps show up on the Task bar.

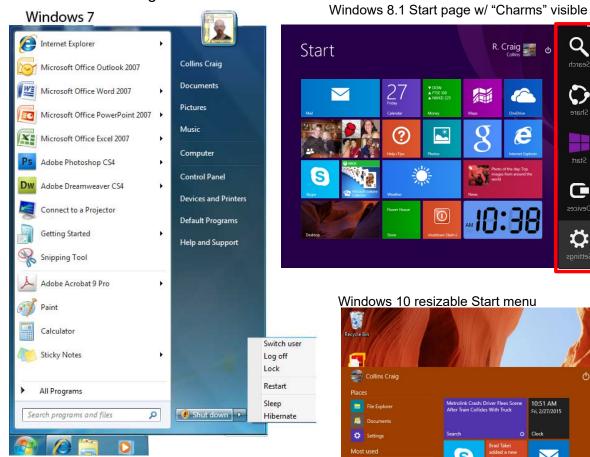
C

‡

3. Start menu, shutting down.

A minor difference: the Shut Down options:

- Windows 7 you choose Start\Shut down, Shut down is at the bottom right.
- Windows 8.1 you choose Start and the Power icon \bigcirc , top right
- Windows 10/11 you choose Start and the Power icon $^{\bigcirc}$, bottom right You can also right click the Start button to access Shutdown or restart



A brief note on touch screens in Windows 8: Place your finger on the right side of the screen and pull to the left to reveal "Charms" to access Search, Share, and get to Settings on whatever you are working on. To close an App drag down from the top. To get info, pull up from the bottom of the screen.

Ask me anything In newer versions of Windows that do have touch screens, press and hold to 'right click. Plugging in a mouse will activate the familiar Windows controls even for apps.

X

Check Class website or YouTube for a short video similar to Lab3



4. Hidden Menus

Application menus may be hidden; to reveal the menus, press the [Alt] key

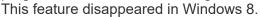


5. Taskbar, [Alt]+[Tab] and [Start]+[Tab]

In Windows XP, pointing your mouse cursor at an item on the task bar generated a small text box describing the icon; now you get a fairly large thumbnail of the program window. Since Windows XP, you could press and hold the [Alt] key, then press [Tab] to scroll through available programs... let go to select the Window you wish to switch to.

Windows 7 Added to that the [Start]+[Tab] sequence to get a large Rolodey style view of

Windows 7 Added to that the [Start]+[Tab] sequence to get a large Rolodex style view of program windows to view... let go to select the Window you wish to switch to.



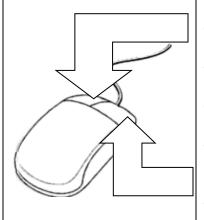


6. Run, Search, Starting programs by naming them.

For power users who liked being able to start a program using the Run tool, it no longer is on the main Start Menu... BUT, now there is a **Search** box instead that can work just like Run used to: if you search for a program it will execute the program. But you don't have to see the Search box... just press the Start key on your keyboard and start typing the name of the program; hit Enter when the program is selected.

Mouse (I know you probably have the basics, but let's make sure)

Aside from using the mouse to simply point, use the buttons to choose, move, or manipulate objects on the monitor.

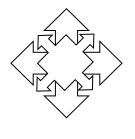


Left mouse, single click •select

Left mouse, press and hold •to drag object to new location Left mouse, double click •select + execute

Right mouse, single click
open property inspectorto reveal a shortcut menuRight mouse, press and hold

•to drag with option to copy, move, or "make shortcut" Mouse movements



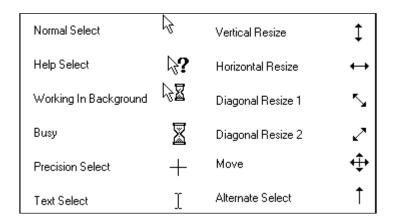
Right click is the answer to most questions, used to reveal a shortcut menu. Example, right click item to reveal, then use the left mouse button to select.





... or choose [Esc] to close shortcut menu.

To change the way the mouse works, choose Start/Control Panel/Mouse, then select the tab you wish to use. (Many Control Panel items lead to Settings items. Both Control Panel and Settings let you configure Windows.) Mouse pointer shapes indicate what tasks can be performed.



Manage Windows\Menus

The taskbar acts as a quick launch tool, but it's primary job is to show programs that are running. Programs the user has started show in the middle portion of the taskbar, while programs Windows has started display in the System Notification Area, also called the Tray. Programs that are running, but not currently needed, can be minimized to the taskbar; that is, shrunk to just an icon that represents the running task.



Win 7 users, click Start\Control Panel.

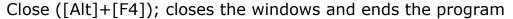
Win 8-11 users right click Start and choose the Control Panel. Recall, the control panel is used to modify the computer settings.

Minimize the Control Panel window. Double Click the Recycle Bin icon. You should now have two icons on the task bar.



Minimize; shrink a program window to the task bar

Restore Down; not full screen, the window can be moved/sized*

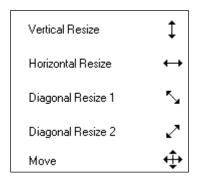






*Maximize and Restore Down share the same spot, if the window is currently maximized, the Restore Down button shows. If the window is currently not full screen, the Maximize tool shows.

Maximize the Control Panel. Now, restore down the Control Panel.



While in restore down mode, move to one of the edges of the window. Resize the window.

Click in the title bar and move the window.

Click on the Recycle Bin icon on the task bar to un-minimize it. Close the Recycle Bin.

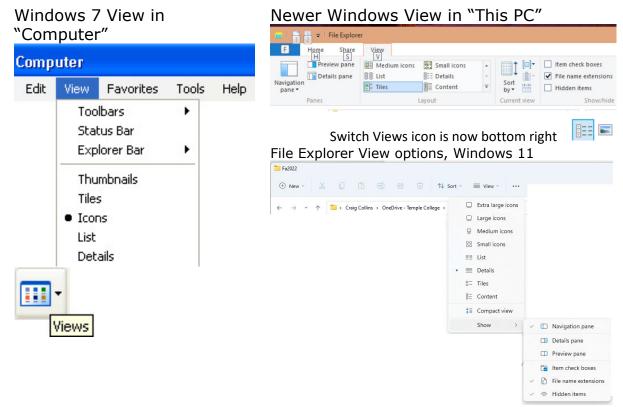
Now, using the Control Panel, choose the Mouse control panel, and explore the different settings in the Mouse control panel. You may wish to select 'Classic View' to change the way the Control Panel organizes items.

Menus

Windows 7 Left click Start and choose "Computer" Newer Windows, Right-Click Start and choose File Explorer ("This PC") (Recall these are the SAME program, they just have different names now.)

If your menus are hidden, press the [Alt] key, then choose <u>View</u>, or press [Alt] and then type the letter 'v.'
(When you use the [Alt] key and the underlined letter, or mnemonic, you are using a keyboard shortcut. More on keyboard shortcuts soon.)

Note: ... after a menu item ... indicates a dialog box will open when the menu item is selected in order to pass the parameters needed to complete the command.



Note the path to show the File name Extensions in Windows 10 and 11

Explore different settings for the display. Details is like dir, you may scroll up/down using scroll bar to the right. List is like dir /w

Keyboard shortcuts

Below is a short list of keyboard shortcuts, additional shortcuts are listed on the class website.

Windows

- [Alt] Open the menu if hidden, or to use a mnemonic
- [Alt] [Tab] Go to next window, or switch between active windows
- [38] [Tab] Switch between active windows, Rolodex style (Vista Win 7)
- [Alt] [F4] Close active window.
- [Alt] [F4] If no window is active, this will shut down Windows.
- [Ctl] [Z] Undo
- [Ct1] [x] cut selected item (copies into memory, called the clipboard)
- [Ct1] [c] copy selected item (into memory, called the clipboard)
- [Ct1] [v] paste an item in memory, called the clipboard, into document

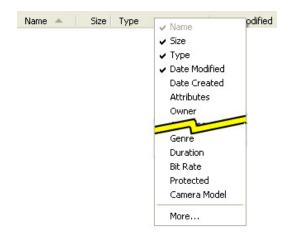
Word processing

- [Ctl] [s] save
- [Ctl] [b] bold
- [Ctl] [i] italic
- [Ctl] [u] underline
- Single click text Select word
- Double click text Select sentence
- Triple click text Select paragraph
- [Shift] [End] select from insertion to end of line
- [Ctl] [Shift] [End] select from insertion to end of document
- [Shift] [Home] select from insertion to beginning of line
- [Ctl] [Shift] [Home] select from insertion to beginning of document

Other tips

If a button is highlighted, pressing the [Enter] key is the same as clicking the button. Pressing the [Esc] key is the same as choosing [Cancel].

You may move the highlight to other buttons by pressing the [Tab] key.



If viewing Computer/This PC in Details view, you may **right-click** the gray column heading, then select or remove additional detail items.

If a column heading is too narrow, place your cursor between the columns. When the cursor looks like ↔, hold down the left mouse button and drag the column to the left or right to resize.

Click a column heading to sort by that item. Click the

or

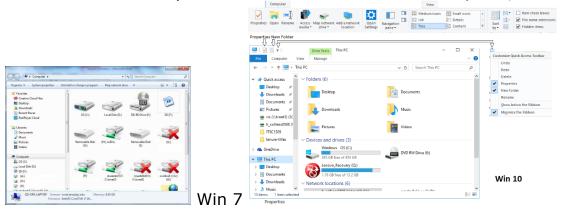
or

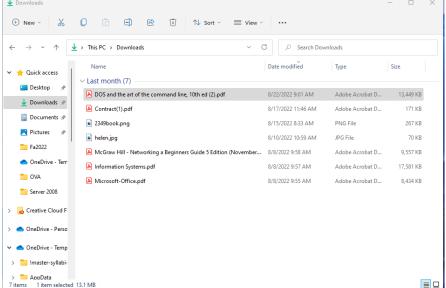
to reverse the sort.

Objects

As mentioned earlier, an icon on your desktop may represents an object; that is, a file, a folder, a device, or anything the computer can manipulate. As we move forward, we will stress the 'anything the computer can manipulate' aspect. Understand that an object might be a snippet of a text that has been copied into memory (called the clipboard), an image that could be pasted into a different document, a chart created by a spreadsheet application, or an object may even be another computer.

When you first choose Computer/This PC, you may be looking at icons for your hard drive, floppy drive, removable storage devices, or a mapped network drive that represents a folder on a different computer, etc.





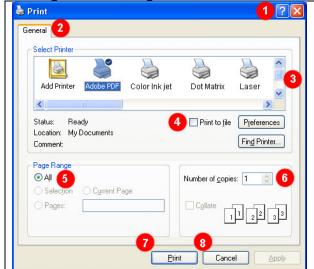
Windows 11

Note: the menu bar in Windows 11 has been simplified. The Properties icon has been removed in Windows 11, but note that the selected item properties are still listed at the bottom of the screen. Recall, use ▼ or ...

Dialog Boxes

As mentioned earlier, a dialog box opens anytime Windows needs additional information before carrying out a command, or to change a

dialog box setting.



- 1. Help [?] on this dialog box

 May be a magnifying glass
- 2. A tab, there may be multiple
- 3. Scroll bars to view choices
- 4. A checkbox □ and/or 図 multiple items can be selected
- 5. A radio button ⊙ or O: only one of group can be selected
- 6. A dropdown list
- 7. Default option (or press enter)
- 8. Cancel (may press [Esc]

Help

There are several kinds of Help in Windows. Content sensitive help, Program help, and online help.

The DOS command Help listed all the commands you could get help on...

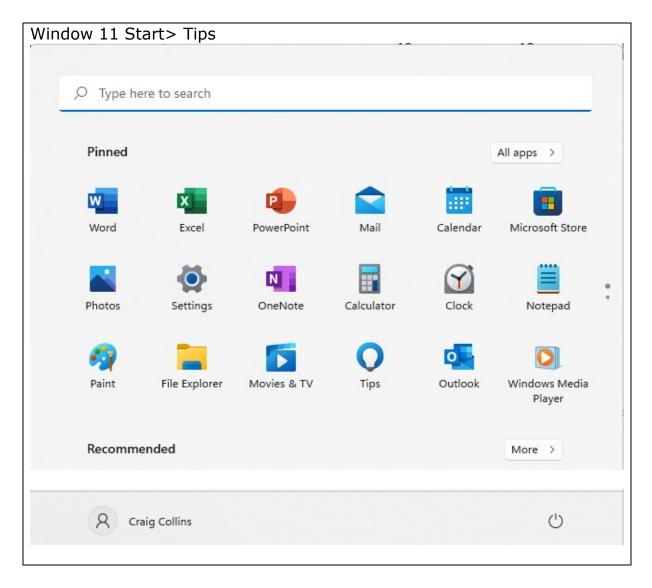
The DOS command /? Feature allowed you to get help on a specific command. Many dialog boxes have a [?] button to get help on just that dialog box. This [?] is a form of **context sensitive** help.

Individual Windows applications also have help files on using that application, called **Program Help**. This is opened by choosing the Help menu if available, or clicking the (?) or Magnifying glass button.

Whatever window is active, by pressing the **F1 key** on your keyboard, you can get help on that activity.

Earlier versions of Windows had a "Help and Support" option to list topics to get help on, plus has a searchable help tool.

In Windows 11, use Start>Tips



You may also click Search to get **online help** to get more up to date, and even let a technician 'drive' your computer from a distance.

Click the Magnifying glass to search... search on your computer for files or apps, or search the Internet. You can also use Search to locate Cortana, Microsoft's AI app that can let you search by speaking to your computer.

Shutdown, Log Off, Sleep

Depending on your version of Windows, there are slight differences in shutting down your computer. However they all start by choosing the Start button.

Windows XP: Start/Shut Down

Windows Vista: Start then choose ▶ and select Shut Down

Windows 7: Start/[Shut Down]

Newer Windows: Start ①

With DOS, you could simply power down the computer. In Windows, don't just power off, as the programs that are running will not have a chance to appropriately save and close... you may not think any programs are running but don't forget those programs Windows itself started that are running in the system notification area, also called the tray. The only way to give all the Windows programs a chance to appropriately close is to use Shut Down.

If your computer freezes, press [Ctrl]+[Alt]+[Delete] to open the task manager... you may close the unresponsive program there, or choose Shut Down.

When can you choose something besides Shut Down? If you are leaving a network computer and someone is about to sit down, you should choose Log Off.

If you are leaving your computer, and don't want anyone else to use the computer, you may choose to Lock the computer. Don't lock the computer if it is a public computer that others may wish to use.

Finally, you may wish to put your computer in Sleep mode if you won't be using it for a few moment, but don't want to shut it down. Sleep is a low power mode that keeps the computer on and items available in memory, without using excess electricity.

Don't choose 'Sleep mode' or 'Hibernate' if you are not going to be using the computer for several hours... go ahead and shut it down and be a green computer user.

Finally, to answer the question: does it hurt to leave the computer on? While this wastes electricity, it doesn't really hurt the computer; however, only the shutdown process completely clears the RAM; eventually a computer left on too long will slow down as poorly written applications clog memory. Does it hurt to turn the computer off?

Windows B File/Folder Creation

Executable Files Directories → Folders Edit → Notepad → WordPad Create, Edit, Format Graphics and Paint Print Screen Copy Source Destination → GUI

Printing

Directories → **Folders**

In DOS, we used the term directory to indicate an organizational tool used to allow the user to group files together. In Windows, a directory is now called a folder, but they behave exactly the same.

Executable Files

While Operating System software is a subset of system software, Windows includes a fair number of system software utilities (see unit F) and a few application programs also, most notably a text editor and a simple word processing application, and even a simple drawing program.

As mentioned earlier, programs and applications are executable files such as the DOS Edit program, a simple text editor that saved plain text files. Files created by an application or program are called data files. The computer can tell the difference between the types of files by examining the extension.

Programs often end in (.exe), while you may recall a text data file often ends in (.txt) or (.doc).

Windows goes one step beyond DOS by also assigning an icon to each extension.



The icon on the left is the Microsoft Word program. Again, the files created by an application are called data files; the file on the right is a data file created by Microsoft Word. Often data file icons resemble the program icon.

Note: Windows is not limited to eight character file names or three character extensions.

Common Windows applications, and the file types they create

Notepad, the Windows version of EDIT, creates (.txt) files

WordPad, a simple word processor, creates (.rtf) files

Paint, a simple drawing/painting program, creates (.bmp) files.



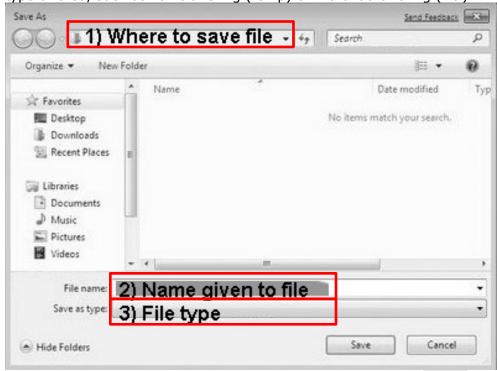
Note: If your computer has Microsoft Word on it, the icon for (.rtf) files will change to the Word icon. This is why it is important to NOT hide file extensions, as you cannot rely on the icon to know the file type. You can still tell Windows to open the file with WordPad, by right-clicking the icon, and choose Open with...

Save, vs. Save As

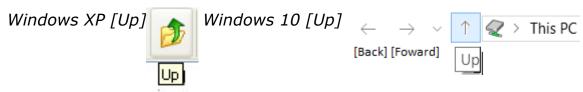
Save replaces an old file with a new version. The first time a file is saved, you must go through the Save As process, where you tell Windows

- 1) where to save the file*,
- 2) what you wish to name the file, and
- 3) what type of file it should be saved as.

Typically, you do not need to change the file type; instead you usually accept the file type offered, such as Paint offering (.bmp) or WordPad offering (.rtf).



*In DOS we had the ability to go up one directory using cd . . In Windows you choose the Up button when browsing to do the same.



Note: When saving files for work or school, it is probably NOT a good idea to just save the files in the default 'Documents' folder, as they will only be available on *that* computer.

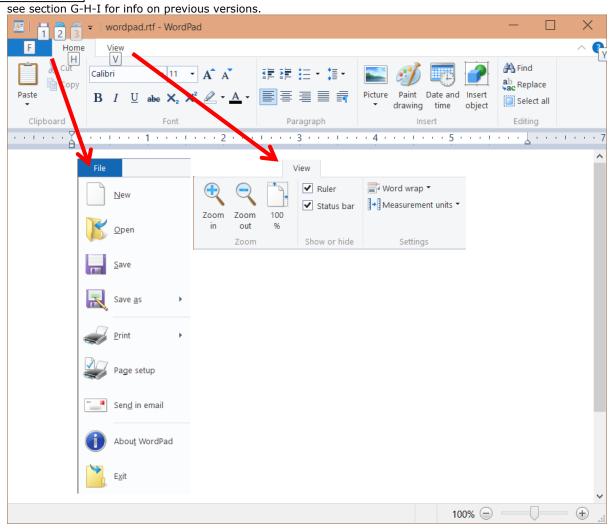
Instead, select "File Explorer" or "This PC" and then browse to a location that is available later... such as a network drive, removable storage device, etc.

Edit → Notepad → WordPad

While EDIT and Notepad have a place, many times you may wish to format your document, that is, change the shape, size or color of the text, or perhaps add a list, or double space paragraphs. Old typewriters and text editors did not have this support. Starting with Windows 3.1, WordPad could *format* text, making Windows a very appealing option to home computer owners.

Find WordPad by clicking the Start key and just type wordpad.

Do This Below is a chart of the tools in newer versions of WordPad are...



Create, Edit, Format

Creating a text file was fairly easy to do in DOS, you would type in COPY CON *filename* and simply type to create your file.

The big difference between using COPY CON *filename* and using EDIT was obviously the fact that EDIT would allow you to change text several lines up; that is, move your cursor off the last line and retype. WordPad can go quite a bit beyond this. While we learned in DOS that you can copy and move files, in Windows we can actually apply this sort of housekeeping to parts of a file.

If you have several lines of text already typed in WordPad, you can cut, copy, paste, and move text around your screen, or even undo the last action you performed, using the Edit/Undo menu, [Ctl] [Z], or button.

Recall in Windows we have to select, then execute. To cut, copy, paste, or move text, you first need to highlight it by dragging your mouse across the text.

Cut removes the selected object from the current document and places it in the clipboard. You can cut using Edit\Cut, right click\cut, or [Ctl] [x]

Copy duplicates the selected object from the current document and places it in the clipboard. You can copy using Edit\Copy, right click\copy, or [Ctl] [c]

Paste duplicates an object from the clipboard and places it in the current document at the point of the cursor. You can paste using Edit\paste, right click\paste, or [Ctl] [v]

To move text, highlight it and then drag it to a different location in WordPad by keeping the left mouse button held down. Another useful keyboard shortcut is <code>[Ctl] [s]</code> to save.

Once you have edited your text, you may wish to change the appearance of the text, or format. You can change the font face (or shape of the letters), the font size, or the font color. You can also make text bold [Ctl] [b], italic [Ctl] [i], or underline [Ctl] [u].

Graphics and Paint

How Monitors Create Text and Images

There are two real concepts in computer graphics, and they both deal with how a computer represents a line that used to be drawn on paper.

The earliest attempt at this concept is how a TV screen 'draws' pictures. If you look carefully at a TV, you see the image is actually made up of tiny dots of color, called pixels. The proximity of certain dots of light are then interpreted by our eyes as lines and solid shapes.

The term for this simple collection of dots is bitmapped. Originally computer screens were very much like typewriters, and could only create predetermined shaped like letters on the screen.

But as the technology improved, it was decided to mimic TV and represent letter shapes by a series of dots, and if you could represent a letter, you could also represent other kinds of shapes and computer graphics were born.

You could now display a picture, or print out a picture, instead of just words.

Bitmapped means that each pixel has a value assigned to it, which is translated by us as the shape or color. So 111000111 might darken some pixels on the monitor like this *****, or from a distance it might look like - -.

Raster images are where the shades of an image are converted to 1s and 0s at the place where the shapes covers a particular pixel.

But the problem with this is when you try to magnify the image. A diagonal line like \(\) may look fine, until it is 10 times larger, and suddenly looks like a staircase.

It was never really smooth, so magnifying it makes things worse.

The solution for this is was to stop describing a line with dots, and instead describe a line with a line, or at least a formula that was understood by the computer to represent a line. That is tell the computer a line starts at the second pixel on the first row, and runs at a 35° angle to a particular pixel on the 68th line.

What was nice about this is that formulas can be manipulated to magnify the line without jagged edges.

And since a letter of text on a screen could be described with formulas for circles and lines, we could now have scalable text, as with Windows True Type Text.

Typed Characters (Fonts)



A little bit about text shapes on computers, usually called fonts. A font is actually a collection of information, such as the shape of the letter, the thickness of the letter, the attribute of the letter, and the size of the letter. So Times New Roman, Bold, Italic, Black, and 10 pt. describes most Microsoft word characters.

(There are 72 points to an inch; so 12 pt is 1/6 of an inch high letters, measured from the highest point that any letter reaches, to the lowest possible point.

Some letters have extra doodads called serifs, which give a letter more shape, making it easier to read. A serif 'g' is a lot less likely to be read as a 'q' that the san serif version of a 'g'.

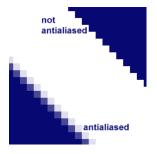
serif	san serif	monospace	proportional
g	g	ill	ill
1 (one)	$1_{(L)}$ $1_{(one)}$ $1_{(L)}$	WOW	WOW

Originally computers used seven 1s and 0's to represent about 128 different shapes, or letters to display on the screen.

Example: 'A' was 100001 and 'a' was 110001.

Today, the Open True Type fonts use Unicode, sixteen 1s and 0s, which can represent tens of thousands of different shapes, to include not only English, but Russian, Japanese, Arabic, etc.

A final note, while True Type fonts improve scaling and display, the monitor is still a series of dots... limiting the ability to display smooth curves. This can be overcome to an extent, using partial shading of pixels to simulate smooth lines and curves... this is called anti-aliasing.



Finally, for the words and images to be printed, a ink jet printer sprays ink onto paper, using magnets to guide the ink. Laser printers use a laser to change the magnetic properties of a rolling drum where words are to appear; the magnetic toner sticks to the drum until paper passes under it, where the toner is transfer to the paper, and set with heat by a fuser.

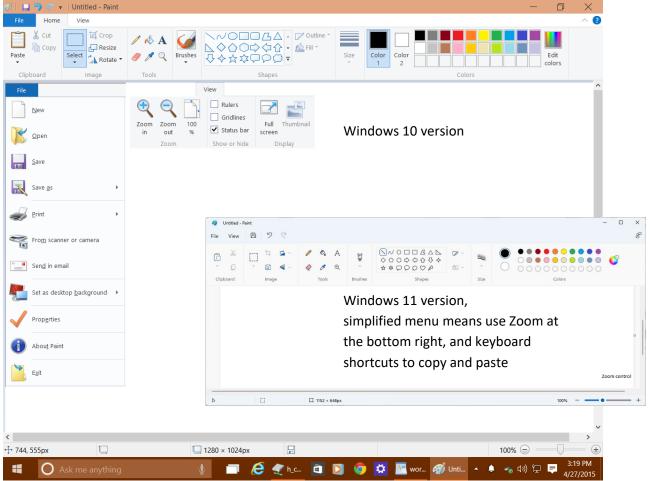
Paint

DOS could not really handle graphics too well, so there was no real built in program to edit images. This changed with Windows.

See section G-H-I for older versions of Paint.



Find Paint by clicking the Start key and just type paint.



Select File\Image Properties to set your canvas size. Feel free to experiment with Paint. Perhaps set your canvas size to be 72 pixels high by 72 pixels wide to keep the file size down. You may save your file, preferably on your network drive or removable storage device is available; the default file type for Paint is 24 bit bitmap, or (.bmp), but the new version can also save as jpg, gif, and png.

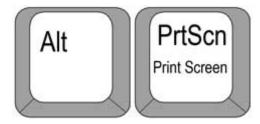
Note: with the selection tool you can select parts of an image to cut or copy.

Print Screen

From time to time, there will be something **on your screen** that you will wish to save. If you choose the [Print Screen] key, whatever is displaying will be copied to the clipboard. From there it can be pasted into Paint, or other program, and saved.



To save just the active window, press and hold the [Alt] key, then press [Print Screen] and let go of both keys. The active window will be copied to the clipboard. From there it can be pasted into Paint, or other program, and saved.



Copy Source Destination → GUI

While we have already covered copying just part of the text in a WordPad document, Windows offers us much more granular control of what can be copied... as mentioned earlier, we can also copy **part** of an image.

Using your selection tool in Paint, select just part of your image, then choose Copy. Open WordPad, and choose Paste, as WordPad can also deal with text and graphics.

What we are doing in Windows is exactly what we would do in DOS, in order to copy or move, we first must specify a source, and then we must specify a destination.

In Windows, we select some text or part of a graphic, and then choose copy in order to call the copy command and specify the source. Then we choose a different location in the same file, or a different file, and choose to Paste... delivering to Windows the destination for the copy or move command. It is the same functionality, just implemented by using the mouse or a highlight to indicate the source, and later the destination.

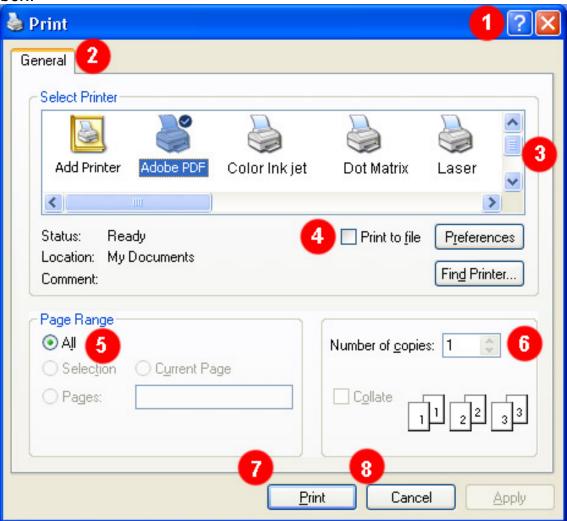
Further, obviously we can cut, copy, paste, and move files, too. Open File Explorer, select a file, then choose Copy. Browse to a different folder or device to select a new location, choose paste.

(See page unit C, starting Windows -29-, for more on managing files.)

The easiest way to copy, move, or paste is to use the right mouse button. To me, the answer to most questions in Windows is 'right-click.'

Printing

As we saw earlier, when it is time to print we normally open a dialog box.



To print a document first select the printer you would like to use, if there are multiple printers available (item 3). Choose which pages you would like to print (All, the current page, or a range of pages, item 5). Then choose how many copies of those pages you would like printed on the specified printer (item 6). You can get Help with item 1 [?] Por F1

To issue the now fully formed Print command, (7) press [Print] or the [Enter] key. If you do not wish to print, (8) choose [Cancel] or the [Esc] key. Either will execute your intention, and close the dialog box.

Note: If you press the [Apply] key, this will execute the command indicated in the dialog box, but instead of closing the dialog box, [Apply] will leave the dialog box open for further implementations of the command.

Windows C File Management

dir → tree → File Explorer and [Folders]
dir /w /p → View options
ren → rename
move or copy
undelete → recycle bin
paths → shortcuts

dir → tree → "File Explorer" or "This PC" and [Folders]

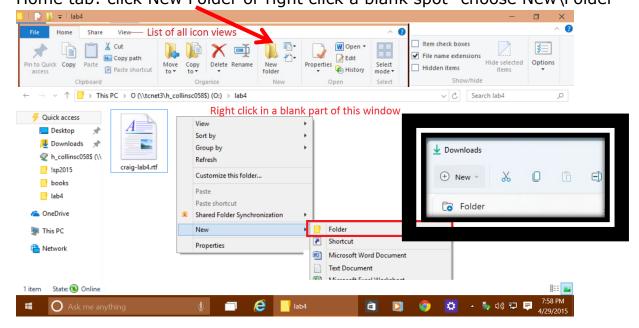
File management is about organizing files and folders in a hierarchy so that information is easy to locate.

In order to manage file then, you need to be able to: create and name/rename folders to organize your storage devices create and save files by choosing a file name files and storage folder delete, or rename, copy, or move files to other named folders You should also be able to browse your storage devices and folder to locate files. We could do that in DOS with DIR or TREE.

Windows also lets us search for files, or create a shortcut (path) to a file, a folder, or any other object.

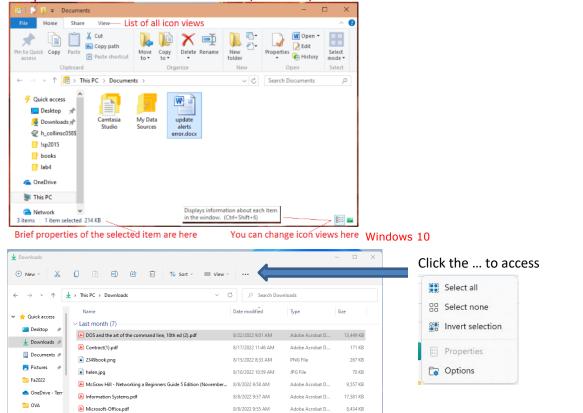
Note: DOS and earlier Windows used directories (folders) to physically organize files on a drive. Starting with Windows 7, specially created folders called libraries and favorites are used help you logically organize files, regardless of where they are physically stored.

md →make a folder in Windows In "File Explorer" or "This PC" Home tab: click New Folder or right click a blank spot- choose New\Folder



Using "File Explorer" or "This PC"

Properties icon in Windows 10, below; icon removed from Windows 11



Simplified in Windows 11

The other buttons available in Windows are

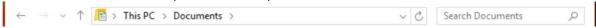
Server 2008

> OneDrive - Perso

← Back, only available if you have browsed from some other device or folder, choosing Back returns you to the last storage location viewed.



→, Reverses a ← Back; and again, Up is exactly like cd .. Search, the Magnifying glass, is used to locate a file based on file name, or contents of the file, or file size, or when created.



Recall, you can also search simply by pressing the Start key, and start typing what you are looking for.

Menu Items In Windows

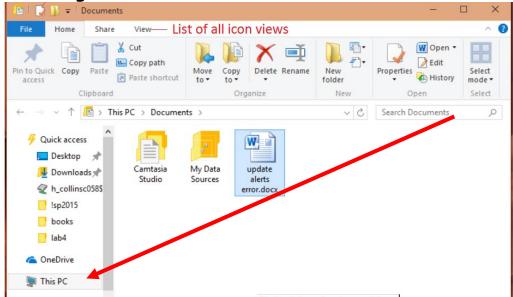
Pressing the Alt key followed by the underlined mnemonic opens the menu, just as in DOS, such as Alt + F opens the File menu.



In some programs, some menus may be hidden; press Alt to reveal.



Browsing for files



In a network environment, normally you will not save your files on the computer, but rather on a removable device or network drive. To locate these storage devices, start by selecting "This PC" in the left pane; you may have to scroll to find this.

$dir /w /p \rightarrow View options$

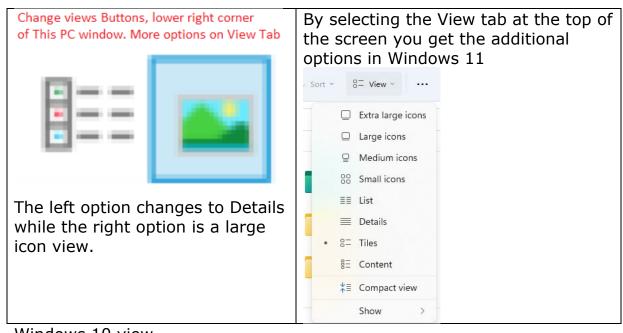
Once you have located your file, you may find out additional information about the file by changing views, much as you did in DOS.

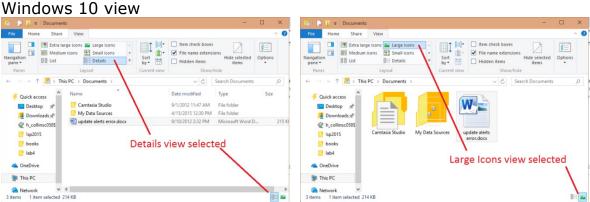
dir by itself generated a listing of the file name, file size, and file creation date.

dir /w just displayed filenames, without the other details, and often displayed the filenames in columns.

dir /p paused the display after a page full.

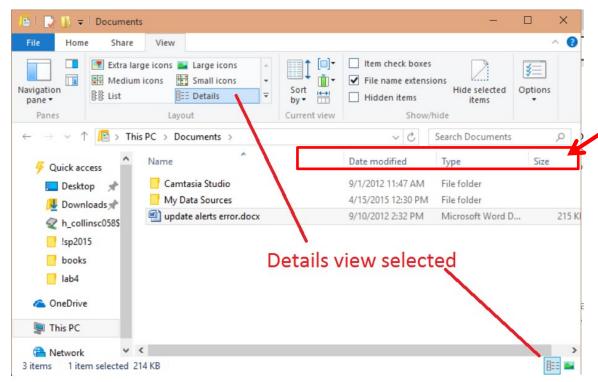
In Windows, with its scroll bars, we don't need to worry about /p, but we often still need the functionality of the details.





To find info about a file not in Details view, right click and choose Properties.

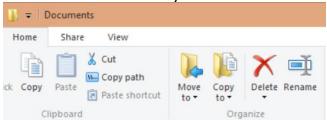
The Details option can be further tweaked to give you even more info on your files; right-click on the gray column heading bar (the area the arrow is indicating below) to add or remove items listed in the detailed list.



Further, you may resize the columns by pointing your cursor at the dividing line between columns... when the cursor changes to \leftrightarrow you click and drag the column to a different width.

ren > rename

There are several ways to rename a file in Windows.



Choose the Home menu, then Rename

Right-click the file, and choose rename

Click one on a file name to select the filename and pause; click once more on the filename, and the filename should go into rename mode.

Note: you normally do NOT change an extension when renaming a file.

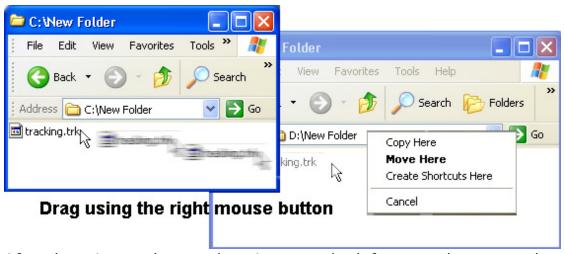
move or copy

In DOS, you always had to choose a command first, such as copy source destination. As we have seen in Windows, you usually start with the selection to choose the source, then choose the command.

While describing the various methods to copy (or cut, or paste), the move was included in that discussion.

A slightly faster variation to 'right-click copy' followed by 'right-click paste' is simply dragging a file by clicking on a file, keeping the left mouse button down, then moving the file to a new location.

However, dragging a file from one folder to another folder on the same drive behaves differently than if you are dragging a file from one storage device to another. To avoid confusion, *drag using the right mouse button*. This prompts you to choose whether you intend to move, copy, or even create a shortcut.



After dragging to the new location, use the left mouse button to choose: Copy Here, Move Here, Create Shortcuts Here, or Cancel.

More on shortcuts shortly.

You may also **select multiple files** to copy or move.

- Using the mouse draw a box around the files in File Explorer or on the desktop to select multiple items.
- Click on one file in a column, press and hold the [Shift] key, and click another file in the column to select all files between the two items
- Click on one file, press and hold the [Control] key, and click to include additional files into the selection. Release the key when done.

undelete → recycle bin

In DOS, we had the potentially useful, but unreliable, UNDELETE. Undelete attempted to reintegrate recently 'deleted' files by updating the File Allocation Table, or FAT. This typically was only successful if the deletion attempt was carried out before there was any other disk activity that might over-write the file, making undelete impossible.



Your recycle bin icon may differ.

In Windows, a similar process occurs, but using the Recycle Bin, the chances of successfully recovering a recently 'deleted' file are very high.

This is because the file is often NOT deleted at all.

Methods to 'delete' a file or folder include:

- selecting the file(s) or folder(s), then pressing the [delete] key,
- select the file(s) or folder(s), choose the File menu and Delete
- right-click the file(s) or folder(s) and choose Delete on the menu

Methods to restore a file or folder in the recycle bin

- Immediately after deleting, choose Edit/Undo or [Ctrl] [Z]
- Open the recycle bin, select the file(s) or folder(s), right-click and choose Restore. The items will be returned to the original location.

What happens when the recycle bin is full?

The recycle bin is actually a folder. When you 'delete' file(s) or folder(s) from a hard drive, instead of being removed from the computer, they are moved to the recycle bin for safe keeping. This gives you time to decide if you need to restore them later.

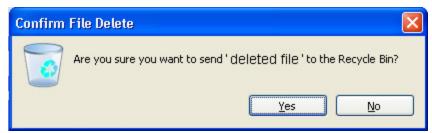


Emptying the recycle bin.

Eventually the recycle bin will get full, and won't be able to protect additional files. If nothing is done, then next time a file is 'deleted' it will be moved to the recycle bin, but the oldest file already in the recycle bin will actually be deleted, with no way to restore. To prevent the recycle bin from getting full, you can right click the recycle bin and choose to empty it, after making sure you don't need the files or folders that currently occupy the recycle bin.

When the recycle bin won't work.

Normally when you choose the 'delete' a file, you get something like the following message:

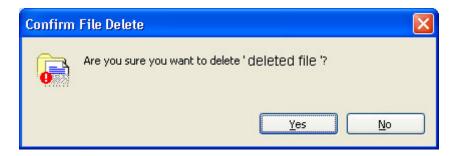


The confirmation message may differ from that shown.

The recycle bin only protects files that are 'deleted' from a hard drive, or a device that acts as a hard drive, such as a USB memory stick. Files deleted from network drives, or floppy disks, or re-writable CDs, are not moved to the recycle bin.

You can compensate for this by first moving potentially un-needed files to the hard drive, then 'deleting' them to the recycle bin.

You can also bypass the recycle bin and actually delete a file immediately by first selecting the file, then press and hold the [Shift] key as you choose the [Delete] key. The confirmation message may differ from that shown.



Note: Choosing to empty the recycle bin on your desktop may also empty recycle bins on removable drives and other hard drives on your computer.

paths → shortcuts



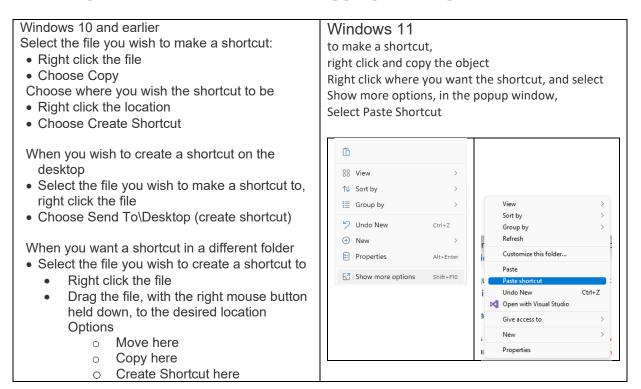
As previously discussed, an icon represents an object. Sometimes what appears to be an icon is actually a shortcut. A shortcut differs as it include an arrow

A shortcut is just a way to locate an object quickly. You might not want to physically move a file to your desktop, but you could add a shortcut to a file on your desktop, making access much easier. Later, you can delete the shortcut without actually removing the original file from the system.

In short, a shortcut is a path to an object. Just as we used the path command to tell DOS where the DOS commands were, or just as we used a full path in a command to tell DOS where the source or destination items were, we use shortcuts to tell Windows where to find something.

When you make a web site a 'favorite' or a 'bookmark,' again basically you are simply copying the path to that site.

Creating Shortcuts, aside from dragging with right mouse button



You may watch a short video on this topic on the class web site.



Windows Lab 4 See Appendix C for help with Lab 4

Lab 4 Activities

Lab 4 Questions

Make a folder named Lab4 on your thumb drive or network drive; ie f: or o:

At the end of this process, you will be taking a quiz based on the following questions. So, to get the best score, fill in all the answers in this document first.

******Documentation

What is does an icon represent?

What does a shortcut represent?

What is on the Start Button?

What is on the Task Bar

What is 🎑

What is 🔲 What is

What is

What is "File Explorer" or "This PC" used for?

Discuss Windows Help and Support, Program Help, and context sensitive help.

Discuss the Control Panel

What does ... as in Print ... mean?

What does a triangle or ▼ mean?

What does Double Click Mean?

What does Right Click Mean?



Windows Activity:

Folders

Open the lab 4 folder you made a moment ago.

Note: Be able to discuss creating opening folders.

Topic: Copying Info, not just files

Make sure "File Explorer" or "This PC" is open; you will be switching between it and WordPad;

Open **WordPad** and save a file named yourname-lab4.rtf in your lab4 folder, Type some text; experiment with formatting.



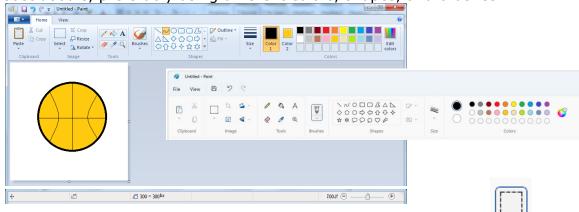
DO NOT CLOSE WordPad, you may minimize WordPad if you like.

Open Paint

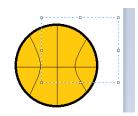
Create a bitmap image in Paint;

I suggest you choose Image\Attributes, and make it 300 pixels by 300 pixels (use the File menu to choose Properties.)

Just doodle, preferably using different colors, shapes, and brushes.



Use the rectangular selection tool to highlight part of your image



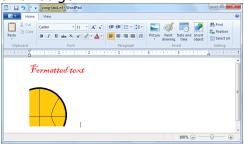
Use Right-click and choose Copy, or press and hold the Ctl key, touch the C key and let go This copies the image into memory... the Clipboard.

You may save the image in your lab4 folder, or simply close Paint.

Switch to WordPad. (Experiment with [Alt]+[Tab])

Place your cursor at the end of the first line and press Enter.

Then Right Click and choose Paste, or hold down the Ctl key, touch the letter V, and let go.



This should paste the copied image into your WordPad document.

Save this document, to avoid losing your work.

You should now have some formatted text, and an image in yourname-lab4.rtf, as shown above.

Leave WordPad open.

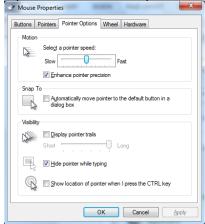
The Control panel

Open the Mouse control panel

Note: Be able to describe how you open the Mouse control panel

In the Mouse Control Panel, change from tab to tab, and test the use of making different choices.

Open the Pointer Options tab.

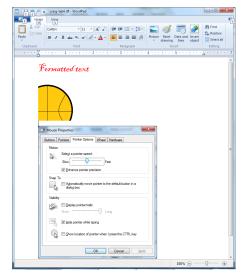


Your Mouse Options may look different.

Press and hold the Alt key, then press the PrtScn or Print Screen key and let go of both keys.



This copies the active window into memory, the Clipboard.



Switch to WordPad

Make sure your Paint image is not selected by clicking to the right of the image...

Press the enter key to start a new line.

Right Click/Paste or hold down the Ctl key, touch the letter V, and let go.

This should paste the copied image into your WordPad document.

Save this document, to avoid losing your work.

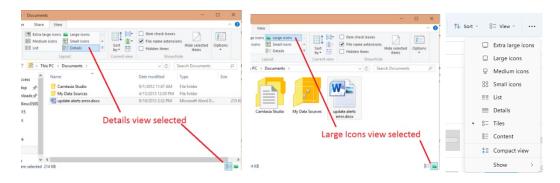
You should now have a your copied Paint image and the mouse screenshot, plus some formatted text in *yourname-lab4.rtf* as shown above.

Leave WordPad open.

Views in "File Explorer" or "This PC"

Make sure you have opened your lab4 folder in "File Explorer" or "This PC"

Use both the View option and the icons at the bottom right to change the view to Icons, to Details, then back to Icons



Note: Be able to describe how you can change how you view file details.

Right click a file, and choose Properties Get properties of *yourname-lab4.rtf*

Note: Be able to describe how you get properties of a file.

Copy files

Copy *yourname-lab4.rtf*, paste the copy into the same folder Note: Be able to describe how you can copy a file.

Rename files

Rename the copy of *yourname-lab4.rtf*, to *lab4-yourname.rtf* Note: Be able to describe how you can rename a file.

Shortcuts

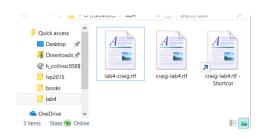
Create a shortcut to yourname-lab4.rtf in the lab4 folder.

Restore down "File Explorer" or "This PC" so you can see the desktop, if needed. Drag the shortcut to the Desktop using the right mouse button.

Choose to make a copy on the desktop, then

Delete the shortcut on the desktop.

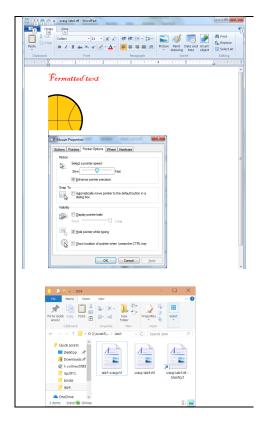
Note: Be able to describe how you can delete and 'undelete' files, folders, or shortcuts.



Make sure all the files were created Switch to "File Explorer" or "This PC" to view your Lab4 folder's contents

Note: Be able to describe what do you have to do to resize a window?

Then resize the Window until it is about 5 inches wide,
Alt+PrtScn to copy that window.



Switch back to your *yourname-lab4.rtf*, in WordPad.

Paste the "File Explorer" or "This PC" screen shot into your file.

You should now have a some formatted text your copied Paint image, the mouse screenshot, the File Explorer This PC screenshot showing -your file

- -the copy of your file
- -the shortcut to your file

in yourname-lab4.rtf, as shown on the left.
Save this document, to avoid losing your work.

You may now close WordPad.

Note: Be able to describe how you close all open Windows, and shut down your computer

****Lab Hands-On Questions**

Are the following True or False?

- "File Explorer" or "This PC" views files like the DOS CD command.
- "File Explorer" or "This PC" can change to directories the DOS CD command.
- In previous versions of Windows, could the [Folders] button can open a pane that is like the DOS TREE command
- The [Up] folder button in "File Explorer" or "This PC" is like the DOS CD.. command
- You can enter commands or start programs with the Start Menu Search, much like the DOS command prompt
- You can control the list in "File Explorer" or "This PC" using View, similar to the DOS DIR /W or DIR /P command

Submit files and quizzes as directed

See page 57 for details if taking a Collins class. Zip and save as yourname-lab4.zip Note Information about new versions of Windows is in Appendix B End chapter 6



Folder Management; Control Panel; Utilities; Lab 5; 3.1-XP-10

Windows D File Management parameters

Favorites
Folder options
More Disk, Folder, and File details
Personal Folders in (My) Documents
Customize personal folders
Zipping

Windows E Control Panel and Variations

Desktop Properties Time and Date Fonts Scheduling tasks Taskbar/Start Menu

Windows F Utilities

Diskcopy → in Windows
Scandisk Defrag→ in Windows
Disk Cleanup
Roll back/Restore
Add Remove
Command Prompt

WW Windows Lab 5

Lab 5 Activities Lab 5 Questions

G, H, I Windows 3.1-XP-Vista/Windows 7-Windows 8-Windows 10 Comparison of Program Manager to My Computer to This PC Shifts in Customizing/Personalizing the Desktop

Note Information about new versions of Windows is in Appendix B

Windows D File Management parameters

Favorites

Folder options

More Disk, Folder, and File details

Personal Folders in (My) Documents

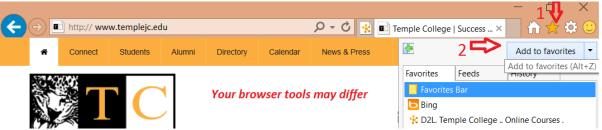
Customize personal folders

Zipping

Favorites

As mentioned earlier, a Shortcut is simply a path to an object, whether that object is a file, a program, or a web site. In the case of a shortcut to a web site, that is often called a favorite, and is accessible as a list in your web browser.

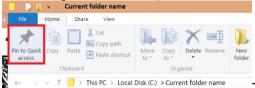
To create a Favorite, you must first open the object you wish to add as a favorite... if you wanted http://www.templejc.edu to be a favorite, you would first open the web page, then 1) choose the ☆ icon 2) select Add to Favorites



To return to that web site later, choose the ☆Favorites icon, and choose the proper item from the list.

Pinning, a quick way to a favorite folder in "File Explorer" or "This PC" In Windows XP and Windows 7 (though not always in in Windows Vista), you could also make a folder a favorite also. As before, you would first open the folder, and then choose to [Add to Favorites].

In Windows 10, once you open a folder you use a lot, you can click the Pin to Quick access, so that folder is listed at the top of your folder tree.

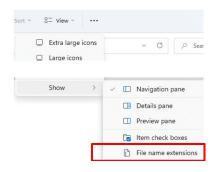


The Pin to Quick Access is on the Home tab

In newer versions of File Explorer, the Quick Access tool shows you recently used items.

Folder options

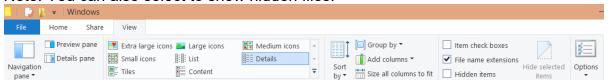
As discussed at the beginning of the Windows section, a very helpful place to make a few changes is Tools/Folder options. Earlier we discussed how many Windows computers are set up to hide known file extensions and how confusing this can be.



To view the full file name in Windows 11 Open File Explorer select the View menu select Show then chose File Name extensions

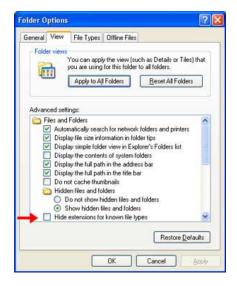
To set your computer to display the entire file name in earlier versions of Windows: Open "File Explorer or "This PC" and select the View tab.

Turn On extensions by selecting to show [] File name extensions Note: You can also select to show hidden files.



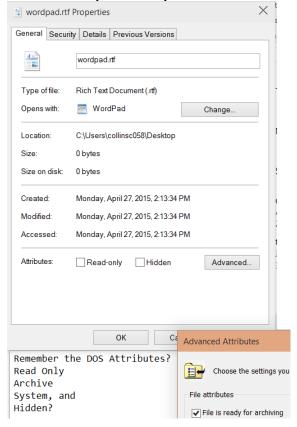
As so many people still have access to Windows XP and Windows 7,

 Choose the View tab, then click off the check mark next to 'Hide extensions for known file types', then click OK



Typically, this is the only change that you may need to make on the View tab, aside from perhaps showing hidden files.

More Disk, Folder, and File details



Earlier we learned that you can right-click a file or folder in "File Explorer" or "This PC" and choose Properties.

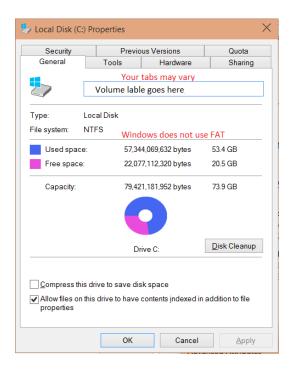
You can get tons of info, such as creation and access dates, the size of all the files in the folder or see the attributes. Or, select [Change...] to choose a different program to open a certain type of file.

More on the registry soon.

Note the information available on the General tab, and when [Advanced...] is selected.

What is really powerful is if you open up

"File Explorer" or "This PC" and right click on a hard drive or storage device.



The properties for a disk show:

tabs to more information at the top,

the volume label,

the file system, usually **not** FAT (Windows NT was the first non FAT OS from Microsoft, and all modern versions of Windows are based on the NT File system, or NTFS.)

a usage graph,

and access to Disk Cleanup.

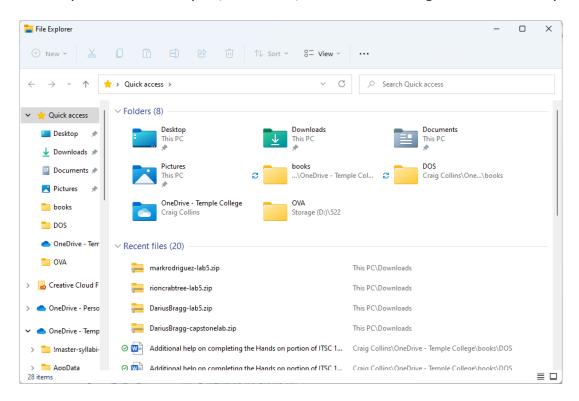
More on Disk Cleanup and Tools tab will be covered later.

Personal Folders and Quick Access

Personal folders have changed quite a bit (see Chapters G-H-I for comparison of Windows XP, Windows Vista, and Windows 7).

In Windows 10/11, if you open "This PC", and select the *This PC* icon on the left, a collection of folders will display at the top right of the screen, including the default locations to save Documents, Music, Pictures, and Video, as well *pinned* or quick access items. Below those are local and network storage locations.

Note: your folder shapes, network, and local storage locations may vary.



Note, the folders aren't the usual folder shape... they have visual clues to indicate what is saved in each folder.

It is *strongly* suggested you don't save files in these personal folders if you are on a network, as they will ONLY be available when you sit at that machine. For portability, you may wish to save files on thumb drives or network drives.

When doing File\Save As, make sure you verify where you wish to save the file, as well supplying a file name and choosing the file type, if applicable.

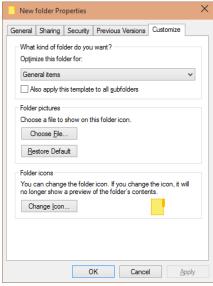
Customize personal folders

This leads us to the next topic. You CAN change many of those plain folders, so they too are easy to recognize, by customizing them.

While some versions of Windows do a good job of displaying an empty folder vs. a folder with documents, vs. a folder with images, as below, we can still do more.



Right-click the folder you wish to modify, select Properties and choose Customize.



You can choose a File to display on the folder, or you can choose [Change Icon...]



Zipping

Since the beginning of the semester, you may have been zipping folders to place in a dropbox. The steps are:

- Right click the file or folder you wish to zip
- Choose Send To/Compressed (zipped) folder
- A new file with the zippered folder icon will be created... you may rename the file if you like.

There are several reasons this zipping is done.

First, you cannot attach a folder and its contents to an email, nor can you upload a folder and its contents to Desire2Learn (D2L).

By zipping the folder, it is changed to a package that *can* be attached to emails or uploaded.

Note: While zipped, the contents of the file are not really for editing or even for viewing... they are just packed up for the time being.

Zipped items need to be Extracted in order to really use the files. (Right click the zipped item, and choose Extract All)

But the real reason to zip items is because of **compression**.

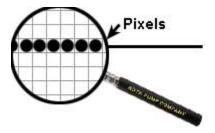
Zipping reduces file size, called compression. But some files are compressed when saved, especially images.

Again, compression is about reducing file size; smaller files take up less space on hard drives, and download faster. Basically, there are two ways to compress a file, to remove redundant or superfluous data.

Redundant data is repeated data; as computers are very good are detecting and repeating patterns, this is a favorite method of compression.

Example: Let's say we point a digital camera at a white board, and snap a picture. The camera detects colors at various points, usually by dividing the image to be captured into rows and columns, then collecting color information at the intersections. VGA resolution is 640 points along the horizontal, and 480 rows, for just over 30700 pixels, or picture elements.

Below is a magnified view of a line on that white board, so you may see the pixels that make up the image.



Each pixel is represented by a series of 1s and 0s that dictate the color... some cameras will assign twenty four 1s and 0s to each pixel, allowing up to 16.7 million colors to be represented at that single point. That means you have $640 \times 480 \times 24$, or a total of 7372800 1s and 0s for that one image. That is just over 7 megabytes! Obviously, we need to compress the image, and one way is to get rid of the redundancy. On the rows that are just white pixels, instead of saying 'white pixel,' 'white pixel,' 'white pixel' over and over, why not just tell the computer to repeat the white pixel 640 times.

And if you have 400 or 500 similar rows, why not tell the computer to repeat the 'white row' 400 or 500 times? This immediately gets rid of a lot of 1s and 0s, making the file smaller. The file has not changed, just how we describe it. This is called loss-less compression.

Another way to compress a file is to remove 'extra' information.

Example: consider 2+2=4. Is there any part of that statement that does not need to be stored? The computer can add 2+2, so why store the answer? The answer will not change the next time it is added, to the answer is superfluous, or extra.

Now, consider a picture of a rainbow. Can you really detect the 16.7 million shades, or would 256 shades get your point across? Moving from 24 bit color (24 ones and zero to describe each pixel) to 8 bit color (8 ones and zero to describe each pixel), removes a ton of the 1s and 0s that indicate color; thus you can compress a file by removing the 'extra' color information, and rid yourself of a lot of 1s and zeros that make up the file. The file has changed, but perhaps not in a meaningful way. This is called lossy compression.

The image below on the left is a jpg; while still compressed, it is still a good image. However, on the right, that image has been stripped down too far; it is too grainy, and no smooth transition between shades. This would NOT be a good compression, as TOO much info was removed.





In images, a .bmp file is lightly compressed, and not good for say Internet downloads as the files stay large. So instead, you could use .gif, if your file is limited to 256 colors, as in a pie chart. If it is a photograph, as above, use .jpg which allows for more colors, but still has good compression. (A .png version is a larger file, really better for print.)

PS, that 7 MB picture of the white board can compress to 900 KB (24 bit 16.7 million shades bitmap image), or 37 KB (monochrome bitmap image)... or a 5 KB jpg file... but since we don't need a lot of colors, it is best suited to be a gif, which comes in at mere 1.7 KB!

From 7 MB to 2 KB without losing the meaning of the image... that is about 2400% improvement in storage space, and download time. That is great compression!

Flashback

While this chapter is concerned with Windows 10 and 11, and there are several pages in chapters G-H-I on older versions, the fact is many of you may be using an older version of Windows, so we really need to include a quick comparison of Windows XP to newer versions: My Computer vs. Computer and This PC

Up/Back: Used to retrace steps, similar to the DOS cd ..

Search: used to locate files by name, contents, size, etc.

Folders icon: XP, toggle between a tree view and a info screen

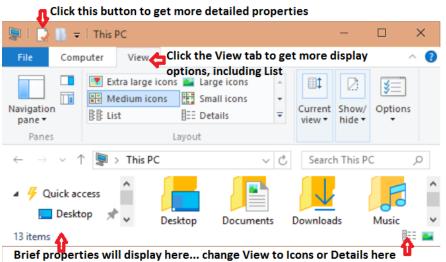
Folders button: Vista, toggle between a list of 'favorite' storage areas,

and tree of all storage areas...

View: Choose to view files or folders as icons, a list, or detailed list, etc.



Windows 10



Windows 11 does not have the Properties icon, just right click an item

Windows E Control Panel and Variations

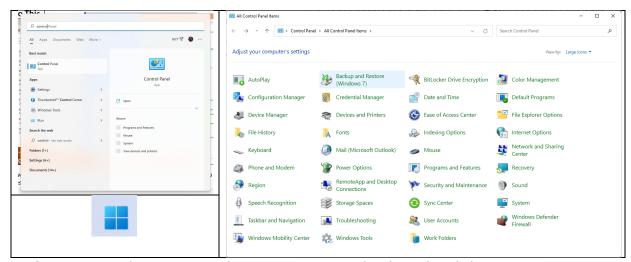
Desktop Properties Time and Date Fonts Scheduling tasks Taskbar/Start Menu

The Control Panel is a powerful tool to configure your system, but a few items formerly only in the Control Panel now have space in the 'Settings.'

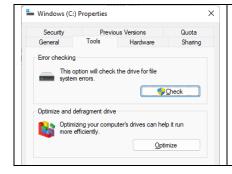


Left click the Start button, select All Apps and scroll to Settings.

Use the Start button to access the Control Panel.



A few notes: File History is the current way to back up hard drives. Backup and Restore (Windows 7) is a legacy backup tool..



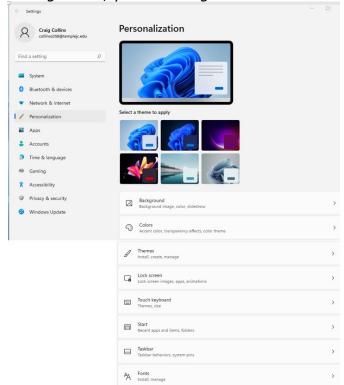
Backup used to be located with the Error Checking (ScanDisk or Chkdsk) and Optimize and defragment (Defrag) utilities; accessed by right clicking a hard drive, selecting Properties, and then selecting the Tools tab

Also, Some Control Panel items lead to Settings items.

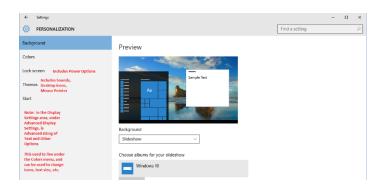
Desktop Properties (Windows 10 variations discussed in class)

There are many things that can be configured on the desktop, the background image (or wallpaper, as it is often called), the color of the windows, the size of icons or the icon label text color, which optional items aside from the recycle bin appear, which screen saver pops up and when, and even setting the controls for the monitor and video card. You can even make a change to all of the above, by selecting a 'theme.'

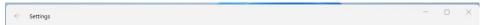
There are many ways to get to the tools that allow you to customize the desktop, or examine what is currently set. One method is to use Control Panel, and select Display. To manage the video card, you might need to choose System, and dig down into the Hardware tab, and the look through the Device Manager... or, you could right click the desktop and select Personalize!



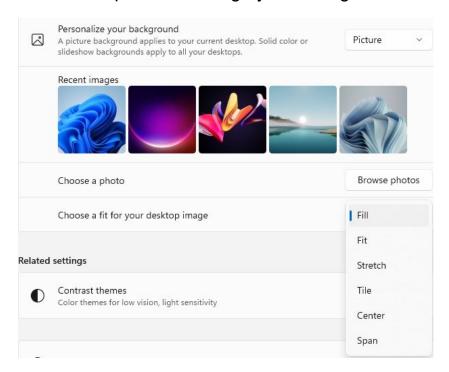
In Windows 10 (See G-H-I for previous versions)



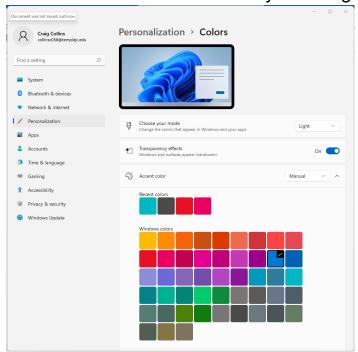
You return to the main menu by clicking ←, top left, by "Settings"



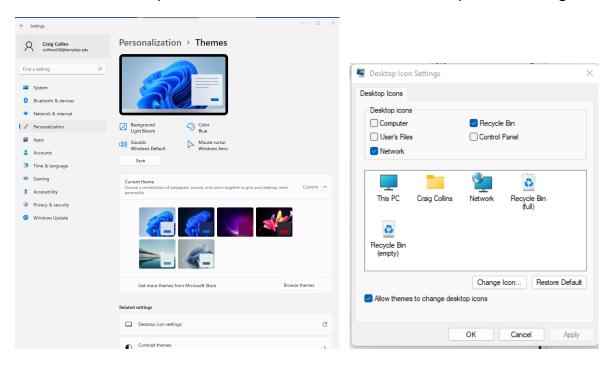
There are options to change your Background, and how to fit the image



Not all versions of Windows let you change accent colors



I find Themes to be the most useful selection, as a theme lets you change many aspects simultaneously, such as background, colors, sounds, mouse options, etc. PS, Click into the Desktop icon settings



Sounds Associating sounds with events that happen in Windows



Note Playback/Recording tabs. Your options may differ.

Other tools: Lock Screen Controlling what is displayed if the computer is idle, including Screen saver.

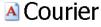
I personally dislike Screen savers, why make the computer work while you are away? I can see using them to cover sensitive work if you step away for a moment, but I prefer to use the Change Power settings option to shut down the monitor if idle.

Fonts

Previously we learned how formatting of text is possible because the computer can now control the size, color, and typeface of various fonts.

The different fonts that are installed on your computer are organized by type in the Fonts tool, located in the Control Panel.

VGA fonts are similar the bitmap font that DOS used. They were called bitmap fonts because they were made up of dots, little bits of light, mapped to a particular location on a monitor. It wasn't an 'A' as much as it was a series of dots that *looked* to our eyes like an 'A'. However, notice how poorly these scale to large sizes. This limited early printers as well.



```
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
123456789.:;;(:*!?')

12 The quick brown fox jumps over the lazy dog. 1234567890
18 The quick brown fox jumps over the lazy dog.
24 The quick brown fox jumps over
36 The quick brown fox jumps over
```

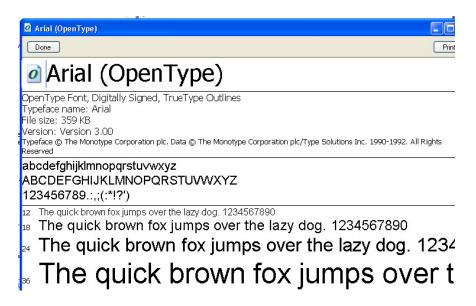
Recall, it was the introduction of fonts that scaled that lead the Windows revolution. Those were called True Type fonts, and these print well.

True Type fonts include hundreds of additional characters beyond what is available on the keyboard, to support languages other than English. Notice how smoothly the font scales as font sizes get larger.

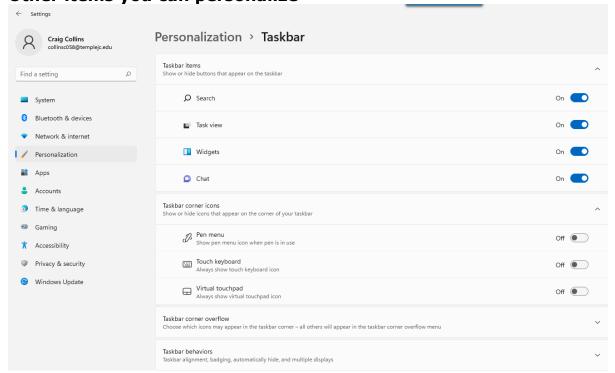
Start/Run or Start/Search charmap to view these additional characters.

Open Type (Open True Type) fonts can include thousands of additional characters beyond what is available on the keyboard, to support languages other than English. Notice how smoothly the fonts scale to larger sizes. Some of

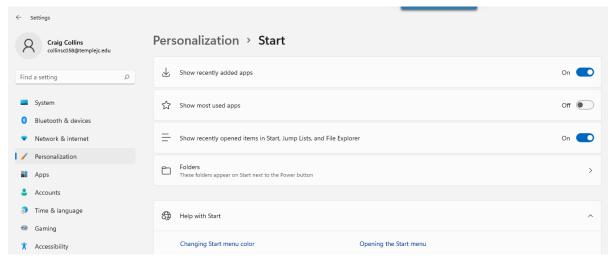
the fonts are 32 bit, compared to the 8 bit bytes used by DOS. Start/Run or Start/Search charmap to view these additional characters.



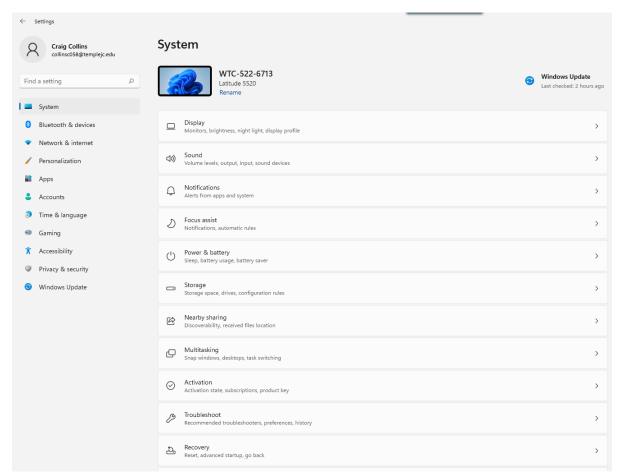
Other items you can personalize



You can also open a program, right click the taskbar icon, and Pin to taskbar



Note options on personalizing the Start menu

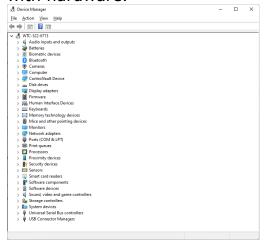


We'll discuss Recovery in a bit.

If you use the Find a setting, you can find the "Device Manager" to view the state of devices on your computer... but often only administrators can make changes to those devices.



We'll discuss using Device Manager, and it's equivalents, to update drivers in a bit. A driver is software that tells Windows how to interact with hardware.

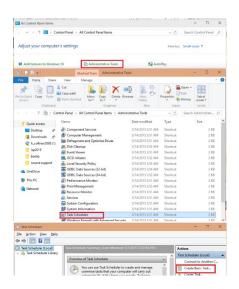


Scheduling tasks (bonus reading)

Some jobs, such as defragmentation or error checking, should not be run while you are using the computer... use of the computer actually interferes with the task. One option to accomplish the task then is to schedule the computer to run the task when you aren't using the computer. Note: the computer must be on for a scheduled task to run.

To start the scheduler:

In Windows 10, tasks are scheduled in the Administrative Tools Control panel, or of course Start and begin typing Task Scheduler.



After naming the task and entering a basic description, you choose a trigger, such as Daily, or when the computer is started. Monthly is good for error checking or defragmentation. Once you set up the trigger time you choose to start a program... then browse to the program you want.

Difficulties with scheduler.

First, one must remember to leave the computer on, so the schedule will trigger. Next, if an error occurs, you aren't there so tell it what to do next. An example is error checking; sequence can be important... you should run error checking before you defragment. A thorough defragment will stop if it encounters an error. Then you computer is just sitting there, waiting for you to show up Monday.

Other 'scheduled' tasks.

Further, error checking doesn't like to examine the location of the system- files. If you want the whole disk checked, the Error Checking tool itself will ask if you would like to run the tool the next time you start the computer. While not technically a scheduled task as with the control panel tool, it has the same net effect. Basically this will be added to a batch file that will run AS

Windows Booting

Windows boots up.

When Windows first starts, it really is a lot like DOS. This is called *real mode*. As more and more of the 'OS' is loaded into memory, Windows shifts into *protected mode*, then loads the full graphical user interface. Protected mode means each program is assigned its own chunk of memory, and Windows builds a wall around itself to prevent programs from crashing other applications, or the OS.

While in protected mode, error checking is blocked from the OS files, but in real mode which is very DOS like, an updated scandisk can run easily.



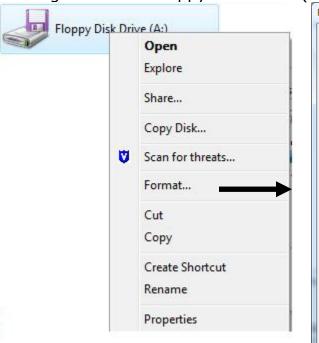
Then when scandisk is finished, the computer finishes booting and loads the protected mode part of the OS, and full graphical user interface.

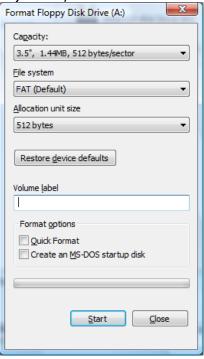
There are problems here, too. What if there is a short brown out just after you 'schedule' the scandisk for the next boot, and suddenly your computer is reboots now... instead of at the end of the day, when you wanted it to occur? Scandisk can take many, many hours to run, effectively blocking you from using your computer.

Windows F Utilities

Diskcopy → in Windows Scandisk Defrag→ in Windows Disk Cleanup Roll back/Restore Add Remove Command Prompt

In DOS we discussed **format a:** to prepare a disc for use; in Windows, if you have a floppy disk, you could choose "File Explorer" or "This PC", then right click the Floppy Disk Drive (A:) then, choose Format...





Your icons may differ slightly

The same goes for diskcopy

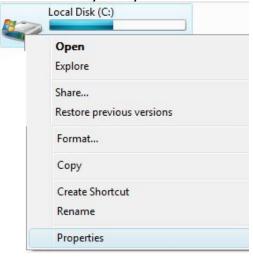
Just above the Format... menu item is Copy Disk...



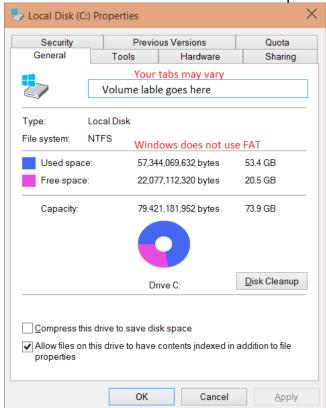
Just like diskcopy a: a:

For the remaining items in this section, right click the hard drive icon, and choose Properties. Your icons may vary.





The C: Properties window



The C: Properties window displays the volume label, disk usage and file system type. Note DOS used FAT, Windows typically used NTFS.

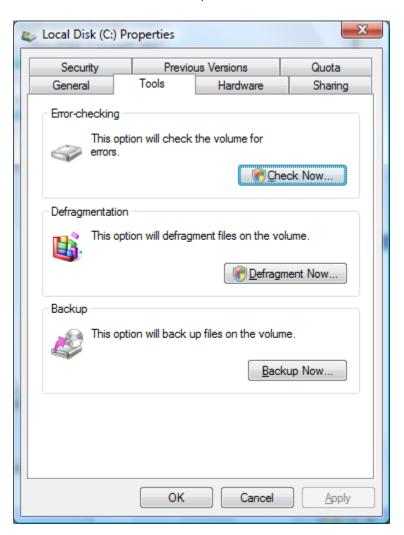
To run the Windows version of basic **DOS utilities**, choose the Tools tab

scandisk → in Windows is started using Error-Checking Thorough checks may require being run at boot

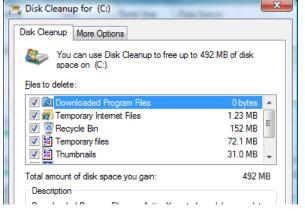
defrag → in Windows is started using Defragmentation

msbackup → in Windows is run using Backup

The Backup feature has been moved to in later Windows.



Return to the General tab, and choose **Disk Cleanup**



Disk Cleanup is used to remove 'garbage' from the hard drive to increase free space, by letting users remove installer files, temporary Internet files (cache), emptying the recycle bin, etc.

Disk cleanup also can remove temporary files that should have been removed by programs, but were not.

Note, Disk Cleanup only free hard drive space; it does not remove items from memory, or delete applications.

Restore computer setting

Modern versions of Windows are 'plug and play' systems, meaning that Windows itself can often detect new software, and configure the computer to use the hardware automatically. But that doesn't mean the system is foolproof. Typically, the most vulnerable time for your computer is when you install new hardware or software, leading to problems even starting computer. While the previously mentioned Backup tool can let you rebuild your computer to the way it was, there may be some other options. Your first indication of a problem might be a screen at boot indicating there is an issue, and offering you the option of starting the computer using the 'last known good configuration.' While troubleshooting is beyond the scope of this text, choosing the previous configuration can bypass a lot of work, though the new hardware or software may not work, at least you have use of the computer.

To verify you have a 'good' configuration to choose, research backing up your registry. (The Registry is the Windows list of hardware and software that is installed on your computer, and how Windows can use those items.)

If the computer won't boot normally at all, for Win 7 is to press F8 when booting; this boots to Safe Mode. Safe Mode starts the computer without all the peripheral devices, one of which may be incorrectly set up and now interfering with the boot process; while in Safe Mode, Windows can often repair itself, allowing you to boot normally thereafter. In Windows 10, a failed boot leads to options; advanced options leads to start up setting, which include Safe Mode. In Windows 11, Click Start, select the 'Power' button, and the hold down the Shift key and click Restart.

Error Checking can prevent some file corruption, but is not always successful in recovering files that may have become corrupt. If some Operating System files have become corrupted, you may be able to simply 'repair' the OS by copying files from your install CD; however, any patches and service packs may need to be reinstalled to bring your computer back to the way it was. (Or, you could restore from backup.)

Your computer may also be able to set up 'restore points;' this commits hard drive space to keeping track of changes made on your computer. While tempting, typical users rarely remember to set these restore points, so this may be a program to schedule. (Search Windows Help and Support for the specifics on your computer if you wish to learn more on 'Repairing your OS from CD,' 'Restore Points,' or 'Automated System Recovery.')

Note: many computers have a Reset option, either as a vendor program, or a separate partition storing the info on the computer's hard drive; these options will reset your computer to the way it was the first day you started it, and should be avoided... because you have been making your own backups, right?

Restore **Hardware**

While Plug and play works for many devices, newer devices may come with a CD that needs to be run to update the Windows Plug and Play database with addition instruction on how to recognize and use hardware. These instructions telling Windows how to use a piece of hardware are called drivers.

From time to time, a device may fail to work or stop working, even If the computer boots normally. If you can rule out hardware failure, the driver may be to blame. This type of situation requires the use of the Device Manager, which was discussed earlier.

Your first action is to typically try to update the driver. You'll be prompted to insert a disk, or browse the Internet. If the current driver is the newest version, you may wish to rollback to a previous driver, as the older driver may be more stable. Another option is to delete the device, and reinstall, either using the CD or plug and play.

Device drive codes

- (X) Device is not working
- (!) Device may need attention.
- (?) Device is disabled

Some devices simply will not get along, or different users may not need to load all the drivers for devices they don't use; for those times you may be able to use different, savable configurations.

That is, build one configuration for José uses the scanner, and build a different configuration for Joanne who uses the external DVD that doesn't work well with the scanner plugged in.

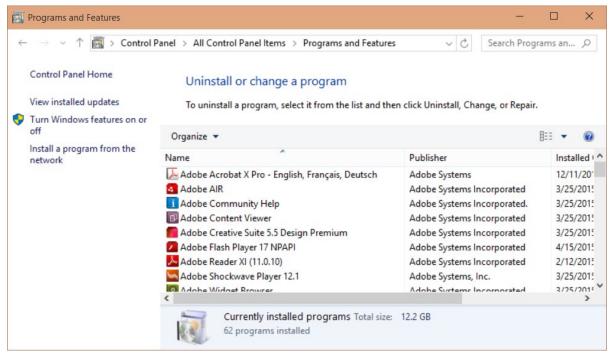
Software

These days, new programs have installer software, and part of the job of the installer is to update the Registry. That means if you simply delete an application, the Registry has wrong information, and may lead to Windows crashing.

Example, installing a trial version of Microsoft 'Word' reassigns the WordPad file type (.rtf) to now open with 'Word.' If you simply deleted the 'Word' program at the end of the trial period, the next time you double click a file that ends with .rtf, the computer will generate an error as it can no longer find 'Word.' Instead, the program must be uninstalled to reassign .rtf back to WordPad in the Registry. This uninstall action is handled in the Control Panel.

Variations on **add/remove**, and installing Windows software. In Windows XP, the Control Panel item you look for is Add or Remove *Programs*

In later versions of Windows, the Control Panel item you look for is *Programs*, or *Programs* and Features.



Click the item you wish to modify or uninstall.

Installing software.

As most programs now come with an installer that loads the software and updates the registry, you typically don't need the help of "Add Software," unless you want to add a Windows feature, such as a game that comes on the Windows disk, or load a program from a network.

Command Prompt

Start/All Programs/Accessories/Command Prompt

Windows Help

If using Windows command prompt, the HELP screen will look similar to:

```
C:\>help
For more information on a specific command, type HELP command-name
ASSOC Displays or modifies file extension associations.
AT Schedules commands and programs to run on a computer.
ATTRIB Displays or changes file attributes.

CD Displays the name of or changes the current directory.

CLS Clears the screen.

COPY Copies one or more files to another location.

DATE Displays or sets the date.
DEL Deletes one or more files.
DIR Displays a list of files and subdirectories in a directory.

FORMAT Formats a disk for use with Windows.
```

This is not the full list, just what may fit on the screen.

To find usage, use HELP command-name or command-name /?

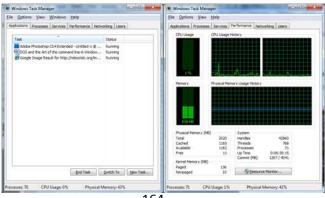
Note: You may use lower case or upper case when typing commands.

While similar to DOS, this is the full power of Windows, accessed from a command prompt. (When you can choose how you interact with the OS, you are said to be choosing 'shells.')

Note: Windows command prompt does not support deltree or undelete

Task Manager

By Pressing at the same time, you can then Log off, Switch Users, or access the Task Manager. The task manager lets you view running Applications (and force them to quit if needed), or see how hard your computer is working by selecting the Performance



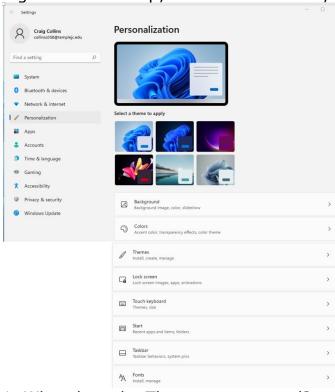
Windows Lab 5 See Appendix C for help with Lab 5

Lab 5 Activities

Lab 5 Questions

Documentation 3 points each

Right Click Desktop; choose Personalize, then Themes



- 1. What does the Theme area control?
- 2. Explore other menus
- 3. What does the Desktop Background area control?
- 4. What will the Change Desktop Icons let you add to the desktop?
- 5. What does the Fonts area control?
- 6. What are some of the Lock screen options?

Customizing the Task Bar

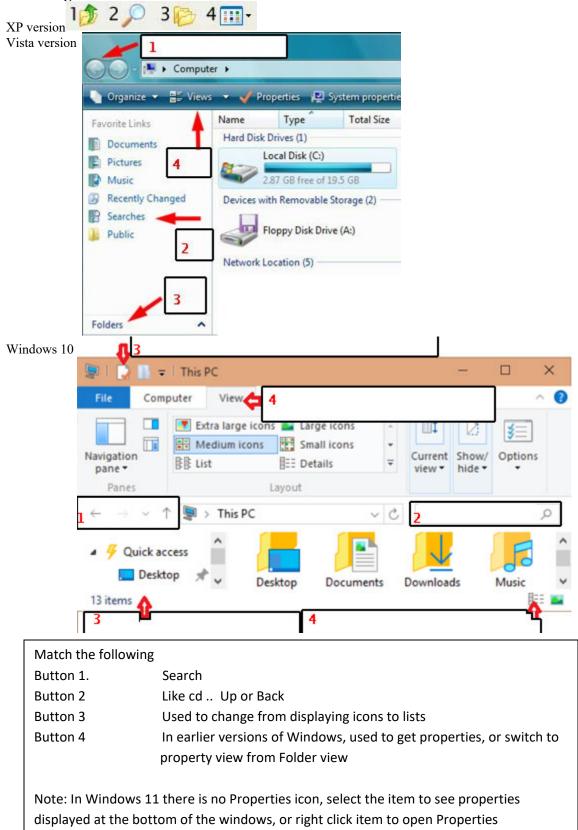
- 7. What are the options available if you right click the Task Bar? Customizing the Folders
- 8. What can you add to a folder icon? Can you replace the folder icon?



Windows activity, questions 3 points*, screen shots 5 points.

- 1. Using "File Explorer" or "This PC" select a storage device you can save files to. If there is not a folder called 'Lab 5' there, create it. **Yourname-lab5.rtf** should be created inside 'Lab 5,' using WordPad.
- 2. In order to add a web page to Favorites, what must you do first? Choose the best answer
 - a) Right Click it. b) Open it c) Change Views to Details d) Unhide the folder

3. Matching:



Lab 5, continued

Changing the Desktop. Right click the desktop and Personalize.

- 4. Place the Icon for the Network on the Desktop (icon, not shortcut).
 - a. Press PrtScr (or Snip) to capture the desktop showing this change.
 - b. Paste the image in your lab5.rtf document
 - c. Change the desktop back, so the Network icon is not on the desktop.



- 5. Explore the Themes setting, and discuss what can be changed.
- 6. Search for Display settings. Discuss how to change resolution of your desktop.
- 7. Discuss how you could add the Microsoft Word icon to your Start menu or Taskbar
- 8. If you had a floppy drive, in "File Explorer" or "This PC", if you right click
 - a. What actions can be performed on the floppy?
- 9. Right click the hard drive to open the properties with the pie chart of the hard drive.
- Do This
- a. Press Alt+PrtScr (Print Screen) to capture this window. Paste the image beneath the other image in your lab5.rtf document
- b. While in the same dialog box, click the Tools tab and get a screen capture with Alt+PrtScr (Print Screen) to capture this window of the items on the Tools tab; paste this image below the other images in your lab5.rtf document
- 10. Get to the Control, and open the control panel item to 'add or remove software' (It will have the name 'Programs and Features in the Control Panel item).
 - a. Press Alt+PrtScr (Print Screen) to capture this window. Add below the other images
- 11. In File Explorer, right click your hard drive. Which Disk properties tab is the Disk Cleanup button on?
- 12. **Save document as yourname-lab5.rtf** in your lab 5 folder. You may Print your document, but it is not required.

Hands On 6 points each

Be prepared to discuss:

- 1. Compression
- 2. Disk Clean Up
- 3. Fonts
- 4. Scheduling Tasks
- 5. Disk Property Tools and Right Click Disk options

Your lab5.rtf should look something like the following, when you are finished:



Desktop with Network icon

Pie Chart Window

Tools tab

'Add/remove' Programs and Features control panel

Submit files and quizzes as directed

See page 57 for details if taking a Collins class. Zip and save as yourname-lab5.zip Note Information about new versions of Windows is in Appendix B

G, H, I Windows 3.1-XP-Vista/Windows 7-Windows 8-Windows 10

Comparison of Program Manager to My Computer to This PC Shifts in Customizing/Personalizing the Desktop

Windows 3.1, a graphical interface that ran on top of DOS



Note the lack of a Start Button... PIF was to run DOS programs in a window.

Windows 95, the first consumer Windows product that did not rely on DOS.



The interface remained very similar until Windows 8

Windows 95 was followed by Windows 98, Windows 2000, Windows ME, Windows XP, and then Windows 7. Starting with XP, the consumer version and server version shared much of the same kernel, Windows NT 5.

Differences in the Log in screen



XP Single User Login Click arrow for options



XP Network Login Click v for options



Windows 7 Login Click arrow for options

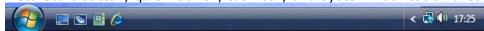


Differences in the Start button

Windows XP Start button, quick launch, task bar, and system notification area

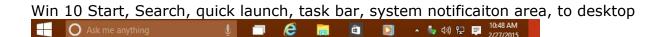


Vista Start button, quick launch, task bar, and system notification area



Win 7 Start, quick launch w/ browse, task bar, system notification area, to desktop button

Win 8.1 Start, quick luanch w/ browse, task bar, system notification area, to desktop button



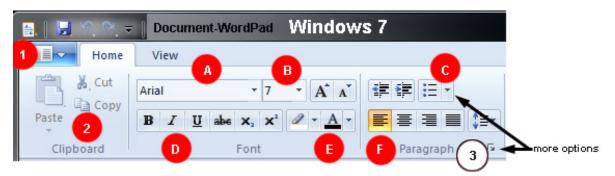
Differences in the Start Menu

A minor difference: the Shut Down options:

- XP you choose Start\Shut Down
 - Vista you should choose Start then click the ►to the lower right to select Shut Down
 - Windows 7 you choose Start\Shut down.

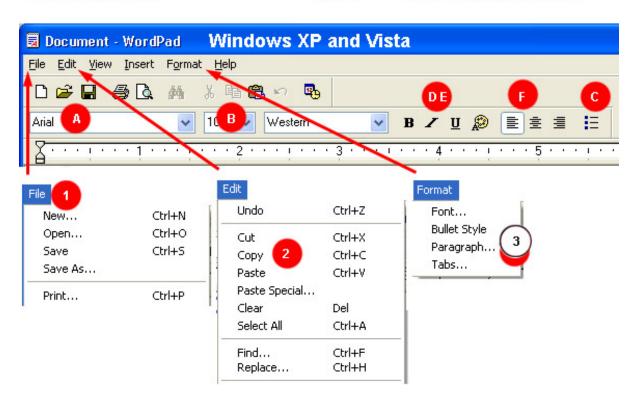


Earlier versions of WordPad



- 1) File menu, access to open, save, save as
- 2) Cut, copy, and paste
- 3) Format paragraphs

- A) Font face
- D) Attributes: bold, italic, underline
- B) Font size E) Font color
- F) Alignment: left, center, right C) Lists



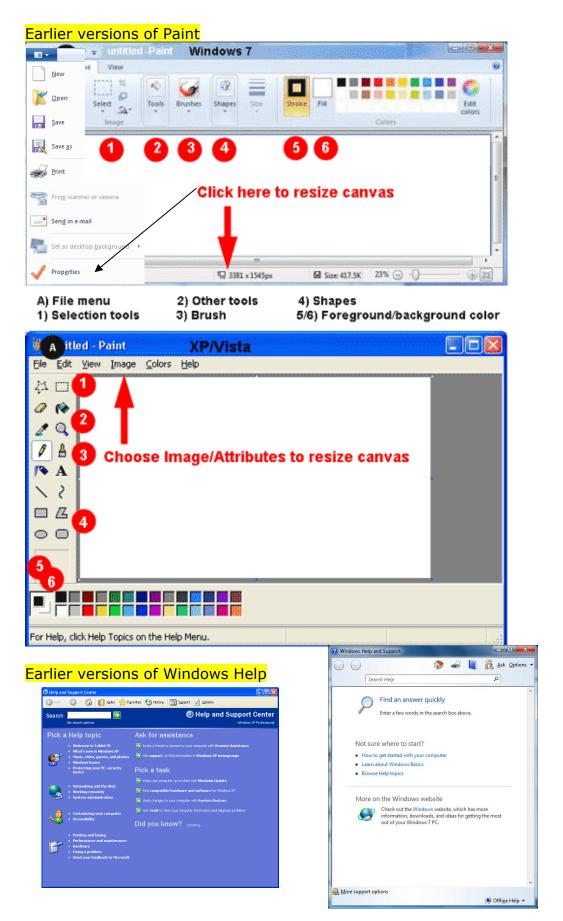
Earlier versions of the Up button, and the icon to change icon Views



Up, equivalent to the DOS cd.. to move out of the current folder and up the tree structure. Not available in Windows Vista or Windows 7, but occasionally the ← Back button accomplishes the same thing.



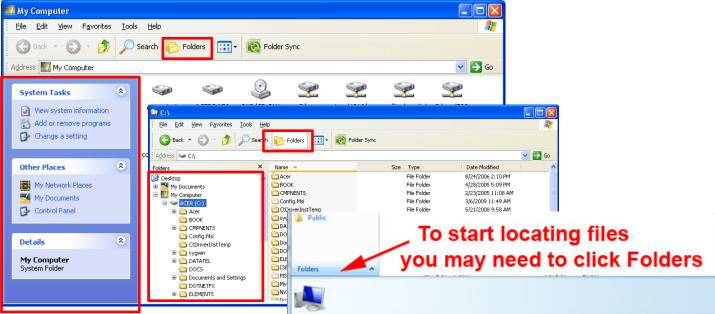
Views, to change from Details, to List, to Icons, or Thumbnails. Thumbnails display the image if a photograph instead of an icon. More on views in the next section.



Earlier versions of "File Explorer or "This PC"

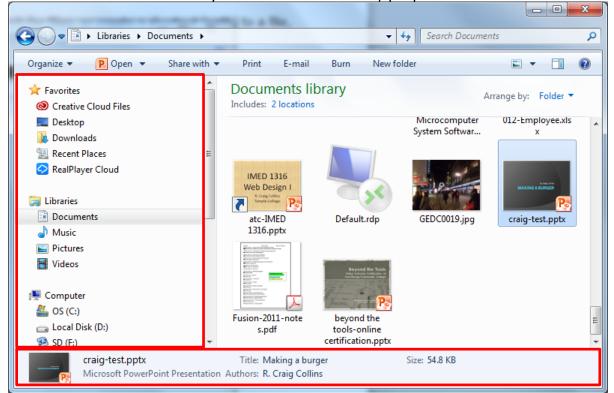
Windows XP My Computer/Windows Explorer

Note: you had to select the [Folders] button to change from Property view on the left, to the Tree view, as shown in the image on the right. Vista is also seen

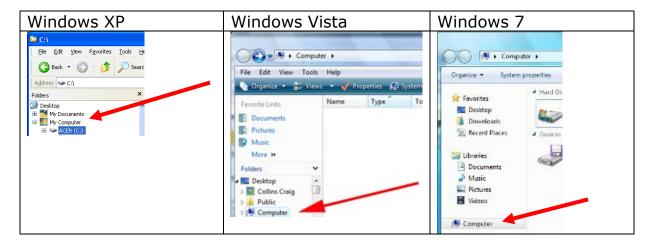


Windows 7 Computer/Windows Explorer

Note: the Tree view is always available on the left, properties on the bottom.



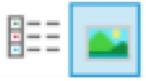
Earlier versions of Browsing to Network or Thumb drives



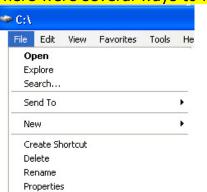
Change View icon in earlier versions of Windows which was on the top tool bar, compared to newer view options that are at the bottom right of the screen.



Close



There were several ways to rename a file in earlier versions of Windows.



·

Choose the File menu, then Rename

Right-click the file, and choose rename

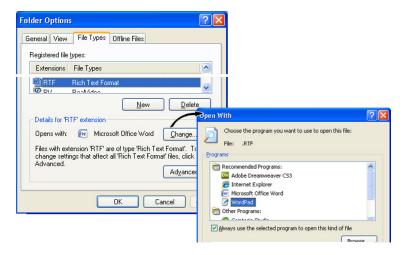
Click one on a file name to select the filename and pause; click once more on the filename, and the filename should go into rename mode.

Note: you normally do NOT change an extension when renaming a file.

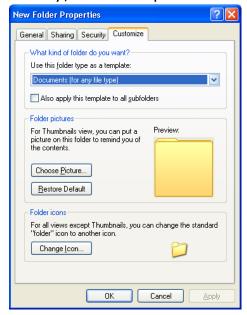
Changing file extensions in earlier versions of Windows.

You can also 'fix' icons for files that are opening with the wrong program, using the [File Types] tab. For example, if you have Microsoft Word installed, the icon for (.rtf) files changes from WordPad to Word.

By selecting File Types, you can browse to .rtf and choose WordPad to open that type of file.



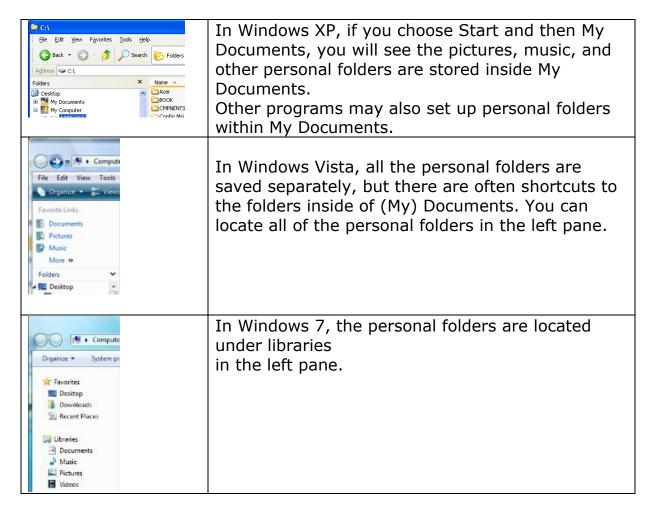
You can also change the look of a folder. Right-click the folder you wish to modify, select Properties and choose Customize.



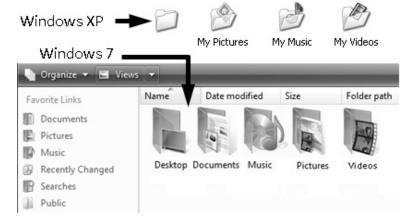
You can choose a picture to display on the folder, or you can choose [change Icon...]

Personal Folders in (My) Documents

When you save a file, unless you specify a different location, the file is usually saved in one of your personal folders. The folders have several names, such as Documents, Pictures, Videos, and Music.



Again, these personal folders the icon isn't the regular yellow folder. Instead they're descriptive of the contents.

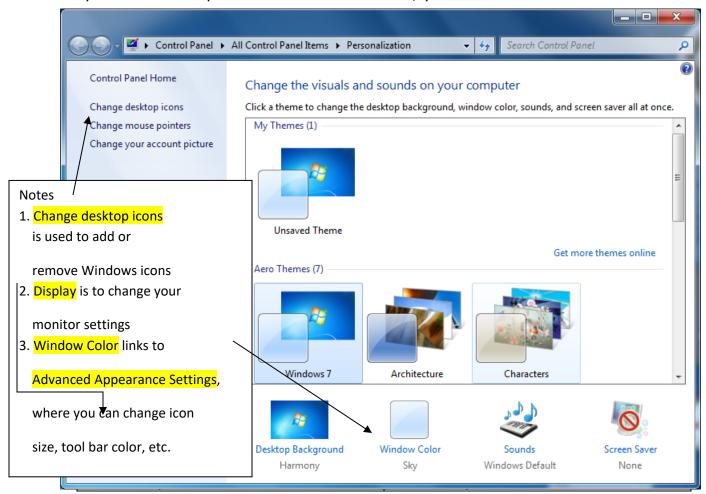


Desktop Properties (Windows 7 and earlier)

There are many things that can be configured on the desktop, the background image (or wallpaper, as it is often called), the color of the windows, the size of icons or the icon label text color, which optional items aside from the recycle bin appear, which screen saver pops up and when, and even setting the controls for the monitor and video card. You can even make a change to all of the above, by selecting a 'theme.'

There are many ways to get to the tools that allow you to customize the desktop, or examine what is currently set. One method is to use Start/Control Panel, and select Display. To manage the video card, you might need to choose Start/Control Panel, and then select System, and dig down into the Hardware tab, and the look through the Device Manager... or, you could right click the desktop!

In Windows XP, once you have right-clicked the desktop, you choose Properties. In Windows Vista, you choose Personalize.



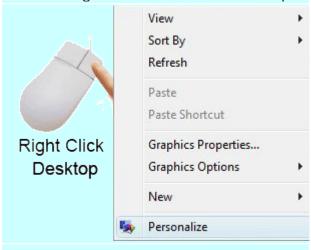
Use the following guide to explore desktop options for Windows XP-Vista

Desktop Properties, side by side comparison of XP and Vista

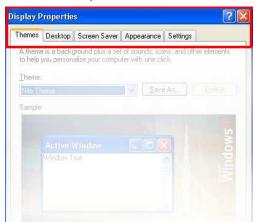
Customizing the Windows XP Desktop



Customizing the Windows Vista Desktop



Choose Properties



Contents:

Themes

Desktop (Vista Desktop Background) Appearance\Customize)
Screen Saver Windows Colors and

Appearance (Vista Windows Colors and Appearance)

Settings (Vista Display Settings)

Choose Personalize



Contents of note:

Change Desktop Icons (XP

Windows Colors and Appearance (XP Appearance)

Desktop Background (XP Desktop)

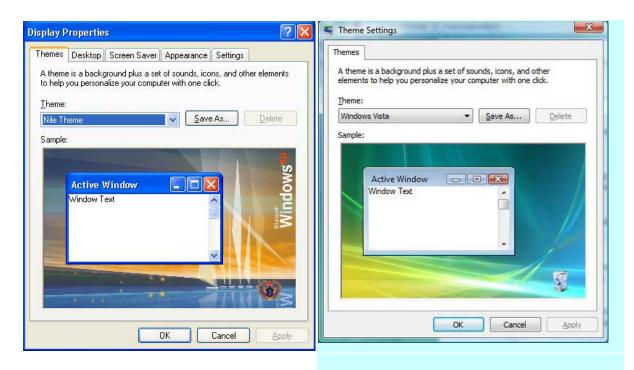
Screen Saver

Themes

Display Settings (XP Settings)

XP Themes

Vista Themes



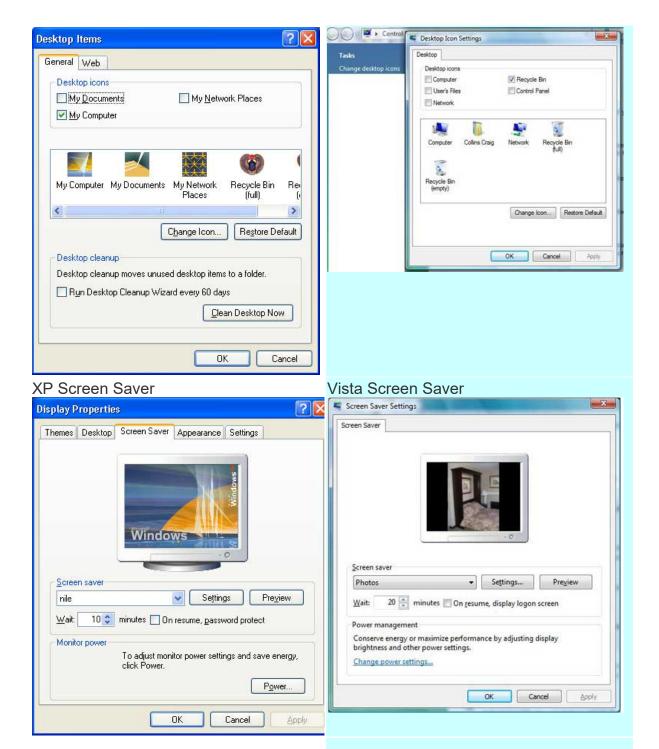
XP Desktop (Vista Desktop Background) Vista Desktop Background (XP Desktop)



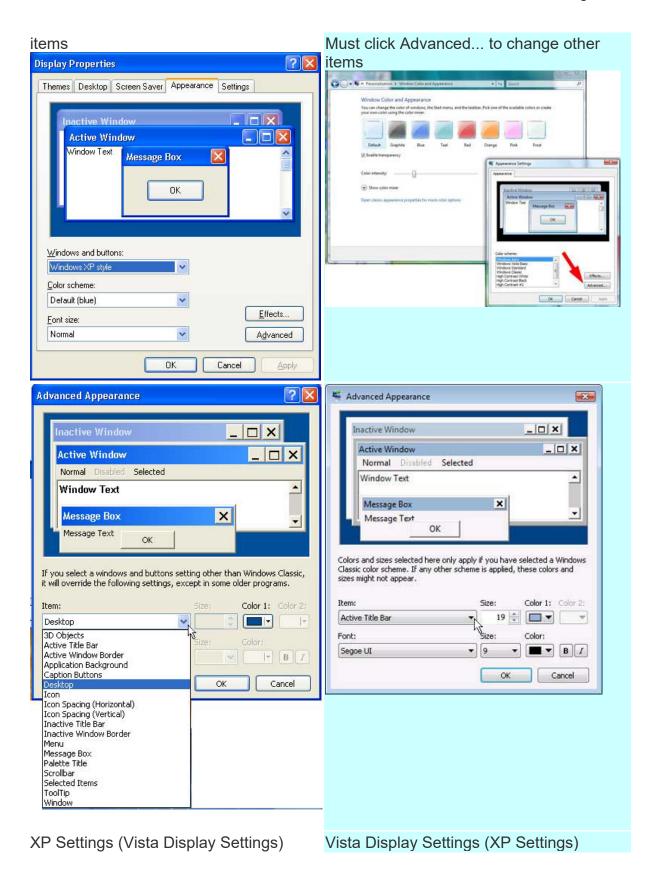
OK Cancel

XP Desktop, con'd [Customize Desktop]

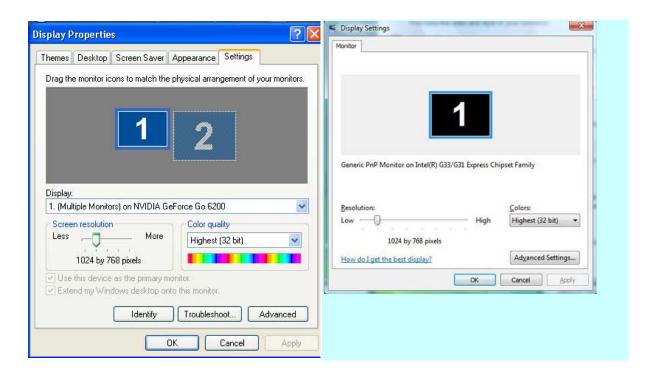
Change Desktop Icons (top left) (XP Appearance\Customize Desktop)



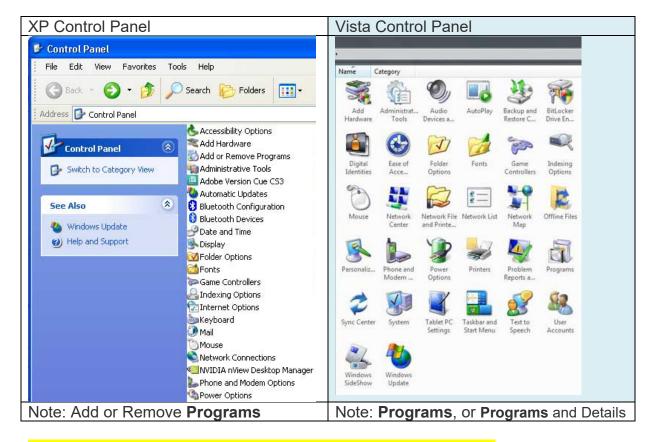
XP Appearance Must click Advanced... to change other Vista Windows Colors and Appearance Open 'Classic appearance properties...'



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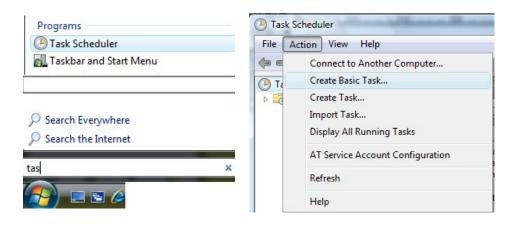


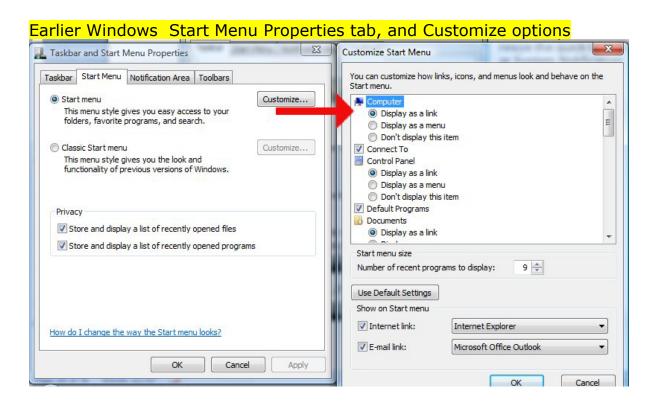
Again, these items can be accessed via the Display tool in the **Control Panel**. Below is a side by side comparison, in Classic view, of XP and Vista control panels.



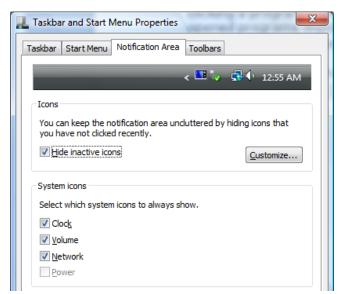
To start the Task scheduler in earlier versions of Windows:

In Windows XP, you choose Control Panel/Scheduled Tasks. In Windows Vista/7, while technically a Control Panel item, the fastest way to start the program is from the Start Button, using Search. After typing 'tas' in the search box, you'll see the Task Scheduler listed at the top of the Start menu. Once running, choose Action/Create Basic Task... Or, go to the Control Panel\Administrative Tools\Task Scheduler.





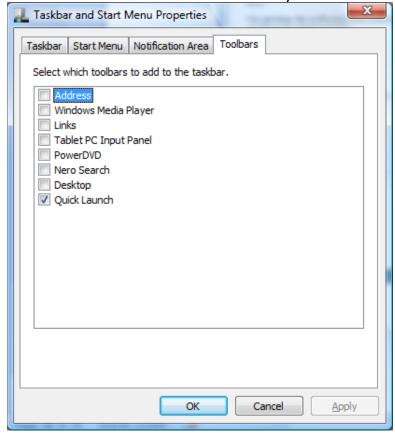
The Notification Area tab in earlier versions of Windows



The central Taskbar displays programs that users start. The System Notification Area, also known as the tray, displays the programs Windows has started, such as Antivirus software.

This means the a large part of the taskbar could be consumed; instead by selecting 'Hide inactive icons,' you cut down the space used for displaying the tray, freeing the space for the programs the user started.

Toolbars tab...Your choices will vary



See http://www.windowsitpro.com/article/windows-7/windows-7-workarounds.aspx for great information on customizing Windows 7

Note Information about new versions of Windows is in Appendix B End chapter 7



Networks; Object linking and embedding; Lab 6

Windows J Networks

Shared Folders Mapped Network Drives

Windows K OLE

Paste Special

W Windows Lab 6

Lab 6 Activities Lab 6 Questions

Windows J Networks

Shared Folders Mapped Network Drives

Networks

You could compare a computer to a book. While it contains a lot of useful information, a library would have even more information. Thus, if you could connect computers to other computers, the increase in information would be dramatic. This is the idea behind LANs, or Local Area Networks. A collection of LANs is called a WAN, or Wide Area Network. The Internet is a collection of WANs...

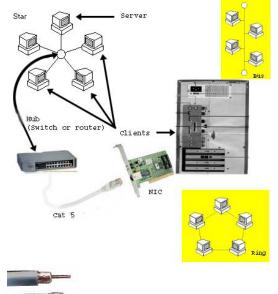
There are several kinds of networks... Peer to Peer is where a regular computer shares info with another regular computer. This bogs down though, if too many computers get involved. For larger networks, typically something called a client-server network is used.

A client-server network involves a special computer that like a waiter, serves to you, the client, what you requested.

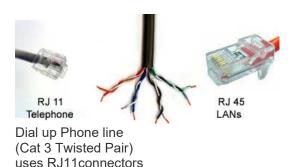
To allow the computers to communicate with each other they need the basics for any communication: a sending device, a communication channel, and a receiving device. Typically at home, the sending and receiving device are a modem, and the communication channel is a telephone line. Many broadband users now tie into the coax cable TV network.

In a business that has a LAN, the most common type of network is called Ethernet; the sending and receiving device types are called a NIC (network interface card) and the communication channel is what is called cat 5 (category 5) wire. Cat 5 is suitable for slower 10 Mb connections, or faster 100 Mb connections, which are often referred to as 10Base T or 100BaseT.

The server and client wires normally connect to each other through a hub of some sort, in a topology called a star. Other topologies include stars and bus designs.



Coax (coaxial) cable & connector;



Ethernet network line (Cat 5 or Cat 6 Twisted Pair) uses RJ45 connectors



Fiber Optic cable (many cables bundled) & FDDI connector

About your Network drive

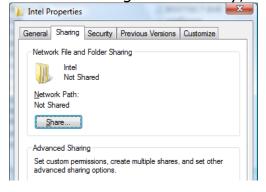
At Temple College, I have an O:\ drive and an H:\ drive; these are folders that is not on the computer's hard drive, but a server's hard drive. That makes the O:\ drive accessible from any computer on the network.

In order for you to use a network folder, two things have to occur... the administrator of the network has to create and then *share* the folder, and then *map* a 'network drive' on your computer.

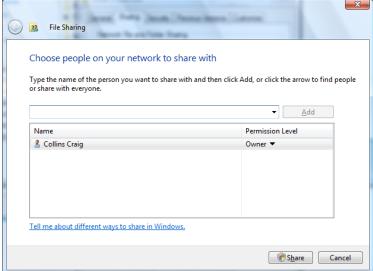
How to share a folder in Vista

Due to security issues, many students are not allowed to 'share' folders on their school computer, so you must memorize the following steps.

Right Click a folder, choose Properties, then Sharing (on some computers, you may also be able to right click a folder and choose Sharing and Security, or something similar)

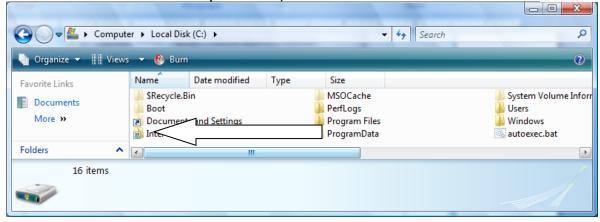


Choose the [Share...] tab (it may be labeled Share or Sharing)



Choose the [Share] button. You then choose who to share the folder with, and set security on the folder, such as passwords.

The icon for a shared folder may look like a 'server' bringing it or like a folder with multiple faces, to indicated others can see it





Due to the ability to customize folders, there **may not be an icon** showing the folder has been shared; but for the test... know the icons!

For those with computers at home that have multiple users, you may wish to experiment with sharing a folder, so a different user will be able to open the shared folder. However, this requires a bit more know-how than is covered in an Intro to Operating Systems class, such as being able to locate the shared folder within the hierarchy of the file system.

But, the point is, sharing folders is exactly the key concept of Networking. Servers have *controlled access* of the shared folders, so only specific users can use the folder, and access is normally given via passwords.

Mapping a drive so the user doesn't have to search for the shared folder is coming up in just a moment, but even more on shared folders and mapping network drives is covered in the Network Server class many of you may take.

About **Mapping** drives

Do This

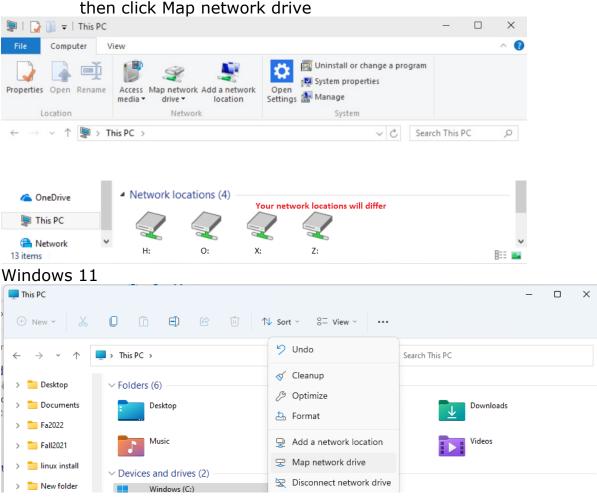
In a local drive, such as C:\, the files and folders are actually stored in a disk within that computer. A mapped network drive is a **path** to a shared folder on another computer.

Due to security issues, many students are not allowed to 'map' network drives to shared folders on other school computers, so you must memorize the following steps.

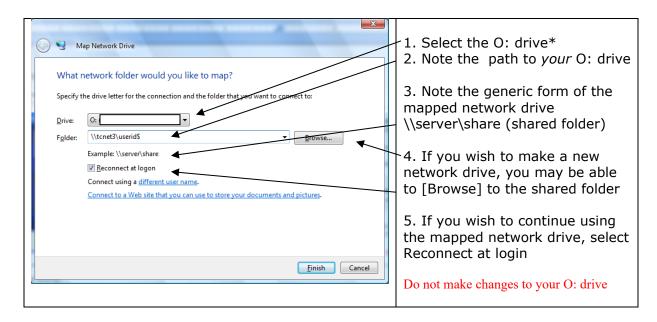
Earlier Windows, Start/ Computer, choose the Tools menu. (You may need to press the [Alt] key to reveal the Tools menu.) Choose Map Network Drive...

Newer Windows, Start/'This PC,' Click This PC in the left bar, then click the ... in Windows 11, or

then click the ... in Windows 11, or Computer in Windows 10 then click Map network drive



If you were to see a \$ at the end of your folder, that means the shared folder is hidden, and no one can find the folder by browsing.



You will NOT make any changes here, just examine what has been set up. DO NOT CHOOSE [Finish], instead you will choose [Cancel]

Browsing the computers within our network

Again, you may not have sufficient permissions to browse the network. If not, Memorize the following:

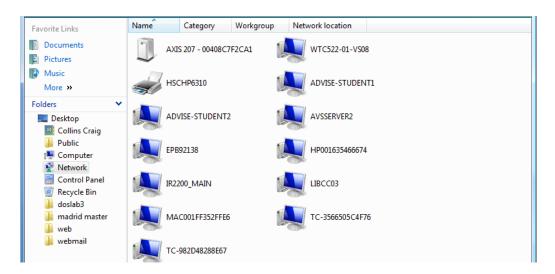
Windows XP Start/My Network Places

Under 'Other Places', choose Entire Network.

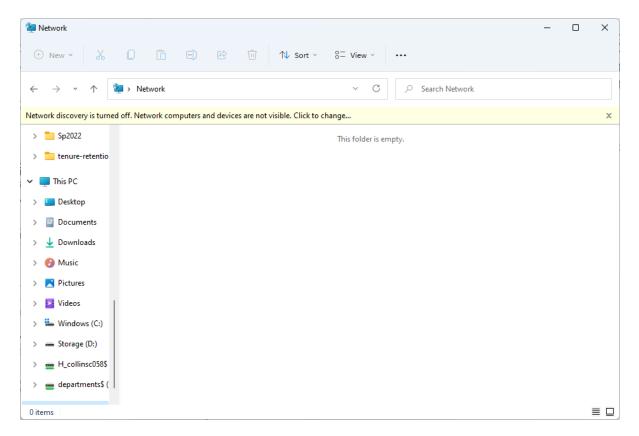
Choose Microsoft Windows Network.

Choose TCNET, some other available network to see some of the computers within your network.

Newer Windows: Choose ■ Start/Network or This PC, and select Network.



You may get a popup asking if you wish to load the Network Discovery feature of the Network and Sharing Center... if so, you will need to provide an administrator's username and password for the machine. Check with the Instructor for this information, if available.



You will NOT make changes here

Windows K OLE

Paste Special

OLE: Object Linking and Embedding

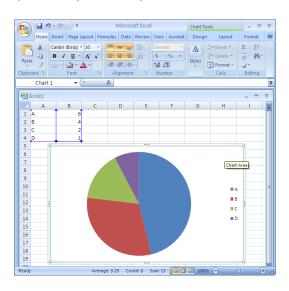
OLE stands for Object Linking and Embedding; you should be familiar with objects... an object basically is anything a computer can manipulate.

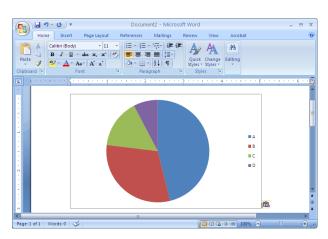
When we did lab 4, we didn't copy the entire Paint file, we selected and copied only a portion of the file... and that portion became an object. In Spreadsheets you can create a chart... the chart is a component part of the file, and it can be manipulated, so a chart is another example of an object. Each screenshot you made and pasted into your word processing documents was an object.

And, you already know about the embedding concept, but not perhaps with that name. Every time you copy and paste you are embedding a static copy of an object into a different document.

The problem with embedding becomes obvious if you think again about the chart object.

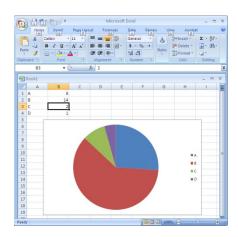
Scenario, a chart has been created in Excel. The chart is selected, then copied. The user then opens Microsoft Word, and chooses to Paste (embed) the object.

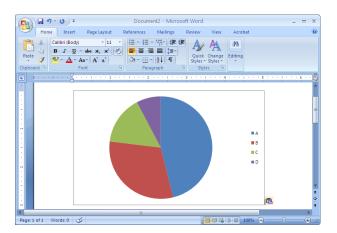




After a moment, the user realizes that one of the Excel values is incorrect. They change the value, and the chart in Excel automatically

changes, but NOT the chart in Word, as it is a static snapshot that was embedded.





The solution is to LINK, rather to the object, rather than embed a static copy. A link is nothing more than a PATH to an object.

To link you still select and object and copy, but the secret to linking is to choose Paste Special. We have finally encountered a time when

'right click' fails us.

In Word, choose the **▼** beneath Paste.

Then choose Paste Special.

Then choose Paste Link

and finally, select

As: Microsoft Office Excel Chart Object



Home

If both documents are save in the same folder... any changes made in the Excel chart will show up in the Word document. To verify it is up to date, right click the Word chart, and choose Update Link. Update Link

■ B

C

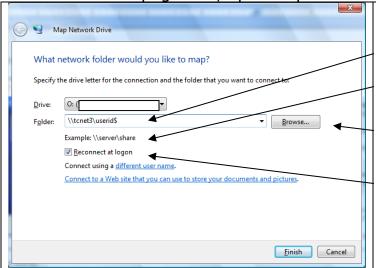
■ D

W Windows Lab 6

Lab 6 Activities This is typically a GUIDED activity Lab 6 Questions

Documentation 30% (Fill this sheet out, later you may submit in a quiz.)

As discussed on page 189, open Map Network Drive...



- 1. True or False: a mapped network drive is a shared folder on a server that can be accessed from your computer.
- 2. What is the path to *your* O: * drive?
- 3. What is the generic example of a mapped network drive?
- 4. If you wish to make a new network drive, is there a way to locate the shared folder available? If so, what is it?
- 5. What must be done if you wish to continue using this network drive?

Do not make changes to your O: drive



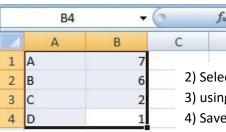
通Windows Activity 1:

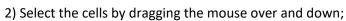
Create a folder called lab6.

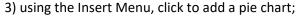
Open Microsoft Word, NOT WORDPAD

D

then start Excel. 1) Add the following to the Spreadsheet:

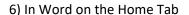






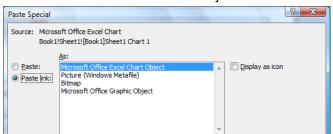
4) Save the worksheet in lab6 as yourname-lab6.xlsx.

5) Right click the chart, and choose copy.



[Paste ▼] Paste Special – •Paste Link → Microsoft Office Excel Chart Object





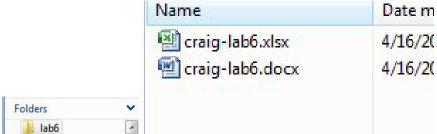
To test and verify that the chart is linked and not embedded: make a change in the spreadsheet, this should change the chart. In Word, right click the chart, do you see "! Update Link"?

■Windows Activity 2:

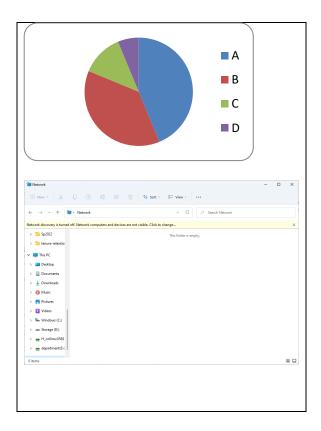
Open Network as described earlier, browse the Entire network, if allowed. If not, just get a screenshot showing you tried to browse the network.

Use Print Screen, then Edit/paste to embed that image in your word document, save the file with the chart and screenshot as *yourname*-lab6.docx. (Do even if nothing show for you in network.)

Your lab 6 folder contents should now look similar to this:



Your Word document, yourname-lab6.doxc, should look similar to this:



Lab 6 Hands On Q&A 30% (Fill this sheet out, later you may submit)

What is a client server network?

What is a peer to peer network?

Describe the process of sharing a folder (from book material).

What is different about the icon for a shared folder in

Windows XP or Windows Vista?

What is a network mapped drive?

Describe the process of mapping a network drive.

What does OLE stand for?

What is an object?

How is linking different than embedding?

How do you update a link?



XP Shared folder above



Newer shared folder icon

Note, the process of zipping may break the link between Word and Excel, so your faculty member may wish to view your Word document and test it to see if the chart is in fact linked before you submit this work.

Submit files and quizzes as directed

See page 57 for details if taking a Collins class. Zip and save as yourname-lab6.zip

Note Information about new versions of Windows is in Appendix B End chapter 8



Windows Bonus Material

Browsers eMail

Review

Windows Bonus Material

Browsers eMail

Networks → **Internet**

Earlier we discussed Networks, and how they were a series of computers that could share information. Most networks are closed, that is, you have to physically connect your computer to the network.

A Local Area Network (LAN) is a geographically compact network, such as a room, or building.

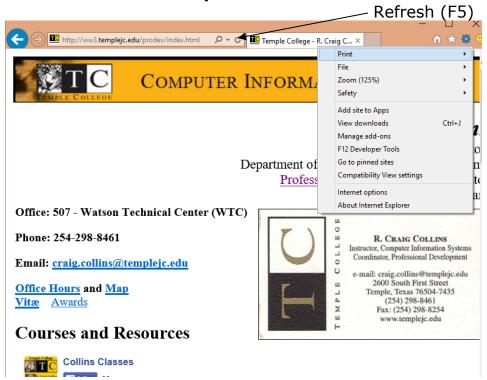
A group of LANs that can share information, such as two different campuses of the same school might be a Metropolitan Area Network, or MAN.

A group of MANs, across a large geographical might be a Wide Area Network, or WAN.

Some networks allow 'guest access' to parts of the information stored on their network... which lead to what we now call the Internet... the Internet is for all practical purposes a network made up of thousands of WANs.

To access this huge WAN, you typically use a Browser, such as Firefox, Safari, or Internet Explorer.

Browsers: Internet Explorer 11 or similar



URLS

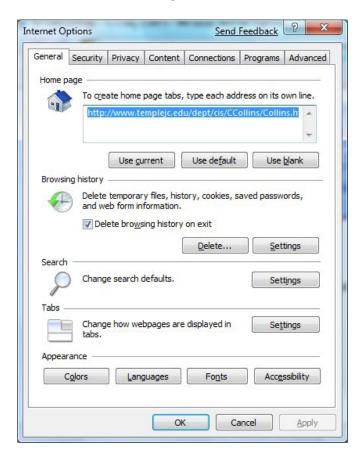
An Internet Address (URL, or Uniform Resource Locator) is made up of many parts. Just as a mail carrier starts with the zip code and works backward to the street, then an individual stop on that street, a URL has similar information

stamp	house	street	Zip code
1 st class	2600	S. First, Temple, TX	76504
←			
protocol	host	domain	Top level domain
http://	www	templejc	edu
	4		

Other Top Level Domain Names: .com, .org, .net, .mil, .gov, or country codes, such as .us, .uk, .ca, or .tv

Other protocols: https:// or ftp://

Tools\Internet Options



Searching the Web

To increase the precision of your search results, many search engines require that most of the words in your search string be present in the result documents. So, it may be better to start by listing just a few *key* words, and add additional terms to refine searches.

To gain even more control over your results, please read through the following hints.

- Most search engines support full Boolean capability; Boolean terms are AND, OR, & NOT.
- Use AND to connect a series of keywords you would expect to be in your documents, this forces the search engine to include that word in documents.

Example: War AND Peace

will return documents that contain both the word War *and* the word Peace, not just one or the other as with a simple series of words.

Use OR to retrieve documents that include either of the search words

Example: encryption OR cryptography

will locate documents that either include the word encryption *or* the word cryptography.

• Use **NOT** to indicate a word that must *not* appear in the documents. Example:

dolphins **NOT** NFL

will deliver searches on the mammal, rather than the football team.

Some browsers use + and - instead of AND or NOT; you may use a + (plus) to indicate words that must be present in the documents and a - (minus) for those that must not be present. Examples:

```
+dolphins -NFL
+recipes for +cake -nuts
```

• Use quotes around specific phrases to focus your search on occurrences of the actual phrase.

Example

"War AND Peace"

will return documents with the phrase "War and Peace" (such as discussion of the book by Leo Tolstoy), instead of random pages on conflict and quiet; thus you can use quotes to force the search on the phrase, rather than individual words,

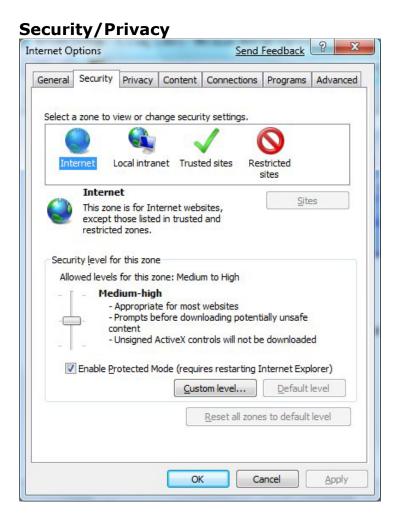
 Slowly add additional words in your search if the results are still too random, but don't do this too early... you may be putting blinders on the search engine, and miss good results. The often, the more words you enter, the more on target your results will be.

Cookies

A cookie is a file left on *your* computer from the web site you are visiting. The intent was perfectly legit. Preferences can be stored here, to make a faster interaction possible. Or they may just sit there, taking up valuable disk space (along with tons of other files in your cache (which is worthy of another article...).

Or those cookies can release those preferences, and other info, to **other** web master for less honorable purposes. But there is hope, go and delete all those extra cookies in your cache! Tools/Internet Options/General/Browsing History

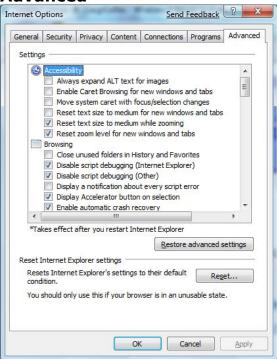
Using Browsers maybe covered in more detail in class



Identity



Advanced



Note: You may wish to investigate the Control Panel RemoteApp

eMail



Also available are condensed versions of MS Word 2013, Excel and PowerPoint.



Log into your account

Sign in with your organizational account



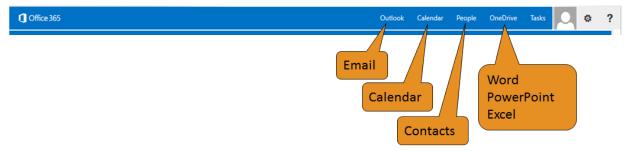
TC Office 365 can be accessed from any computer with an Internet connection both on and off campus Your TC Office 365 address is the only email address that will be used by campus instructors

Remember passwords are case sensitive.

What is your USER NAME? Your username consists of your last name plus first letter of your first name and the last 3 numbers of your Temple College ID number.

Example: Nora Jones has Temple College ID number 0003234, so her username is: **jonesn234**

The top navigation bar is how you get to your email, calendar, and other applications



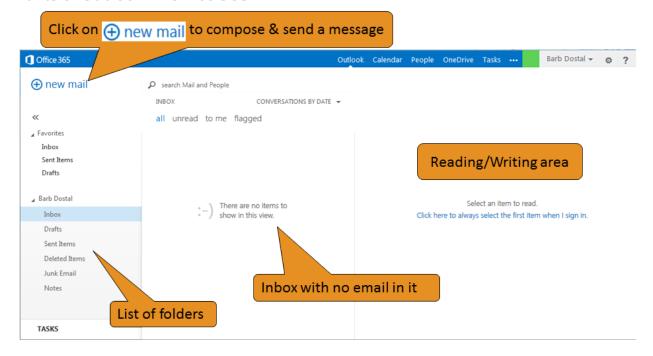
Select Outlook to access your TC email

The first time using Outlook, a window asking for language and time zone appears.



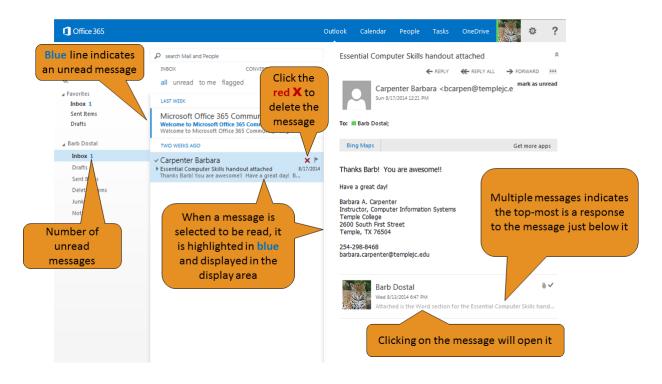
Then click save

Parts of Outlook in Office 365



Reading email messages

- Above figure shows no messages in the "Inbox"
- · Below shows messages received



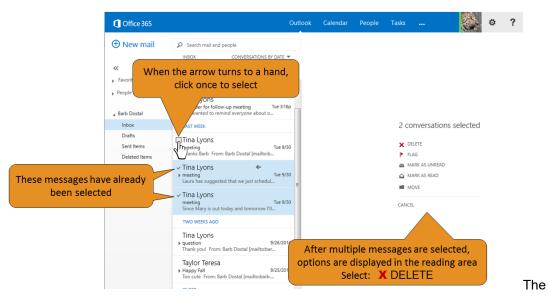
Deleting email messages

Keep mailbox current and eliminate clutter



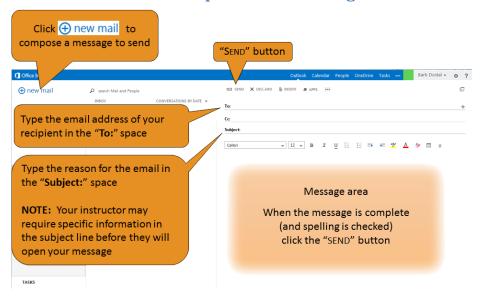
The message was moved to the **Deleted Items** folder

- To select multiple messages move the pointer arrow over the area to the left of the sender's name
- When the arrow turns to a hand, click once to select
- After multiple messages are selected, the reading area displays options



messages were moved to the **Deleted Items** folder

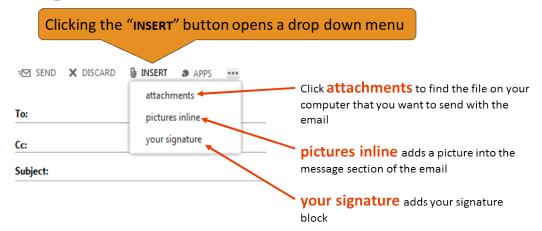
Sending a message using Office 365 Click on new mail to compose a new message to send



Discard option

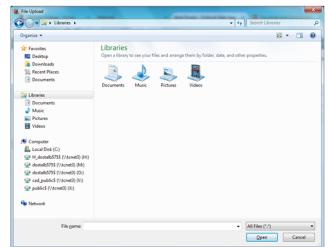


Adding attachments

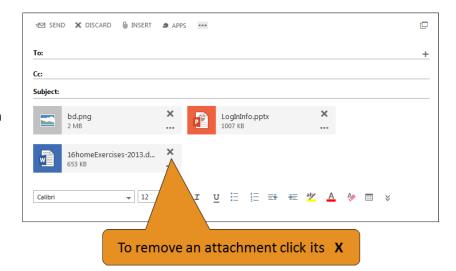


Navigate through your folders and files until you find the file you want to attach.

Double-click the file name or
Click once on the file name then click the Open button



- The attachment will appear below the subject line with an icon showing its file type
- Multiple attachments can be sent in one email
- Attachments need to be added one at a time.



Spell checking your composed message

Misspelled words have a red wavy underline Some things to know about the message area for composing email messages.

Missspelled words will have a red wavy underline.

i went to the book store. notice there are no green wavy lines for grammar checking. there is no automatic capitalizing of the first word of a sentence either.

I two went to the store. There are also no blue underlines like in MS Word.

Note:

Subject:

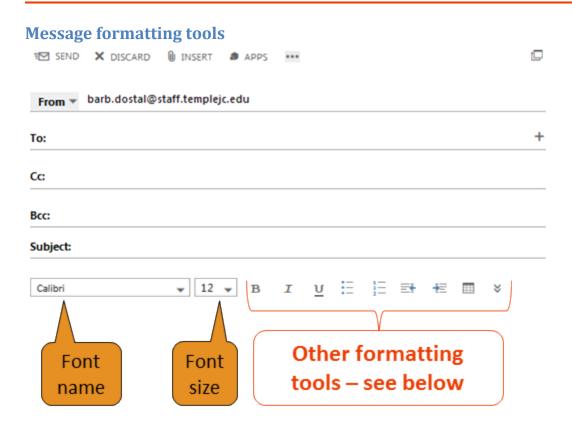
Calibri

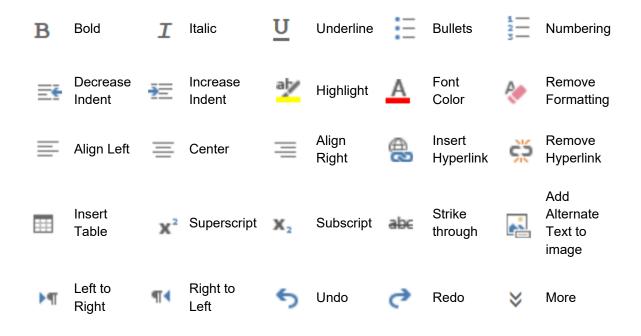
No automatic capitalization of

- Personal pronoun I
- First letter of a sentence

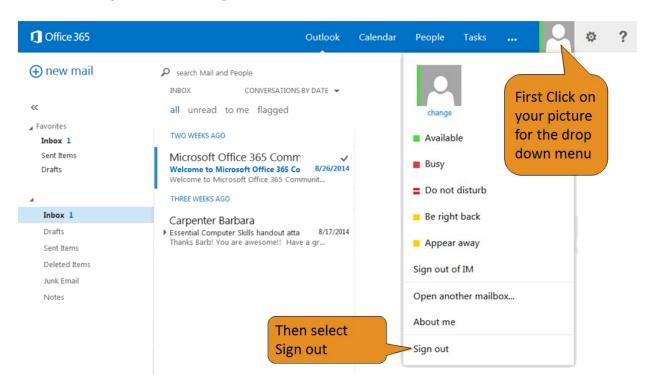
No green or blue wavy underlines for grammar

TI☑ SEND 🗶 DISCARD 🖟 INSERT 🐊 APPS 🚥 A wavy red line appears under a word that is not in Outlook's dictionary. Subject: **→** 12 **→** B I <u>U</u> 등 등 등 등 등 % Calibri Right click when the mouse pointer When a word is misspelled, a red wavy underline appears. is over the word with a red wavy line to reveal word replacement suggestions Add to Dictionary If one of the suggestions is clicked, Cut that word will replace the one Paste considered incorrect and the red Delete Select All wavy line will disappear Check Spelling <u>L</u>anguages Inspect Element (Q)





Remember to sign out when through



Netiquette and a Smiley (Emoticon)

Netiquette is about not what you can do, but what you should do. The Core Rules of Netiquette were written by Virginia Shea, and discuss how you, as an Internet User, suddenly have a lot of power... and why you shouldn't let it go to your head!

Below are the 10 rules Virginia Shea developed, and my quick take on them.

- Rule 1: Remember the Human (you aren't dealing with machines, you are dealing with people who put information on machines; just because you can't see them doesn't mean they don't exist. All other rules relate to this one. Remember this Mantra: Treat others as you wish to be treated)
- Rule 2: Adhere to the same standards of behavior online that you follow in real life (Don't hide behind the anonymity of a made up username, and forget everything you mother taught you! Behave on line as you would in the non-virtual world. Treat others as you wish to be treated)
- Rule 3: Know where you are in cyberspace (It is illegal for people in Saudi Arabia to have pictures of bikini models... so don't email one there. You have to contend with import/export and local laws, as well as laws of places you visit electronically)
- Rule 4: Respect other people's time and bandwidth (Every file you get uses someone's computer power, and takes up bandwidth, which they may have to pay for. Just be aware of the implications. Treat others as you wish to be treated)
- Rule 5: Make yourself look good online (Electronic communication lacks the nuances of body language and inflection, be sure of what you are communicating... look for double meanings, and use spell check!) More on this topic below...
- Rule 6: Share expert knowledge (What makes the system work is the idea of 'you rub my back, I'll rub yours.' Treat others as you wish to be treated)
- Rule 7: Help keep flame wars under control (If someone is an idiot, they deserve to know. Once. Don't swamp their mailbox with insults every day for the rest of your life. Treat others as you wish to be treated)
- Rule 8: Respect other people's privacy (If you don't want folks looking in your medicine cabinet, return the favor. Treat others as you wish to be treated)
- Rule 9: Don't abuse your power (You could look through other folks files, you could tie up their server, you could ruin their mail box... don't. Treat others as you wish to be treated)
- Rule 10: Be forgiving of other people's mistakes (You will make mistakes. How do you want to find out about it? A flame, or a friendly hint? Treat others as you wish to be treated)

Smileys and trying to communicate with email

Many people retain information according to the following rates:

10% of what they read

20% of what they hear

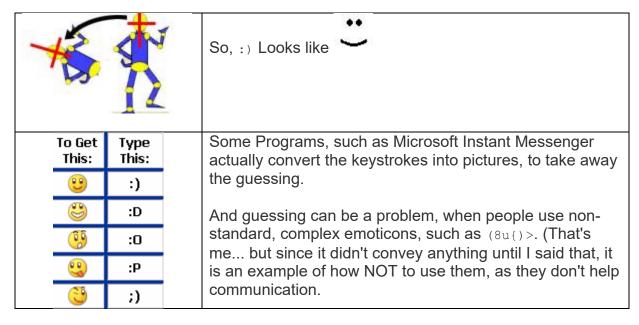
30% of what they see

70% of what they see and hear...

The problem with email is that you have eliminated 90% of communication when you are stuck with just reading. To try and overcome this shortcoming, many people try to use emoticons or abbreviations.

Emoticons (*Emoti*on I*cons*), or smileys, are keystrokes to represent your body language when sending a phrase. If someone in person asks me how a student is doing... reading 'just fine' has a completely different meaning than if I said it in person, and I rolled my eyes. So to convey a smile, a frown, etc. people use smileys.

To read a smiley, you have to turn your head 90° to the left.



Many people will also use abbreviations and acronyms to try and improve communication. A lot of you know that LOL is laughing out loud, and that IMHO is In My Humble Opinion, but a lot of these also get to complex to be useful. It is so much easier to just say what you mean, re-read it for clarity, and then send it!

But just in case, here is a short list of common chat acronyms (or chaq, pronounced "chalk"):

BFN or ttfn, bye or tata for now; BRB, be right back BTW, by the way CWOT, complete waste of time DIY, do it yourself RTM, read the manual

A more detailed list is at http://www.sharpened.net/glossary/acronyms.php

Review

Before continuing, verify you are caught up; ask your instructor on how you can check.

Feel free to copy and email answers to your instructor... Theywon't give you the right answers necessarily, but they'll let you know where you still need a little work.

Note: This test is a little more challenging

PS, The first part of the final will include the same information as Test 2. There are suggestions on studying, on the class web site

- What does the left mouse button do?
- What does the right mouse button do?
- What is minimize?
- What is maximize?
- What is restore?
- What is a dialog box?
- What types of Help does Windows have?
- What key gets help?
- Why should you 'shut down' a computer?
- Name three ways to start a program.
- Name three formatting options
- Discuss cut, copy, and paste
- How do you view the tree/folders structure in Windows?
- How do you create new folders in Windows?
- How do you rename folders in Windows?
- How do your delete folders in Windows?
- How do you undelete in Windows?
- What is a shortcut?
- How do you create a shortcut? On the desktop?
- How do you change file viewing options? Name two.
- How do you change the desktop?
- If the button is not there, look for [Advanced] [Customize] [Options]
- Name three changes you can make to a desktop
- Discuss tasks that may be scheduled, and why.
- How do you format a floppy?
- How do you copy a floppy?
- How do you 'clean up' a disk?
- How do you find out all about your hard drive, such as getting a pie chart of usage?

- Name two tools for disks
- Should you just delete a Windows program? Why or why not?
- Can you enter DOS commands? How?
- Is this really DOS?
- What is a URL?
- What is Back?
- What is a favorite?
- Where do you set your home page, or privacy, etc?
- How do you get to the school email?
- What is a CC? A BCC?
- Can you unsend?
- What is an emoticon?
- What is an address book? How can you add addresses to it?
- How can you organize your mail?
- Discuss protecting your identity.
- How do you know if a site is secure?
- What is a client server network?
- What is a peer to peer network?
- Describe sharing a folder.
- What is the icon for a shared folder?
- What is a network mapped drive?
- Describe mapping a network drive.
- What does OLE stand for?
- What is an object?
- · How is linking different than embedding?
- How do you update a link?

Note Information about new versions of Windows is in Appendix B End Chapter 9



Linux Intro

About Linux Setting up Linux Reduced DOS-Linux guide Sample Linux Session

About Linux

Linux is a UNIX like operating system, meaning that while the programming that built the operating system differs from Linux, it behaves in a similar fashion.

UNIX originally came out of ATT's Bell Labs in the 1960s from teams working on time sharing operating systems for main frame computers. It was reinvented in 1972, this time around being based in the C programming language.

But when UNIX really took off was when some college kids started using UNIX for research, and to play computer games on a network... but that is another story.

In the early 1990s. Linus Torvalds created an operating system that behaved like UNIX, but could run on personal computers. Further, he release this operating system as 'open source,' meaning anyone could use it, and even modify it, for free.

Another unique feature, at least to Windows users, it the choice of how the user interacts with the operating system.

The Kernel is the most basic part of an operating system. In DOS, the only way to access the kernel was using the DOS command prompt. But newer operating systems have options on how to interact with the kernel... these are called shells. Example: Windows can be interacted with via the command line or the graphical user interface.

But in Linux, there are many, many shell options, allowing the user to interact with the kernel in many different ways.

The Bourne shell replaced the Thompson shell in 1977, becoming the default UNIX shell

C shell uses C language-like syntax is, and is an interactive shell, mainly used to write programs called shell scripts

The KornShell is a complete, powerful, high-level programming interface for writing applications

The Bash shell, <u>Bourne Again SH</u>ell, is an updated version of the Bourne shell, and is now the default shell for Linux

Notes:

Everything in UNIX/Linux is treated as a file



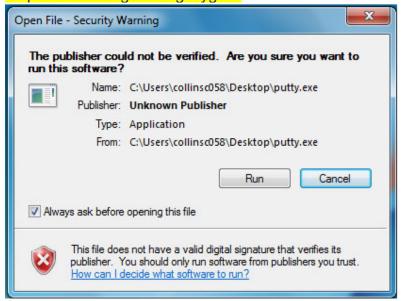
-rwxr-xr-x the – at the beginning indicated the items is an ordinary file drwxrwxr-x the d at the beginning indicated the items is a directory crwxrwxr-x the c at the beginning indicated the items is an character device brwxrwxr-x the b at the beginning indicated the items is a block device

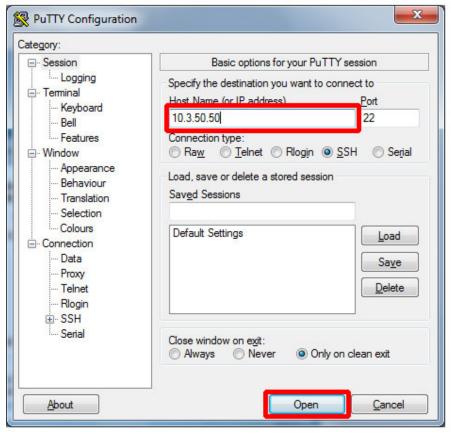
Server Client Setup

While you may be using Linux on a stand alone computer, it can also be accessed via remote connections. To set up the UNIX client, you must first start an emulator program, such as putty.exe or Cygwin.



Skip the following if using Cygwin





All you worry about is the Host Name (or IP address), an example might be 10.3.50.50, then choose Open

If you get a message about a key, choose [Yes] to trust the host and cache (save) the updated information



For Collins students using remote access only

If you are a day student, your log in name is the linux+machine number (two digits)+a If you are a night student, your log in name is the linux+machine number (two digits)+b

Your password will be Password2 (note the capital P and the number 2)... your password WILL NOT DISPLAY when typing

```
login as: linux01a
Access denied
linux01a@10.3.50.50's password: Password2
Last login: Thu Oct 20 13:23:41 2011 from wtc522-win7.tcnet.templejc.edu
[linux01a@wtc522linuxserver ~]$
```

While most standalone systems use gEdit, an editor released under the GNU open licence agreement, some systems are accessed remotely may require using the VI command line text editor.

Step 1, type vi filename

You are now in command mode. Go to step to start inserting text

Step 2, to insert text, type the letter "i"

You are now in insert text mode. Type your name ... Craig

When you have finished typing, you must escape from insert mode

Step 3, when finished editing, hit <ESC>

Step 4, to save and exit type (upper case, hold down the shift key)ZZ....

More about using VI available on Google, etc.

Introductory Linux Commands

- paths use / instead of \ such as \ home\user
- command are case senstitive
- command parameters use instead of / such as ls -R

 directory listing ls long directory listing ls-l tree like directory listing ls-R

 make directory mkdir foldername

 change directory cd

 create a file touch filename

 edit file gedit or vi filename

 display file cat filename

 copy file cp source destination move or rename mv source destination

 delete file rm filename

 remove directory rmdir foldername

Sample Linux Session

Desired action	Command given	Result (your result may differ)
See full path to current directory	pwd	/home/linux01a
Brief directory listing	ls	(nothing to display)
Make a directory called junk	mkdir junk	(nothing to display)
Brief directory listing	ls	junk
Long, detailed directory listing	ls -1	drwxrwxr-x junk
Create an empty text file	touch test.txt	(nothing to display)
Long, detailed directory listing	ls -1	drwxrwxr-x junk
		-rw-rw-r test.txt
Edit text file (see vi on p.C-6)	vi test.txt	(vi opens; insert, save/close)
or	gedit test.txt	
Long, detailed directory listing	ls -1	drwxrwxr-x junk
You may see a back up file		-rw-rw-r test.txt
created (test.txt~)		-rw-rw-r test.txt~
Remove backup file, if there	rm test.txt~	(nothing to display)
Long, detailed directory listing	ls -1	drwxrwxr-x junk
shows back up file created (~)		-rw-rw-r test.txt
Display the contents of test.txt	cat test.txt	(contents display)
Copy test.txt into junk	cp test.txt jun	nk/new.txt
calling the copy new.txt		
Recursive directory listing	ls -R	drwxrwxr-x junk
		-rw-rw-r test.txt
		junk
		-rw-rw-r new.txt
Change into the junk directory	cd junk	(prompt changes)
Remove new.txt	rm new.txt	(nothing to display)
Use arrow keys to run Is		(no file to display)
Go up one directory	cd	(prompt changes)
or	or	
Change into the home directory	cd \$HOME	
Remove the junk directory	rmdir junk	(nothing to display)
Long, detailed directory listing	ls -1	-rw-rw-r test.txt
Rename test.txt to fred.txt	mv test.txt fre	
Long, detailed directory listing	ls -l	-rw-rw-r fred.txt
Delete all files in this directory	rm *.*	(nothing to display)
Long, detailed directory listing	ls -l	(nothing to display)

Try Calendar command ${\tt cal}$ to display current month

Try Calendar command cal 12 2010 to display December of 2010

Try Calendar command cal 9 1752 to display September of 1752

Note Full DOS-Linux guide is in Overview 11 End chapter 10



Commands; Lab 7

Linux Commands

DOS/Windows -Linux guide Graphical User Interface quick start

Linux Lab 7

Linux Commands Linux Activities Linux Questions

Linux Commands

DOS/Windows -Linux guide Graphical User Interface quick start

DOS UNIX (*Linux)

Help commands

help man command end session with q

command /? whatis command

apropos keyword

Clear screen

cls clear

To Display the present working directory

prompt \$p\$g pwd

Root directory

\

Directory Listing Commands

dir detailed ls -1 detailed

dir /w just file names ls just file names

tree all directories and files 1s -R all directories and files

Change Directory/Folder commands

cdbasic commandcdbasic commandcd ...move up one directorycd ...move up one directorycd \move to root directorycd /move to root directory

cd $\mbox{$HOME}$ to \home\your home

Used to make directories/folders

mkdir directoryname mkdir directoryname

md directoryname

DOS UNIX (*Linux)

File creation

copy con filename use [Ctrl] + [z] to end touch filename

Filename rules

8.3 255 characters

allowed

avoid spaces and hyphens as first

character

'hide' a filename with , for first character

move

rename

copy

('see' w/ ls -a)

Used to specify multiple files

* or ? wildcards * or ? metacharacters

Text Editing

edit filename.txt vi filename.txt

Display the contents of a text file on the monitor

type filename cat filename

File Manipulation

move source mv source destination destination

stination destination

rename source destination rename mv source destination

copy source copy copy destination

File deletion

del filename delete rm filename remove

Folder deletion

rd foldername must be empty

rmdir foldername must be empty rmdir foldername must be empty

deltree foldername will delete w/contents rm -rf foldername will delete w/contents

DOS UNIX (*Linux)

File properties

attrib \pm ? filename read only, archive, sys, hidden chattr \pm ? filename

From Intro to Computer classes, Powers-of-two number line.

2 ¹⁰	<mark>2</mark> 9	<mark>2</mark> 8	<mark>2⁷</mark>	<mark>2</mark> 6	<mark>2</mark> 5	<mark>2</mark> 4	<mark>2</mark> 3	<mark>2</mark> 2	<mark>21</mark>	<mark>2</mark> 0
1024	512	<mark>256</mark>	128	<mark>64</mark>	32	<mark>16</mark>	8	4	2	1

Folder Properties

chmod ugo ± ?
foldername

read, write, execute

for user, group, or

other

chmod 755 foldername

standard web permissions

d rwx r-x r-x

r w x

421

read=4

write=2

execute=1

7==4+2+1, r+w+x

ls | more

To redirect output, such as from the monitor to a file

example: (pipe) dir | more |

> example: type aa.txt > lpt1 >

example: cat aa.txt > lpt1

example: (pipe)

To sequence commands; take the output of one command and use it as the input for another

Day and Month

cal

 ${\tt cal}\ {\tt mm}\ {\tt yyyy}$

Windows

date

UNIX (*Linux)

End Command Line session

exit exit

Automatically replace typed text with predetermined text

auto correct alias xx=command

Windows

UNIX (*Linux)

Searching

search find filename

search contains grep word Of phrase

End program



File\Close q
[Ctrl]+[Alt]+[Del] kill

UNIX specific items

passwd change password

(must change at least 3 items)

required aspects

minimum 6 minimum of 2 letters minimum of 1 characters

ex Password1

command & starts command, but will run in background

[Ctrl]+[z] pause

Database features

join To combine records, or files

search for files in a directory hierarchy

grep print lines matching a pattern, to search for words within files

uniq remove duplicate lines from a sorted file

diff find differences between two files

translate or delete characters, such as changing from upper

case to lower case

Other useful info

runs the command as low priority
[command]; [command] use the; to start multiple programs

start process in background (fg will bring it back to the

foreground)

[Ctrl] [z] suspend process

Other useful info continued

show free disk space (see man df for other options)
show processes (see man ps for other options)

free show remaining RAM

convert, then copy a file... used when using Windows to

download a Linux distro

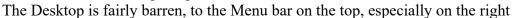
tar create a compressed format backup file, i.e. tar -cvf

/home/archive.tar /etc

where archive is the file created in the /home directory, and is a

backup of /etc

If using a standalone Linux box, you will have to be able to locate the terminal, the command line shell. So here is a quick primer on the GNOME 3 Linux Interface





Accessibility settings, Volume, Network Connection, and user options



Enable the network connection, if there is an X showing on the Network icon, click to turn on



Much like Windows 8, to access info, Press the 'Start' key You will now see two options, Windows and Applications.



Quick Launch on the left for browser, and browsing files. Switch windows is on the right. If you have applications running, you switch by selecting on the Windows screen.



Right click a menu on a program window to maximize, minimize, or restore down.



Click Applications to browse for programs or to search, in this case find TERMINAL.

Finished? Click on the User options icon top right.





Press the Alt key....

₩ Linux Lab 7

Linux Commands **Linux Activities Linux Questions**

Documentation 30% (Fill sheet out, later you may be submiting your answers)

man

What does the command do? What is the syntax for the command? (Syntax does not include specific drives or directories) How do you end the man session

ls

What does the command do? What is the DOS equivalent? What is the syntax for the command? (Syntax does not include specific drives or directories) After doing the activity, come back and fill in the examples Write out one example of how the command was entered into Linux in this lab

mkdir

What does the command do? What is the DOS equivalent? What is the syntax for the command? (Syntax does not include specific drives or directories) Write out one example of how the command was entered into Linux in this lab

cat

What does the command do? What is the DOS equivalent? What is the syntax for the command? (Syntax does not include specific drives or directories) Write out one example of how the command was entered into Linux in this lab

ср

What does the command do? What is the DOS equivalent? What is the syntax for the command? (Syntax does not include specific drives or directories) Write out one example of how the command was entered into Linux in this lab

rm

What does the command do? What is the DOS equivalent? What is the syntax for the command? (Syntax does not include specific drives or directories) Write out one example of how the command was entered into Linux in this lab rmdir

What does the command do?

What is the DOS equivalent?

What is the syntax for the command?

(Syntax does not include specific drives or directories)

Write out one example of how the command was entered into Linux in this lab

mν

What does the command do?

What is one DOS equivalent?

What is the other DOS equivalent?

What is the syntax for the command?

(Syntax does not include specific drives or directories)

Write out one example of how the command was entered into Linux in this lab

chmod

What does the command do?

What is the syntax for the command?

(Syntax does not include specific drives or directories)

Write out one example of how the command was entered into Linux in this lab

Linux Activity 40% (Fill sheet out, later you will submit your answers in D2L)

Log into the Linux account, and make sure you are in your home directory (~ folder)

Create a folder. ITSC 1305-01 students will call this folder test1. 1305-02 students will call this folder test2.

Exact command typed into Linux to create folder:

Change into the new folder. Exact command typed into Linux:

Use touch to create a file called test.txt. Exact command typed into Linux:

touch test.txt

Start a linux editor, Exact command typed into Linux:

gedit test.txt

Now edit the file to include your name in the text file. Save and exit. Display the contents of your text file. Exact command typed into Linux:

Create a folder named web. Exact command typed into Linux:

Display a simple directory listing. Exact command typed into Linux:

Should look something like youraccount@myserver ~ \$ web test.txt

Copy your text file into the folder called web. Exact command typed into Linux: Run a recursive directory listing to see the contents of all directories, Exact command typed into Linux: Should look something like youraccount@myserver ~ \$ web test.txt web test.txt Change into the web folder. Exact command typed into Linux: Rename the text file in the web folder to index.htm. Exact command typed: Change from the web folder to your test folder. Exact command typed: cd .. Set the web folder to standard Internet folder permissions. Exact command: Display a detailed directory listing to verify the permissions were set. Exact command typed into Linux: Display the Calendar for September of 1752. Exact command typed into Linux: Change into the web folder. Exact command typed into Linux: Command used to delete your index.htm file. Exact command typed into Linux: Command used to move from web folder back to your 'test' folder. Exact command typed into Linux: Command used to delete empty web folder. Exact command typed into Linux: Command used to delete your test.txt file. Exact command typed into Linux: (do not use wildcards for this) If there are extra files, such as a test.txt~ file, make sure you delete that, too: perhaps rm *.* Move out of your test1 or test2 folder to your home folder. Exact command typed into Linux: cd \$HOME Command used to delete your test1 or test2 folder. Exact command typed: There should be nothing left in your starting folder... remove all strays. Command used to log out

Hands On Q&A 30% (Fill this sheet out, you may be submitting this later)

Use the class website, or whatis to get a description of a command, or apropos

to search for keywords to locate a command
Command or character used to search for a file Command /character to take the output of man Is and use it as the input of the more command: man Ismore Command or character used to redirect output, say from the monitor to a printer
Command or character used to search for words or phrases within files
Command or character used to remove duplicate lines from a file
Command or character used to show differences in files
Command or character used to change lower case to upper case
Submit files and quizzes as directed See page 57 for details if taking a Collins class

Check Class website or YouTube for a short video similar to Lab7



Note Full DOS/Windows -Linux guide is at the beginning of this Overview End chapter 11



Install & Explore GUI; Lab 8

Linux Graphical User Interface

Similarities to Windows Standard features Versions Installation Exploration

Linux Lab 8

Linux Concepts Linux Activities Linux Questions

Linux Graphical User Interface

Similarities to Windows
Standard features
Versions
Installation
Exploration

Similarities

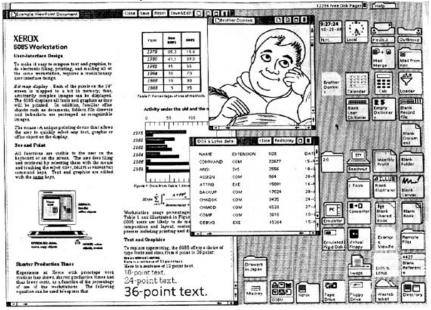
All modern operating systems do the same thing, they manage resources... in our case, primarily hardware and files. As they do the same functions, the way they handle the tasks can be very similar.

All modern graphical user interfaces have the following: a main menu

a bar for quick launching applications and tracking open applications the ability to switch between windows, and some sort of method to resize windows many support the equivalent of right click many use ... to indicate a dialog box will open many use arrows to indicate 'more options' something like "File Explorer" or "This PC" something like the Control Panel and the use of icons, menus and a mouse (or touch)

Graphical Linux

The Linux GUI is derived from the MIT X-Windows system (UNIX GUIs started in 1978), and is actually fairly close to the Xerox Alto computer (1972; the 'first' PC with GUI). (Windows started life as Interface Manager in 1981 and also copied many ideas from the Alto.)



The Linux GUIs that most people know (GNOME, KDE) are derivatives of HP-VUE (from the early 1990's).



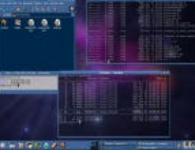
X-window



HP-VUE



KDE



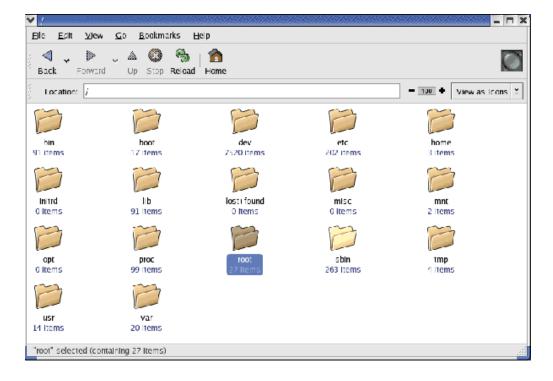
The OSX Apple operating system is called AQUA, and runs on a UNIX kernel, though they released their first GUI based system in 1984. More on Apple soon.

Views of the Red Hat 9 Server: Gnome





There will be a tool like My Computer to browse folders, minimize, maximize, close



Popular Linux distros and some of the included software



http://www.ubuntu.com/

Mozilla Firefox web browser and Open Office/Libre Office Productivity software



Mozilla Firefox web browser and Productivity software

Other Popular Linux distros

See also http://www.linux.org/dist/list.html for















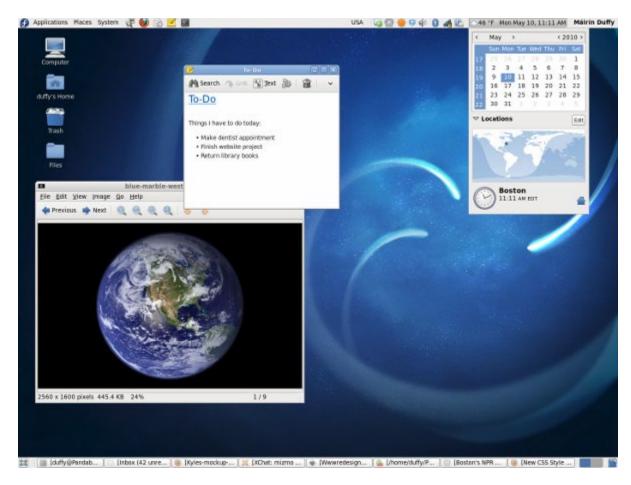
Linux is UNIX like, so what about UNIX?

http://www.unix.org/what is unix.html

In 1994 Novell (who had acquired the UNIX systems business of AT&T/USL) decided to get out of that business. Rather than sell the business as a single entity, Novell transferred the rights to the UNIX trademark and the specification (that subsequently became the Single UNIX Specification) to The Open Group (at the time X/Open Company). Subsequently, it sold the source code and the product implementation (UNIXWARE) to SCO.

You also wish to Google BSD (foundation of Apple Darwin kernel), Solaris, HP-UX, and AIX

A later versions of Red Hat, this is Fedora Core 13; note the panel has been split so only the 'task manager' is at the bottom. The Red Hat replacement for the Start button is now a Fedora logo/Applications, and at the top of the screen. Places is like File Explorer, and System is like the Control Panel. GNOME 2



The Fedora minimize button, maximize button, and close button are very similar to the Windows buttons. Not exactly the same, but similar.

You can Right click to get a shortcut menu, you can Alt Tab between windows.

Almost every version of Linux includes open source software such as AbiWord or Open Office or Libre Office, and often a nice array of games.

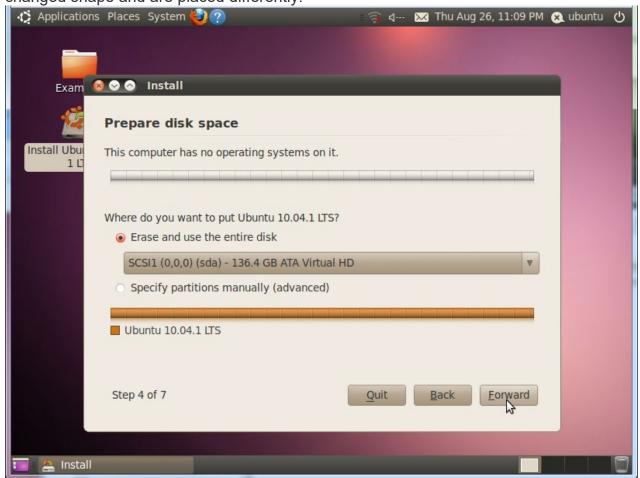
Of course you can't get Microsoft Office, or iTunes, or Turbo tax for Linux, but you can often find a lot of free, open source software, and using RPM or Yum can make installing software fairly easy.

Ubuntu

One of the most popular versions of Linux is Ubuntu.

Note: while Fedora and Ubuntu both use Gnome as the desktop shell, there are differences. The Applications menu logo is different, and the top panel includes a shut down button on the top right.

A bigger difference is the minimize button, maximize button, and close buttons have changed shape and are placed differently.



Another nice feature in Fedora and Ubunu is the Live disk option.

Simply insert the disk and boot, and use a the OS without installing it... when you shut down and remove the disk, you can restart back to your old OS.

The installers are very good, and many installers can add Linux to your system and leave Windows in place, letting you choose which OS to use when you boot... but please note that if you do install Linux on your computer at home, there is a chance that it REMOVE Windows... so install at home at your peril.

More on GNOME 3 on page 227.

While Gnome is still very prevalent, GNOME 3 was not well received. Ubuntu created their own interface, called Unity.

This created an opening in the market for something that was similar to both GNOME2 and GNOME 3... the Cinnamon interface in Mint.

Press the Start key on the keyboard and it behaves like GNOME 3 Press the Menu icon on the desktop, and it behaves like GNOME 2.



****** Linux Lab 8

Linux Concepts Linux Activities Linux Questions

Check with your instructor on Installation

The Linux GUI

1. True or False:

Most Linux installations are free

2. True or False:

You can download many Linux installation program files from the Internet, then burn them to CD

3. True or False:

The Graphical User Interface is required in order to use Linux

4. True or False:

You can easily add Linux to your computer without worrying about Windows

5. True or False:

Linux requires a more powerful computer, called a Workstation, to run

Hands On 30%

Be prepared to discuss:

- 1. Does right click in GNOME work?
- 2. Do Maximize, minimize, restore down work in GNOME?
- 3. What do you use, instead of the Start button in GNOME?
- 4. What Graphical Internet Browser is installed in most Linux systems?
- 5. What Word Processor is installed with many version of GNOME?

I strongly suggest you take a LOT of Notes as you explore the different systems (the more notes you take on Fedora and Ubuntu, the easier the capstone lab will be to write...)

Submit files and quizzes as directed See page 57 for details if taking a Collins class. End chapter 12



Linux Web Pages

Similarities to Batch files/scripts Standard web structures Using gedit Using Firefox Web Page creation in HTML

Linux Lab 9

Linux Compression Linux network usage

Preview Lab 9

Linux Web Pages

Similarities to Batch files/scripts
Standard web structures
Using gedit
Using Firefox
Web Page creation in HTML

Windows has batch files... commands in a plain text file save with the .bat extension. Linux has scripts, basically commands saved in a text file but instead of changing the extension, the X permission is turned on. But rather than create scripts, it might be more interesting to create another plain text document that can deliver instructions... a web page.

Plain text files cannot have color, cannot have attributes such as bold or italic, and cannot include images... but a web page can. How can a plain text document do that? The answer is be delivering instructions to a browser on how to render the page, and where to find images. The instructions to the browser go between < and >, and are called tags.

In Microsoft Word, to make a word bold, you select the word first, then click the [B] button. This actually is marking the beginning and the end of the area that can be made bold.

In web pages, text to be formatted is surrounded by two tags... on to start the instruction or command, if you will, and one to end the instruction... so the entire page won't be bold, for example. It would look like this:

| Solution | Solut

One more item before we get started... once you save a text document with a .htm extension, many Linux text editors will actually start color coding the commands, attributes, and values in the tags.

Check with your instructor for addition details.

Making a web Page with gEdit in Linux

All browsers need to be instructed as to what type of file to they are about to deal with, so the first tag set that we need to type in your text editor identifies the page as a Hyper-text document. Type in:

<HTML> </HTML>

I usually type in both the starting tag <html> and the ending tag </html> at the same time, this way I don't forget the ending tag later. Next, place the insertion point between the tag set, and hit the enter key a few times to give you space to work. What is typed *in between these two tags* will be part of the web page.

<HTML>

Next, we need to know that there are two parts of the web page, the part the computer reads, and the part the users read. We'll insert the computer's part next. Just as Microsoft Word has parts of the document reserved for page numbers, etc., web pages also have something similar to a header section, called the head.

Between the two <html> tags, add the head section, as follows. Don't worry about how many spaces or how many lines are between things...browsers ignore this "white" space. It also doesn't matter if you use capital letters or not.

<html>
<head>
</head>
</html>

Usually, the only thing that goes in between the head tags is something to create a title. So add the following so that your entire page looks like:

<HEAD>
<TITLE>
</TITLE>
</HEAD>

<HTML>

</HTML>

Now, just as in Microsoft Word, we need to add the section where all the words go; just as Microsoft Word has a body area, web pages also have something similar, also called the body.

<html></html>
<head></head>
<title></td></tr><tr><td></title>
<body></body>
Notice the two HTML tags surround the entire document. Within the document you have a HEAD section and a BODY section. And within the head, you have an area for a TITLE. We are now ready to save this document, which will be the starting point for all of your web documents.
Choose File\Save As save as test1.htm in the default user folder.
· ·
Now modify test1.htm by inserting a title between the <title> tags. Call it</td></tr><tr><td>Now modify test1.htm by inserting a title between the <TITLE> tags. Call it something like <i>My 1<sup>st</sup> page.</i></td></tr><tr><td>Now modify test1.htm by inserting a title between the <TITLE> tags. Call it something like <i>My 1<sup>st</sup> page</i>. <HTML></td></tr><tr><td>Now modify test1.htm by inserting a title between the <TITLE> tags. Call it something like <i>My 1<sup>st</sup> page</i>. <HTML> <HEAD></td></tr><tr><td>Now modify test1.htm by inserting a title between the <TITLE> tags. Call it something like <i>My 1<sup>st</sup> page.</i> <HTML> <HEAD> <TITLE></td></tr><tr><td>Now modify test1.htm by inserting a title between the <TITLE> tags. Call it something like <i>My 1<sup>st</sup> page</i>. <HTML> <HEAD> <TITLE> My 1<sup>st</sup> page</td></tr><tr><td>Now modify test1.htm by inserting a title between the <TITLE> tags. Call it something like <i>My 1<sup>st</sup> page</i>. <HTML> <HEAD> <TITLE> My 1<sup>st</sup> page </title>

</HTML>

Now click the **File** menu item, and then select the **save** option. (Not save <u>as</u>, the file already has a name.)

Next, minimize your text editor window; DO NOT CLOSE THE WINDOW, as we will be switching back to it.

Linux Users:

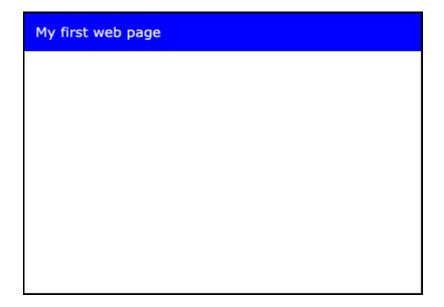
Open your 'home' folder, locate test1.htm, and right click it.

Choose Open with Firefox.

Firefox is the default web browser on most Linux systems.

This should launch the browser, placing **test1.htm** in **address** text box.

It may look like nothing is being displayed, but look above the main browser window, in the title bar. It should read "My 1st page". This is appropriate as we have only put in a title.



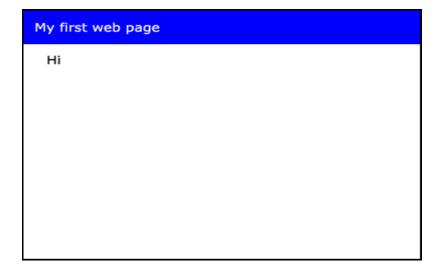
Next, leave the browser running, but switch back to your text editor.

Try using Alt+Tab...

Between the <BODY>tags, type Hi.



Save your text editor file, click on the browser icon, then click on the refresh/reload button. You should now see the word **Hi** displayed.



Switch back to your text editor, and highlight the word Hi by clicking just to the left of the word, and drag across it with the mouse button sill depressed. When the word is highlighted, press down the [Ctrl] button and hold it down. Now tap the [c] key and let go of both. Now press the [End] key. This will break the highlight, and place the cursor at the end of the line. Press the [Enter] key to create a new line below the word **Hi**. Now, press down the [Ctrl] button and hold it down. Now tap the [v] key

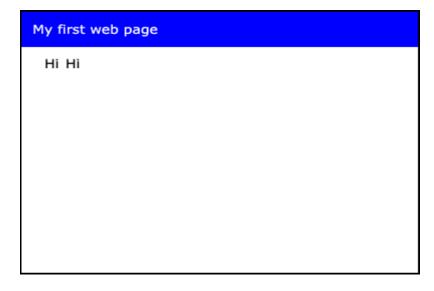
and let go of both. A copy of the word **Hi** should now be pasted in below the original. (You could also have used the edit menu.)



Save the changes, and switch back to your browser. Refresh/reload (Internet Explorer can be refreshed by using the [F5] key.)

You should now have two Hi's, but are they one on top of the other?

No. I'll bet they are side by side.



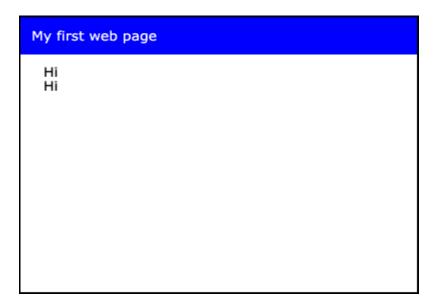
Why? Because the browser ignored the white space separating the two, and thus they are displayed side by side.

In Microsoft Word, you start a new line by inserting a line break... so let's force a line break here. In your text editor, make the following change, and save.



Notice that the break tag
 does not have an ending component, as this tag is not surrounding text in order to format the text for display. You don't start breaking your leg, then finish breaking your leg later... it is just a break! Save your changes.

Switch to your browser, refresh, and you should now see the two ${\bf Hi}$'s displayed in stacked fashion.



Now, when we read a newspaper, we know when a new story starts, because of headlines. Headlines are different sizes, bold, and always are on on a different line than the story. So, let's try to add one of the 6 headlines by make the following changes, and note the results in your browser. Remember, every time you make a change in your editor, save your document, switch to your browser, then refresh/reload.

Recall also, tags normally surround the text that they will format for the browser.

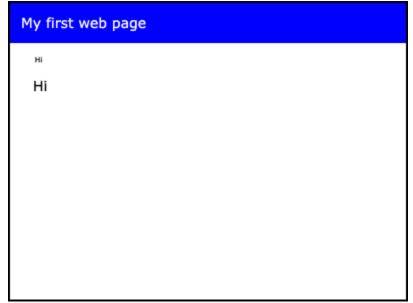
Only the <BODY> section will be changing this time, but the other tags must still be on your document.

First we'll get rid of the

 , and surround the first word Hi with a headline size 6 tag set.

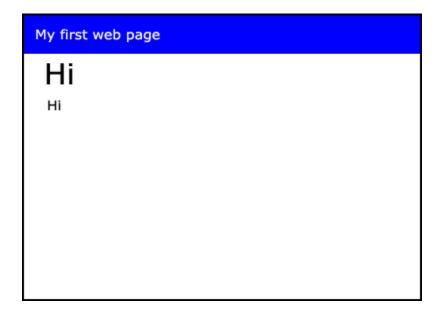
```
1. <HTML>
     <HEAD>
     <TITLE> My first web page </TITLE>
     <BODY>
     <H6>Hi
     </BODY>
     </HTML>
```

You should see a really small first line now, as h6 is the smallest headline, and this tag surrounds the first word Hi.



Now, let's try a headline size 2, by replacing the h6 tags with H2 tags. Recall from above, we don't need a line break after a headline

```
2. <HTML>
     <HEAD>
     <TITLE> My first web page </TITLE>
     <BODY>
     <H2>hi</BODY>
     </BODY>
     </HTML>
```



This is the second largest... I avoided using H1 tags, as they look a little too much like Hi, but you can try an H1 set if you like!

In the steps below, DO NOT ADD ADDITIONAL BODY TAGS! Simply edit the existing body tag to reflect the changes. From this step on, the items are being inserted **between** the "<body" and the ">" in <body>... again, ALL of these changes made are BETWEEN the < and the >. Also and use the number "0", not the letter "o" Changes to be made are in **bold**. Don't forget to save after each change, and refresh/reload your browser.

•NOTE: Do NOT use curly quotation marks, such as "; only use straight quotation marks, such as ".



```
3. <HTML>
     <HEAD>
     <TITLE> My first web page </TITLE>
     <BODY BGCOLOR="green">
     <H2>hi</H2>
     Hi
      </BODY>
     </HTML>
```

Again, this modifies the background color to be green. The modifier is called an attribute, and attributes are followed by ="value", in this case, bqcolor="green"

```
4. <HTML>
     <HEAD>
     <TITLE> My first web page </TITLE>
     <BODY BGCOLOR="#00FF00">
     <H2>hi</H2>
     Hi
      </BODY>
     </HTML>
```

Think of a room with 6 lights, 2 red, 2 green, and 2 blue. If 0 is off, and F is fully on, then #00ff00 means no red light, lots of green light, and no blue light... making the background green. Try this now.

Did you guess that if no lights are on, that the room would be black? If the background is black, let's make the text white. Again this is all between the <body and the >, even though I am adding another instruction on the next line down.



What else goes in web page?

Oh yes... now, let's add a picture.

Open <u>Google</u> and select to search for Images. Type in something, such as *money* or *Lincoln*, and search. You will be presented a list of images; right click one of those images, and choose <code>Save Picture As...</code>

Save the picture in the same folder as the web page you are working on, and give it a short, memorable name.

(I'll call mine 'prez.jpg'). Again, save the picture in the same folder.



NOTE, this is 'fair use' of a copyrighted image, since only you are viewing it. You may NOT use this image on web pages that you post to the Internet.

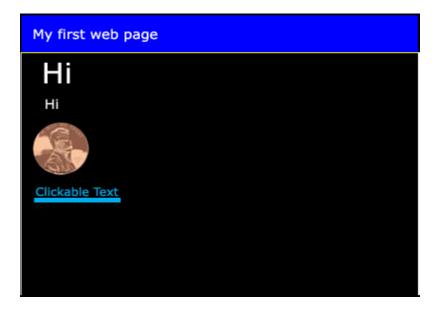
Now, switch back to your text editor and insert the following line.

```
<HTML>
<HEAD>
<TITLE> My first web page </TITLE>
<BODY TEXT="#FFFFFF"
BGCOLOR="#000000">
<H2>hi</H2>
Hi
<img src="prez.jpg">
</BODY>
</HTML>
```

Then, switch back to the browser, and refresh.

Finally, we'll create a link, using the anchor tag. An anchor tag allows you to not only move to another site, but to later return to sight you came from by using the back button, hence the anchor name. Just as the **image** tag required the **source** attribute to point to the location of the image, the **a** tag requires an **href** attribute to point to the hypertext reference of the site you wish to link to. And just as the **H2** tag set needs to surround the text to render as a headline, the **a** tags need to surround the text that will become the clickable link. You could replace the blude **URL** below with a favorite web site, such as http://www.google.com. (You must include the http://)

```
<HTML>
<HEAD>
<TITLE>My First Web Page</TITLE>
</HEAD>
<BODY TEXT="#FFFFFF"
BGCOLOR="#000000">
<H2>hi</H2>
Hi
<img src="prez.jpg"><br>
<a href="http://www.templejc.edu"> Clickable Text </a>
</BODY>
</HTML>
```



₩ Linux Lab 9

Linux Compression Linux network usage

After completing the web page, close your browser and editor. Locate the two files in the filing system, and select both file.

(Hold down the control key when selecting items to add to the selection.) Right click the selection and choose the Compress option.

The default file type is .tar.gz, but change it to .zip.

Note the shape of the 'packaged' folder, which could be submitted.

Continue exploring the Linux systems.

- Older systems could mount and browse a floppy, then unmount the floppy (mount unmount equivalent)
- Locate the System Monitor, a Windows Task Manager (ps equivalent)
- Under the System setting, note the Windows Control Panel style items of Preferences and Administration
- On the Filing system menu, look over the Network item, the My Computer type items, Search, etc.
- Open your users HOME folder (cd \$HOME equivalent) and view any contents in the folder (1s equivalent)
- Right click to create a directory there, using your name (mkdir equivalent)
- Experiment with OpenOffice or Libre Office.

Submit files and quizzes as directed

See page 57 for details if taking a Collins class. Zip and save as yourname-lab9.zip

Check Class website or YouTube for a short video similar to Lab9



Preview of Lab 10

Lab 10 is a short term paper (1000 word+) in which you will compare DOS to Windows to Linux.

This will be done by listing the strengths and weaknesses of DOS, the strengths and weaknesses of Windows, and the strengths and weaknesses of Linux.

You will the recap key points, and then choose an OS for a certain type of user... using the recap to bolster your conclusion.

This is not a research paper... you do not go online or go to the library to look things up... you review your notes to write the paper.

You will have a cover page a 1000 word + paper, double spaced, 1" margins, 12 point font

The paper should start with an introduction and overview,

followed by at least 6 good paragraphs, where you list the strengths of DOS, the weaknesses of DOS, the strengths of Windows, the weaknesses of Windows, the strengths of Linux, and the weaknesses of Linux.

To make grading easier you will clearly label each section, such as **Strengths of DOS**

Do NOT include items that affect all operating systems... such as malware, virus, etc. as ALL operating systems can get a virus. All of them.

End with your recap and conclusion.

Again, I am looking for a circumstance, your choice of OS and why, and bolster your choice by recapping key points you made earlier.

An example might be,

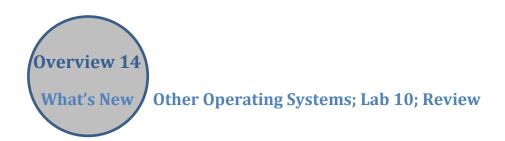
as a user of Microsoft Office, I would choose Windows because...

or

as I have an old computer that can't run Windows I would choose Linux because...

Many faculty members will have you submit this paper to plagiarism detection, to verify that you wrote the paper, and didn't simply copy other people's work.

End Chapter 13



Other Operating Systems

Apple Macintosh Windows replacements Chrome based Android based

Lab 10 Review

DOS strengths and weaknesses Windows strengths and weaknesses Linux DOS strengths and weaknesses

Linux Review

Other Operating Systems

Apple Macintosh Windows replacements Chrome based Android based

Apple Macintosh

Below is a sneak peak at a Mac, a UNIX variant that runs the Aqua graphical user interface.



The biggest things to remember about a Mac are:

- 1) there is one title bar... it stays at the top and changes based on what is selected as the active window,
- 2) the keyboard is different and there are different keyboard shortcuts
- 3) the mouse has one button, you use Control+Click instead of right-click
- 4) you can close a windows and leave the program running... so you must Quit programs when finished with them.

While more similar to Ubuntu than Windows, I'll bet you could drive it. But just like driving someone else's car where you may have to look around to find the lights, you might have to click a few menus to find the right item to do the job. Remember, Operating Systems all do the same thing, so they by nature are very similar in how you use them.

Therefore don't choose an OS because you like the OS, choose the OS that runs the software you want to run.

iPads and iPhones

The iOS operating system is based on the same UNIX kernel as the desktop operating systems, but has been geared for smaller screens and more touch controls. There is only one button, the home button, and it takes you to your primary screen of your desktop.

The desktop of an iPad or iPhone may be scrollable, meaning you can swipe left or right to access more items, or Press and hold to select.

To search, swipe down with one finger.

To switch to other programs, swipe up with four fingers... to close one of the tasks you see running, use one finger to swipe the mini window up and off.

You can only get small programs for these devices, called apps, from the Apple store.

A few silly tricks: if you prefer to thumb type, place one finger on each side of the keyboard and pull the keyboard apart. Return it by dragging to two parts back together.

For those of you who may remember the Etch-a-Sketch, you erased by shaking. If you shake your iOS device, it will ask if you wish to undo typing.

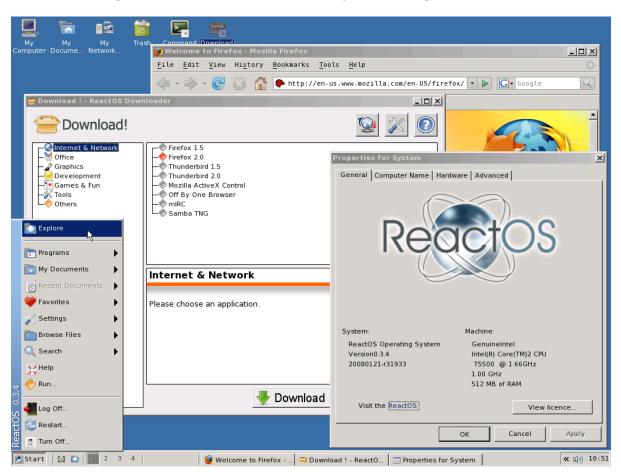
You can press and hold an icon to delete it, or drag one icon on top of another to create folders. Drag all the items out of the folder and the folder disappears. You can also pinch screens to resize.



Windows Replacements

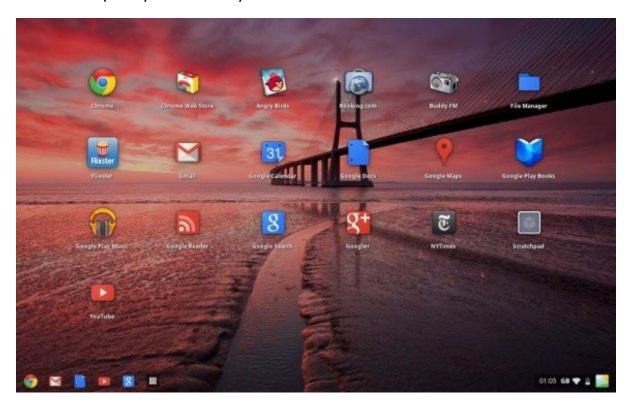
Many people still have computers running Windows XP, and haven't upgraded because their older systems aren't suited to newer Windows, and they feel uncomfortable trying Linux.

For these folk, a group is working on an open source operating system that will behave in a similar fashion to XP, and run Windows software... much as Linux behaves like UNIX but is a completely different OS. At this writing, the REACT OS is still in Alpha testing.



Chrome

Chrome, for all practical purposes is an scaled Ubuntu Linux operating system whose primary job is to run a web browser... and almost all activities in the system run in the browser. (Recall, Linux is open source, and anyone can reconfigure and redistribute the operating system.) So, your word processing uses Google Docs online, etc. While easy to interact with, and there is little maintenance or configuration to worry about, Chrome is pretty useless if you are not online.



Android

Android is also based on the Ubuntu distro of Linux, and is primarily for smart phones and tablets. About the biggest difference being the touch screen interface, which in many ways is similar to iOS; though it should be noted that Android beat iOS to multitasking.

A few key difference for iOS:

- 1) The hand gestures while similar, do differ... such as pressing the Recent Apps button at the bottom of the screen to switch apps, instead of the hand swipe.
- 2) Each manufacturer can further modify the OS
- 3) Android can not only get apps from Google Play, but can run apps from other sources... which may or may not be a good thing.

****** Lab 10 Review

DOS strengths and weaknesses Windows strengths and weaknesses Linux DOS strengths and weaknesses

Lab 10 is a short term paper (1000 word+) in which you will compare DOS to Windows to Linux.

This will be done by listing the strengths and weaknesses of DOS, the strengths and weaknesses of Windows, and the strengths and weaknesses of Linux.

You will the recap key points, and then choose an OS for a certain type of user... using the recap to bolster your conclusion.

This is not a research paper... you do not go online or go to the library to look things up... you review your notes to write the paper.

You will have a cover page a 1000 word + paper, double spaced, 1" margins, 12 point font

The paper should start with an introduction and overview,

followed by at least 6 good paragraphs, where you list the strengths of DOS, the weaknesses of DOS, the strengths of Windows, the weaknesses of Windows, the strengths of Linux, and the weaknesses of Linux.

To make grading easier you will clearly label each section, such as **Strengths of DOS**

Do NOT include items that affect all operating systems... such as malware, virus, etc. as ALL operating systems can get a virus. All of them.

End with your recap and conclusion.

Again, I am looking for a circumstance, your choice of OS and why, and bolster your choice by recapping key points you made earlier.

An example might be,

as a user of Microsoft Office, I would choose Windows because...

or

as I have an old computer that can't run Windows I would choose Linux because...

Many faculty members will have you submit this paper to plagiarism detection, to verify that you wrote the paper, and didn't simply copy other people's work.

Purpose: To allow the student to evaluate the operating systems covered in class, based on what they learned. This isn't a research paper, you use your notes, not the Internet.

Due the last class period before finals.

The paper must be typed using these guidelines: (Plagiarism will result in a '0' for this lab)

- Title/Cover Sheet
- A 1000+ word report created using Microsoft Word. Will be about 3 pages, double spaced. Must be double spaced using a 12-point Times font and no more than 1 inch margins.
- Must include an introduction and overview.
- Must include a bold, clearly labeled section on the strengths of DOS
- Must include a bold, clearly labeled section on the weaknesses of DOS
- Must include a bold, clearly labeled section on the strengths of Windows
- Must include a bold, clearly labeled section on the weaknesses of Windows
- Must include a bold, clearly labeled section on the strengths of Linux
- Must include a bold, clearly labeled section on the weaknesses of Linux
- The conclusion should include a recap of the high points of the paper, to bolster an expressed opinion of which OS is best for a situation, based on what you learned in class.

Content	points
Intro	3
Overview	5
DOS Weakness: BOLD Label	3
DOS Weakness Content	5
DOS Strength: BOLD Label	3
DOS Strength Content	5
Windows Weakness: BOLD Label	3
Windows Weakness Content	5
Windows Strength: BOLD Label	3
Windows Strength Content	5
Linux Weakness: BOLD Label	3
Linux Weakness Content	5
Linux Strength: BOLD Label	3
Linux Strength Content	5
Recap	5
Conclusion	10
Delivery	points
Coversheet	3
1000+ words, 12 pt font	20
Double spaced	3
1" Margins	3
Total	100

Do not include malware...
ALL Operating Systems
can get a virus...

Format Requirements

The following is a sample to use as a format for your term paper. Please follow these guidelines carefully. Failure to do so will result in a lower total score. See also <u>Tips on writing a term paper</u> on the class web site.

Title Page

Jane Doe (student's Name)

R. Craig Collins (Instructor's Name)

ITSC 1305 (Course)

[Due Date]

OS Comparison (title)

[Body of report...Double-spaced,12 pt font, 1" margins, at least 1000 words (about three full pages)]

Intro and overview xxxxxxx	Jane Doe p. 2	Jane Doe p.3
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
XXX	Strengths of Windows xxxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
In this paper, I will discuss	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	xxx
topic 1, topic 2, and topic 3. xx	xxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	XXX
	XXX	Weaknesses of Linux xxx
Strengths of DOS	Weaknesses of Windows x	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxx		
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXX
700000000000000000000000000000000000000	XXX	Danam and associate
XXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Recap and conclusion
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		XXXXXXXX
XXX		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Strengths of Linux xxxxxx	XXX
XXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	xxxx discussed topic1, topic 2,
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	xxx	and topic 6. Based on
XXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Weaknesses of DOS	xxx	xxx
XXXXXXXX	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	xxx	xxx
XXX	xxxxxxxxxxxxxxxxxxxxxxxxxxxxx	xxx conclude that
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	xxx	xxxxxxxxxxxx
xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
700000000000000000000000000000000000000		

Submit as directed

Linux Review

Before continuing, verify you are caught up with the class Feel free to copy this to a word document and send it to me... I won't give you the right answers necessarily, but I'll let you know where you still need a little work.

Hint: highlight the questions on the web page version of this document.

Now that you are mastering the theory, it is time to ramp up the tests a bit.. This will be a fairly challenging test.

Just as there are no multiple choice job interviews, the third test is designed to see not what you recognize, but what you have learned. The test and review below, have more picky fill in the blank and short answer /short essay questions, where you have to write out a short phrase or a short paragraph to answer the question. You'll have 40-45 minutes for the test, so you will need fairly rapid recall to finish in the allotted time. Go over your completed review frequently, though, and you'll do just fine!

Don't forget, there are study suggestions on the class web site.

PS, The third part of the final will include the same information as Test 3.

Linux (can you supply the Linux version of the following DOS commands?)

```
DOS
help (end session w/ 'Alt' F X)
(Keyword search of help commands used in Linux?)
cls
$p$q
dir
dir /w
tree
cd
md or mkdir
copy con filename
edit filename
type
move
rename
del
deltree
exit to logout of command prompt session
```

Linux Concepts

```
attrib ±x file chmod ugo±rwx folder

ugo=user (owner) group others (such as web visitors)
chmod 755 foldername Shortcut to set standard web settings
ugo
444 read
2-- write
111 execute

passwd (must change at least 3 items)
Required aspects to UNIX password:
2 characters; 1 number; min 6; caps are different
```

Linux as a database commands

A command used to merge files to the screen, or simply view a file on the screen

A command used to combine items

Command or character used to search for a file

Command or character used to search within a file

Command or character used to run multiple commands

sample: Password1

Command or character used to take output of one command as the input of another

Command or character used to redirect output

Command or character used to compare files

Command or character used to remove differences in files

Command or character used to change lower case to upper case

Be prepared to discuss

Shells (types, such as bash, C, or Korn; allows interaction between user/kernel) The types of users that permissions apply to (user/owner, groups, and others) How UNIX treats everything (as a file, - is regular file, d is directory, c is character or I/O device, or b for block, as in drives)

Be prepared to discuss, in the GUI

GNOME is based on	licensing
Start Menu equivalent / Task Bar equ	uivalent
Do right-click, windows controls, 'Alt'	'Tab' work the same? Help? Using a floppy?
Mozilla browser	

End chapter 14



Lab 10

DOS strengths and weaknesses Windows strengths and weaknesses Linux DOS strengths and weaknesses See the last chapter for details on Lab 10

Tips:

DOS can run on old computers, but can't run modern software Windows has the most software titles available Linux can run on computers that might not run Windows, and is free

Again, no one should choose an operating system because they like it, you choose the system that can run on your computer, and run the software you want to use.

Submit all work as specified

End chapter 15



Notes: a great way to prepare for a final exam is to review each of the labs

- Lab 1 getting help in DOS, basic navigation, and file and folder creation
- Lab 2 external commands, wild cards, attributes, file management
- Lab 3 Sequential instruction execution and batch files
- Lab 4 getting help in Windows, basic navigation, file and folder creation, copying
- Lab 5 customization of the desktop, disk management, control panel
- Lab 6 sharing on the small scale: OLE, plus sharing on the large scale: networks
- Lab 7 getting help in Linux command line, basic navigation, and file and folder creation, permissions, file management
- Lab 8, the Linux Graphical Interface and installation
- Lab 9 Instruction execution in web pages, using the Linux system
- Lab 10 Comparing the strengths and weaknesses of DOS, Windows, and Linux

Begin appendix A

DOS reference

DOS COMMAND REFERENCE

ATTRIB

CD

CHKDSK

CLS

COPY

DATE

DEFRAG

DEL

*DELTREE

DISKCOPY

DIR

ECHO

FORMAT

LABEL

MD

MOVE

PATH

PAUSE

PROMPT

RD

REM

REN or RENAME

TIME

TREE

TYPE

*UNDELETE

VER

VOL

XCOPY

ATTRIB

Command Name	ATTRIB
Purpose	used to display or change attributes
Syntax	ATTRIB [±R or A or S or H] [path\][filename]
Common parameters	n/a
Example	ATTRIB +R file1.txt

CD

Command Name	CD
Purpose	To change directories
Syntax	CD [drive:\][directory-name\] directory name
Common parameters	n/a
Example	CD TEST
·	CD to change out of the current directory
	CD \ to change to the root directory

CHKDSK, used to display a status report of a disk, or Fix errors in the File Allocation table

Syntax CHKDSK [drive:] [/f]

Replaced by SCANDISK

CLS

Command Name	CLS
Purpose	Clears the screen
Syntax	CLS
Common parameters	n/a
Example	CLS

COPY

Command Name	COPY
Purpose	Duplicates files
Syntax	COPY [path\]source [path]destination
Common parameters	n/a
Example	COPY file1.txt file2.txt

DATE, used to display or change the system calendar Syntax DATE [mm-dd-yy]

DEL

Command Name	DEL
Purpose	To delete a text file
Syntax	DEL [drive:\][directory-name\] file-name
Common parameters	n/a
Example	DEL TEST.TXT

DEFRAG used to defragment files into contiguous (adjacent) sectors Syntax DEFRAG [drive:]

*DELTREE, not available in Windows, used to remove non-empty directories DANGEROUS, use with caution Syntax DELTREE [path]

DISKCOPY

Command Name	DISKCOPY
Purpose	Duplicates floppy disks
Syntax	DISKCOPY source destination
Common parameters	n/a
Example	DISKCOPY A: A:

DIR

Command Name	DIR
Purpose	Generates a directory listing
Syntax	DIR [drive:\][directory-name\]
Common parameters	/w (wide directory listing)
	/p (directory listing pauses after each full screen)
Example	DIR or DIR /w or DIR /p

ECHO

Command Name	ECHO
Purpose	To control what displays on the monitor
Syntax	ECHO [off] [message] [on]
Common parameters	n/a
Example	@ECHO OFF immediately suppresses display, not even @ECHO OFF will be seen
	ECHO OFF will suppress the batch file display immediately after the command ECHO off is run.
	ECHO HELLO will display HELLO, even if the ECHO is off
	ECHO ON reverses ECHO OFF

FORMAT

Command Name	FORMAT
Purpose	To prepare a disk for use
Syntax	FORMAT drive:
Common parameters	/q (quick format on a previously formatted disk)
Example	FORMAT A: or FORMAT A: /q
	Note: You have the option to label the disk

LABEL, used to change a disk's volume label Syntax LABEL [drive:] [new volume label]

MD

Command Name	MD or MKDIR
Purpose	Makes a directory
Syntax	MD [drive:\][directory-name] directory-name
Common parameters	n/a
Example	MD TEST

MOVE

Command Name	MOVE
Purpose	Move a file to a different directory
Syntax	MOVE [path\]directory-name [path\]directory-name
Common parameters	n/a
Example	MOVE dira\file1.txt dirb\file1.txt

PATH

Command Name	PATH
Purpose	Directs the OS to external commands.
Syntax	PATH [external file storage location]
Common parameters	n/a
Example	PATH C:\DOS

PAUSE, temporarily halts a batch file execution, and displays the message Press any key to continue Once a key is pressed, execution resumes

PROMPT

Command Name	PROMPT
Purpose	Displays info in the system prompt
Syntax	PROMPT [option 1] [option n]
Common options	\$P Current Drive AND path
	\$G > (greater than sign)
Example	PROMPT \$p\$g
-	includes the directory Path and a >

RD

Command Name	RD or RMDIR
Purpose	To remove an empty directory
Syntax	RD [drive:\][directory-name\] directory name
Common parameters	n/a
Example	RD TEST

REM

Command Name	REM
Purpose	To prevent a line in a batch file from executing
Syntax	REM [DOS command]
Common parameters	n/a
Example	REM CLS tells the batch file to skip CLS Or REM \$T is to add time to the prompt Can be a note to you to explain PROMPT \$T

REN or RENAME

Command Name	REN or RENAME
Purpose	Renames files
Syntax	REN [path\]source destination
Common parameters	n/a
Example	REN file1.txt file2.txt

TIME, used to display or change the system clock Syntax TIME [hh:[mm:[ss]]]

SCANDISK, used to check and repair a drive Syntax SCANDISK [drive:] [autofix]

TREE

Command Name	TREE
Purpose	To display a tree structure
Syntax	TREE [drive:\][directory-name\]
Common parameters	/f (will display directories and directory contents)
Example	Tree /F or tree a:\ /f

TYPE

Command Name	TYPE
Purpose	To display the contents of a text file
Syntax	TYPE [drive:\][directory-name\] file-name
Common parameters	n/a
Example	TYPE TEST.TXT

^{*} UNDELETE, not available in Windows (replaced by the recycle bin)
May be able to recover recently deleted files

VER, used to display the DOS or Windows version Syntax VER

VOL, used to display the volume label (labels are normally set with FORMAT, and changed with LABEL) Syntax VOL [drive:]

XCOPY

Command Name	XCOPY
Purpose	Duplicates files and directories
Syntax	XCOPY [path\]source [path]destination
Common parameters	/e
Example	XCOPY dir1*.* dir2*.* /e

Notes

Begin appendix B

New in Windows

Touch Screen

Windows 8 was the first Microsoft OS to really embrace the touch screen interface, though Vista and supported tablets... but those earlier operating systems primarily relied on a stylus.

A great way to learn the touch gestures in Windows 8 was to swipe in from the edges...

running apps would display if you swipe from the top left, charms would display if you swipe from the bottom right, the start menu would appear if you swipe from the bottom right, etc. You could also swipe up from the bottom on the Start screen to see more apps. Press and hold an app to resize or move.

You can lock an open app into the right or left third of the display by tapping the app and dragging it to the left or right edge of your screen until a thin vertical bar appears, then open another app in the remaining space. Resize by dragging the vertical line. Before the X button was added to close an app, you could close apps by dragging your finger down from the top of the screen until the app minimizes and begins to disappear into the bottom edge. And as in other touch bases systems, you can Pinch to zoom in or out.

Check Class website or YouTube for a short video on using Win 8.1



Voice and facial recognition

Starting in Windows 10, the Cortana voice recognition system was added, allowing you to say "Hey Cortana" and then add something like "What's the Weather?" or search for something on the Internet, or add reminders to your calendar.

If you have a web cam, it can start to recognize you, so perhaps in the future passwords may go away.

More will be added to the online version of this appendix as time goes on.

End appendix B

Begin Appendix C Misc. Odds and Ends

Additional help on completing the Hands on portion of ITSC 1305 Lab 4...

Highlights only... sequence may vary from Lab.

Open File Explorer the easiest way is to press the Start key on your Keyboard



or click the Start button on your screen



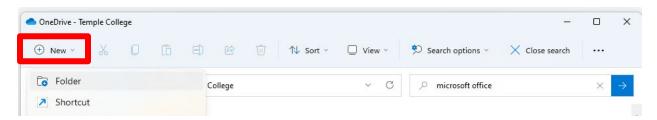
and then just start typing File Explorer

or click the File Explorer icon on the taskbar

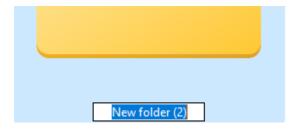


2. Make a folder

Right click a blank spot in the place your wish to make the folder, or click the New button, and select Folder

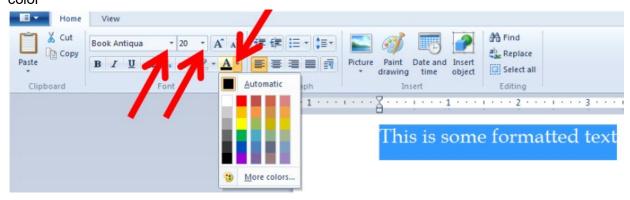


While the name of the folder is still highlighted blue, change the name as specified.

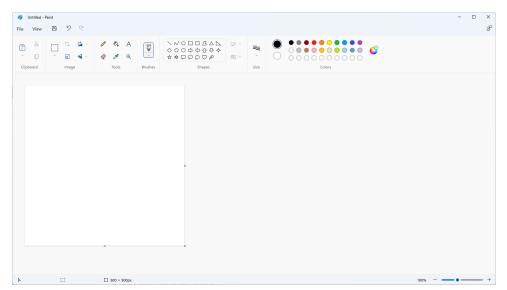


3. Open Wordpad

Select Start, and type WordPad. In WordPad, type some text, then select the text; now format the text to change the font face, the font size, and the font color



4. Start Paint (as you did with WordPad)

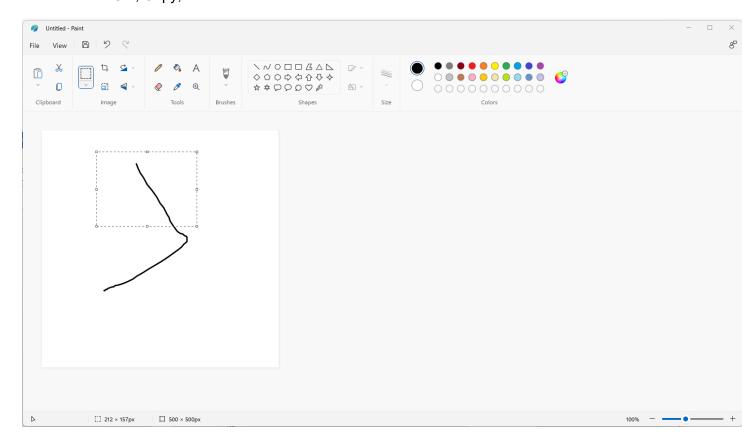


You can adjust how big the image is using File>Image Properties, and you can zoom in and out using the slider at the lower right hand corner.

Create something... even a scribble.

Use the selection tool to draw a box around part of the image.

Note how the Cut, Copy, and Paste tools become available now.



5. Copy your selection.

There are three ways to copy:

Right click and choose Copy

Keyboard shortcut [Ctrl]+[C]

or the menu item

6. Switch back to Wordpad...

minimize Paint, or

if you can see part of the Wordpad image, click it, or

if you see the icon on the Taskbar, click it, or

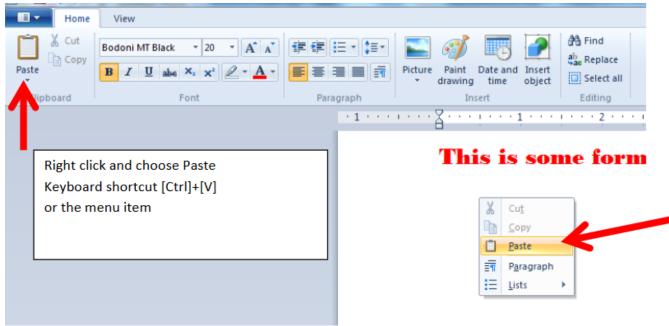
Press the [Alt] key and hold it down, then tap the [tab] key until Wordpad appears, and let go.

The selected part of the image is now in RAM, on the clipboard.

In Wordpad, make sure your text is not selected and paste... there are three ways to paste...

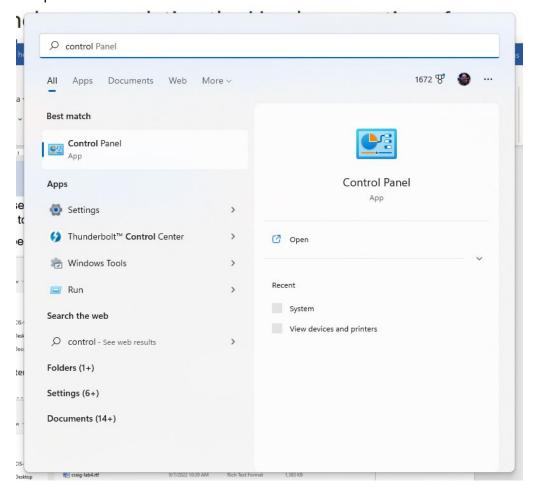
Right click and chose Paste,

Keyboard shortcut [Ctrl]+[V], or menu item.



The selected part of the image is now pasted into Wordpad. (You may close Paint; no need to save the image.)

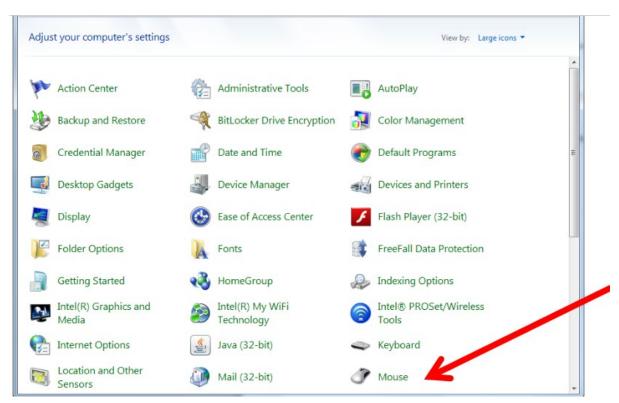
7. Open the Control Panel. Start\Control Panel



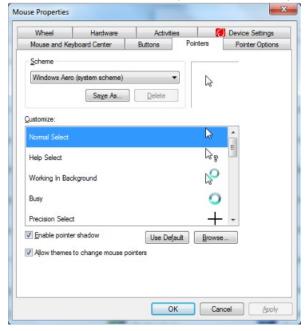
I prefer to change from Category view to Large Icons. Click the arrow next to View by to see the options.



After exploring the tools available, click the Mouse control panel icon, and look through the options



Click on the Pointers tab. (Your options may differ.)



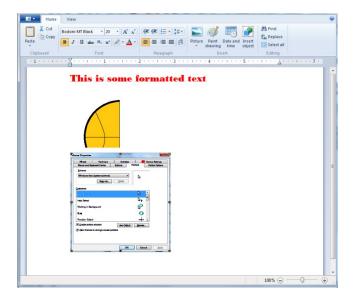
Press [Alt]+[Prt Scrn] to copy the active window to the clipboard. Switch to Wordpad, as before

8. In Wordpad, make sure nothing is selected, and paste the contents of the clipboard, as before.

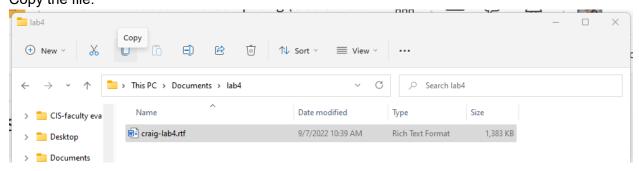
You should now have formatted text, the copied Paint object, and the screenshot showing you were on the Mouse

control panel. Your items may be in a different sequence.

9. Save As the file as directed in the proper folder.

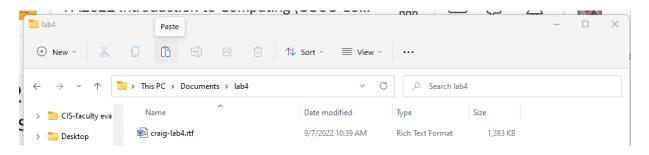


10. Open File Explorer, and browse to your folder, and open it. Copy the file.



Select the file, and Menu item copy or [Ctr]+[C] or Right Click and Copy

11. Paste the file in the same folder

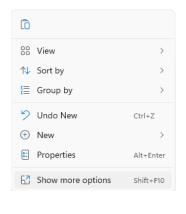


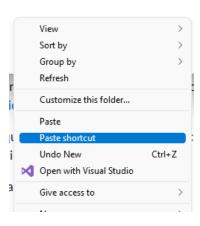
Menu item paste or [Ctr]+[V] or Right Click and Paste Rename the newly copied file.

12. Make a shortcut of the file, in the same folder.

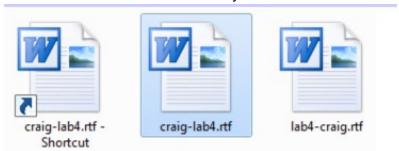
To make a shortcut in a different place, you can drag a file with the right mouse button to another folder, and chose Move, Copy, or create shortcut

But, to make a shortcut in the same folder, copy as above, Right click and select Show more options, in the popup window, Select Paste Shortcut



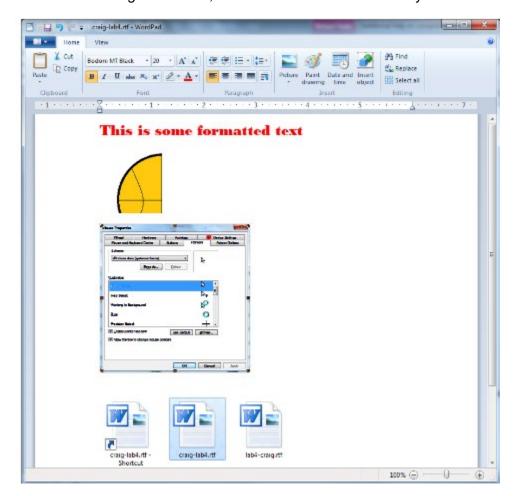


You should now have three items in your lab4 folder...



- 13. Resize the window to be smaller, get a screenshot using [Alt]+[Prt Scrn], as before.
- 14. Switch to Wordpad as before.

Make sure nothing is selected, and Paste the screenshot into your file



- 15. Save the changes in your Wordpad file. Close all the programs, then zip your lab4 folder, call it yourname-lab4.zip.
- 16. Submit the file to the Lab4 dropbox

Additional help on completing the Hands on portion of ITSC 1305 Lab 5...

Highlights only... sequence may vary from Lab. Review Lab 4 for additional help.

1. Open File Explorer the easiest way is to press the Start key on your Keyboard



or click the Start button on your screen



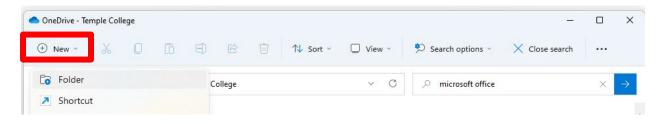
and then just start typing File Explorer

or click the File Explorer icon on the taskbar



2. Make a folder

Right click a blank spot in the place your wish to make the folder, or click the New button, and select Folder

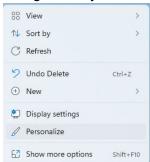


While the name of the folder is still highlighted blue, change the name as specified.

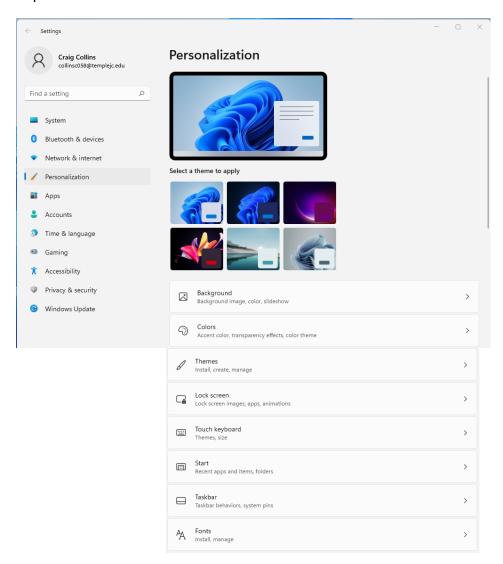
3. Open WordPad

Select Start, and type WordPad. In WordPad, use File>Save as to appropriately create your file in your new lab folder. Minimize WordPad.

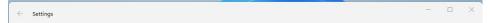
4. Right click your desktop, and select Personalize



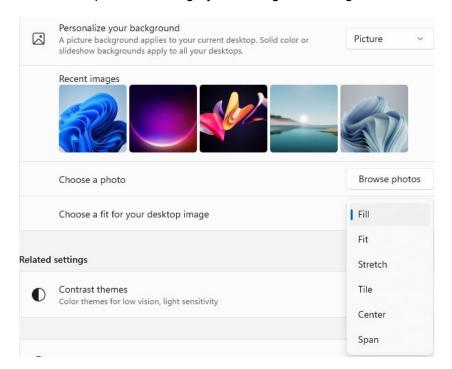
Explore the items



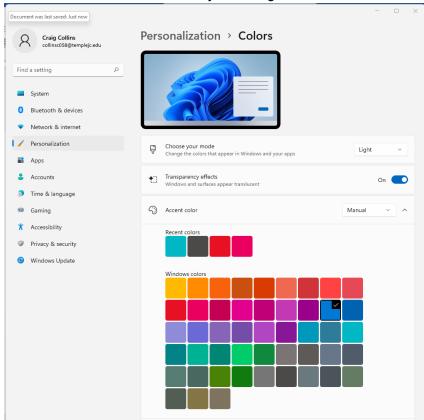
After opening a menu, you return to the main menu by clicking ←, top left, by "Settings"



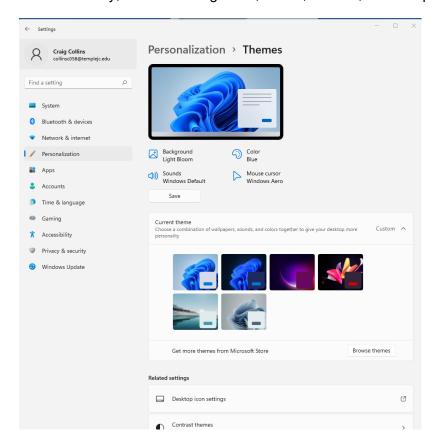
There are options to change your Background image, and how to fit the image



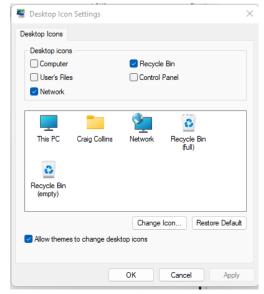
Not all versions of Windows let you change accent colors



I find Themes to be the most useful selection, as a theme lets you change many aspects simultaneously, such as background, colors, sounds, mouse options, etc.



Select Desktop icon settings



Select Network, click okay, and close the Properties window.

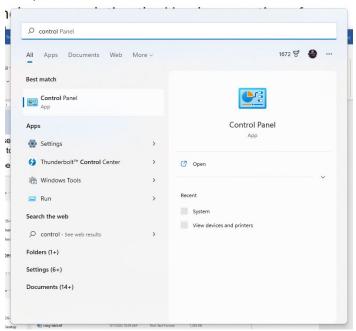
Get a screenshot of the now newly added Network icon that is now on your desktop.

You could use [Alt]+[Prt Scrn] to copy the active window to the clipboard, but this would get the whole screen. You might want to try the Snipping tool, instead.

Switch to Wordpad, and paste your image with the Network icon.

Save your changes.

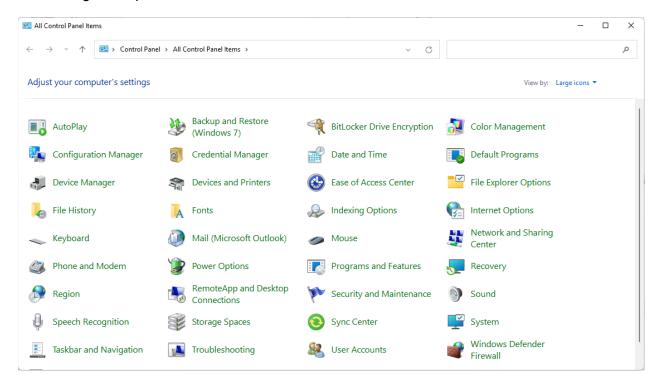
5. Open the Control Panel. Start\Control Panel



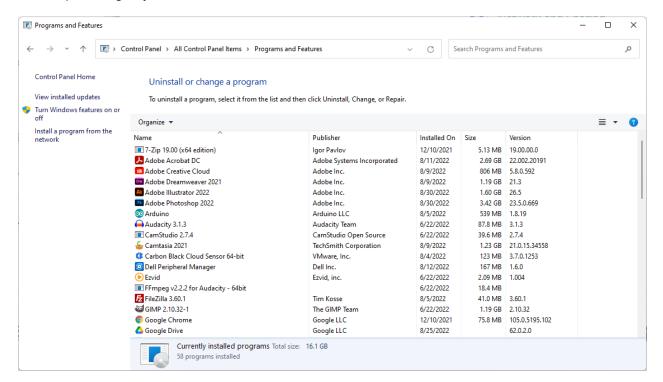
I prefer to change from Category view to Large Icons. Click the arrow next to View by to see the options.



After exploring the tools available, click the Programs and Features control panel icon, and look through the options

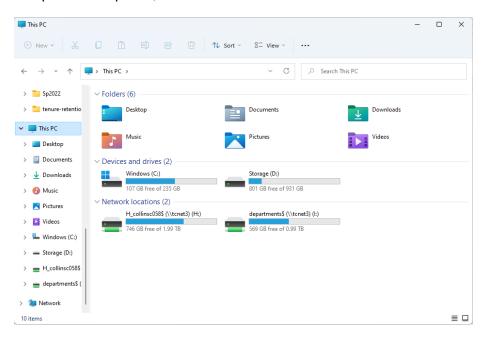


In previous versions of Windows, this was called Add Remove Software, but most Windows software now comes with an installer... so the tool is primarily to remove programs and clean up the registry.

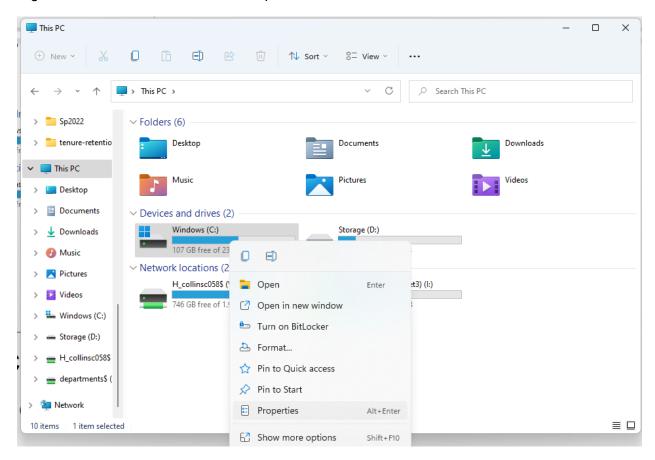


Get a screenshot and paste into your Wordpad file.

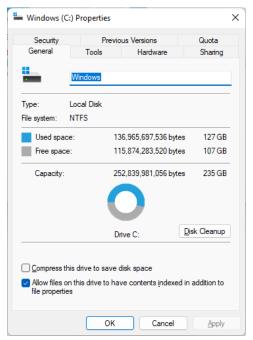
6. Open File Explorer, browse down and select This PC



Right click the C: drive, and select Properties.



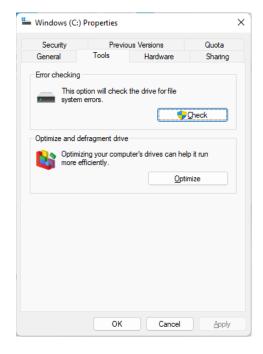
Notice the label of the drive (recall, the format command includes adding a label to a drive.)



Get a screenshot, and paste into your WordPad file.

7. Select the Tools tab.

This is where some of the old DOS utilities live; the Backup is now in the Control panel.



Get a screenshot, and paste into your WordPad file.

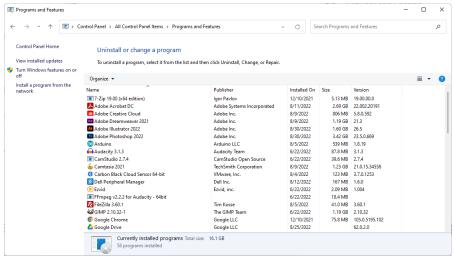
You should now have the four following items in your file:

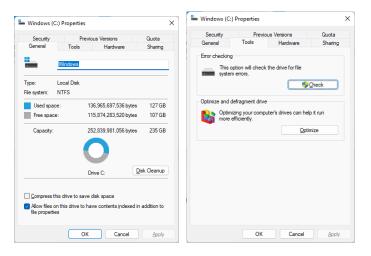
A screenshot of your Network icon

The Programs and Features screenshot where you could remove software The General tab of the Properties of your hard drive and the Tools tab of the Properties of your hard drive...

8. Save your changes, close WordPad. Browse to the folder, zip, and submit.







Notes:



WORKBOOK

Why learn Command Line?

The command line is often the fastest way to accomplish a job, and the only way to apply a command to multiple objects, such as renaming hundreds of files at once. In some environments, the command line is the only method of taking control of the task at hand, such as troubleshooting, or advanced networking. The command line can make you a better Windows user, and these skills apply to other operating systems, as well.

DOS+Windows Command Prompt Quick Reference

Get help

C:\> HELP

close help

[Alt]+F, then S

Get help on a known command

Command /?

Prepare a floppydisk (NOTE: THIS WILL ERASE A USED DISK)

C:\> FORMAT A:

Change to focus to floppy disk

C:\> A:

Search the disk for directories and files

A:\> DIR

or dir /p *or* dir /w

Make a directory

mkdir

oi md

change to a directory

cd

back up the directory tree

C:DOS\> CD ..

repeat a command

F3]

display the directory tree

A:\> TREE

display the directory tree and files

A:\> TREE /f

create a text file

copy con filename (8.3 file convention)

Enter text

{Ctrl]+[z] (will display as ^Z)