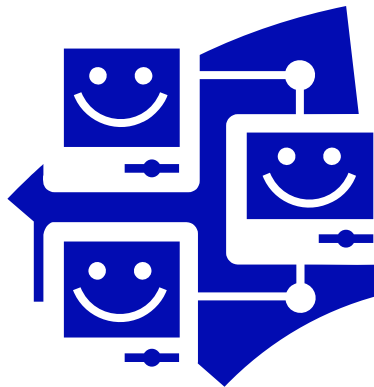# Operating Systems & Networking

Nedlog, Inc. Project

Amy Hissom

Chapter #1 Homework

NAME: Amy Hissom

Activities

1. Why do we need an operating system?

It is the most important software of a computer that acts like a middleman for the user and the hardware. It interprets what we want the computer or the application programs to do and gives the appropriate instructions to the hardware to carry out our wishes.

2. What are the three main components of most operating systems?

The Kernel, the file system, and the shell.

3. What does GUI mean?

Graphical User Interface

4. What is a desktop?

It is the entire window that fills your computer screen and its contents.

5. What is a Quick Launch Toolbar?
A toolbar located in the taskbar, just right of the start button, that has shortcuts to programs that you use most often. It is also customizable.

Hands-on

1. Using the Internet, find five different operating systems not named in this chapter. Give a brief description of each.

LINUX - Developed by Linus Torvalds and further elaborated by a number of developers throughout the world Linux (*lee'nuhks/ or /li'nuks/,_not_/li:'nuhks)* is a freely available multitasking and multi-user operating system.
MAC OS 9.0 - Mac OS 9 is the latest public release of the Apple operating system, which includes new and unique features not found in any other operating system. Below are some of the new features found with this new operating system.
Tru64 - Digital UNIX - DUNIX - OSF/1 - Tru64 (not True64) which was DUNIX short for Digital UNIX and previously called OSF/1 is an Operating System generally used and found on the digital (Alpha) platforms. Tru64 primarily designed for medium to large scale servers and mainframes. However, can also be used in workstations.
VectorLinux - VectorLinux which in short is VL utilizes the XFree86 V3.3.6, the 2.2.17 kernel and requires only 170MB of disk space for full install. The installation works on both laptops and desktops and is fast, can generally be done in 15 minutes.
Windows Vista – Longhorn - Codename for the next edition of Microsoft Windows, expected to be released sometime in 2006. On July 23, 2005 Microsoft named the operating system "Microsoft Windows Vista".

2. Using www.webopedia.com or another online technical dictionary, explain the difference between a mainframe, a minicomputer, and a super computer.

A <u>mainframe</u> is a powerful multi-user computer capable of supporting many hundreds or thousands of users simultaneously. A <u>minicomputer</u> is a multi-user computer capable of supporting from 10 to hundreds of users simultaneously. A <u>super computer</u> is an extremely fast computer that can perform hundreds of millions of instructions per second.

3. Using www.webopedia.com or another online technical dictionary, explain what an open source operating system is.

Generically, *open source* refers to a <u>program</u> in which the <u>source code</u> is available to the general public for use and/or modification from its original design free of charge, i.e., open. <u>Open source code</u> is typically created as a collaborative effort in which programmers improve upon the <u>code</u> and share the changes within the community. Open source sprouted in the technological community as a response to proprietary software owned by corporations.

4. Using the Internet, find at least two application programs that would be used on a Macintosh computer.

Keynote- Deliver stunning, interactive presentations.
Pages- This stylish word processor has all the tools you need.

5. Using Windows help, define what a shortcut is.

A special type of file in some operating systems that points to another file or device. You can place shortcuts on the desktop to conveniently access files that may be stored deep in the directory structure. Double-clicking the shortcut icon is the same as double-clicking the actual file.

Terms

1. **Binary Math** - Pertaining to a number system that has just two unique digits. For most purposes, we use the decimal number system, which has ten unique digits, 0 through 9. All other numbers are then formed by combining these ten digits. Computers are based on the binary numbering system, which consists of just two unique numbers, 0 and 1. All operations that are possible in the decimal system (addition, subtraction, multiplication, division) are equally possible in the binary system.
2. **Code** - A set of symbols for representing something. For example, most computers use ASCII codes to represent characters. Written computer instructions. The term *code* is somewhat colloquial. For example, a programmer might say: "I wrote a lot of code this morning" or "There's one piece of code that doesn't work." Code can appear in a variety of forms. The code that a programmer writes is called *source code*. After it has been compiled, it is called *object code*. Code that is ready to run is called *executable code* or *machine code*. Colloquial for *to program* (that is, to write *source code*).
3. **DOS** - Acronym for *disk operating system*. The term *DOS* can refer to any operating system, but it is most often used as a shorthand for *MS-DOS* (**M**icro**s**oft **d**isk **o**perating **s**ystem). Originally developed by Microsoft for IBM, MS-DOS was the standard operating system for IBM-compatible personal computers.

4. **File system** - Also referred to as simply a *file system* or *filesystem*. The system that an operating system or program uses to organize and keep track of files. For example, a *hierarchical file system* is one that uses directories to organize files into a tree structure.
5. **GUI** - Pronounced *GOO-ee.* Acronym for *graphical user interface.* Abbreviated *GUI* (pronounced *GOO-ee*). A program interface that takes advantage of the computer's graphics capabilities to make the program easier to use. Well-designed graphical user interfaces can free the user from learning complex command languages. On the other hand, many users find that they work more effectively with a command-driven interface, especially if they already know the command language.
6. **Kernel** - The central module of an operating system. It is the part of the operating system that loads first, and it remains in main memory.
7. **Object Oriented** - A popular buzzword that can mean different things depending on how it is being used. *Object-oriented programming (OOP)* refers to a special type of programming that combines data structures with functions to create re-usable objects (see under *object-oriented programming*). Object-oriented graphics is the same as *vector graphics.* Otherwise, the term *object-oriented* is generally used to describe a system that deals primarily with different types of objects, and where the actions you can take depend on what type of object you are manipulating. For example, an object-oriented draw program might enable you to draw many types of objects, such as circles, rectangles, triangles, etc. Applying the same action to each of these objects, however, would produce different results. If the action is *Make 3D*, for instance, the result would be a sphere, box, and pyramid, respectively.
8. **OS** - The most important program that runs on a computer. Every general-purpose computer must have
    an operating system to run other programs. Operating systems perform basic tasks, such as recognizing
    input from the keyboard, sending output to the display screen, keeping track of files and directories on
    the disk, and controlling peripheral devices such as disk drives and printers.
9. **Shell** – (a) The outermost layer of a program. *Shell* is another term for *user interface.* Operating systems
    and applications sometimes provide an alternative shell to make interaction with the program easier.
10. **Source Code -** Program instructions in their original form. The word *source* differentiates code from
    various other forms that it can have (for example, object code and *executable code*).

Multiple Choice Questions

1. The operating system is an example of a computer **C**.

    a. object
    b. file system
    c. program
    d. desktop
2. Most operating systems are comprised of three main components: the **B**, the file system, and the shell.

    a. desktop
    b. kernel
    c. user interface
    d. code

3. The **B** keeps track of directories and files.

    a. kernel
    b. file system
    c. shell
    d. user interface

4. Most often, you click with the **B** button when you want to select something.

    a. middle
    b. left
    c. right
    d. all of the above

5. Before the days of Windows, users interfaced with the operating system through a **D** interface.

    a. graphical
    b. object oriented
    c. command utility
    d. command line

6. The **C** is often used as part of a path.

    a. comma
    b. forward slash
    c. backslash
    d. semicolon

7. The **B** is often used in a switch.

    a. comma
    b. forward slash
    c. backslash
    d. semicolon

8. The **C** is the entire window that fills your computer screen and its contents.

    a. System Tray
    b. Taskbar
    c. Desktop
    d. Quick Launch Toolbar

9. A quicker way to launch a program is to click on it in the **D**.

    a. System Tray
    b. Taskbar
    c. Desktop

d. Quick Launch Toolbar

10. The **B** lets you move between applications without having to open and close them all the time.

   a. System Tray
   b. Taskbar
   c. Desktop
   d. Quick Launch Toolbar

11. You will find the clock and icons for certain applications in the **A**.

   a. System Tray
   b. Taskbar
   c. Desktop
   d. Quick Launch Toolbar

Chapter #2 Homework

NAME: Amy Hissom

Activities

1. The first time you save a file, what is the difference between Save and Save As? For any subsequent time you save a file, what is the difference between Save and Save As?

There is no difference if you are saving it for the first time because both choices require you to save it with a file name and type. Any time after the initial first save, if you click "Save As" you have the choice of saving the revised version as a new file name and type, and if you click "Save" it overwrites the existing file as the same name and type with the revised file.

2. What would you do to find a file that you knew was created eight days ago but you didn't know what it was called or where it was saved?

I would go to "search files and folders" and click on "when was it modified" and then the specify dates option. Here I would type in the date and click search.

3. What does .RTF stand for? Why is it best to save a file as an RTF file if you plan to share it with someone?

Rich Text Format. It is best to use this option when saving a text file if you will be sharing it, because an RTF file will open up in most word processing programs. The person you are sharing it might not have the same word processing program as you do.

4. Which is the correct answer if you wish to keep the most current version of the file?

Pg. 41 – Figure 2.32 - yes

5. How does the operating system know which applications are associated with specific file extensions?

When you install different applications on your computer, they register themselves with your operating system. They tell the OS what file types belong to them. This information is stored in the registry.

Hands-on

1. To determine how much space you have on the hard disk, Open My Computer and right click on the C:. Choose properties from the context menu. How large is the C drive? How much space is free? How much space is used?

<u>My Home Computer</u>
Capacity – 107GB
Free Space – 87.9 GB
Used Space – 19.6 GB

2. Using the Internet, list three typical file extensions for graphic files not shown as examples in the module.

TIFF, PNG, PSD, PCX, etc.

3. Draw a directory structure that you might create for the classes you are taking this semester.

ROOT (C:)

Spring 2006

OS & Networking   MM Web Design   Intro to Computers II   Developemental Mathmatics

4. Create a file and save it to the hard drive, delete it, and then explain the steps you need to take to restore it from the Recycling Bin.

5. Explain why you might see Figure 2.33 and what it is expecting you to do.

Open the Recycle Bin and right click on the file I want to restore and then click restore on the sub menu.

Terms

1. Bit - Short for *binary digit*, the smallest unit of information on a machine. The term was first used in 1946 by John Tukey, a leading statistician and adviser to five presidents. A single bit can hold only one of two values: 0 or 1. More meaningful information is obtained by combining consecutive bits into larger units. For example, a byte is composed of 8 consecutive bits.
2. BMP - The standard bit-mapped graphics format used in the Windows environment. By convention, graphics files in the BMP format end with a.*BMP* extension. BMP files store graphics in a format called *device-independent bitmap (DIB).*
3. Byte - Abbreviation for *binary term,* a unit of storage capable of holding a single character. On almost all modern computers, a byte is equal to 8 bits. Large amounts of memory are indicated in terms of kilobytes (1,024 bytes), megabytes (1,048,576 bytes), and gigabytes (1,073,741,824 bytes).
4. Directory – **(a)** An organizational unit, or container, used to organize folders and files into a hierarchical structure. Directories contain bookkeeping information about files that are, figuratively speaking, beneath them in the hierarchy. You can think of a directory as a file cabinet that contains folders that contain files. Many graphical user interfaces use the term *folder* instead of *directory.*
5. GIF - Pronounced *jiff* or *giff* (hard *g*) stands for *graphics interchange format,* a bit-mapped graphics file format used by the World Wide Web, CompuServe and many BBSs. GIF supports color and various resolutions. It also includes data compression, but because it is limited to 256 colors, it is more effective for scanned images such as illustrations rather than color photos.
6. Gigabyte - 2 to the 30th power (1,073,741,824) bytes. One gigabyte is equal to 1,024 megabytes. Gigabyte is often abbreviated as *G* or *GB.*
7. Hierarchical - Refers to systems that are organized in the shape of a pyramid, with each row of objects linked to objects directly beneath it. Hierarchical systems pervade everyday life. The army, for example, which has generals at the top of the pyramid and privates at the bottom, is a hierarchical system. Similarly, the system for classifying plants and animals according to species, family, genus, and so on, is also hierarchical.
8. JPG – (JPEG) Short for *Joint Photographic Experts Group,* and pronounced *jay-peg.* JPEG is a *lossy compression* technique for color images. Although it can reduce files sizes to about 5% of their normal size, some detail is lost in the compression.
9. Kilobyte - In decimal systems, *kilo* stands for 1,000, but in binary systems, a *kilo* is 1,024 (2 to the 10th power). Technically, therefore, a kilobyte is 1,024 bytes, but it is often used loosely as a synonym for 1,000 bytes. For example, a computer that has 256K main memory can store approximately 256,000 bytes (or characters) in memory at one time.

10. Megabyte - (a) When used to describe data storage, 1,048,576 (2 to the 20th power) bytes. *Megabyte* is frequently abbreviated as *M* or *MB*.
11. Registry - A database used by the Windows operating system (Windows 95 and NT) to store configuration information.

Multiple Choice Questions

1. **B** allow(s) us to organize our files so we can more easily find them

    a. Navigation
    b. Folders
    c. Desktop
    d. None of the above

2. The **D** folder is the default place that most applications want to store your data files in.

    a. Start menu
    b. Recycle Bin
    c. Program Files
    d. My Documents

3. **C** is referred to as a path using the proper syntax.

    a. c;windows/desktop
    b. c:>
    c. c:\windows\desktop\My Documents
    d. c:winnt/system32

4. The Recycle Bin is configured automatically to be able to store files equal to **C** of the size of your hard disk.

    a. 1 percent
    b. 5 percent
    c. 10 percent
    d. 15 percent

5. The **A** was really designed for users who also have a notebook computer and often work in files in two different places.

    a. Briefcase
    b. Suitcase
    c. Desktop
    d. Start menu

6. **D** keeps track of the computers around you in a networked environment.

    a. My Computers
    b. FTP
    c. Add Network Place
    d. My Network Places

7. If you right click on a file or folder, one of the context menu options is **B**.

    a. remote
    b. send to
    c. copy to
    d. rename to

8. You can drop a file onto the start button to add it to the **C**.

    a. Quick Launch Toolbar
    b. Taskbar
    c. Start menu
    d. Recycle Bin

9. Many operating system directory structures are **D**.

    a. discrete
    b. disparate
    c. virtual
    d. hierarchical

10. The **A** of a directory structure is the topmost directory on the disk.

    a. root
    b. tree
    c. subdirectory
    d. base

11. If you prefer to **A** on a file versus **A**, you can configure that setting by going into Tools, Folder Options.

    a. single click/double click
    b. double click/ single click
    c. both of the above
    d. none of the above

12. **C** Explorer is a Web browser that allows to more easily navigate the Internet.

    a. Windows
    b. Netscape
    c. Internet
    d. Microsoft

13. **A** Explorer is a tool that lets you more easily navigate the files and folders on your computer.

    a. Windows
    b. Netscape
    c. Internet
    d. Microsoft

14. A floppy disk can hold **C** when it is formatted.

    a. 2.0 MB
    b. 1.44 KB
    c. 1.44 MB
    d. 2.0KB

15. Examples of file **C** are read only, hidden, and archive.

    a. types
    b. sizes
    c. attributes
    d. formats

16. If you **C** a file you now have more than one instance of it; if you **C** a file, you only have one instance of it.

    a. borrow/delete
    b. move/copy
    c. copy/move
    d. none of the above

17. Each copy of the file is referred to as a different **C** of the file.

    a. attribute
    b. element
    c. version
    d. facet

18. The **C** wildcard is used to replace an infinite number of characters.

    a. !
    b. ?
    c. *
    d. &

19. The **B** wildcard is used to replace a single character.

    a. !
    b. ?
    c. *
    d. &

20. To select noncontiguous files, hold down the **B** key when selecting the files.

    a. Alt
    b. Ctrl
    c. Shift
    d. Space Bar

Chapter #3 Homework

NAME: Amy Hissom

Activities
1. dir
2. Click on the run button in the start menu and type command in the box, or go to the command prompt listed in the accessories of the start menu.
3. It removes the directory.
    Correct syntax example - rd c:\test
    Switches - /S - Removes all directories and files in the specified directory in addition to the directory itself. Used to remove a directory tree.
    /Q - Quiet mode, do not ask if ok to remove a directory tree with /S.
4. Copy – used to copy one file
    XCopy – used to copy multiple files
5. A special symbol that stands for one or more characters. Many operating systems and applications support wildcards for identifying files and directories. This enables you to select multiple files with a single specification. For example, in DOS and Windows, the asterisk (*) is a wild card that stands for any combination of letters.

Hands on
Done

Terms

1. Backslash - The backslash character is \; a simple slash or *forward slash* is /. In DOS and Windows systems, the backslash represents the root directory and is also used to separate directory names and filenames in a *pathname.*
2. Batch file - A file that contains a sequence, or batch, of commands. Batch files are useful for storing sets of commands that are always executed together because you can simply enter the name of the batch file instead of entering each command individually.
3. **Clone -** A computer, software product, or device that functions exactly like another, better-known product. In practice, the term refers to any PC not produced by one of the leading name-brand manufacturers, such as IBM and Compaq.
4. Forward slash - The forward slash character is /. Now more commonly referred to as the "forward slash", this character was first called an oblique.
5. GUI - Pronounced *GOO-ee.* Acronym for *graphical user interface.*
6. Partition - To divide memory or mass storage into isolated sections. In DOS systems, you can partition a disk, and each partition will behave like a separate disk drive. Partitioning is particularly useful if you run more than one operating system. For example, you might reserve one partition for Windows and another for UNIX.
7. Path - In DOS and Windows systems, a path is a list of directories where the operating system looks for executable files if it is unable to find the file in the working directory. You can specify the list of directories with the PATH command.
8. Prompt - A symbol on a display screen indicating that the computer is waiting for input. Once the computer has displayed a prompt, it waits for you to enter some information. Generally, it will wait forever, but some programs have built-in time-outs that cause the program to continue execution after it has waited a specified amount of time.
9. Redirect - In e-mail, a redirect is an option found in e-mail clients that is similar to a forward, with the exception that the body of the text is not normally shown as quoted text. Additionally the *From (or)*

Sender field will show the e-mail address of the original sender, and in brackets it will show your information.

10. **Root** – The main directory (usually c drive).

11. **Shell or User Interface** - The outermost layer of a program. *Shell* is another term for *user interface*. Operating systems and applications sometimes provide an alternative shell to make interaction with the program easier. For example, if the application is usually command driven, the shell might be a menu-driven system that translates the user's selections into the appropriate commands.

12. **Standard Output** - The place where output goes unless you specify a different output device. The standard output device is usually the display screen.

13. Switch - a symbol that you add to a command to modify the command's behavior.

14. **Syntax** - Refers to the spelling and grammar of a programming language. Computers are inflexible machines that understand what you type only if you type it in the exact form that the computer expects. The expected form is called the syntax.

15. **Wildcard** – A special symbol that stands for one or more characters.

Multiple Choice

1. C
2. D
3. D
4. C
5. C
6. C
7. B
8. C
9. B
10. D
11. D
12. D
13. A, C, and D
14. ALL
15. D
16. C
17. C
18. D

Chapter #4 Homework

NAME: Amy Hissom

Activities
1. Install an antivirus application and keep it updated
2. Install an antivirus application, install a firewall, and keep OS updated.
3. To obtain personal information or to infect your machine with a virus.
4. A scanner that identifies open doors (ports) to a computer and collects information.
5. Rumor of a particular virus. One that is not true.

Hands On
1. My home computer – 42,299 Kb

2. I don't have this option on my computer.

3. **Sygate Personal Firewall Pro 5.5**
   VisNetic Firewall 2.2.5
   Xeon Personal Firewall 2.4
   Armor2net Personal Firewall 3.123
   Agnitum Outpost Firewall Pro 2.5

4. **Backdoor.Nodelm -** Backdoor.Nodelm is a Trojan horse with back door capabilities that allows a remote attacker unauthorized access to the compromised computer.
W32.Beagle.DX@mm - W32.Beagle.DX@mm is a mass-mailing worm that also spreads through file-sharing networks. It opens a back door on the compromised computer, attempts to lower security settings, and tries to download and execute remote files.
JS.Ffsniff - JS.Ffsniff is a JavaScript Trojan horse that logs information from HTML forms in Web pages and sends the information to a predefined email address. The Trojan is a JavaScript file, which can be included with a malicious Mozilla Firefox browser extension.

5. I created a folder called CLASS in the My Documents folder, then I copied to this folder 3 files of different types I already had on my computer. I then navigated to this folder and inside it I created another folder named DATA and copied 3 other existing files on my computer to this folder.   I now Have a folder in My Documents named CLASS. Inside that folder are 3 files and another folder named DATA, which has 3 more files in it. I then navigated to my C drive where I created an empty folder named TESTFILES. After that, I navigated back to My documents where my CLASS folder is located. I right clicked on the CLASS folder, went to WinZip on the sub menu and then clicked on Add to Zip file. When the WinZip program opened, I changed the path where the zip file would be saved to C:\TESTFILES and then clicked the ADD button. When I navigated back to my TESTFILE folder located on my C drive. My zip file was there. All I had to do then was double right click it to view the files located inside.

Terms

1. Algorithm- (al´g&-rith-&m) **(n.)** A formula or set of steps for solving a particular problem. To be an algorithm, a set of rules must be unambiguous and have a clear stopping point. Algorithms can be expressed in any language, from natural languages like English or French to programming languages like FORTRAN.
2. Cluster- A group of disk sectors. The operating system assigns a unique number to each cluster and then keeps track of files according to which clusters they use. Occasionally, the operating system

marks a cluster as being used even though it is not assigned to any file. This is called a *lost cluster.* You can free up disk space by reassigning lost clusters, but you should first make sure that the clusters do not, in fact, contain valuable data. In DOS and Windows, you can find lost clusters with the ScanDisk utility.

3. Defragment- To optimize a disk by unfragmenting files. See under *fragmentation.*

Encryption- The translation of data into a secret code. Encryption is the most effective way to achieve data security. To read an encrypted file, you must have access to a secret key or password that enables you to *decrypt* it. Unencrypted data is called *plain text ;* encrypted data is referred to as *cipher text.*

4. File compression- Storing data in a format that requires less space than usual.

5. Firewall- (fīr´wâl) **(n.)** A system designed to prevent unauthorized access to or from a private network. Firewalls can be implemented in both hardware and software, or a combination of both. Firewalls are frequently used to prevent unauthorized Internet users from accessing private networks connected to the Internet, especially *intranets.* All messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria.

6. Fragmentation- (1) Refers to the condition of a disk in which files are divided into pieces scattered around the disk. Fragmentation occurs naturally when you use a disk frequently, creating, deleting, and modifying files. At some point, the operating system needs to store parts of a file in noncontiguous clusters. This is entirely invisible to users, but it can slow down the speed at which data is accessed because the disk drive must search through different parts of the disk to put together a single file.

7. Freeware- Copyrighted software given away for free by the author. Although it is available for free, the author retains the copyright, which means that you cannot do anything with it that is not expressly allowed by the author. Usually, the author allows people to use the software, but not sell it.

8. Hacker- A slang term for a computer enthusiast, i.e., a person who enjoys learning programming languages and computer systems and can often be considered an expert on the subject(s). Among professional programmers, depending on how it used, the term can be either complimentary or derogatory, although it is developing an increasingly derogatory connotation. The pejorative sense of *hacker* is becoming more prominent largely because the popular press has coopted the term to refer to individuals who gain unauthorized access to computer systems for the purpose of stealing and corrupting data. Hackers, themselves, maintain that the proper term for such individuals is cracker.

9. Port scanning- The act of systematically scanning a computer's ports. Since a port is a place where information goes into and out of a computer, port scanning identifies open doors to a computer. Port scanning has legitimate uses in managing networks, but port scanning also can be malicious in nature if someone is looking for a weakened access point to break into your computer.

10. Pretty Good Privacy (PGP)- **(n.)** Abbreviated as *PGP*, a technique developed by Philip Zimmerman for encrypting messages. PGP is one of the most common ways to protect messages on the Internet because it is effective, easy to use, and free. PGP is based on the public-key method, which uses two keys -- one is a public key that you disseminate to anyone from whom you want to receive a message. The other is a private key that you use to decrypt messages that you receive.

11. Shareware- Software distributed on the basis of an honor system. Most shareware is delivered free of charge, but the author usually requests that you pay a small fee if you like the program and use it regularly. By sending the small fee, you become registered with the producer so that you can receive service assistance and updates. You can copy shareware and pass it along to friends and colleagues, but they too are expected to pay a fee if they use the product.

12. Sniffer- A program and/or device that monitors data traveling over a network. Sniffers can be used both for legitimate network management functions and for stealing information off a network. Unauthorized sniffers can be extremely dangerous to a network's security because they are virtually impossible to detect and can be inserted almost anywhere. This makes them a favorite weapon in the hacker's arsenal.

13. Socket- In UNIX and some other operating systems, a software object that connects an application to a network protocol. In UNIX, for example, a program can send and receive TCP/IP messages by opening a socket and reading and writing data to and from the socket. This simplifies program development because the programmer need only worry about manipulating the socket and can rely on the operating system to actually transport messages across the network correctly. Note that a socket in this sense is completely *soft* - it's a software object, not a physical component.

14. Software piracy- The unauthorized copying of software. Most retail programs are licensed for use at just one computer site or for use by only one user at any time. By buying the software, you become a *licensed user* rather than an owner (see *EULA*). You are allowed to make copies of the program for backup purposes, but it is against the law to give copies to friends and colleagues.

15. Spyware- Any software that covertly gathers user information through the user's Internet connection without his or her knowledge, usually for advertising purposes. Spyware applications are typically bundled as a hidden component of freeware or shareware programs that can be downloaded from the Internet; however, it should be noted that the majority of shareware and freeware applications do not come with spyware. Once installed, the spyware monitors user activity on the Internet and transmits that information in the background to someone else. Spyware can also gather information about e-mail addresses and even passwords and credit card numbers.

16. SSL- pronounced as separate letters) Short for *Secure Sockets Layer*, a protocol developed by Netscape for transmitting private documents via the Internet. SSL uses a cryptographic system that uses two keys to encrypt data − a public key known to everyone and a private or secret key known only to the recipient of the message. Both Netscape Navigator and Internet Explorer support SSL, and many Web sites use the protocol to obtain confidential user information, such as credit card numbers.By convention, URLs that require an SSL connection start with *https:* instead of *http:*.

17. Virus- A program or piece of code that is loaded onto your computer without your knowledge and runs against your wishes. Viruses can also replicate themselves. All computer viruses are manmade. A simple virus that can make a copy of itself over and over again is relatively easy to produce. Even such a simple virus is dangerous because it will quickly use all available memory and bring the system to a halt. An even more dangerous type of virus is one capable of transmitting itself across networks and bypassing security systems.

18. Trojan- A destructive program that masquerades as a benign application. Unlike viruses, Trojan horses do not replicate themselves but they can be just as destructive. One of the most insidious types of Trojan horse is a program that claims to rid your computer of viruses but instead introduces viruses onto your computer.

Multiple Choice
1. B
2. D
3. C
4. B
5. A
6. D
7. C
8. D
9. A
10. B
11. D
12. A
13. A
14. D
15. B

Chapter #5 Homework

NAME: Amy Hissom

Activities

1. Choosing color schemes that won't affect the eyes and choosing what type of chair you sit in are just a couple examples. Depending on how long you have to sit in front of your computer, these two things are important factors to look at.

2. The style of windows and buttons, color scheme, font size, transition effects and icons.

3. A scheme is the way your desktop appears along with choices of colors. Three examples of color schemes include, blue, silver or olive green.

4. It means how many dpi's (dots per inch) are displayed.

5. Windows

Hands on

1. The desktop icons appear on the toolbar. To switch it back just repeat the stps it took to get it that way.

2. I don't have 3D Maze on my computer.

3. I right clicked on my desktop and then on properties in the sub menu. Once the display properties box came up I changed the color scheme, windows and button, and font size under the appearance tab. I then clicked on the effects button under this tab and changed the transition effect. Clicked OK on that box and then apply on the display properties box. To undo this, I repeated the same steps to change everything back to the way it was.

4. Go back to the same place and click the button titled restore defaults.

5. I would right click on my desktop and then click on properties. Under the Desktop tab of the display properties box I would click on the customize desktop button. A new box would come up and in it I would click on the Web tab. From here I would choose my current homepage or click the new button and change it to another one of my choice by searching for it.

Terms

1. Avi-Short for *Audio Video Interleave,* the file format for Microsoft's Video for Windows standard. See under *Video for Windows*.
2. Digital audio- Refers to the reproduction and transmission of sound stored in a digital format. This includes CDs as well as any sound files stored on a computer. In contrast, the telephone system (but not ISDN) is based on an analog representation of sound. In sound recording and reproduction systems, digital audio refers to a digital representation of the audio waveform for processing, storage or transmission. When analog sound waves are stored in digital form, each digital audio file can be decomposed into a series of samples.
3. Ergonomic- The science concerned with designing safe and comfortable machines for humans. For example, one branch of ergonomics deals with designing furniture that avoids causing backaches

and muscle cramps. In the computer field, ergonomics plays an important role in the design of monitors and keyboards. Another term for ergonomics is *human engineering.*

4. MHz- Abbreviation for *megahertz*. One MHz represents one million cycles per second. The speed of microprocessors, called the clock speed, is measured in megahertz.

5. Midi- Pronounced *middy*, an acronym for *musical instrument digital interface*, a standard adopted by the electronic music industry for controlling devices, such as synthesizers and sound cards, that emit music. At minimum, a MIDI representation of a sound includes values for the note's pitch, length, and volume. It can also include additional characteristics, such as attack and delay time.

6. Mp3- The name of the file extension and also the name of the type of file for MPEG, audio layer 3. Layer 3 is one of three coding schemes (layer 1, layer 2 and layer 3) for the compression of audio signals.

7. Pixel- Short for *Picture Element,* a pixel is a single point in a graphic image. Graphics monitors display pictures by dividing the display screen into thousands (or millions) of pixels, arranged in rows and columns. The pixels are so close together that they appear connected.

8. Refresh rate- (1) Generally, to update something with new data. For example, some Web browsers include a refresh button that updates the currently displayed Web pages. This feature is also called *reload.* (2) To recharge a device with power or information. For example, *dynamic RAM* needs to be refreshed thousands of times per second or it will lose the data stored in it. Similarly, display monitors must be refreshed many times per second. The *refresh rate* for a monitor is measured in hertz (Hz) and is also called the *vertical frequency, vertical scan rate, frame rate* or *vertical refresh rate.*

9. Resolution- Refers to the sharpness and clarity of an image. The term is most often used to describe monitors, printers, and bit-mapped graphic images. In the case of dot-matrix and laser printers, the resolution indicates the number of dots per inch.

10. Streaming- A technique for transferring data such that it can be processed as a steady and continuous stream.

11. Wav- The format for storing sound in files developed jointly by Microsoft and IBM. Support for WAV files was built into Windows 95 making it the de facto standard for sound on PCs. WAV sound files end with a.*wav* extension and can be played by nearly all Windows applications that support sound.

Multiple Choice

1. C
2. D
3. D
4. A
5. A
6. C
7. C
8. D
9. B
10. A

Chapter #6 Homework

NAME: Amy Hissom

Activities

1. **RAM (random-access memory)** is the same as main memory. When used by itself, the term *RAM* refers to *read and write* memory; that is, you can both write data into RAM and read data from RAM. This is in contrast to **ROM (read-only memory)**, which permits you only to read data. Most RAM is *volatile,* which means that it requires a steady flow of electricity to maintain its contents. As soon as the power is turned off, whatever data was in RAM is lost.

2. A bus is a collection of wires through which data is transmitted from one part of a computer to another. You can think of a bus as a highway on which data travels within a computer. When used in reference to personal computers, the term *bus* usually refers to *internal bus.* This is a bus that connects all the internal computer components to the CPU and main memory. There's also an expansion bus that enables expansion boards to access the CPU and memory. A 32-bit bus is like a four lane highway, while a 16-bit bus is like a two lane country road.

3. **Intel® Celeron® D 355 Processor -** Clock Speed (3.33 GHz), Front Side Bus (533 MHz). The Intel® Celeron® D processor on 90 nm process in the 478-pin package and in the FC-LGA775 Land package expands Intel's processor family into value-priced PC market segments. Celeron D processors offer exciting new technologies at a great value. The Celeron D processors include a larger integrated L2 cache and faster processor system bus when compared to Celeron processors. The Celeron D processor is built on the foundation of Intel's successful engineering and manufacturing leadership with Intel's commitment of technology, quality and reliability to value-priced PC market segments. The Celeron D processors provide customers the capability to affordably get onto the Internet, utilize educational programs, home-office software and productivity applications with great computing and multimedia power.

4. **AMD Athlon™ 64 FX** – Provides the highest performance levels without any changes to existing 32-bit applications. Allows both high-performance 32-bit and 64-bit computing, offering end users an easy, compelling and affordable means to take advantage of tomorrow's emerging applications. Doubles the number of internal registers enabling increased performance

5. Right click on the My Computer icon and go to properties on the sub menu. It is listed under the General information tab. You can get to the same place by going to the control panel and clicking on performance and maintenance. Once there, click on system.

Hands on

1.
   a. 45, 22, 1869
   b. 10010001, 100010110, 10000100000

2. I would click on the Software and Driver Downloads link from this page. On the next page I would Select a task and enter a product name/number and then search for the specific driver. On the next page I would choose my specific operating system and click on it. I would then choose the current version of the driver in the list of drivers by clicking on the download button. When the download box appears I would save it on my computer in a folder somewhere on my hard drive just incase I would need that driver again in the future because of a system crash, etc. To install it, I would navigate to

where I saved it and double click it to start the install procedure. I didn't follow through with this all the way because I don't want this driver on my computer. I don't need it.

3. The computer will not boot into windows because it is configured to check the floppy drive first incase there is a boot disk in it. This function is to help incase you can't boot into windows normally.

4. Once you're in the control, click on printers and other hardware and then choose mouse from the list. Under the button tab, put a checkmark in the box nest to switch primary and secondary buttons. Other configuration options pertaining to the mouse include, changing pointer schemes (the way it looks), Weather or not to show the mouse trail, and options for the wheel if there is one.

5. You can't because you protected it from being wrote over and a box appears telling you so.

Terms

ASCII - Acronym for the **A**merican **S**tandard **C**ode for **I**nformation **I**nterchange. Pronounced *ask-ee*, ASCII is a code for representing English characters as numbers, with each letter assigned a number from 0 to 127. For example, the ASCII code for uppercase *M* is 77. Most computers use ASCII codes to represent text, which makes it possible to transfer data from one computer to another.

Bus -A collection of wires through which data is transmitted from one part of a computer to another. You can think of a bus as a highway on which data travels within a computer. When used in reference to personal computers, the term *bus* usually refers to *internal bus.* This is a bus that connects all the internal computer components to the CPU and main memory. There's also an expansion bus that enables expansion boards to access the CPU and memory.
Cluster- A group of disk sectors. The operating system assigns a unique number to each cluster and then keeps track of files according to which clusters they use.

Com port - In DOS systems, the name of a serial communications port. DOS supports four serial ports: *COM1, COM2, COM3,* and *COM4.* However, most software uses system interrupts to access the serial ports, and there are only two IRQ lines reserved. This means that the four COM ports share the same two IRQ lines. Typically, COM1 and COM3 use IRQ4, while COM2 and COM4 use IRQ3. So in general, if you have two devices, one of which is attached to COM1 and the other to COM3, you cannot use them simultaneously.

Connector - The part of a cable that plugs into a port or interface to connect one device to another. Most connectors are either *male* (containing one or more exposed pins) or *female* (containing holes in which the male connector can be inserted).
Controller - A device that controls the transfer of data from a computer to a peripheral device and vice versa. For example, disk drives, display screens, keyboards, and printers all require controllers.

DIN - *DIN* is short for **D**eutsches **I**nsitut für **N**ormung eV, the standards -setting organization for Germany. A DIN connector is a connector that conforms to one of the many standards defined by DIN. DIN connectors are used widely in personal computers. For example, the keyboard connector for PCs is a DIN connector. DIN 41612 connectors are used widely to connect network equipment, such as routers and switches.
Driver – A machine that reads data from and writes data onto a disk. A disk drive rotates the disk very fast and has one or more heads that read and write data.
Dvorak Keyboard - A keyboard designed for speed typing. The Dvorak keyboard was designed in the 1930s by August Dvorak, a professor of education, and his brother-in-law, William Dealy. Unlike the traditional QWERTY keyboard, the Dvorak keyboard is designed so that the middle row of keys

includes the most common letters. In addition, common letter combinations are positioned in such a way that they can be typed quickly.

EIDE - Short for *Enhanced IDE,* a newer version of the IDE mass storage device interface standard developed by Western Digital Corporation. It supports data rates of between 4 and 16.6 MBps, about three to four times faster than the old IDE standard. In addition, it can support mass storage devices of up to 8.4 gigabytes, whereas the old standard was limited to 528 MB.

Gigahertz - Abbreviation for *gigahertz*. One GHz represents 1 billion cycles per second. The speed of microprocessors, called the clock speed, often is measured in gigahertz. For example, a microprocessor that runs at 200 GHz executes 200 billion cycles per second.

Hard disk - A magnetic disk on which you can store computer data. The term *hard* is used to distinguish it from a soft, or *floppy,* disk. Hard disks hold more data and are faster than floppy disks. A hard disk, for example, can store anywhere from 10 to more than 100 gigabytes, whereas most floppies have a maximum storage capacity of 1.4 megabytes.

IDE - Abbreviation of either *Intelligent Drive Electronics* or *Integrated Drive Electronics*, depending on who you ask. An IDE interface is an interface for mass storage devices, in which the controller is integrated into the disk or CD-ROM drive. Although it really refers to a general technology, most people use the term to refer the ATA specification, which uses this technology. Refer to *ATA* for more information.

IEEE - Abbreviation of *Institute of Electrical and Electronics Engineers*, pronounced *I-triple-E*. Founded in 1884 as the AIEE, the IEEE was formed in 1963 when AIEE merged with IRE. IEEE is an organization composed of engineers, scientists, and students. The IEEE is best known for developing standards for the computer and electronics industry. In particular, the IEEE 802 standards for local-area networks are widely followed.

IEEE 1394 - A very fast external bus standard that supports data transfer rates of up to 400Mbps (in 1394a) and 800Mbps (in 1394b). Products supporting the 1394 standard go under different names, depending on the company. Apple, which originally developed the technology, uses the trademarked name *FireWire*.

Interrupt - A signal informing a program that an event has occurred. When a program receives an interrupt signal, it takes a specified action (which can be to ignore the signal). Interrupt signals can cause a program to suspend itself temporarily to service the interrupt.

I/O – Short for *input/output* (pronounced "eye-oh"). The term I/O is used to describe any program, operation or device that transfers data to or from a computer and to or from a peripheral device. Every transfer is an output from one device and an input into another. Devices such as keyboards and mouses are input-only devices while devices such as printers are output-only. A writable CD-ROM is both an input and an output device.

IRQ - Abbreviation of *interrupt request line,* and pronounced *I-R-Q.* IRQs are hardware lines over which devices can send interrupt signals to the microprocessor. When you add a new device to a PC, you sometimes need to set its IRQ number by setting a DIP switch. This specifies which interrupt line the device may use. IRQ conflicts used to be a common problem when adding

ISA - (Pronounced as separate letters or as *eye-sa*). Short for *Industry Standard Architecture bus*, the bus architecture used in the IBM PC/XT and PC/AT. The AT version of the bus is called the AT bus and became a de facto industry standard. Starting in the early 90s, ISA began to be replaced by the PCI local bus architecture. Most computers made today include both an AT bus for slower devices and a PCI bus for devices that need better bus performance.

Master/slave - Any device that is controlled by another device, called the *master.*

Memory - Internal storage areas in the computer. The term *memory* identifies data storage that comes in the form of chips, and the word *storage* is used for memory that exists on tapes or disks.

Moreover, the term *memory* is usually used as a shorthand for *physical memory,* which refers to the actual chips capable of holding data. Some computers also use virtual memory, which expands physical memory onto a hard disk

Microprocessor - A silicon chip that contains a CPU. In the world of personal computers, the terms *microprocessor* and CPU are used interchangeably. At the heart of all personal computers and most workstations sits a microprocessor. Microprocessors also control the logic of almost all digital devices, from clock radios to fuel-injection systems for automobiles.

Modem - (mō´dem) **(n.)** Short for **mo**dulator-**dem**odulator. A modem is a device or program that enables a computer to transmit data over, for example, telephone or cable lines. Computer information is stored digitally, whereas information transmitted over telephone lines is transmitted in the form of analog waves. A modem converts between these two forms.

Motherboard - The main circuit board of a microcomputer. The motherboard contains the connectors for attaching additional boards. Typically, the motherboard contains the CPU, BIOS, memory, mass storage interfaces, serial and parallel ports, expansion slots, and all the controllers required to control standard peripheral devices, such as the display screen, keyboard, and disk drive. Collectively, all these chips that reside on the motherboard are known as the motherboard's chipset.

Network interface card - Often abbreviated as *NIC*, an *expansion board* you insert into a computer so the computer can be connected to a network. Most NICs are designed for a particular type of network, protocol, and media, although some can serve multiple networks.

Parity - The quality of being either odd or even. The fact that all numbers have a parity is commonly used in data communications to ensure the validity of data. This is called *parity checking*.

Partition – To divide memory or mass storage into isolated sections. In DOS systems, you can partition a disk, and each partition will behave like a separate disk drive. Partitioning is particularly useful if you run more than one operating system. For example, you might reserve one partition for Windows and another for UNIX.

PCI - Short for *Peripheral Component Interconnect,* a local bus standard developed by Intel Corporation. Most modern PCs include a PCI bus in addition to a more general ISA expansion bus.

Plug and Play - Refers to the ability of a computer system to automatically configure expansion boards and other devices. You should be able to plug in a device and play with it, without worrying about setting DIP switches, jumpers, and other configuration elements. Since the introduction of the NuBus, the Apple Macintosh has been a plug-and-play computer.

Port - An interface on a computer to which you can connect a device. Personal computers have various types of ports. Internally, there are several ports for connecting disk drives, display screens, and keyboards. Externally, personal computers have ports for connecting modems, printers, mice, and other peripheral devices.

RAM - Pronounced *ramm,* acronym for *random access memory*, a type of computer memory that can be accessed randomly; that is, any byte of memory can be accessed without touching the preceding bytes. RAM is the most common type of memory found in computers and other devices, such as printers.

ROM - Pronounced *rahm,* acronym for *read-only memory*, computer memory on which data has been prerecorded. Once data has been written onto a ROM chip, it cannot be removed and can only be read. Unlike main memory (RAM), ROM retains its contents even when the computer is turned off. ROM is referred to as being *nonvolatile*, whereas RAM is *volatile.*

SCSI - (sku´zē) Short for *small computer system interface*, a parallel interface standard used by Apple Macintosh computers, PCs, and many UNIX systems for attaching peripheral devices to

computers. Nearly all Apple Macintosh computers, excluding only the earliest Macs and the recent iMac, come with a SCSI port for attaching devices such as disk drives and printers.

Sector - The smallest unit that can be accessed on a disk. When a disk undergoes a low-level format, it is divided into tracks and sectors. The tracks are concentric circles around the disk and the sectors are segments within each circle. For example, a formatted disk might have 40 tracks, with each track divided into 10 sectors. The operating system and disk drive keep tabs on where information is stored on the disk by noting its track and sector number.

Virtual memory - An imaginary memory area supported by some operating systems (for example, Windows but not DOS) in conjunction with the hardware. You can think of virtual memory as an alternate set of memory addresses. Programs use these *virtual addresses* rather than real addresses to store instructions and data. When the program is actually executed, the virtual addresses are converted into real memory addresses. The purpose of virtual memory is to enlarge the *address space*, the set of addresses a program can utilize.

Volume Control - A fixed amount of storage on a disk or tape. The term *volume* is often used as a synonym for the storage medium itself, but it is possible for a single disk to contain more than one volume or for a volume to span more than one disk.

Multiple Choice

1. D
2. A
3. B
4. D
5. C
6. D
7. A
8. D
9. D
10. C
11. B
12. D
13. A
14. A
15. C
16. D
17. B
18. D
19. C
20. D

Amy Hissom

Review Questions

1. Peer-to-Peer

     Characteristics
       a. Popular for smaller environments and are relatively easy to set up.
       b. There is no dedicated network administrator. It is the responsibility of each user to maintain resources and give permissions to other people to use them.
       c. There is no dedicated server so every computer can act as a server providing resources but can also act as a client when accessing someone else's resources.

     Potential Problems
       a. A computer in the network is not turned on.
       b. If your computer isn't particularly powerful and you share a printer from your computer for others to use, your computer suddenly has a lot more work to do causing it to become a bottleneck slowing things down.
       c. Security is another issue because each person is responsible for allowing access to the resources on their computer and may not always be trained to do it correctly.

2. Client/Server

     Characteristics
       a. Client/Server environments have one or more dedicated network administrators who maintain not only the server but also the client computers.
       b. Client/Server environments have one or more computers dedicated as a server.
       c. The server has a special network operating system (NOS) installed that is designed to provide resources to clients in a multiuser environment.

     Potential Problems
       a. Security and integrity of the data. Since most of the data is located in a central place, if the server fails the users no longer have access to the resources they need. If there are no backups, the situation is even worse.
       b. Virus can spread a lot easier.
       c. At least one dedicated server will be needed and can be very expensive.

3. Difference

     Centralized Administration – Resources are stored and configured on a server.
     Decentralized Administration –Resources are stored and configured on each computer.

4. Difference

     Workgroup- This type of environment allows access to few resources. If an account for you is created on only one particular computer in the network, you will not be able to access your account unless you sit at that computer.
     Domain Environment – A domain user potentially has access to all resources in an entire domain and who's account on that domain can be accessed from any computer within the domain.

5. Compare and Contrast

Bus topology: All devices are connected to a central cable, called the bus or backbone. Bus networks are relatively inexpensive and easy to install for small networks. Ethernet systems use a bus topology.

Ring topology : All devices are connected to one another in the shape of a closed loop, so that each device is connected directly to two other devices, one on either side of it. Ring topologies are relatively expensive and difficult to install, but they offer high bandwidth and can span large distances.

Star topology: All devices are connected to a central *hub.* Star networks are relatively easy to install and manage, but bottlenecks can occur because all data must pass through the hub.

Tree topology: A tree topology combines characteristics of linear bus and star topologies. It consists of groups of star-configured workstations connected to a linear bus backbone cable.

Hands-On

1.
2.
3.
4.
5.

Terms

1. Attenuation – Reduction of signal strength during transmission. Attenuation is the opposite of *amplification,* and is normal when a signal is sent from one point to another. If the signal attenuates too much, it becomes unintelligible, which is why most networks require repeaters at regular intervals. Attenuation is measured in *decibels.*

2. Bus – In networking, a bus is a central cable that connects all devices on a local-area network (LAN). It is also called the *backbone.*

3. Client/Server – The client part of a *client-server architecture.* Typically, a client is an application that runs on a personal computer or workstation and relies on a server to perform some operations. For example, an *e-mail client* is an application that enables you to send and receive e-mail.

4. Cluster -
A group of disk sectors. The operating system assigns a unique number to each cluster and then keeps track of files according to which clusters they use.

5. Ethernet – A local-area network (LAN) architecture developed by Xerox Corporation in cooperation with DEC and Intel in 1976. Ethernet uses a bus or star topology and supports data transfer rates of 10 Mbps. The Ethernet specification served as the basis for the IEEE 802.3 standard, which specifies the physical and lower software layers. Ethernet uses the CSMA/CD access method to handle simultaneous demands. It is one of the most widely implemented LAN standards.

6. FAT32 – A version of the file allocation table (FAT) available in Windows 95 OSR 2 and Windows 98. FAT32 increases the number of bits used to address clusters and also reduces the size of each cluster. The result is that it can support larger disks (up to 2 terabytes) and better storage efficiency (less slack space).

7.   File System – Also referred to as simply a *file system* or *filesystem.* The system that an operating system or program uses to organize and keep track of files. For example, a *hierarchical file system* is one that uses directories to organize files into a tree structure.

8. Hub – A common connection point for devices in a network. Hubs are commonly used to connect segments of a LAN. A hub contains multiple ports. When a packet arrives at one port, it is copied to the other ports so that all segments of the LAN can see all packets

9. LAN (Local Area Network) – A computer network that spans a relatively small area. Most LANs are confined to a single building or group of buildings. However, one LAN can be connected to other LANs over any distance via telephone lines and radio waves. A system of LANs connected in this way is called a *wide-area network (WAN)*. Most LANs connect workstations and personal computers

10. MAN (Metropolitan Area Network) – Short for *Metropolitan Area Network,* a data network designed for a town or city. In terms of geographic breadth, MANs are larger than local-area networks (LANs), but smaller than wide-area networks (WANs). MANs are usually characterized by very high-speed connections using fiber optical cable or other digital media

11. Media – In computer networks, *media* refers to the cables linking workstations together. There are many different types of transmission media, the most popular being twisted-pair wire (normal electrical wire), coaxial cable (the type of cable used for cable television), and fiber optic cable (cables made out of glass).

12. Network – A group of two or more computer systems linked together.

13. NIC (Network Interface Card) – Often abbreviated as *NIC*, an *expansion board* you insert into a computer so the computer can be connected to a network. Most NICs are designed for a particular type of network, protocol, and media, although some can serve multiple networks.

14. NOS (Network Operating System) – Abbreviated as *NOS*, an operating system that includes special functions for connecting computers and devices into a local-area network (LAN). Some operating systems, such as UNIX and the Mac OS, have networking functions built in. The term *network operating system*, however, is generally reserved for software that enhances a basic operating system by adding networking features. Novell Netware, Artisoft's LANtastic, Microsoft Windows Server, and Windows NT are examples of an NOS.

15. NTFS – Short for *NT File System,* one of the file system for the Windows NT operating system (Windows NT also supports the FAT file system). NTFS has features to improve reliability, such as transaction logs to help recover from disk failures. To control access to files, you can set permissions for directories and/or individual files. NTFS files are not accessible from other operating systems such as DOS. For large applications, NTFS supports spanning volumes, which means files and directories can be spread out across several physical disks.

16. Peer-to-Peer – Often referred to simply as *peer-to-peer*, or abbreviated *P2P*, a type of network in which each workstation has equivalent capabilities and responsibilities. This differs from client/server architectures, in which some computers are dedicated to serving the others. Peer-to-peer networks are generally simpler, but they usually do not offer the same performance under heavy loads.

17. Repeater – A network device used to regenerate or replicate a signal. Repeaters are used in transmission systems to regenerate analog or digital signals distorted by transmission loss. Analog repeaters frequently can only amplify the signal while digital repeaters can reconstruct a signal to near its original quality. In a data network, a repeater can relay messages between subnetworks that use different protocols or cable types. Hubs can operate as repeaters by relaying messages to all connected computers. A repeater cannot do the intelligent routing performed by bridges and routers.

18. Ring – A local-area network (LAN) whose topology is a ring. That is, all of the nodes are connected in a closed loop. Messages travel around the ring, with each node reading those messages addressed to it. One of the advantages of ring networks is that they can span larger distances than other types of networks, such as bus networks, because each node regenerates messages as they pass through it.

19. Router – A device that forwards data packets along networks. A router is connected to at least two networks, commonly two LANs or WANs or a LAN and its ISP's network. Routers are located at gateways, the places where two or more networks connect.

20. Slack Space – The unused space in a disk cluster. The DOS and Windows file systems use fixed-size clusters. Even if the actual data being stored requires less storage than the cluster size, an entire cluster is reserved for the file. The unused space is called the *slack space.*

21. Star – A local-area network (LAN) whose topology is a star. All devices are connected to a central *hub*. Star networks are relatively easy to install and manage, but bottlenecks can occur because all data must pass through the hub.

22. Switch - In networks, a device that filters and forwards packets between LAN segments. Switches operate at the data link layer (layer 2) and sometimes the network layer (layer 3) of the OSI Reference Model and therefore support any packet protocol. LANs that use switches to join segments are called *switched LANs* or, in the case of Ethernet networks, *switched Ethernet LANs.*

23. Token Ring – A type of computer network in which all the computers are arranged (schematically) in a circle. A *token*, which is a special bit pattern, travels around the circle. To send a message, a computer catches the token, attaches a message to it, and then lets it continue to travel around the network.

24. WAN (Wide Area Network) – Short for *wide-area network.* A computer network that spans a relatively large geographical area. Typically, a WAN consists of two or more local-area networks (LANs). Computers connected to a wide-area network are often connected through public networks, such as the telephone system. They can also be connected through leased lines or satellites. The largest WAN in existence is the Internet.

Multiple Choice

1. In Terms of _____, there are local area networks, wide area networks, and metropolitan area networks to name a few.
A. Network Scope

2. In terms of _____, examples for a LAN would be peer-to-peer or client/server.
B. Network types

3. There is a lot of maintenance involved for each user in a __ environment.
A. peer-to-peer

4. _____ networks typically have one or more dedicated network administrators who maintain not only the server but also the client computers.
B. Client/Server

5. A server has a special _____ on it designed to provide resources to clients in a multiuser environment.
C. Network Operating System (NOS)

6. _____ allows for much greater security and explains why Windows NT, Professional, XP and Server are typically used in a business environment.
D. NTFS

7. One thing that differentiates a network operating system from a desktop operating system is the specialized _____ that can be installed on the server to provide resources such as DNS.
B. attributes

8. A _ network is an example of centralized administration whereas a _____ network is an example of decentralized administration.
B. client/server, peer-to-peer

9. _____ are used primarily in a peer-to-peer environment and are designed to help users find the resources in the peer-to-peer network more easily.
C. Workgroups

10. A _____ allows you to organize your files by creating a directory structure and it also keeps track of the directories and files.
B. file system

11. Disk _____ is a way of dividing one hard disk into two more logical sections of the physical disk.
C. Partitioning

12. A network _ is the physical layout of the network.
B. topography

13. A network _____ defines how the packets traverse the network, each using a set of rules to get date from point A to point B.
C. technology
14. The most common network _ in local area networks today is Ethernet.
C. technology
15. _____ are the agreed-upom rules that network devices use to communicate with each other.
D. Protocols
16. When designing a network, the distance of a cable run is an issue and can result in _____ which is a loss of signal strength.
B. augumentation
17. Your network interface card also has a unique identifying number called a _ address which is burned in at the manufacturer.
B. MAC
18. A _____ server interprets name to IP address and vice versa.
C. DNS
19. A _____ server is configured with the range of available IP addresses and other information that is passed on to client computers.
D. DHCP
20. _____ are more intelligent than _____ and can help segment traffic to alleviate collisions but they also cost more.
B. Switches/hubs

Chapter #8 Homework

Terms

1. Ethics – **Ethics** (from Greek θος meaning "custom") is the branch of axiology, one of the four major branches of philosophy, which attempts to understand the nature of morality; to define that which is right from that which is wrong.

2. Software Piracy - The unauthorized copying of software. Most retail programs are licensed for use at just one computer site or for use by only one user at any time. By buying the software, you become a *licensed user* rather than an owner (see *EULA*). You are allowed to make copies of the program for backup purposes, but it is against the law to give copies to friends and colleagues.

3. System Administrator - An individual responsible for maintaining a multi-user computer system, including a local-area network (LAN). Typical duties include:
   - Adding and configuring new workstations
   - Setting up user accounts
   - Installing system-wide software
   - Performing procedures to prevent the spread of viruses
   - Allocating mass storage space

Multiple Choice

1. The _____ of the network must be considered before any equipment is ordered.
B. design
2. The number of computers and other network devices will determine how many hubs or switches will be needed because each device will occupy one

_____
A. port
3. The _____ on the server is often a reflection of the organizational structure.
D. directory structure
4. A _____ is simply a place where the user has access to store files but typically no one else does.
C. home directory
5. Users are _____ on a network by supplying two very important pieces of information: a username and password
A. authenticated
6. A network administrator needs to monitor the software _____ to ensure that there are enough legal copies.

C. licensing

7. Computer management is an interface, known as a(n) _____, that contains tools to configure, manage, and monitor a computer

D. MMC

8. Event Viewer has three different logs, _____, that keep track what is happening to the computer

B. Application, Security, and System

9. Performance Logs and Alerts contains the results of any __ you have configured using the performance monitor tool.

C. monitoring

10. A(n) ___ is a snapshot of what a computer looks like when they are typically operating under a normal load and you get one by checking for results at different times of the day.

D. baseline

11. _____ displays your disk configuration information for your hard disks, partitions, and other storage media such as ZIP drive and CD-ROM drives.

C. Disk management

12. _____ is the tool that gathers together the pieces of files stored all over your hard disks and makes it easier for your operating system to find them when needed.

A. Disk Defragmenter

13. _____ shows you all of the services installed on your computer and their current state, which could be started, stopped or paused.

A. Services

14. A _____ interprets from name to IP address and vice versa and the _____ service dynamically allocates IP addresses and other information so the network administrator doesn't have to manually configure each machine.

D. DNS/DHCP

15. _____ are just a database that organizes the resources in the domain.

Chapter #9 Homework

Terms

1. Account - An individual who uses a computer. This includes expert programmers as well as novices. An *end user* is any individual who runs an application program.

2. Authentication - The process of identifying an individual usually based on a username and password. In security systems, authentication is distinct from *authorization*, which is the process of giving individuals access to system objects based on their identity. Authentication merely ensures that the individual is who he or she claims to be, but says nothing about the access rights of the individual.

3. Group – An actual container used to associate users with specific resources.

4. Password - A secret series of characters that enables a user to access a file, computer, or program. On multi-user systems, each user must enter his or her password before the computer will respond to commands. The password helps ensure that unauthorized users do not access the computer. In addition, data files and programs

Multiple Choice

1. Once authentication has occurred, the network operating system next checks your _____ so it knows what resources you have access to.
C. group membership

2. When creating accounts, you should follow a predetermined _____.
B. naming convention

3. When you first install the operating system, some accounts and groups, called _____---, will automatically be created.
D. Built-in

4. By default, the _____ account is disabled when the operating system is installed.
B. Guest

5. The _____ account is used to configure and maintain a computer.
C. Administrator

6. The _____ account is used for any transient users.
B. Guest

7. Although not required in order to create an account, it is a common security practice to assign a _____ for every account.
A. password

8. Requiring that passwords have mixed characters including uppercase and lowercase is referred to as _____.
C. complexity

9. Password _____ is when the network operating system keeps track of the previous passwords used.
A. History

10. Password _____ is the amount of time that must pass before a user can change their password.
C. Minimun age

11. Password _____ is when the user is forced to change their password.
B. Maximum age

12. You should configure the _____ option to limit the chances a hacker has to figure out a password.
D. Account lockout

13. If a user will be gone for an extended period of time or fired, it is best to _____ their account.
C. disable

14. When an account has membership in more than one group, They _____ the permissions of all of them.
A. inherit

15. To create an account on a domain controller, you use _____.
D. Active Directory Users and Computers

Chapter #10 Homework

Terms

1. Domain - A group of computers and devices on a network that are administered as a unit with common rules and procedures. Within the Internet, domains are defined by the *IP address*. All devices sharing a common part of the IP address are said to be in the same domain.

2. Map - A file showing the structure of a program after it has been compiled. The *map file* lists every variable in the program along with its memory address. This information is useful for debugging purposes. Normally a compiler will not produce a map file unless you explicitly ask for it by specifying the appropriate compiler option.

3. Share – Sharing a folder or file with other computers And users on a network.

Multiple Choice

2. The _____ button applies any changes you have made but leaves the Properties window open.
A. Apply

3. The _____ button applies any changes you have made but closes the Properties window.
B. OK

4. If you are using a computer named LAB04 and you are trying to access shares on computers called LAB08 and LAB10, which computer must you have an account on?
D. LAB04, LAB08, LAB10

5. You can find other computers in the same workgroup by first clicking on My Network Places and then clicking on _____.
D. Computers near me

6. You hide a folder when you share it by appending a_____ to the _____ of the share name.
D. $ end

7. The WINNT folder, which houses all of the system files, is a hidden share called _____.
C. ADMIN$

8. _____ is/are how we control how much access a user has to the network resources.
D. Permissions

9. The highest level of permissions you would typically give a regular end user is _____.
C. Modify

10. We map drives to resources on other computers for our users to _____.
D. make it easier for them to find the resources

11. The correct syntax to map a drive using the Wizard is _____.
D. \\server\share

12. If you have a hidden share called CLASS and it is on a computer named LAB09, the correct syntax to map a drive to it using the Wizard is _____.
C. \\LAB09\CLASS$

13. When you map a drive to a resource, you can use _____.
B. any letterable on the client computer

14. When you move a share on your computer and reshare it with the same name, the people mapped to it _____.
B. won't need to do anything

15. You can have _____ share(s) with the same name on a computer.
A. One

Homework #11

Terms

1. APIPA – Automatic Private IP Addressing. A temporary solution that allows your clients to continue to communicate on the LAN but not gives them Internet access.

2. DoS Attack - Short for *denial-of-service attack,* a type of attack on a network that is designed to bring the network to its knees by flooding it with useless traffic. Many DoS attacks, such as the *Ping of Death* and *Teardrop* attacks, exploit limitations in the TCP/IP protocols. For all known DoS attacks, there are software fixes that system administrators can install to limit the damage caused by the attacks. But, like viruses, new DoS attacks are constantly being dreamed up by hackers.

3. DHCP - Short for *Dynamic Host Configuration Protocol,* a protocol for assigning dynamic IP addresses to devices on a network. With dynamic addressing, a device can have a different IP address every time it connects to the network. In some systems, the device's IP address can even change while it is still connected. DHCP also supports a mix of static and dynamic IP addresses.

4. IANA - Short for *Internet Assigned Numbers Authority,* an organization working under the auspices of the Internet Architecture Board (IAB) that is responsible for assigning new Internet-wide IP addresses.

5. IPCONFIG - Ipconfig (sometimes written as IPCONFIG) is a command line tool used to control the network connections on Windows NT/2000/XP machines. There are three main commands: "all", "release", and "renew". Ipconfig displays all current TCP/IP network configuration values and refreshes Dynamic Host Configuration Protocol (DHCP) and Domain Name System (DNS) settings. Used without parameters, ipconfig displays the IP address, subnet mask, and default gateway for all adapters.

6. NETSTAT – Lets you know what communication ports on your computer are in use and who is using them.

7. PING - A utility to determine whether a specific IP address is accessible. It works by sending a packet to the specified address and waiting for a reply. PING is used primarily to troubleshoot Internet connections. There are many freeware and shareware Ping utilities available for personal computers.

8. TCP/IP - Abbreviation of *Transmission Control Protocol,* and pronounced as separate letters. TCP is one of the main protocols in TCP/IP networks. Whereas the IP protocol deals only with packets, TCP enables two hosts to establish a connection and exchange streams of data. TCP guarantees delivery of data and also guarantees that packets will be delivered in the same order in which they were sent.

9. TRACERT – A utility that traces a packet from your computer to an Internet host, showing how many hops the packet requires to reach the

host and how long each hop takes. If you're visiting a Web site and pages are appearing slowly, you can use traceroute to figure out where the longest delays are occurring.

Multiple Choice

1. A <u>disaster recovery plan</u> includes some timeframe wherein the network must be fully functional again following the failure.
2. In a <u>mission critical</u> environment, especially where lives are at stake, most companies have redundant systems in place so there is no real downtime.
3. You should try booting into <u>safe mode</u> if the system becomes unstable after installing a new device driver.
4. When a computer boots, it performs the <u>power on self test</u>. You may see a message about the version of BIOS that is loaded and then the computer usually checks its drives.
5. Services can be configured to be <u>disabled, manually started or automatically started</u> when the system boots.
6. A computer configured with a <u>static</u> IP address always has the same IP address every time it boots.
7. A computer configured with a <u>dynamic</u> IP address may have a different IP address every time it boots.
8. The <u>subnet mask</u> is used to help determine if the network can broadcast data because the sender and recipient are on the same network segment, or if it must route data to another segment.
9. The <u>gateway</u> is the address of the device that will do the routing of the data if needed.
10. The <u>DNS</u> handles the interpretation from name to IP address and vice versa.
11. The <u>DHCP</u> service can be installed on a server to allocate IP addresses and other information.
12. In addition to other information the <u>IPCONFIG/ALL</u> command will tell you what your IP and MAC addresses are.
13. The <u>hostname</u> command will return the name of your computer.
14. The <u>NETSTAT –AN</u> command will show you all of the communication ports that are being used on your computer.
15. A <u>APIPA</u> number is used on a client computer if the DHCP server is unavailable for some reason.

1.

Chapter 12 Homework

Review Questions

1. The Difference Between the Internet and the World Wide Web

Many people use the terms *Internet* and *World Wide Web* (a.k.a. *the Web*) interchangeably, but in fact the two terms are not synonymous. The Internet and the Web are two separate but related things.

The *Internet* is a massive network of networks, a networking infrastructure. It connects millions of computers together globally, forming a network in which any computer can communicate with any other computer as long as they are both connected to the Internet. Information that travels over the Internet does so via a variety of languages known as protocols.

The *World Wide Web*, or simply *Web*, is a way of accessing information over the medium of the Internet. It is an information-sharing model that is built on top of the Internet. The Web uses the HTTP protocol, only one of the languages spoken over the Internet, to transmit data. Web services, which use HTTP to allow applications to communicate in order to exchange business logic, use the Web to share information. The Web also utilizes browsers, such as Internet Explorer or Netscape, to access Web documents called Web pages that are linked to each other via hyperlinks. Web documents also contain graphics, sounds, text and video.

The Web is just one of the ways that information can be disseminated over the Internet. The Internet, not the Web, is also used for e-mail, which relies on SMTP, Usenet news groups, instant messaging and FTP. So the Web is just a portion of the Internet, albeit a large portion, but the two terms are not synonymous and should not be confused.

2. IIS- Short for *Internet Information Server,* Microsoft's Web server that runs on Windows NT platforms. In fact, IIS comes bundled with Windows NT 4.0. Because IIS is tightly integrated with the operating system, it is relatively easy to administer. However, currently IIS is available only for the Windows NT platform, whereas Netscape's Web servers run on all major platforms, including Windows NT, OS/2 and UNIX.

3. META Tag- A special HTML tag that provides information about a Web page. Unlike normal HTML tags, meta tags do not affect how the page is displayed. Instead, they provide information such as who created the page, how often it is updated, what the page is about, and which keywords represent the page's content. Many search engines use this information when building their indices.

4. Boolean Operator- There are five Boolean operators that can be used to manipulate TRUE/FALSE values. These operators have the following meanings, where *x* and *y* represent values of TRUE or FALSE.

The OR operator is often called an *inclusive OR,* whereas XOR is an *exclusive OR*.

Boolean operators are used widely in programming and also in forming database queries. For example, the query

SELECT ALL WHERE LAST_NAME = "Smith" AND FIRST_NAME = "John"

finds all records with the name John Smith. But the query

SELECT ALL WHERE LAST_NAME = "Smith" OR FIRST_NAME = "John"

finds all records with the last name "Smith" *or* the first name "John."

Three Examples:
- a. OR operator
- b. exclusive OR
- c. inclusive OR operator

5. Search Engine- A program that searches documents for specified keywords and returns a list of the documents where the keywords were found. Although *search engine* is really a general class of programs, the term is often used to specifically describe systems like Alta Vista and Excite that enable users to search for documents on the World Wide Web and USENET newsgroups.

Two Examples:
    a. Yahoo
    b. Google

Subject Guide-

Two Examples:
    a.
    b.

Hands On

1. Vint Cerf's contribution to the growth of the Internet- Vinton Cerf has been hailed as the father of the Internet. He co-created TCP/IP 24 years ago and broke down policy barriers, a feat that turned the government-based network into a revolutionary commercial medium.

Throughout his entire career, the 55-year-old Cerf has taken his love of science fiction, his knowledge of computer science and his sensitivity toward humanity and melded these qualities to vastly improve the way the entire world communicates and gathers knowledge. The Internet has become the fastest-growing communications network, touched by everyone from techies at NASA to schoolchildren in rural America.

2. Tim Berners-Lee's contribution to the World Wide Web- **Sir Timothy "Tim" John Berners-Lee**, KBE, FRS (**TimBL** or **TBL**) (born June 8, 1955 in London) is the inventor of the World Wide Web and director of the World Wide Web Consortium, which oversees its continued development.

3. The RGB color code for red is 255 0 0, for green it's 0 255 0, and for blue it is 0 0 255. What is the hexadecimal equivalent for each?

    Red –639C
    Green-9F6
    Blue-FF

4. ARPANET- The precursor to the Internet, ARPANET was a large wide-area network created by the United States Defense Advanced Research Project Agency (ARPA). Established in 1969, ARPANET served as a testbed for new networking technologies, linking many universities and research centers. The first two nodes that formed the ARPANET were UCLA and the Stanford Research Institute, followed shortly thereafter by the University of Utah.

5. Marc Andreesen-   The Father of Mosaic and Netscape

Terms

1. Apache Web Server- Often referred to as simply *Apache*, a public-domain open source Web server developed by a loosely-knit group of programmers. The first version of Apache, based on the NCSA httpd Web server, was developed in 1995.

2. Browser- Short for *Web browser,* a software application used to locate and display Web pages. The two most popular browsers are Netscape Navigator and Microsoft Internet Explorer. Both of these are *graphical browsers,* which means that they can display graphics as well as text. In addition, most modern browsers can present multimedia information, including sound and video, though they require plug-ins for some formats.

3. CERN- Pronounced *sern.* Short for *Conseil Europeen pour le Recherche Nucleaire* (European Laboratory for Particle Physics), a research laboratory headquartered in Geneva, Switzerland, and funded by many different countries. While most work deals with nuclear physics, the CERN is known for Tim Berners-Lee's pioneering work in developing the World Wide Web portion of the Internet.

4. Circuit Switching- A type of communications in which a dedicated channel (or *circuit*) is established for the duration of a transmission. The most ubiquitous circuit-switching network is the telephone system, which links together wire segments to create a single unbroken line for each telephone call.

5. FTP- Short for *File Transfer Protocol,* the protocol for exchanging files over the Internet. FTP works in the same way as HTTP for transferring Web pages from a server to a user's browser and SMTP for transferring electronic mail across the Internet in that, like these technologies, FTP uses the Internet's TCP/IP protocols to enable data transfer.

6. Gopher- A system that pre-dates the World Wide Web for organizing and displaying files on Internet servers. A Gopher server presents its contents as a hierarchically structured list of files. With the ascendance of the Web, many gopher databases were converted to Web sites which can be more easily accessed via Web search engines.

7. HTML- A system that pre-dates the World Wide Web for organizing and displaying files on Internet servers. A Gopher server presents its contents as a hierarchically structured list of files. With the ascendance of the Web, many gopher databases were converted to Web sites which can be more easily accessed via Web search engines.

8. HTTP- Short for *HyperText Transfer Protocol*, the underlying protocol used by the World Wide Web. HTTP defines how messages are formatted and transmitted, and what actions Web servers and browsers should take in response to various commands. For example, when you enter a URL in your browser, this actually sends an HTTP command to the Web server directing it to fetch and transmit the requested Web page.

9. Internet- The *Internet* is a massive network of networks, a networking infrastructure. It connects millions of computers together globally, forming a network in which any computer can communicate with any other computer as long as they are both connected to the Internet. Information that travels over the Internet does so via a variety of languages known as protocols.

10. Meta Tag- A special HTML tag that provides information about a Web page. Unlike normal HTML tags, meta tags do not affect how the page is displayed. Instead, they provide information such as who created the page, how often it is updated, what the page is about, and which keywords represent the page's content. Many search engines use this information when building their indices.

11. Mosaic- An application that simplifies accessing documents on the World Wide Web. Originally produced by the National Center for Supercomputing Applications (NCSA), Mosaic has always been distributed as freeware. In 1994, however, the NCSA turned over commercial development of the program to a company called Spyglass. There are now several varieties of Mosaic, some free and some for sale.

12. Packet Switching- Refers to protocols in which messages are divided into packets before they are sent. Each packet is then transmitted individually and can even follow different routes to its destination. Once all the packets forming a message arrive at the destination, they are recompiled into the original message.

13. Portal- Commonly referred to as simply a *portal*, a Web site or service that offers a broad array of resources and services, such as e-mail, forums, search engines, and on-line shopping malls. The first Web portals were online services, such as AOL, that provided access to the Web, but by now most of the traditional search engines have transformed themselves into Web portals to attract and keep a larger audience.

14. Robot- (1) A device that responds to sensory input. See under *robotics*.

(2) A program that runs automatically without human intervention. Typically, a robot is endowed with some artificial intelligence so that it can react to different situations it may encounter. Two common types of robots are *agents* and *spiders*.

15. Search Engine- A program that searches documents for specified keywords and returns a list of the documents where the keywords were found. Although *search engine* is really a general class of programs, the term is often used to specifically describe systems like Alta Vista and Excite that enable users to search for documents on the World Wide Web and USENET newsgroups.

16. Site Map- A hierarchical visual model of the pages of a Web site. Site maps help users navigate through a Web site that has more than one page by showing the user a diagram of the entire site's contents. Similar to a book's table of contents, the site map makes it easier for a user to find information on a site without having to navigate through the site's many pages. Also, in SEO, a site map can make it easier for a search engine spider to find all a site's pages.

17. Spider- A program that automatically fetches Web pages. Spiders are used to feed pages to search engines. It's called a spider because it *crawls* over the Web. Another term for these programs is *webcrawler*.

Multiple Choice

1. The ARPANET and Internet has been around since the 1960's.
2. The World Wide Web has only been around since the early 1990's.
3. The father of the Internet is considered to be Vint Cerf.
4. The father of the World Wide Web is considered to be Tim Berners-Lee.
5. Telnet allows you to remotely log into other computers.
6. FTP allows you to transfer files to and from other computers.
7. Gopher is a directory-driven way to navigate the internet.
8. A telephone uses a technology called circuit switching to make sure that you speak to the party you dialed.
9. The internet uses a technology called packet switching to make sure your data gets to the intended destination.
13. Typically, you make a Microsoft server into a Web server by installing the Internet Information services.
14. For security reasons, it is recommended that a web server be a member server.
15. HTML is the code used to develop simple web pages.
16. One of the biggest problems with research now is filtering through all of the results to find the most relevant.
17. Yahoo is a directory that is organized by category and is considered a subject guide.
18. Yahoo stands for Yet Another Hierarchical Officious Oracle.
19. Search engines index other sites by sending agents out on the internet to devour whole web sites.
20. You can force a search engine to find an exact phrase by using double quotes
21. You can force a search engine to include words by using a plus sign.
22. Boolean operators are used to help narrow the search and include words like AND, NOT, and OR.
23. A portal is a web site that is considered an entry point to some resource.
24. PDF stands for portable document format and it was designed by adobe to make it easier and faster to publish documents on the web while retaining all of their formatting.

Networks

Scope – A group of two or more computer systems linked together. There are many types of computer networks, including:

>**LAN**- Short for Local Area Network, a computer network that spans a relatively small area. Most LANs are confined to a single building or group of buildings.
>**MAN**- Short for Metropolitan Area Network, a data network designed for a town or city. In terms of geographic breadth, MANs are larger than local-area networks (LANs), but smaller than wide-area networks (WANs). MANs are usually characterized by very high-speed connections using fiber optical cable or other digital media.
>**WAN-** Short for Wide Area Network, a computer network that spans a relatively large geographical area. Typically, a WAN consists of
>two or more local-area networks (LANs). Computers connected to a wide-area network are often connected through public networks, such as the telephone system. They can also be connected through leased lines or satellites. The largest WAN in existence is the Internet.
>**CAN-** Short for Campus Area Network, The computers are within a limited geographic area, such as a campus or military base.
>**HAN-** Short for Home Area Network , a network contained within a user's home that connects a person's digital devices.

Network Topology - The geometric arrangement of a computer system. Common topologies include a bus, star, and ring.

>**Star Topology** - All devices are connected to a central hub. Nodes communicate across the network by passing data through the hub.
>**Bus Topology** - All devices are connected to a central cable, called the bus or backbone.
>**Ring Topology** - All devices are connected to one another in the shape of a closed loop, so that each device is connected directly to two other devices, one on either side of it.
>**Tree Topology -** A hybrid topology. Groups of star-configured networks are connected to a linear bus backbone.

Network Technology – Defines how the packets traverse the network, each using a set of rules to get from point A to point B.

>**Token Ring** - A type of computer network in which all the computers are arranged (schematically) in a circle. A token, which is a special bit pattern, travels around the circle. To send a message, a computer catches the token, attaches a message to it, and then lets it continue to travel around the network.
>**Ethernet -** A local-area network (LAN) architecture developed by Xerox Corporation in cooperation with DEC and Intel in 1976. Ethernet uses a bus or star topology and supports data transfer rates of 10 Mbps.

Network Types

>**Peer-to-Peer-** Often referred to simply as peer-to-peer, or abbreviated P2P, a type of network in which each workstation has equivalent capabilities and responsibilities. Peer-to-peer networks are generally simpler, but they usually do not offer the same performance under heavy loads.
>**Client/Server-** A network architecture in which each computer or process on the network is either a client or a server. Servers are powerful computers or processes dedicated to managing disk drives (file servers), printers (print servers), or network traffic (network servers). Clients are PCs or workstations on which users run applications. Clients rely on servers for resources, such as files, devices, and even processing power.

Network Administrator Rules

Ethics - (from Greek meaning "custom") is the branch of axiology, one of the four major branches of philosophy, which attempts to understand the nature of morality; to define that which is right from that which is wrong.
Server Tools - (DOMAIN CONTROLLER) Active Directory Domains and Trusts, Active Directory Sites and Services, Active Directory Users and Computers, Component Services, Computer Management, Configure your Server, Data Sources (ODBC), Distributed File System, DNS, Domain Controller Security Policy, Event Viewer, Internet Services Manager, Licensing, Local Security Policy, Network Monitor, Performance, Routing and Remote Access, Server Extensions Administrator, Services, Telnet Server Administration.

Accounts & Groups

Authentication- The process of identifying an individual, usually based on a username and password. In security systems, authentication is distinct from authorization , which is the process of giving individuals access to system objects based on their identity. Authentication merely ensures that the individual is who he or she claims to be, but says nothing about the access rights of the individual.
Password- A secret series of characters that enables a user to access a file, computer, or program.

Shares & Permissions

Folders-
Mapped Drive-
Printers-

Maintenance

Backup- To copy files to a second medium (a disk or tape) as a precaution in case the first medium fails. One of the cardinal rules in using computers is back up your files regularly.
IP- Short for Internet Protocol. IP specifies the format of packets, also called datagrams, and the addressing scheme.
IP Config-
Ping- A utility to determine whether a specific IP address is accessible. It works by sending a packet to the specified address and waiting for a reply. PING is used primarily to troubleshoot Internet connections.
Static vs. Dynamic- A Static IP Address never changes and a Dynamic IP Address does.

Internet

URL- Abbreviation of Uniform Resource Locator, the global address of documents and other resources on the World Wide Web. The first part of the address indicates what protocol to use, and the second part specifies the IP address or the domain name where the resource is located.
Search Engine- A program that searches documents for specified keywords and returns a list of the documents where the keywords were found. Although search engine is really a general class of programs, the term is often used to specifically describe systems like Alta Vista and Excite that enable users to search for documents on the World Wide Web and USENET newsgroups. Typically, a search engine works by sending out a spider to fetch as many documents as possible. Another program, called an indexer, then reads these documents and creates an index based on the words contained in each document. Each search engine uses a proprietary algorithm to create its indices such that, ideally, only meaningful results are returned for each query.
HTML- Short for Hyper Text Markup Language, a system that predates the World Wide Web for organizing and displaying files on Internet servers.

Networking Items-Price List   **Name** Amy Hissom

Using the Internet, find the pricing for the following Networking items:
List the location you find the items at all possible.

Item	Manufacturer/Description	Price
Switch/Hub Found at: Best Buy.com	**Dynex 8-Port 10/100 Ethernet Switch** Model: DX-ESW8 Speed up your network connection with this 8-port Ethernet switch. High-tail your way through daily tasks at speeds up to 200 Mbps, so you can access information with ease. 8-port Fast Ethernet switch upgrades old networks to a 100 Mbps network for a high-speed networking solution Auto negotiation ports support auto MDI/MDIX function, allowing each port to operate as un uplink or general port Performs up to 200 Mbps/port in full-duplex dedicated bandwidth **Dynex 4-Port 10 Mbps Ethernet Hub** Model: DX-EHB4 Connect your work team and give attention to network security and management with this 4-port hub. If you're looking to construct a small LAN, this auto sensing hub is an ideal candidate. 4 auto sensing ports include 1 uplink port, so you can link to other hubs Complies with IEEE 802.3 10Base-T standards for complete transfer of information LED indicators monitor power, collision and link/Rx to keep track of your network status	$24.99 9.99
Router Found at: Best Buy.com	**Linksys 4-Port Ethernet Broadband Router** Model: RT41-BU Share your broadband connection with up to 4 computers using this router that offers high-speed access and advanced security. Connects up to 4 computers to share broadband or DSL Internet access, files and games Built-in 4-port switch with 10/100Base-T and auto sensing capability Advanced SPI (Stateful Packet Inspection) firewall with protection against a variety of attacks	59.99
Wireless Router Found at: Best Buy.com	**Buffalo Technology AirStation Turbo G High-Power Wireless Cable/DSL Smart Router** Model: WHR-HP-G54 Give your wireless network a boost when you use this smart router that can extend wireless range and improve performance by up to 50%. Built-in amplifier improves wireless performance by up to	79.99

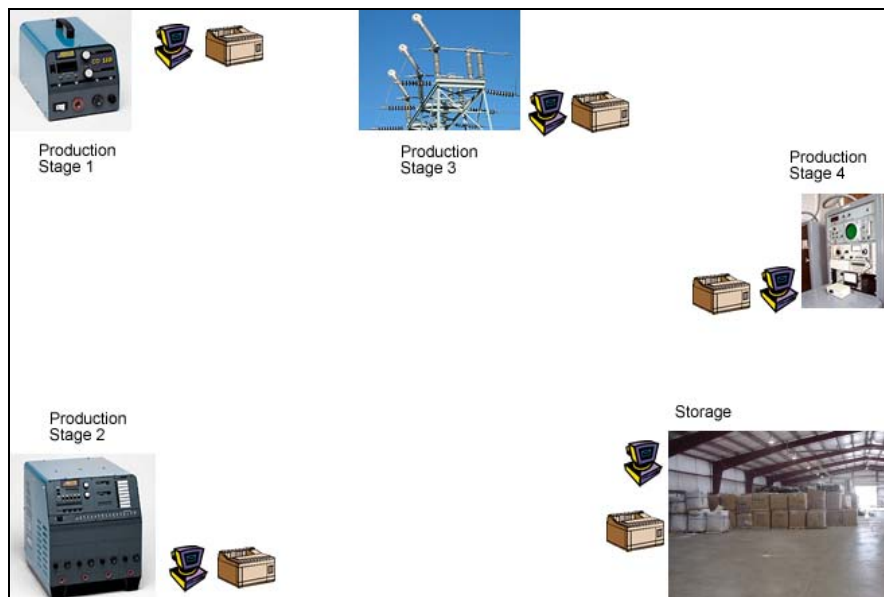|		
	50% and extends range by up to 70% 802.11g wireless interface; 125 High Speed Mode transfer rates when used with optional adapter (not included) Optimized high-speed routing up to 5x faster than standard routing	
Wireless PCI Adapter Found at: Best Buy.com	**Linksys 802.11g Wireless-G Desktop Card with SRX** Enhancement Model: WMP54GX4 Take care of business with this high-speed Wireless-G PCI adapter that features SRX technology for blazing-fast transfer speeds. 2.4GHz wireless frequency (802.11b- and 802.11g-compliant) SRX smart antenna technology increases wireless range by up to 3 times, reduces dead spots and supports accelerated data transfer rates Up to 240 Mbps data transfer rates — up to 8 times faster than standard Wireless-G (802.11g)	109.99
100 Ft CAT5 Cable Found at: Buy.com	**Belkin CABLE;CAT5;STRANDED;100 FT - A7J304-1000-YLW**	81.99
Network Card Found at: Best Buy.com	**Linksys EtherFast Desktop 10/100 PCI Network Card** Model: LNE100TX Everything you need to connect one PC to a fast Ethernet network is in one box. Designed for 32-bit PCI slots, it supports both 10 Mbps and 100 Mbps networks.	34.99
Wireless Notebook Adapter Found at: Best Buy.com	**Netgear RangeMax 240 MIMO Wireless Notebook Adapter** Model: WPNT511NA Now you can enjoy wireless networking speeds on your notebook that rival the speeds you experience on your wired network when you install the RangeMax 240 wireless notebook adapter. MIMO technology helps eliminate dead spots and extend range. Up to 240 Mbps data transfer rates when used with RangeMax 240 Wireless Router (not included) 2.4GHz wireless frequency (802.11b- and 802.11g-compliant) Adaptive Channel Expansion (ACE) technology allows adapter to dynamically adapt to wireless interference to deliver consistently high speed	129.99
Firewall Software Found at: Best Buy.com	**Norton SystemWorks 2006 / Norton Personal Firewall 2006 - Windows** 465040005 CD-ROM Release Date: 10/26/2005	89.99

Operating System & Networking Project

By using your knowledge about operating systems and networking, complete the scenario below. You may use your imagination, real-world references or experiences, creative planning, or other means to complete the task.

NEDLOG Inc., a progressive company in the industrial world, recently acquired a new facility in a town about 10 miles away from their headquarters. The president of the company wishes to create a new line of product at the new facility. The company employs approximately 200 overall employees. With the new acquisition, the company will probably expand by adding between 50-75 employees.
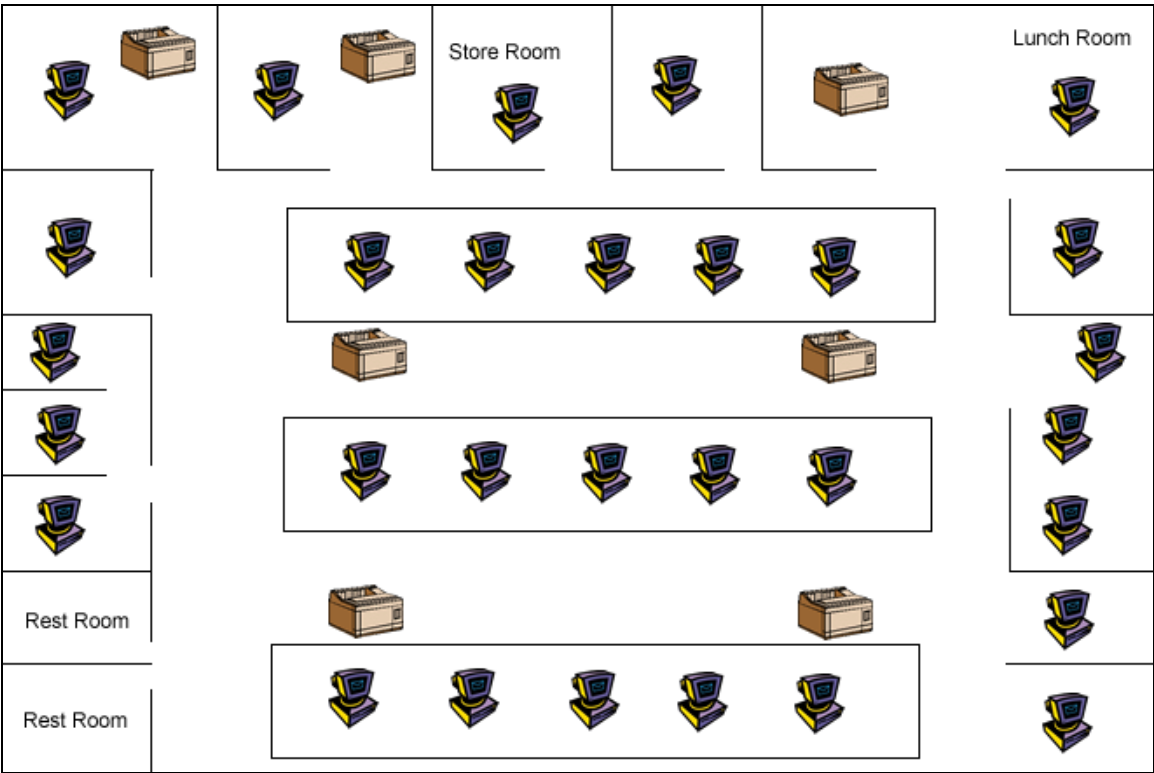
The sales and marketing manager at NEDLOG has been working as the "computer person" for the past few years because the president hasn't seen the need to hire a network administrator. With the new acquisition, the president and marketing manager agree that it is now time to "take the plunge" and hire a network administrator.

An advertisement was recently placed on DICE.com for the position. You had inquired and was been granted an interview. During the interview, they were impressed with your qualifications and interpersonal skills, but as a "test" of your knowledge of operating systems and networking, they have asked if you could propose a plan for their computer system at the headquarters and at the new facility. Eager to have the responsibility taken from the marketing manager, the information attached has been provided that will enable the task to be complete and the marketing manager to then concentrate on selling and marketing the product.
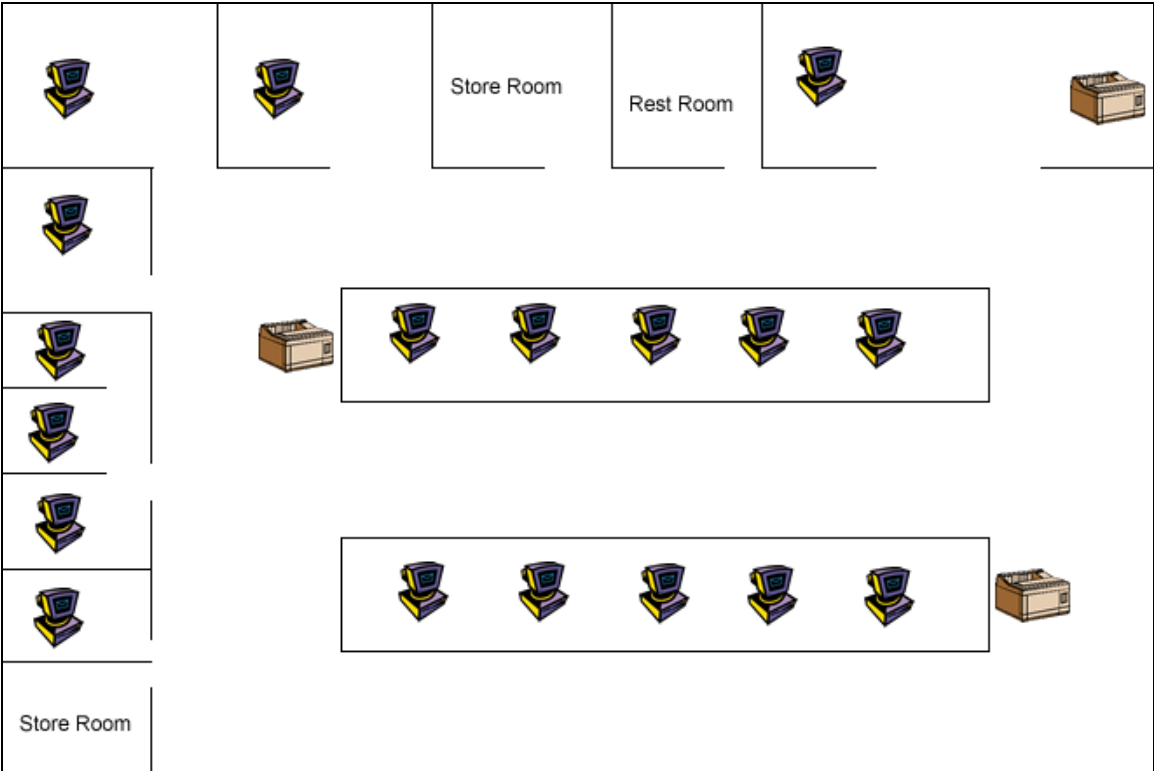
<u>Production Facility</u>

Headquarters Administrative Facility

Store Room

Lunch Room

Rest Room

Rest Room

New Facility

Store Room

Rest Room

Store Room

My Completed Project

Workgroup #2

24 port router, wireless connection, each computer has a wireless adapter, two workgroups, each with it's own printer

Nedlog, Inc. Headquarters

Workgroup #1

Workgroup #3

Building 2

24 port router, wireless connection, each computer has a wireless adapter, two workgroups, each with it's own printer

Workgroup #4
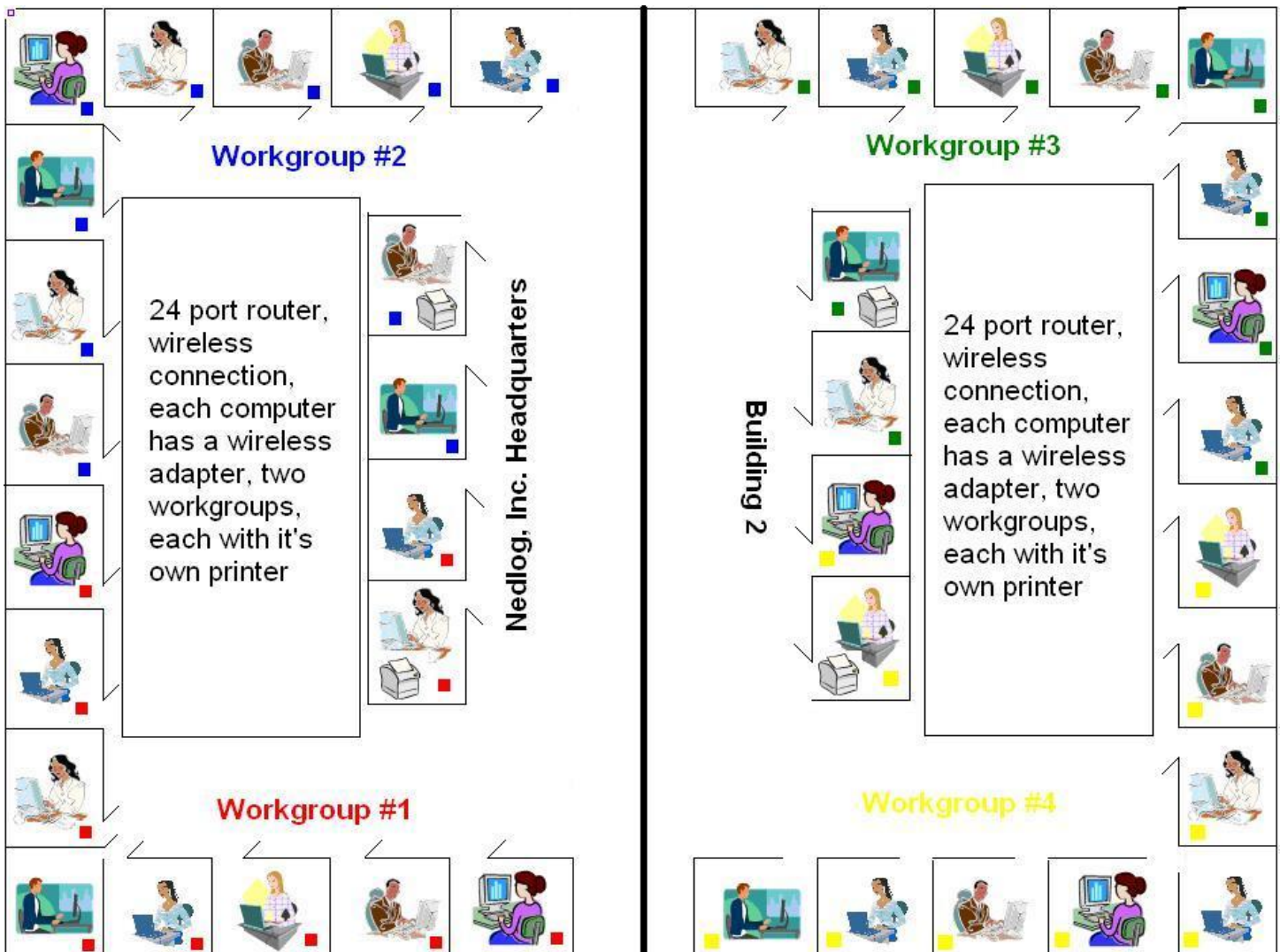
Networks

Scope- (LANs(Local Area Network), MANs, and WANs(Wide Area Network)
Topology-

> **Bus topology:** All devices are connected to a central cable, called the bus or backbone. Bus networks are relatively inexpensive and easy to install for small networks. Ethernet systems use a bus topology.
> **Ring topology :** All devices are connected to one another in the shape of a closed loop, so that each device is connected directly to two other devices, one on either side of it. Ring topologies are relatively expensive and difficult to install, but they offer high bandwidth and can span large distances.
> **Star topology:** All devices are connected to a central *hub*. Star networks are relatively easy to install and manage, but bottlenecks can occur because all data must pass through the hub.
> **Tree topology:** A tree topology combines characteristics of linear bus and star topologies. It consists of groups of star-configured workstations connected to a linear bus backbone cable.

Network Technology- Defines how the packets traverse the network, each using a set of rules to get data from point a to point b. Example: token ring, Ethernet, etc.

> Token Ring- Only one device on the network can transmit at a time and uses a token to pass around the ring.

> Ethernet- The most common network technology in local area networks today. It is not dependent on a specific type of cable or protocol. It allows for multiple protocols to be used. It allows different types of networks to be connected like windows, mac, linux, etc. This technology defines how the data packets are constructed and transmitted across the LAN.

Network Type – Peer-to-Peer or Client/Server

Shares and Permissions

Folders- Right click on the folder you want to share. When the submenu comes up, click on Sharing and security. A box will appear where you can hide, share, etc.

Mapped Drive- Right click on the my computer icon and then click map network drive on the submenu. A box will appear where you can choose a drive letter and choose the folder you want to map,

Printers- Go to printers and faxes and add a new printer. Choose the one that is on the network or the one installed on your computer if you have the computer with the network printer installed on it.

Hidden Share – Same as sharing folders but hiding a particular one on the network so that only certain computers on the network can view it.

Folder Access- Common sense. Access a folder as you normally would whether it is on your computer or the workgroup network.

Physical Network

Hub/Switch- A switch is a smart hub. A hub is a common connection for devices in a network which contains multiple ports and are commonly used to connect segments of a LAN. A switch is a device that filters and forwards packets between LAN segments.

Cable Connect –

NIC- Network Interface Card. An expansion board that you insert into a computer so that the computer can be connected to a network.

Cable Configuration-

General keyboard shortcuts

Press	To
CTRL+C	Copy.
CTRL+X	Cut.
CTRL+V	Paste.
CTRL+Z	Undo.
DELETE	Delete.
SHIFT+DELETE	Delete selected item permanently without placing the item in the Recycle Bin.
CTRL while dragging an item	Copy selected item.
CTRL+SHIFT while dragging an item	Create shortcut to selected item.
F2	Rename selected item.
CTRL+RIGHT ARROW	Move the insertion point to the beginning of the next word.
CTRL+LEFT ARROW	Move the insertion point to the beginning of the previous word.
CTRL+DOWN ARROW	Move the insertion point to the beginning of the next paragraph.
CTRL+UP ARROW	Move the insertion point to the beginning of the previous paragraph.
CTRL+SHIFT with any of the arrow keys	Highlight a block of text.
SHIFT with any of the arrow keys	Select more than one item in a window or on the desktop, or select text within a document.
CTRL+A	Select all.
F3	Search for a file or folder.
ALT+ENTER	View properties for the selected item.
ALT+F4	Close the active item, or quit the active program.
ALT+Enter	Displays the properties of the selected object.
ALT+SPACEBAR	Opens the shortcut menu for the active window.
CTRL+F4	Close the active document in programs that allow you to have multiple documents open simultaneously.
ALT+TAB	Switch between open items.
ALT+ESC	Cycle through items in the order they were opened.
F6	Cycle through screen elements in a window or on the desktop.
F4	Display the Address bar list in My Computer or Windows Explorer.

SHIFT+F10	Display the shortcut menu for the selected item.
ALT+SPACEBAR	Display the System menu for the active window.
CTRL+ESC	Display the **Start** menu.
ALT+Underlined letter in a menu name	Display the corresponding menu.
Underlined letter in a command name on an open menu	Carry out the corresponding command.
F10	Activate the menu bar in the active program.
RIGHT ARROW	Open the next menu to the right, or open a submenu.
LEFT ARROW	Open the next menu to the left, or close a submenu.
F5	Refresh the active window.
BACKSPACE	View the folder one level up in My Computer or Windows Explorer.
ESC	Cancel the current task.
SHIFT when you insert a CD into the CD-ROM drive	Prevent the CD from automatically playing.

DOS Commands

Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Owner>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.
CALL   Calls one batch program from another.
CD   Displays the name of or changes the current directory.
CHCP   Displays or sets the active code page number.
CHDIR   Displays the name of or changes the current directory.
CHKDSK   Checks a disk and displays a status report.
CHKNTFS Displays or modifies the checking of disk at boot time.
CLS   Clears the screen.
CMD   Starts a new instance of the Windows command interpreter.
COLOR   Sets the default console foreground and background colors.
COMP   Compares the contents of two files or sets of files.
COMPACT Displays or alters the compression of files on NTFS partitions.
CONVERT Converts FAT volumes to NTFS. You cannot convert the
         current drive.
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.
DISKCOMP Compares the contents of two floppy disks.
DISKCOPY Copies the contents of one floppy disk to another.
DOSKEY   Edits command lines, recalls Windows commands, and creates 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 two files or sets of files, and displays the differences
         between them.
FIND   Searches for a text string in a file or files.
FINDSTR Searches for strings in files.
FOR   Runs a specified command for each file in a set of files.
FORMAT   Formats a disk for use with Windows.
FTYPE   Displays or modifies file types used in file extension associations.
GOTO   Directs the Windows command interpreter to a labeled line in a
         batch program.
GRAFTABL Enables Windows to display an extended character set in graphics
         mode.
HELP   Provides Help information for Windows commands.
IF   Performs conditional processing in batch programs.
LABEL   Creates, changes, or deletes the volume label of a disk.
MD   Creates a directory.

```
MKDIR    Creates a directory.
MODE     Configures a system device.
MORE     Displays output one screen at a time.
MOVE      Moves one or more files from one directory to another directory.
PATH     Displays or sets a search path for executable files.
PAUSE    Suspends processing of a batch file and displays a message.
POPD     Restores the previous value of the current directory saved by PUSHD.
PRINT    Prints a text file.
PROMPT   Changes the Windows command prompt.
PUSHD    Saves the current directory then changes it.
RD       Removes a directory.
RECOVER  Recovers readable information from a bad or defective disk.
REM      Records comments (remarks) in batch files or CONFIG.SYS.
REN      Renames a file or files.
RENAME   Renames a file or files.
REPLACE  Replaces files.
RMDIR    Removes a directory.
SET      Displays, sets, or removes Windows environment variables.
SETLOCAL Begins localization of environment changes in a batch file.
SHIFT    Shifts the position of replaceable parameters in batch files.
SORT     Sorts input.
START    Starts a separate window to run a specified program or command.
SUBST    Associates a path with a drive letter.
TIME     Displays or sets the system time.
TITLE    Sets the window title for a CMD.EXE session.
TREE     Graphically displays the directory structure of a drive or path.
TYPE     Displays the contents of a text file.
VER      Displays the Windows version.
VERIFY   Tells Windows whether to verify that your files are written
         correctly to a disk.
VOL      Displays a disk volume label and serial number.
XCOPY    Copies files and directory trees.

C:\Documents and Settings\Owner>
```