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## General Computer Usage

There are two things that I think are of prime importance when using a computer. Any computer. The first and simplest, is to read the screen. This means everything on the screen. The reason for this, is that usually when things go wrong there will be some kind of error message giving you a hint as to what the problem might be. Even if there is no such message, you might be able to determine the problem yourself by making sure everything is as you expect it to be.

For example, if you're typing a letter and all of a sudden the margins go haywire, you might notice that you accidentally did something to change the justification. All you would need to do is change the margins back to the way you had them. If you didn't know how, hopefully you would see something on the screen telling you how to get help.

Most computers today (and the software that runs on them) have some sort of on-line context-sensitive help. The on-line part means that you can access it on the computer, no matter what you're doing at the time. Context-sensitive means that the help you get varies depending on what you're doing at the time.

Continuing from the above example, if you're not sure how to change the margins, you might hit the <F1> key for help (this is usually the help key in DOS and Windows programs). You might get information on how to change all of your page settings. Then, you would exit the help screen, and perform whatever action (keystrokes, or mouse clicking) the help screen suggested. Now you're presented with a baffling screen of settings, none of which you know anything about. Just hit <F1> again, for help with the settings. That's why context-sensitive help is so great, it knows what you're doing when you access it, and changes accordingly.

Remember - I said most, not all programs do this. The only way to find out is to try it.

The second important thing is knowing how the computer thinks. This is an acquired skill, and it would be pretty tough to put such an abstract skill into words. It's not quite as bad as predicting the stock market, but close to that.

### The Basics

The first distinction to understand is the difference between hardware and software. Hardware is the physical devices that are the computer. Software is the multiple programs that run on the computer. A good analogy is the TV. The set itself is the hardware, and the programs you watch are the software.

## The Basics: Hardware

Most people already recognize the different boxes sitting on their desk. There is the monitor (screen), keyboard, mouse, and CPU (the *computer* itself). There are the disk drives, divided into two types: hard and floppy. The difference between a hard disk (*hard disk* and *hard drive* are the same thing) and a floppy disk is simple.

A hard disk is a permanent part of the computer. It is installed into the computer when you buy it, and stays there until it is replaced or repaired. It has hundreds to thousands of times more storage space than floppy disks, and has a much faster access time.

Nowadays, most software is so large, that it must be run off of a hard disk, and most computers come standard with a hard disk. Floppy disks are used for backup copies, and moving things between computers. For example, when you buy software in a store, it comes on a floppy disk. The first thing you do with it, is install it on your hard drive. After it is installed, you won't need the floppy disks for regular usage. They serve as a backup, and are sometimes used to install additional information if you add or change things on your computer (like adding a new printer).

In addition to your hard drive, the other important parts of the CPU are the processor and memory. The processor is the *brain* of the computer. It does all of the actual computing. The memory works in tandem with the processor, storing the information that the processor computes. The processor can only compute what is already in memory, so a lot of time is spent moving data back and forth between disk and memory.

Example: how a computer would add 1 and 2. First the processor would load 1 and 2 into memory. Then it would compute the result, and store *it* in memory. It would then send the result back to whatever asked for this computation in the first place.

Memory is much more expensive than disk space, and thus there is much less memory. Also, anything in memory is lost when the power is turned off, so disks are needed to save your work and programs while your computer is off. Typically, a computer will have around a hundred times more disk space than memory. You're probably wondering how the processor can handle so much information with so little memory. Well, firstly, not everything on the disk needs to be in memory at once. Secondly, the computer is very good and very fast at swapping information between the two.

## The Basics: Software

Software is the closest thing to pure thought. It can be an exact copy of a thought process. Currently, the only examples of this are in the areas of math and logic, but scientists hope to someday be able to create computers that can think like we do. Software is like an idea, in that it has no real physical manifestation. We can write down our thoughts, or record our words on a tape, but that is just a medium of exchange. Even speech is just another medium. The thoughts can be transferred from one person to another without the first person losing anything. An idea cannot be a product, for the whole basis of economics is the law of supply and demand. There is an endless supply of ideas, and anyone can create them. The same can be said about software.

Computers have been made easy to use because of software. The software on a computer today can be thought of like an onion. There are layers and layers, each building on top of the one below. The lowest level of software is stored on chips in the computer. This is usually called B.I.O.S., which stands for Basic In Out System. You usually never see this, because you

don't have to. On top of the B.I.O.S., sits another layer of software. This is called the Operating System. It is stored on the hard drive, and is the first thing loaded into memory every single time a computer is turned on. On PCs the most common OS (operating system) is DOS (which stands for Disk Operating System). Macintoshes use an OS called System (I know what you're thinking, "what kind of a name is that?"). At present, most OSs are system specific, meaning they will only work on one type of computer, either a PC, Mac, or something else. There are some operating systems today that can work on a variety of computer types, and in the near future this will become more and more common.

The operating system provides a standard method of accessing the various components (hardware) of a computer. This makes it possible to run multiple different applications made by multiple different companies, all on the same computer, and sometimes all at the same time. It is not necessary for a new user to know much about an operating system, but understanding these basics will help you understand how the various parts function as a whole. The main function of OSs is managing disks. It is extremely helpful to learn the basics of copying files and moving through directories, but that is outside the purposes of this class. As you gain more and more knowledge of computers, you will find it increasingly important to know how to use the OS.

The final layer of software is the application. Applications are the programs you actually use to get work done. Word processors, databases, and desktop publishing programs are all examples of applications. You might know how to use a few of these already.

Now that you know the different parts of a computer, and how they interact, you should have a better understanding of how a computer works.

A Note on Windows - Microsoft Windows skates a fine line between being an operating system and an application. It is actually neither. It is a graphical interface for DOS programs that is also designed for applications to use its interface. On computers powerful enough to run it at a usable speed, it is a vast improvement over DOS alone.

## CIRCA Specifics: PCs

Being that VAX Unlimited is a student group at the University of Florida, we know a lot about UF's computing resources. Being that the Alachua County Free-Net is just starting, we have no idea what resources they will have available. For this reason, we have included instructions for using CIRCA's computers. If you are a student or faculty member at UF, you can use all CIRCA labs. If not, the information below will be of little help.

The first thing you should always do when you sit down at one of the PCs is reboot it. This is like erasing a chalkboard before you start to work. To reboot, press and hold the <CTRL> <ALT> and <Del> keys, and then release. You will see the screen go blank for a second, and then a series of initialization procedures. Now you will see a screen asking you if you wish to delete the temporary user space on that computer. You will usually choose Yes, though there is no real difference either way. Then, you will see some messages scroll up the screen, and you will be prompted to "Press any key to continue". Go ahead, press a key. After this, you will see the main menu for the NETMENU program. This program allows you to run

your desired application without needing to know anything about DOS. To move through the menus, use the arrow keys and the enter key. To back out of a menu, press the <ESC> key.

## Running Microsoft Windows™

To run Windows, exit the NETMENU by pressing <ESC> till you see the DOS screen (It will be a black screen with "C:\USER>\_" or something like that at the top). Then type **win** and press <Enter>. You will now be asked to choose a resolution. Choose the highest resolution, usually the last one on the list. If for some reason Windows doesn't run, and you are bounced back to the DOS prompt, try again, and choose a lower resolution. Once in Windows, most things are done with the mouse. To run something on the screen, double-click with the left mouse button on the icon. If possible, exit Windows when you are done using it, so that the next person to use the computer won't have to figure out how themselves. To exit windows, either double click on the little box in the upper-left corner of each window until you exit, or press <CTRL>-<Space> and then c until you exit Windows.

## CIRCA Specifics: Apple Macintoshes

Using a Mac is similar to using Windows. You double-click on the program you want to run, just as in Windows. We would put more about Macintoshes here, but this is getting really long already, and we're not really Mac enthusiasts.

## Relevance to the Alachua County Free-Net

Well, technically none of this is directly relevant to the AFN, but we thought it might help anyways.