System Software vs. Application Software.

Are you still with me?? Good. Grab another cup of coffee, and get comfy. (Some of this stuff can get pretty dry after a while.) It won't be long however, before we really get our feet wet with some real life programming!

Two Basic Software Types

Recall computer software is the set of instructions that makes the machine do something. These executable programs are also known as "computer programs" or "program files". All executable software that is written (by programmers) can be grouped into one of two categories: Application software and system software.

Application Software is the software written (by programmers) which allows users to perform specific tasks which generally produce some end result (i.e., information). Examples of application software include: Microsoft Word, Firefox, Solitaire, etc.

System Software is software that controls the computer and enables it to run application software. System software, **which includes the operating system**, allows the computer to manage all of its hardware, such as printer, monitor, keyboard, CPU, memory, etc. Examples of system software include DOS, Windows, Mac OSx, UNIX, etc.

Before you purchase a computer, you should have in mind which types of application software programs you want to run, as well as which system software you want to use. In the past, if you bought an IBM/compatible PC, you had no choice but to use DOS. Now you have more choices. Most users choose the latest-and-greatest version of Windows. Others choose LINUX (a version of UNIX). Others are loyal to DOS, and would "never upgrade to Windows in a million years!". (This quote came from a former student of mine.) Apple users do not have as much flexibility. They get whatever operating system software is currently being sold for that machine. At the time I entered these lecture notes, it was called "Mac OS 9".

So, you should be sure you know which operating system you want to use before choosing a microcomputer. You should take the time to try out the different operating systems, and different application software. Lots of people buy a certain microcomputer because their friends, family, or co-workers liked it. What is really important is what the user of the computer likes! Most microcomputers come with the system software included in the cost of the computer. Some include some application software as well. Software should play just as an important role as hardware when purchasing a microcomputer.

A few final words about System Software

There are 4 basic tasks of System Software:

1. It acts as a liaison between the user and the hardware.
2. It allows the user to manage files on disk (create, copy, rename, delete, move, modify etc.).

3. It provides the means for users to start up application programs.
4. It provides the user interface.

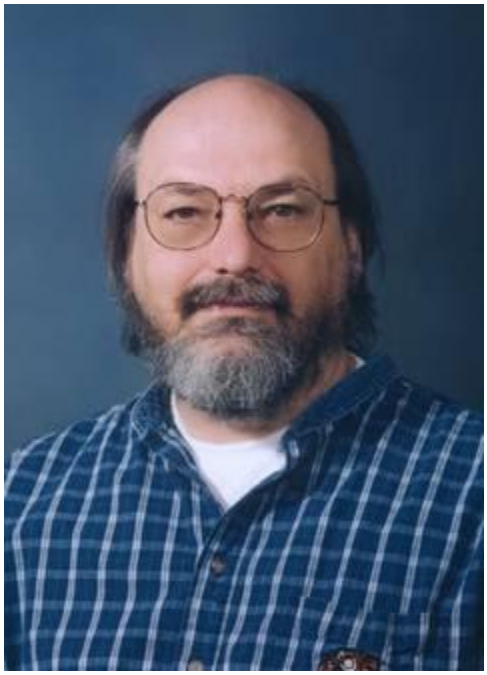
It is the system software that you are communicating with when you type a character on the keyboard. It interprets the keystroke, and issues the appropriate response. It is the system software that allows you to start up the application program(s) you want to run, and then communicates your commands to the hardware devices when you want to print, for instance. It is the system software that determines what your screen will look like when you power up, and how you will interact with the computer (user interface). It is the system software that provides you with the means for managing your files on disk.

This system software does not exist in one huge executable file. It consists of many executable files which, when used together, meet all of the necessary system software requirements. To get a feel for how "large" the system software is, take a look at the directory on your hard disk in which it is stored. (For Windows 7 users, there are about 116,233 files taking about 34.3 GB of storage!)

In this class, we will NOT be writing system software. All of our code will be general purpose, application software (at its most fundamental level).

FYI: Did you know that UNIX (one of the most powerful, and portable operating systems) is written in C?!?!

Do you know who this is?



Ken Thompson -- One of the original developers of the UNIX operating system.