

SOFTWARE

The physical parts of the computer that we've been talking about so far are called Hardware¹³, because you can see and touch them. These hardware devices can input and output data, they can process data in all sorts of ways, and they can store data. Put them all together, and you have a computer.

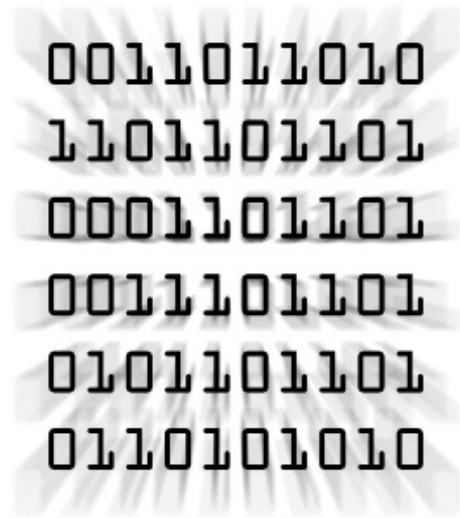
Now, the same pieces of hardware are used whether you want to write a letter, balance your checkbook or play a game of Dungeons and Dragons. So, how does this computer hardware know what to do, and when to do it?

The fact is, these hardware devices don't have a clue. They need instructions to tell them what to do, and without these instructions, they are not much smarter than a box of rocks. So, some of that information that we're storing and processing must be instructions telling the computer what to do.

There are two things I forgot to mention about hardware. One is that it really is hard. If you drop it on your toe, it hurts. The other thing is that it's not easy to change. If you want to upgrade some part of your hardware, that usually means you take out that part and store it in a box in your garage, and you put in a new, bigger and better part into the computer.

¹³ Hardware: The physical parts of a computer- nuts, bolts, electrical components or complete devices.

The computer's *instructions*, on the other hand, don't have either of those qualities. You can't see or touch a computer instruction, or drop it on your toe. However, you can change it easily, with the push of a keystroke. In fact, the computer can change its own instructions, and does so constantly during processing as it decides what to do next. For these reasons, **Software**¹⁴ is a very appropriate name for computer instructions, don't you think?



These software instructions are organized into **sets** of instructions called **Programs**. A software program is a set of instructions to do a particular task. For instance, if you want to play a game on the computer, you must have a program that contains the instructions for that game. If you want to write a letter, you would use a program for word processing, and for e-mail, you guessed it - an e-mail program.

¹⁴ Software: Instructions for a computer, organized into programs.

One program, called the **Operating System**¹⁵, actually runs the computer. Certain things need to be done no matter what you are using the computer for. These are things like moving data on and off the disk, putting information on the monitor screen, and so forth. If every program needed to contain the instructions for doing all these things, it wouldn't be very efficient. So, with the operating system taking care of the details, each of the other programs can stick to their particular jobs.

These other programs are called **Applications**, because their purpose is to *apply* the computer to a certain task. So, the software on your computer consists of the **operating system** to run the show, and **applications** for each of the things you actually want to use your computer for.

Some examples of operating systems are '**DOS**' and '**Windows**'. You will get very familiar with operating systems in Book 3.



By the way, when you turn on the computer, it's the operating system that actually gets it started, and waits to find out if you want to get right to work or would rather play a quick game of computer solitaire while you finish your coffee.

¹⁵ Operating System: The master control program for a computer.