



How to Make a Computer Think

Ever watched movies where the computer whiz saves the day? You know the ones I mean, the kid with glasses who seems quiet until the crisis arises and with a lightening combinations of strokes on the keyboard and an almost magical ability to understand cyber space he steps up to save the day. Have you ever wished that computer genius could be you? If so then you may consider exploring the field of Software Design Engineer. Computer software engineers work in a clean comfortable environment an average of forty hours a week, with most working some evenings and an occasional weekend. Some travel in their work to client locations but for the most part the job is a comfortable and well paying one. Because they spend so much time at a computer they are subject to eye strain, back problems and such injuries as carpal tunnel syndrome, so it is important that they balance their work with appropriate physical exercise to keep good health. When you think of the superstars of this field think of men like Steve Jobs, Bill Gates and others who took Computer Software Design to a stellar level. While we all can't become a multi-millionaire software successes, many of us have the skills and talents needed and with a little training we can have a satisfying and long term secure career working in computer software design engineering.

A Computer software design engineer develops and maintains programs that are a set of coded instructions that tell a computer what to do and in what logical sequence to do it. A software design engineer might be asked to improve a computer system already in use or to develop a program from scratch. He will first analyze the task at hand and then apply techniques of computer science, engineering, and mathematical analysis to come up with the solution that best fits the application. The software engineers will then prepare systems flow charts and show diagrammatically how the information will flow through the computers and the peripheral environments to accomplish the job. After all these steps the engineer would finally create the actual outline of the program. In a large company computer engineers would instruct the computer programmers to write the actual code the program consists of and only step in when a problem occurs. Some programs are written in days and some take years to complete. Computer software engineers work in fields ranging from manufacturing, industry, engineering, government offices, and education. Software engineers can work in two branches of [developer jobs](#); computer application software engineering and computer systems software engineering. Computer applications software engineers develop applications programs that have a specific task, such as controlling a robot arm in a factory. Computer systems software engineers develop the software necessary to run computer systems. In a large company they may coordinate each of a department's needs. A systems software engineer may, for instance, design a program that links the inventory systems to the accounting department so that changes in inventory are automatically updated in the accounting records. These engineers typically work for computer design firms or manufacturers that configure, implement, and install computer systems for other companies. Computer software engineers use a variety of computer language such as C, C++, Java,

SQL, Microsoft SQL and others and training in these languages is mandatory for job seekers.

Training for the job candidate in the software design field includes more than just SQL. A college degree is a must and students in high school should focus on mathematics, computer science, and physics. They should also take programming courses in school or learn computer languages in their spare time. They can also benefit from earning certifications from companies that offer it such as the Microsoft certification programs available. While in college a wise student will also seek to gain experience by getting an internship with a software engineer. A college degree in computer science or software engineering is required for most jobs; for more demanding jobs a graduate degree will be preferred by most employers. Knowledge of major computer languages such as mentioned above is a must and nation's certifications courses are offered for most major computer languages including C++, Java, SML and others. On occasion some employer's sill will hire inexperienced college graduates with promising resumes and provide further training at the company's expense. Most programmers can expect to train the rest of their careers as innovations and new languages and technologies arrive continually in the business marketplace.

When first starting out, a computer software engineer can expect to spend their time testing and verifying programs already in development. As they gain experience they will be asked to design and develop software of their own. Some who show an aptitude for management will go on to become supervisors and department managers as well. Some start their own firms and companies and excel in the field of computer software design as independent business owners.

Eight hundred thousand people worked in software development and design in 2004.



SQL Career Feature

The field is expected to grow at a much faster pace than average through 2014 with many job opportunities available for those who prepare themselves for these positions. With a median income of \$80,519 per year and much more available

depending upon the talents of the individual, computer software design engineer can be both a wealth building and exciting career choice.

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