A Career as a Computer Programmer

Major Career Points:

- Almost 8 out of 10 computer programmers held an associate’s degree or higher in 2006. Nearly half held a bachelor’s degree, and 2 out of 10 held a graduate degree.
- Employment of computer programmers is expected to decline slowly, decreasing by 4 percent from 2006 through 2016.
- Employment opportunities will be best for candidates who possess a bachelor’s degree and who have experience using a variety of programming languages and tools.
- Medium annual earnings for wage-and-salary computer programmers were $65,510 in May 2006.
- According to the National Association of Colleges and Employers, starting salary offers for computer programmers averaged $49,928 per year in 2007.
- Computer programmers held about 435,000 jobs in 2006.

Computer programmers “write, test, and maintain the detailed instructions, called programs, that computers follow to perform their functions.” They also “conceive, design, and test logical structures for solving problems by computer.” They figure out what instructions to use to make computers perform certain functions. Often, they do this with the help of other computer specialists. They usually write “programs according to the specifications given by computer software engineers and system analysts.” The computer programming languages, to code instructions for the computer to perform, usually are COBOL, Prolog (an artificial intelligence language), Java, C++ or ACTOR. Different “programming languages are used depending on the purpose of the program.”

Programmers also “update, repair, modify, and expand existing programs.”

Some of the other major functions of a computer programmer are as follows: analyzing, reviewing, and rewriting programs, using workflow chart and diagram, resolving symbolic formulations, preparing flow charts and block diagrams, preparing records and reports, training subordinates in programming and program coding, assigning, coordinating, and reviewing work and activities of programming personnel, collaborating with computer manufacturers and other users to develop new programming methods, and writing instructions to guide operating personnel during production runs.

People looking to pursue this field should have various skills, including critical thinking, complex or problem solving, active learning, reading comprehension, learning strategies, and operations analysis. In addition, people should have knowledge of computers, electronics, the English language, mathematics, design, engineering and technology, telecommunications, and clerical functions.

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Most computer programmers have a “bachelor’s degree, but a two-year degree or certificate may be adequate for some jobs.” Some computer programmers hold a “college degree in computer science, mathematics, or information systems, where as others have taken special courses in computer programming to supplement their degree” in fields such as accounting or finance.

When employers are looking to hire computer programmers, usually they hire people with the programming skills they are looking for and who can think logically and pay close attention to detail. The field generally requires people to have “patience, persistence, and the ability to perform exacting analytical work, especially under pressure.” Also, computer programmers mostly work in front of a computer terminal and work forty hours per week. About “four percent work part-time, compared with about 15 percent for all occupations.” Since a lot of the work involves working in front of a computer terminal, programmers are at risk of developing eyestrain, back discomfort, and carpal tunnel syndrome.

Furthermore, other professions that involve working the majority of the time with data and are related to computer programming are computer software engineers, computer scientists and database administrators, computer systems analysts, statisticians, and operations research analysts.

An Occupational Survey from a Computer Software Engineer-Level 2

Company: Computer Associates Location: Islandia, New York
Experience: Mid-Level Highest Level of Education: Undergraduate Degree

Job Responsibilities: Support clients who have problems with the software. Involved with problems with the system are brought to my level to determine and fix, if necessary, the problems with the code. Different Level 2 groups have different amounts of work and can differ in the level of intensity.

Hiring/education requirements and career path: Bachelor's Degree is favorable, but there are others here who have moved up from Level 1 support positions. Knowledge of software is useful. Problem-Solving is a very strong necessity for the job. Ability to speak with clients and gather information from them.

Uppers: Do not need to take the work home with you. Constantly working on new issues.

Downers: Lack of ability to develop new functionality. Correcting other people’s mistakes. Client interaction.

Lifestyle: Very little, if any, travel is involved. They like someone to work 8 to 12 hours each day. If you can get your work done, then 8 hours shouldn’t be a problem. It is a very multicultural office, but each culture tends to stick with its own for the most part. Dress code has recently returned to relaxed. Jeans, polo shirts, etc. No shorts, no t-shirts, no bare feet. The people are relaxed for the most part. It can be a high stress job though.

Compensation: Compensation is fair. Good benefits package. Low out-of-pocket expenses. No direct monetary bonuses the last two years. Past year they provided stock shares as a bonus. Small to no raises last couple of years.

Advice to Jobseekers: If you are a developer, and enjoyed it, this is not the job for you. If you are getting into software, this may not be a bad job to get familiar with corporate life. If you are interested in software, but do not intend to advance into software development, this would probably be a good job.

Information for this issue taken from Occupational Outlook Handbook (2008-2009), VAULT, and CareerZone