



www.careersinghana.com

Email : info@careersinghana.com

Tel: +233 245649846

Computer Programming Careers, Jobs, and Training

Computer Programming Career and Job Highlights

- In 2002, the majority of employed computer programmers had received a [bachelor's degree](#). About 20 % had received a [master's degree](#) or [doctorate degree](#).
- Compared to other fields, computer-programming jobs are anticipated to grow at a slower rate in the future.
- The most competitive candidates for employment will have many necessary and related programming skills.

Computer Programming Career Overview

Computer programmers develop the instructions and languages computers use to operate. They also resolve computer problems and logical tests within the system. The roles of programmers and programs have evolved with technical advancements in language and computing. The responsibilities and backgrounds of engineers vary depending on the company or agency.

Essentially, computer programs instruct the computer on how to function. These functions differ according to the information required. The time it takes to write a program ranges between a few hours for simple programs to years for more complex programs. Many programmers collaborate in a team in this process.

Programmers take the designs of software engineers and turn them into functional computer instructions that make up a program. This process includes using technical language codes that vary according to the program's use. Many different languages are used, including those that are platform-specific for databases. Many programmers know more than a single language and they are identified according to the type of function or language they do know.

Often, programmers will change existing codes and programs. When they do this they place comments into the instructions to make other users aware of the changes. Computer-assisted software engineering (CASE) assist engineers in this process by automatically creating large coded sections. Pre-existing code is also stored in libraries to allow more convenient and productive customizing.

Programmers run programs to test and re-test them for errors. They then correct and “debug” the problems, a process that may span the program’s entire life. Programmers that work within a mainframe system write instructions for a central operator or write manuals for program users.

Programmers are categorized as either applications programmers or systems programmers. Applications programmers develop or modify programs for a specific purpose, such as recording a companies’ inventory. Systems programmers work in a much broader field, developing computer, networking, and operating systems. These types of programmers alter the instructions given to networks and other systems units to enable them to effectively communicate with other hard equipment, including disk drives and terminals. Systems programmers have a fundamental knowledge of whole systems, enabling them to resolve programming problems that applications programmer often face. Presently, the most common form of programming in the computer services industry occurs for the rising popularity of software packages.

Software development programmers often work with other specialists in creating either customized or packaged general-use software. This includes games, financial management, and other programs used for educational purposes.

Some smaller organizations employ programmer-analysts who do both programming and analysis on systems. Both users and programmers alike are finding that new languages and programming resources are becoming much more efficient. Many home PC users are assuming the responsibilities once commonly held by programmers. One example is spreadsheet and packaged financial software that allows personal users to operate programs and complex calculations with relative ease.

In 2002, computer programs accounted for about one-half million jobs. Most industries employ programmers, but the greater number are found in software publishing and systems design service industries. Many telecommunications, manufacturing, management, educational, governmental, and financial firms employ a large amount of programmers as well.

Many computer programmers work independently as contractors or consultants for companies needing specialized knowledge in areas of computer languages and application. An organization, such as a marketing firm, may contract with an independent programmer or an agency to provide debugging services in order to begin running any kind of management software application. Hiring programmers through contractual agreements rather than as permanent employees is an efficient way of harnessing people with the specific skills needed without having to train or re-train newcomers. Contractual agreements range from a few weeks to more than a year.

Computer Programming Training and Job Qualifications

Educational experience is becoming a more common need among employees with the rise in skilled and specialized job candidates. The most qualified applicants will have a [bachelor's degree](#) or, at the minimum, a certificate of a two-year [computer programming degree](#). Many new computer programmers entering the field hold associate degrees, and many colleges and institutes offer this kind of degree in related computer information and science-related fields.

Employers typically seek computer programmers with specialized experience in a particular area. Graduates can enroll in courses at a technical or college institution to gain specialized training in a certain area. Although having a college degree is very helpful, more employers are preferring candidates with practical working experience or possessing a vocational [computer programming degree](#).

Many programmers have a degree in a computer science field, while some have simply enrolled in courses as educational supplements. As employers require more training and education, there should be a substantially higher number of programmers with college educations and degrees.

The need for a particular set of skills varies according to the different fields, whether it is in engineering, mathematics, scientific, or business applications. Emerging programming languages are creating a competitive field of applicants with the relevant knowledge. Candidates with skills in special languages that involve such technical features as graphic user interface (GUI) are highly demanded. Also, highly qualified job applicants will have business and management skills. These and other skills can be acquired through internships or on-campus work programs.

Systems programmers typically have a bachelor's degree to complement an expansive knowledge of computer science. These programmers should be able to configure database (including Oracle, Sybase, and DB2) and operating systems within different organizations.

The most qualified applicants for programming jobs will have analytical and logical thinking skills along with patience and creativity in designing better programs. Software programs are often very sophisticated and abstract and thus systems programmers should also be able to exercise strong problem-solving and technical skill. The ability to effectively communicate within a team is also preferable among employers.

Amateur programmers just beginning their career may work alone or within a team, depending on the difficulty of the project. Some kind of supervision is always required at first, and programmers should constantly modernize their knowledge of new technology through offered courses.

Advancements opportunities for programmers include becoming a chief manager or supervisor. This depends on the respective programmer's current skills and knowledge level. Programmers with the acquired skills and education may also move between specialized fields, such as systems, management, or research or media technology. These and opportunities, including consulting opportunities, should grow as employers continue to hire programmers in specialized areas.

Job applicants can enhance their qualifications by becoming certified in programming. In addition to gaining certification through voluntary means, different programs exist including those offered by software and product companies.

Computer Programming Job and Employment Opportunities

Programming job increase is projected to grow at an equal rate with other jobs over the next decade. Experts predict that computer sectors in which design and software services are related will be among the most rapid growing sectors during this time period. Programmers will grow in demand, as evolving technologies require companies to adapt to new language and computer systems. Moreover, job turnover will create more openings for programming applicants.

Programming growth rates, however, are expected to not exceed the growth rate of specialists in other computer-related fields. Changing technology is changing the scope of programmers' responsibilities, as code writing can be accomplished through automated computer programs without the need of manual work. This change in scope is also due to the growing use of software packages and the ability of users to write their own programs. Technological advancement also means that firms will seek lower costs through out-sourcing jobs to foreign countries.

Despite these changes, businesses will remain to seek programmers for management and programming needs. Programmers will thus need to maintain their skills, especially as they relate to networks, wireless hardware, and Internet and Intranet communications. The growth of these online communications should necessitate larger numbers of programmers to develop client/server, media, graphic user interface (GUI), and wireless operations. Also, programmers will continually be needed to implement technological security system with its growing use.

As programming becomes more complex, four-year college graduates will become more highly competitive. Those with skills in language programming—including languages for network, database, and Internet management—will become highly favorable. Programmers seeking jobs should stay abreast of the current technologies that employer's need. They will also benefit in gaining practical experience to supplement that knowledge.