

Computer Information Systems - Software Development



The Software Developer/Programmer develops and maintains application software for use in businesses. These applications include but are not limited to Accounting, Marketing, and Web Applications. In preparation for this field, one needs a background in Programming languages, database design, SQL, as well as fundamental IT skills in networking, security, and systems design.

Programmers write, test, and maintain the detailed instructions, called programs that computers must follow to perform their functions. They also conceive, design, and test logical structures for solving problems by computer. Many technical innovations in programming—advanced computing technologies and sophisticated new languages and programming tools—have redefined the role of a programmer and elevated much of the programming work done today. Job titles and descriptions may vary, depending on the organization. Because technology changes so rapidly, programmers must continuously update their knowledge and skills by taking courses sponsored by their employer, software vendors, or offered through local community colleges and universities.

In a large organization entry-level or junior programmers may work alone on simple assignments after some initial instruction, or they may be assigned to work on a team with more experienced programmers. In smaller companies the Software developer will have a wider range of responsibilities and therefore must be able to work independently. In either case, programmers need to work with and communicate with other members of the organization

to help develop software that serves the organizational goals. Computer programs tell the computer what to do—which information to identify and access, and how to process it. Programs vary widely depending upon the type of information to be accessed or generated. For example, the instructions involved in updating financial records are very different from those required to duplicate conditions on board an aircraft for pilots training in a flight simulator. In order to solve problems programmers need knowledge of the problem subject as well as the technical skills. This program curriculum focuses on business applications therefore the programmer needs a variety of basic business skills such as accounting, marketing, and business management.

Programmers write programs according to the specifications determined by the Systems Analysis process. After the design process is complete, it is the job of the programmer to convert that design into a logical series of instructions that the computer can follow. The programmer then codes these instructions in a programming language, such as Visual Basic.NET, Java, or C++. Different programming languages are used depending on the purpose of the program. Programmers generally know more than one programming language and, because many languages are similar, they often can learn new languages relatively easily. In practice, programmers often are referred to by the language they know, such as Java programmers, or the type of function they perform or environment in which they work, which is the case for database programmers, mainframe programmers, client/server programmers or Web programmers.

Job Outlook

Employment of computer software engineers is projected to increase by 38 percent over the 2006 to 2016 period, which is much faster than the average for all occupations. This occupation will generate about 324,000 new jobs, over the projections decade, one of the largest employment increases of any occupation. As a result of rapid employment growth over the 2006 to 2016 decade, job prospects for computer software engineers should be excellent. Those with practical experience and at least a bachelor's degree in computer engineering or computer science should have the best opportunities. Employers will continue to seek computer professionals with strong programming, systems analysis, interpersonal, and business skills. In addition to jobs created through employment growth, many job openings will result from the need to replace workers who move into managerial positions, transfer to other occupations, or leave the labor force. Consulting opportunities for computer software engineers also should continue to grow as businesses seek help to manage, upgrade, and customize their increasingly complicated computer systems.

Earnings

According to Robert Half Technology, starting salaries for software engineers in software development ranged from \$66,500 to \$99,750 in 2007

Related Programs

- Data mining
- Database development
- E-business development
- End-user support
- Graphic design
- Programmer
- Systems analysis
- Testing and quality assurance
- The “business side” (e.g. marketing) of a computer company
- Web design and development

Software Development Careers

Educational Opportunities in Computer Information Systems-Software Development at LCCC

The following programs may be completed in two years, if taken on a full-time basis. Many LCCC students choose to study on a part-time basis. Students in the associate of applied business in computer information systems – network communication technology program complete courses in computer information systems, communications, English, math, business administration, accounting, physical science, psychology or sociology, computer diagnostics and repair and Cisco certification.

Associate of Applied Business in Computer Information Systems – E-Business Technology

The e-business technology major prepares students for development, administration and support positions in the emerging digital economy. Students learn to design and develop Internet applications in a client/server environment. Additional topics covered include integrating Internet and enterprise-wide databases, middleware issues, building robust Internet applications and designing dynamic Web portals. A variety of elective courses are available to augment the program.

Associate of Applied Business in Computer Information Systems – Network Communications Technology

This program prepares students for network and microcomputer support positions in business and industry. Students learn to design, install, test and manage local and wide area networks. Additional topics covered in this program are software installation, automated connectivity, security and option CISCO/ Cisco Certified Network Associate (CCNA) preparation and Web page design.

Associate of Applied Business in Computer Information Systems – Software Development

This program prepares students for programming on computer platforms from personal computers to mainframes. Students learn to design and develop software using the procedural and object-oriented languages most commonly used in business. Additional topics covered in this program are database design and development and an introduction to networking.

Microsoft Certification

Enrolling in a Microsoft authorized academic training program and receive certification means you meet Microsoft's highest standards. Certification requirements include passing six examinations which are administered and taught by Microsoft.

Cisco Certification

The computer information systems department is an authorized Cisco Regional Academy. Therefore, you can enroll in Cisco certification classes that will prepare you for the Cisco Certified Network Associate (CCNA) examination. This cluster of four classes can be completed either as credit or non-credit classes. If you are interested in taking the classes and receiving college credit, you must check the credit-course schedule under the computer information systems course heading.

About Lorain County Community College

Lorain County Community College is one of Ohio's leading colleges delivering distance learning education via the Internet. The College has expanded its delivery of its programs and services through the opening of the Learning Center at St. Joseph Community Center in Lorain, the LCCC Wellington Center, Lorain County Growth Partnership in downtown Elyria and the Midpoint Campus Center in Brunswick. Partnerships with Lorain County's K-12 school districts have also led to important developments for the community. More than 1300 high school students participate in the Post Secondary Enrollment Options program by enrolling in LCCC classes, making LCCC the state's largest community college provider of PSEO. More than 35 percent of Lorain County's top high school graduates choose to attend LCCC.

LCCC is one of Ohio's fastest growing colleges because of the variety of learning opportunities it provides. Students can choose from more than 80 educational programs. Students can complete the first half — and sometimes more — of a bachelor's degree. The University Partnership brings eight universities to the LCCC campus offering 37 bachelor's and master's degree programs. With the University Partnership at LCCC, the College partners with the state's finest universities to bring the best in bachelor's and master's degree programs right to the LCCC campus. Students can earn degrees that get them jobs immediately. Students can upgrade, retrain and improve current life skills. Students can learn in the classroom, at home and over the Internet.

LCCC offers a complete college experience. We understand that there's more to college life than attending classes. We offer many of the programs, sports, and activities available at large four-year universities and colleges. But, students will not have to stand in line behind juniors and seniors in the classroom, on the playing field, or in leadership positions. Students can immediately act in a play, sing in a musical group, serve as editor for the college newspaper, plan social activities, compete on the playing field, or set policy as a student government member.

In addition to providing a great education for those who enter college with aspirations of a degree, LCCC helps those who have changed their career goals, who want to broaden their horizons, and who want to return to work. LCCC provides learning and training for those who want to move up but find they need new or improved skills for the kind of professional opportunities they seek.

LCCC faculty is recognized locally and nationally for their work as professors and in other areas. They all have advanced degrees and real-world experience and understand their primary responsibility at LCCC is to teach classes. Classes are small. Individual attention is plentiful.

An LCCC education, prepares students for real jobs and real futures. To find out more, call (800) 995-LCCC or visit LCCC's Connections Center, the Learning Center at St. Joseph Community Center in Lorain, the LCCC Learning Center in Wellington, the Lorain County Growth Partnership in downtown Elyria or the Midpoint Campus Center in Brunswick for all of your enrollment service needs, including admissions, registration, advising and counseling.

Many of These Programs Qualify for Work-Based Learning:

- Paid internships and co-op job opportunities
- Work experience related to your major
- College credits
- Technical electives
- Career success

Program Qualifications

- Enrollment in a qualified academic program
- Completion of at least 15 LCCC credit hours with six credits within your major
- An overall GPA of at least 2.0 and at least 2.5 within your major

For more information, contact LCCC Employment and Career Services at 440-366-4076, e-mail careers@lorainccc.edu or visit www.lorainccc.edu/careers.



**Lorain County
Community College**



**The University
Partnership**

of Lorain County Community College

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