Career Profile

A weekly series devoted to providing information on career exploration

For the last two weeks, we have focused on careers in Information Technology.
The products of information technology are a part of our daily lives, whether it's the operating systems on mobile phones, the computer networks that automate everyday financial transactions, or the reams of information sought and found on the Internet.

CAREERS IN INFORMATION TECHNOLOGY

The type of work

- Modify existing software to correct errors, to adapt it to new hardware, or to upgrade interfaces and improve performance.
- Develop or direct software system testing or validation procedures.
- Direct software programming and development of documentation.
- Consult with customers or other departments on project status, proposals, or technical issues, such as software system design or maintenance.
- Analyze information to determine, recommend, and plan installation of a new system or modification of an existing system.
- Consult with engineering staff to evaluate interface between hardware and software, develop specifications and performance requirements, or resolve customer problems.
- Design or develop software systems, using scientific analysis and mathematical models to predict and measure outcome and consequences of design.
- Prepare reports or correspondence concerning project specifications, activities, or status.

More Facts

So it should come as no surprise that careers in the IT field are expected to grow significantly in the next decade - jobs in computer software engineering, for example, are expected to grow by 19% through 2024, according to the Bureau of Labor Statistics.

SOFTWARE DEVELOPERS

Kevin L. Rák
Software Developer
RIDGID (Ridge Tool Company), Elyria, OH

Research, design, develop, and test operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computing applications.

Q. How did you become interested in your particular field?

A. I have always had an interest in computers, but my time in the Network Communications Technology program at the Lorain County JVS helped refine and focus that interest. By the end of the two-year program, I knew that I wanted to specialize in writing code, and I knew that I had the skills I needed to dive into the IT field and start building the experience that would be the foundation for my career.

Q. How did you get to where you are today? What path did your employment journey take?

A. After graduation from the LCJVS, I obtained an entry-level position as a Help Desk Technician at Dawson Companies in Rocky River, OH. Over my four years at Dawson, I advanced in the ranks, eventually becoming the IT Systems Administrator reporting directly to the IT Director. At that point, I was leading a team of technicians to handle all support operations for hundreds of employees at the company across four states. From the start of my time at Dawson, my mentors consistently encouraged me to expand my horizons and pursue my passion with writing code. Within my first year there, I had created a basic network monitoring application which reduced our downtime dramatically. Over the next few years, I continued to refine that, and several other programs which eventually became critical for day-to-day operations of the IT department. The things I learned at Dawson acted as a spring-board for my career moving forward. I could not be more grateful to the mentors I had there, and the Career Services staff at the LCJVS who helped me obtain that position. I have now been enrolled in the Computer Science and Engineering major at the University of Toledo through Lorain County Community College's University Partnership for the past two years, which has solidified and built on the foundation I established at Dawson. I recently started a new job at the Ridge Tool Company as a full-time Software Developer Co-Op. This new environment has already taken me to new levels of learning, and I take true pride in the products I am helping to build.

Q. What skills or certifications do you think are needed to be successful in this field?

A. Having been part of the hiring process in my time at Dawson, I had the chance to see some technicians grow from the time they were hired until I had complete confidence that they could handle any problem that arose. The number one skill that set these technicians apart from the rest was the ability to troubleshoot. In a technical interview, I would always throw in one problem which I knew that no applicant would have possibly seen before. The point was to see how the person goes about figuring out something that they do not already know. Based on that one problem alone, it was pretty easy to see which candidates would succeed.

Q. What changes have you seen in the last few years in your industry?

A. The world of IT is always changing. In my years at Dawson I saw amazing new tools produced, both by Microsoft and by the free and open-source community. Regardless of the tools, however, the same fundamental fact will always be at the root of IT: every company will always need people who can understand complicated systems, and troubleshoot the problems which invariably arise within those systems.

Q. What is the best part of your job?

A. There are three things that stick out about my job which I absolutely love. First, there is always a challenge. There is rarely, if ever, simple mindless repetitive work. When you successfully solve a problem that you have been working on, there is a moment of "Eureka!" where every block you have encountered falls into place and all makes sense. Second, when you complete a large project, you get to look back at the completed task. This feeling gives me some small idea of what the builders of the Hoover Dam must have felt when they finally saw it complete in all of its awesome glory. Finally, as a proud Geek, I love the community. There is no feeling like being part of a team who have so many shared experiences and so much shared enthusiasm for the technology.

THE FUTURE OUTLOOK

Employment of software developers is projected to grow 17 percent from 2014 to 2024, much faster than the average for all occupations. Employment of applications developers is projected to grow 19 percent, and employment of systems developers is projected to grow 13 percent. The main reason for the rapid growth in both applications developers and systems developers is a large increase in the demand for computer software.

Software developers overall held over 1,114,000 jobs nationwide. Software developers-systems software held 405,000 nationwide, with approximately 5,630 in Ohio.

EARNINGS POTENTIAL

Annual Salary for 2014

Location	Low	Median	High
United States	$56,310	$95,510	$149,480
Ohio	$50,110	$82,660	$118,200
Cleveland-Elyria-Mentor, OH PMSA	$42,680	$79,470	$114,920

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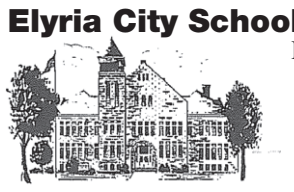
Pathways to success:

Software developers usually have a bachelor's degree, typically in computer science, software engineering, or a related field. A degree in mathematics is also acceptable. Computer science degree programs are the most common, because they tend to cover a broad range of topics. Students should focus on classes related to building software in order to better prepare themselves for work in the occupation. For some positions, employers may prefer a master's degree. Although writing code is not their first priority, developers must have a strong background in computer programming. They usually gain this experience in school. Throughout their career, developers must keep up to date on new tools and computer languages. Software developers also need skills related to the industry in which they work. Developers working in a bank, for example, should have knowledge of finance so that they can understand a bank's computing needs.

What Employers look for in individuals:

- Computers and Electronics - circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
- Engineering and Technology - practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.
- Mathematics - arithmetic, algebra, geometry, calculus, statistics, and their applications.
- Telecommunications - transmission, broadcasting, switching, control, and operation of telecommunications systems.
- Design - design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models



Sources: Occupational Information Network, O*Net Online, http://online.onetcenter.org.** U.S. Department of Labor, Bureau of Labor Statistics, Occupational Outlook Handbook, http://stats.bls.gov/ocoeHow.com