Careers

There is a high demand for IT professionals in a variety of areas including software engineers, network administrators, database administrators, web developers, systems analysts, application programmers, and technical writers. This high demand is related to the fact that not enough college students are currently graduating in the United States with degrees in computer-related fields.

Even though duties will vary from company to company, duties generally associated with specific occupations are outlined below:

- A *software engineer* specifies, designs, implements, tests, and documents software in fields such as robotics, operating systems, and applications.
- A *network administrator* is responsible for a company's network. Duties could include installing the network hardware and software, as well as maintaining the network so it runs properly. *LAN manager* is another term for network administrator.
- A *database administrator* manages the security of a database, monitors the performance of a database, and checks backup and recovery processes.
- *Web developers* design, build, and program websites. They determine the website strategy, which includes the hardware to be used and the design and navigation of the site. They also design tools, such as reports and databases, to measure the success of the website.
- A *system analyst* works closely with clients and users to analyze requirements, design, and develop new information systems and incorporate new technologies.
- An *application programmer* converts a system design into an appropriate computer language, such as Java.
- A *technical writer* works with analysts, programmers, and users to create system documentation and user materials.

Pursuing an IT Career

Education requirements for IT careers vary widely. However, a formal education, such as an undergraduate degree in computer science, engineering, or business is often required. A graduate degree may also be required in highly specialized fields. Some careers require a specialized certification course in an area such as networking. Other skills that are required in this industry are teamwork, problem-solving skills, oral and written communication, up-to-date technical knowledge, and computer experience.

IT related degree options that are offered at a variety of schools include:

- Computer Arts
- Computer Science
- Computer Engineering
- Computer Animation
- Information Technologies Support Services

- International Telecommunications Systems and Service
- Internet Commerce and Technology
- Electronic Media, Arts, and Communication

When selecting a college or university program, factors such as cost, length of program, program location, and course content should be examined. It is always a good idea to visit the school campus before deciding on a program.

A program that sounds interesting at a college or university should be matched to the job market. Employment opportunity ads should be examined to determine the demand for the specific job, job locations, salary range, and educational requirements.

Certifications

Programming certifications include:

- **Sun's Certified Java Programmer**, which tests basic knowledge of the Java programming language.
- **Sun's Certified Java Developer**, which tests advanced knowledge of the Java programming language.
- **IBM Certified Specialist**, which tests knowledge of creating and maintaining J2EE application components.
- **Sun's Certified Enterprise Architect**, which tests knowledge of creating and maintaining J2EE applications.

Hardware certifications include:

- **A+**, which tests entry-level knowledge of personal computer setup, configuration maintenance, troubleshooting, basic networking skills, and system software.
- **NACSE (National Association of Communication System Engineers) Network Technician** or **NNT**, which tests basic knowledge of personal computers, operating systems, networks, and cabling.

Obtaining a certification indicates to a potential employer that you have achieved a specific standard of competence.