Computer Engineer

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Job Description:

Computer engineers design and test computer hardware and software.

Gross Monthly Income:

$6,500

Wages:

Average median yearly pay is about 80,000 a year in Utah.

Schedule:

May work evenings and weekends to meet deadlines. Generally a set schedule.

Advancement:

Beginning computer engineers usually test computer systems. As they gain experience, they may advance to designing hardware and software. Those who have good people and organizational skills may become project managers. Project managers supervise computer engineers and technicians. Some computer engineers start their own computer-consulting firms.

Education & Experience:

- Completed High School
- Bachelor's Degree

High School Courses:

- Computer Applications
- Computer Programming
- Electronics
- Keyboarding
- Network Technology

Job Outlook:

Very Large

Work Conditions:

- Almost always work as part of a team of engineers
- Always work indoors.
- Must make sure that all details are performed and are completed accurately.
- Set nearly all their daily tasks and goals without consulting another.
- Must meet strict deadlines.

Travel: None

Hours a Week:

40

Leisure Time:

Medium

Knowledge:

- Computers & Electronics
- English Language
- Mathematics
- Design
- Telecommunications
- Education & Training
- Customer & Personal Service
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Source: Utahfutures.org, 2013. Adapted from *The Real Game* by Bill Barry

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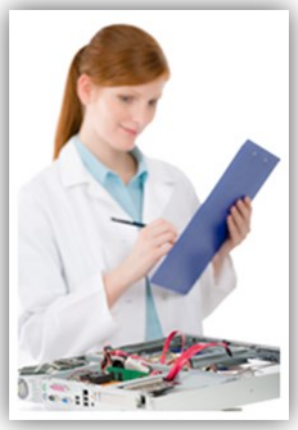

Overview

Look around. There are computers everywhere. Well, of course. You see a lot of desktops inside office buildings. There's always someone with a laptop inside the local coffee house. But did you know there's a computer inside your DVR? Your car? Inside the x-ray machine at the hospital? The ATM? Cash registers?

Computer engineers are behind all these computers. They are part of a team of workers who develop computer equipment (hardware) and programs (software).

Computer engineers are the team members who solve theoretical problems. They apply their knowledge of math and science to computer design. They help solve technical problems and pass that information on to team members who do the programming or create the equipment. However, engineers sometimes are involved in the hands-on part of the job.

Regardless of whether they develop software or hardware, engineers have some tasks in common. Before starting a project, they talk to clients to find out more about their needs. They also learn about the time line, security needs, and cost limitations. During projects, engineers test or supervise those who test their work. Once they complete projects, engineers may train clients how to use software or maintain hardware. They also monitor systems and repair those that are not functioning properly. Hardware and software engineers work together on some tasks. For example, they make sure that the hardware is able to handle the demands of the software.

Software engineers develop computer software systems, such as those that control manufacturing processes. They research, design, and test all parts of the software. For example, they look at the current operating system and determine how the new software will work with it. These engineers have strong programming skills. However, they spend more time analyzing and solving programming problems than doing programming. They supervise workers who do much of the programming and documenting. Engineers examine work as it is completed and suggest modifications. When the software is finished, engineers coordinate its installation on the client's system.

Many hardware engineers are involved in the development of hardware such as computer chips. However, some hardware engineers put together systems that will handle clients' needs. After gathering information from clients, engineers determine the best way to upgrade or replace the client's current hardware. They make sure the system is installed in a good environment. Thus, they may recommend that clients purchase equipment that controls the dust and temperature in the computer area. They may also require clients to rewire the computer area so that computers have a stable power supply. Engineers supervise the installation of the system and monitor its performance.

Computer engineers usually work together on projects. It is also very important that they stay up to date on advancements in the field.

Pathway:
Information Technology

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