# ПРОФЕССИЯ ПРОГРАММИСТ – ПЕРСПЕКТИВЫ

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**Аннотация:** В данной статье рассматривается профессия программиста - основные характеристики, преимущества и недостатки, а так же перспективы профессии, карьерные возможности в ближайшем будущем.

**Ключевые слова:** Профессия, программист, перспективы, трудоустройство.

# PROFESSIONAL PROGRAMMER – CAREER PROSPECTS IN FUTURE

**Abstract:** This article describes the profession of the programmer – basic information, advantages and disadvantages, as well as career and employment prospects in the near future.

**Keywords:** Career, programmer, prospects, employment.

## 1. BASIC INFORMATION ABOUT THE PROFESSION.

Computer programmers are the builders of the computing world. They translate software design into code that computers can read, crafting the operating systems and software applications that consumers use every day. People's interaction with computers is at an all-time high-familiar desktop models that provide a constant stream information and entertainment, while complex systems perform countless behind-the-scenes tasks. [5]

After a software developer designs a computer program, the programmer writes code that converts that design into a set of instructions a computer can follow. A computer programmer creates the code for software applications and operating systems He or she tests the program to look for errors and then rewrites it until it is error-free. The programmer continues to evaluate programs that are in use, making updates and adjustments as needed.

## 2. PROGRAMMER CAREER IN-DEPTH.

For a career that didn't even exist until 60 years ago, programming has had a pretty impressive run as far as tech jobs go.

From Bill Gates to James Gosling, Steve Wozniak to Tim Berners-Lee, many of the greatest minds of the last 100 years knew how to code. Today, coding remains a highly profitable skill for computer science graduates.

Programmers fall into three camps: Applications programmers, Systems programmers and Web programmers.

**Applications** programmers create and upgrade software applications and customize programs to fit a certain context, whether it be patient management software at a dentist's office or translation software for a mobile phone. Usually they are narrow-profile, for example, 1C specialists.

**Systems programmers** create operating systems, interfaces, distribute databases, and manage the operation of networks. They take a holistic approach to how different applications work with the computer. This is the most complex kind of programming. System specialists are always in demand. Applications programmers sometimes bring in systems programmers to make sure their programs will be compatible on an operating system.

**Web specialists** deal with global networks, for example, the Internet. They develop interfaces and web sites. This specialization is especially popular since beginning of Internet era.

Computer programmers' primary responsibility is to write code, so they must know at least one programming language. Since different languages are suited to different applications, most programmers learn multiple languages and more versatile languages. Programmers also update code for programs to make them more secure and/or functional. They routinely test code by looking for errors — sections of code that the computer does not understand — and debugging programs.

## 3. ADVANTAGES AND DISADVANTAGES.

The profession of a programmer has many advantages.

**Pay** is probably the biggest advantage of working as a computer programmer. Computer programmers, work in almost every industry you can imagine, including the engineering, educational and medical fields. Computer programmers work under an assortment of titles, including system analyst, web programmer and application programmer.

**Flexibility.** Programmer may work as a freelance contractor. No need to lease office space or chain yourself to a schedule. Computer programming is a career that can be performed from anywhere you can carry a laptop computer and that an access to Internet. Great advantage is flexibility to complete jobs from home or to maintain work shifts, as long as the projects assigned are completed on time.

**Demand.** Job security is an advantage enjoyed by most computer programmers. Computer technology advances at a fast rate, keeping the demand for computer programmers at a high level. As long as society relies on computing technology, there will be a demand for computer programmers.

**Advancement.** Programmers who have general business experience may become computer systems analysts. With experience, some programmers may become software developers.

Disadvantages.

Pursuing a career as a programmer may bring a handsome paycheck, and an air-conditioned work environment, but the occupation isn't always perfection.

The major disadvantage is quite serious. It is **negative effects on health**.

Sitting in a chair while looking at a bright screen, tapping keys and clicking a mouse button for several hours straight and working overtime to finish a project on a deadline, takes its toll on the body and mind.

## 4. MAJOR REQUIREMENTS TO A COMPUTER PROGRAMMER.

Most computer programmers have a bachelor's degree; however, some employers hire workers who have an associate's degree. Quite often programmers get a degree in computer science or a related subject. Programmers who work in specific fields, such as healthcare or accounting, may take classes in that field to supplement their degree in computer programming. [1]

Most programmers learn only a few computer languages while in school. However, a computer science degree gives students the skills needed to learn new computer languages easily.

In addition, employers value experience, which many students gain through internships.

Students in a University like ours (DSTU) enjoy an option to combine their education and practice. For example, senior students may and often do start working part-time at an enterprises and companies - partners of the University.
During their classes in DSTU, students receive hands-on experience writing code, debugging programs, and doing many other tasks that they will perform on the job.
To keep up with changing technology, computer programmers should take continuing education and keep up to date with the newest programming tools.

## 5. IMPORTANT QUALITIES AND SOFT SKILLS FOR A PROGRAMMER.

In addition to the technical skills acquired through formal training and experience, the following soft skills will help make your success in this field possible:

**Concentration**. Programmers must be able to work at a computer, writing lines of code for long periods of time.

**Analytical skills / Reading Comprehension**: Computer programmers must understand complex instructions in order to create computer code.

**Detail oriented.** Computer programmers must closely examine the code they write because a small mistake can affect the entire computer program.

**Troubleshooting skills.** An important part of a programmer's job is to check the code for errors. Programmers must identify problems and fix it.

**Critical Thinking:** When solving problems and making decisions, a programmer should know how to weigh all your options so that you can choose the best one.

Here are some requirements from actual job announcements found on Indeed.com. Most employers also require proficiency in particular programming languages:

"Ability to work independently";

"Must possess a high degree of accountability of his/her work";

"Ability to comprehend and apply principles of modern algebra while analyzing data and generating reports";

"Works well in a team environment";

"Able to work under pressure to meet timelines and handle multiple tasks and changing priorities";

"Self-discipline, as projects take several months to complete".

## 6. JOB PROSPECTS

The development of technologies and computer networks creates a shortage of specialists.

The demand for computing power is only growing, opening more career possibilities for programmers. Even a not-experienced specialist can find a job in accordance with his level of knowledge, and then gradually learn and gain experience.

The salary of the trainee is about $ 1000 (57300 rubles). A full-time programmer in an average company (not IT) earns up to $ 1500-1800 (85950-103140 rubles), a little more - in an organization associated with mass software development. The salary of the chief programmer is $ 2500-3000 (143250-171900 rubles). The next step is the head of the IT department. Knowledge, work experience, foreign language skills, personnel management skills, etc., and earnings can reach $ 4000 (229200 rubles). A good programmer can become the head of a large software development project, and here the income level reaches $ 5000 (286500 rubles) and higher. [3]

A good start to a career can be joining a group of programmers when developing a project. Large projects often attract the attention of big enterprises in Russia and Western companies as well, which "buy" Russian programmers. The problem of "brain drain" in this profession is one of the most acute.[3]

A programmer can make a career up to the tim-leader, IT-director of an enterprise, manager of an IT project, etc. In the course of the work, the programmer can move within his specialty, improving professionally.

## 7. PROSPECTS OF A PROGRAMMER CAREER – A GLANCE INTO FUTURE.

If hitting a target is hard - hitting a moving target is even harder.

It's no secret that technology trends move fast - and the tools and means for building those technologies constantly evolve. But if we don't lift our heads up every once in a while to look past the next year's projects, we could end up coding ourselves down an inescapable rabbit hole. [4]

In our country the support of information technology by the government of Russian Federation makes a great contribution in our future.

In 2013 the Government of Russian Federation has approved “The strategy for the development of the information technology industry in the Russian Federation". The main purpose is development of IT industry as the major term for the transition to a new postindustrial technological way of society.

Since 2014 Ministry of Education of Russia has increased the number of budget places in universities for IT specialties by 70% being in collaboration with Ministry of Labor which has included IT specialties in state financed regional programs for retraining of specialists from other industries. [2]

Apart from companies in the technology sector, there is an increasing number of businesses relying on computer code. A software engineer could just as easily find themselves working at Skolkovo innovation center, as they could in a hospital, or at an automotive manufacturer.

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