

STATISTICS OF PROGRAMMERS IN UZBEKISTAN. POPULAR PROGRAMMING LANGUAGES AND EARNINGS

Jahongir Davronov

*student of Karshi branch of Tashkent University
of Information Technology Muhammad al-Khorazmi.*

Karshi, Uzbekistan

Nzonik731@gmail.com

Keywords: programmer, salary statistics, programming languages, earnings, web developer, game developer, DevOps, engineers, software engineer, Data Scientist.

Annotation. A programmer is a specialist who is proficient in one or more programming languages, thanks to which he performs a specific task assigned to him. It can be creating programs for devices like: Computers, phones and various gadgets. All this is created by programmers who know the appropriate programming languages. Programming languages are not few as they are designed for different types of work. The article will tell you about the **main specializations of programmers**, which are most in demand in the Uzbek market. For each type will be indicated organizations where he can be found most often and technologies with which he needs to be able to work. (income of a programmer in Uzbekistan)

Introduction: In 2024 the profession of a programmer is one of the most demanded professions, as today most people use various technologies and programs in their lives respectively programmers creating these very programs are divided into several types and have their own directions:

Table 1

Type of programmers	Direction	Programming languages and technologies	Work
Web developer	Frontend, Vasquend, Full stack	HTML CSS JavaScript + (frame stealing) PHP RUBY Java Python Database MySQL/PostgreSQL	Creating web sites internal and external development
Game Developer	Game develop	C# C++ Java OpenGL, Unity, Unreal Engine	Creating games
Android developer	Android develop	Java, Android SDK, OpenGL Android Studio	Creating an app for android gadgets

1C programmer	1C	1C, T-SQL	Writes programs to automate document flow in the company
Software Engineer	Engineering	C,C#,C++,Java, Delphi Assembler	In a production or scientific institution
DevOps engineers	System and development	Phyton,Ruby,Cisco,Go.	Work with automation, testing and optimization tools
Mobile application developer	Mobile development	Java and Kotlin for Android, Objective-C and Swift for iOS	develops applications for mobile devices: smartphones, tablets and smart watches.
Data Scientist	Analytics and algorithms	Python, R, SQL	An IT data scientist develops bots and algorithms. works with big data and engages in machine learning.

World ranking of the top 10 programming languages:

Table-2

Rating	PYPL Rating, September 2023.	Stack Overflow 2023 Developer Survey.
#1	JavaScript /TypeScript	JavaScript
#2	Pyhton	HTML/CSS
#3	Java	Pyhton
#4	C#	SQL
#5	PHP	TypeScript
#6	C/C#	Bash/Shell
#7	Ruby	Java
#8	SQL	C#
#9	Go	C++
#10	Kotlin	C

This table highlights the main directions of programmers and popular languages that are relevant today. The most demanded directions of programmers in Uzbekistan

Web developer is the most popular field that is developing in Uzbekistan. Web programmers develop software sites that work through the Web. In addition, these specialists correct the work of already created web resources. There are three groups of such programmers:

Frontend-developers - are engaged in the development of convenient and understandable services. Such a web programmer creates the interface of the site. When a user enters the site, everything he sees on the screen is the brainchild of a frontend developer (animation on pages, drop-down lists, windows, menus. (2.3 million - 7 million) sums

Backend programmers - create the **backend of the** system, database, architecture and program logic. Without such a specialist, sites will not be able to fully function. Backend-programmers are responsible for the safe storage of data, the correctness of issuing the necessary information. (2.4 million - 9 million) sums

Fullstack developers are versatile programmers who can perform all the above tasks. They know how to design a web resource and form its internal content. Fullstack developers know how to create complete turnkey websites. (3mn - 12mn) sums

Game Developer

A computer game is the same as a program. To make it appear, you need programmers, who are called game developers. It is important not to confuse a developer with other specialists: scriptwriter, designer and game designer. Here are their differences:

- A screenwriter writes the game's script, characters, and dialog. The game designer works on the general concept of the game - what kind of experience the player will have, how levels, leveling and other elements will be organized.
- The designer draws characters, items, environments, interface, and levels. The developer writes the code so that everything created by others is realized in the form of a game.

In small projects, specialists sometimes combine functions, but in general everyone does their own thing. Salary: 2 mln-13 mln sums.

Android developer

Android Developer (Android developer, android developer) creates mobile applications on the Android operating system. Android programmer uses Java, Kotlin, C++, sometimes Javascript.

List of android developer features:

- Creating an application architecture;
- program interface design;

- writing program code;
- program code testing;
- downloading the program to the android store or website;
- making edits, releasing updates;
- Analyzing user behavior to improve the program.

Android programmer gets 2.2 million -7.8 million sums

1C programmer - develops, implements and maintains the 1C program, which is designed to automate document flow, planning and management of the enterprise. The profession is suitable for multifaceted erudite people with a technical mindset

In addition, 1C programmers may specialize in development, implementation, or consulting:

- **1C developers** - program a new product, they understand how the platform works, design configurations and technology solutions;

- **implemented by 1C** - they serve companies that already have a ready-made product, finalize it, if it needs to be reconfigured; they are specialists in application solutions;

- **1C consultants** - are able to select the right software tools to solve specific industry tasks of the customer; assess whether the program needs to be modified, and if modifications are necessary, they set the right tasks (ToR) for programmers to adapt configurations.

What a 1C programmer does

Job duties of a 1C programmer in general terms:

- Assess the suitability of office, sales and production equipment available at the enterprise for 1C operation. If it is necessary to purchase new equipment, give recommendations on the necessary characteristics.
- Assist the business in selecting the appropriate software configuration.
- Install software on servers, computers, place in cloud storage.
- Develop non-typical configurations to meet the company's objectives.
- Customize, administer standard and non-standard 1C configurations.
- Debug databases, modes of access to them from users' computers.
- Improve the program functionality if necessary, provide data exchange between configurations, if there are several of them.
- Customize user interfaces.
- Organize backups in case of failure.
- Maintain software: update configurations (this has to be done regularly, especially for accounting and payroll); administer databases; connect new users, etc.
- Draw up instructions, prepare technical documentation.

- Train users on how to use 1C.

Any 1C programmer is both a developer and a sysadmin.

Salary of 1C programmer in Uzbekistan 1.5 mln - 5 mln sums.

Software Engineer

Software Engineer (Software Engineer) creates software (software) designed for computer operating systems. The profession belongs to the type of "human - sign system" and is suitable for those who like to study computer science and mathematics. The main task of a software engineer is to develop user-friendly, reliable, highly functional software. He or she must have an equal understanding of engineering and programming and design software so that it is easy to maintain and modify.

The duties of a software engineer include the following:

- program development in accordance with the technical assignment, testing and debugging;
- selection of appropriate programming languages;
- improvement of previously created program solutions;
- control of the process of implementation and use of software tools, technical support;
- creation of technical documentation and instructions on the use of the software;
- Development and implementation of systems aimed at automatic software testing;
- determining the possibility of using off-the-shelf IT products for the needs of a particular company;
- adapting and finalizing the software for use in a particular company.

The salary of a software engineer depends on his created software and the price of his software is set by him or negotiated with the place of work.

DevOps engineer

A DevOps engineer synchronizes the work of programmers and sysadmins, automates their tasks to speed up the release of software or applications and the release of updates to them. The profession is new, it is related to information technology. Engineers perform a large frontline of work to ensure communication and technical collaboration among work team members. The responsibilities of a DevOps engineer include:

- automation of all processes related to development and operation;
- Controlling the speed of task completion and schedule adherence;
- Supervising all phases of development as well as product rollout;

- performance evaluation of software products;
- Communication between developers and the service that operates the software;
- rollback changes in case of problems with updates.

Duties vary from job to job, but in any case, a DevOps engineer must have impeccable knowledge of Development and Operation processes.

Salary of a DevOps-engineer per month in Uzbekistan will amount to 3mn-9mn sums

Mobile Developer

Mobile Developer (Mobile Developer, Mobile app Developer, App Developer) designs, develops and implements software applications for various mobile devices: tablets, smartphones, fitness trackers and others. The profession is suitable for people with a technical mindset. The job duties of a mobile developer at the moment are not clearly defined due to the youth of the profession. He has to be a designer, layout designer, programmer at the same time.

The standard set of functional responsibilities of a mobile app developer looks like this:

- Identify customer needs and translate them into technical requirements.
- Develop application programming interface (API) to support mobile functions.
- Collaborate with UX and UI designers, programmers.
- Implement new applications and develop existing applications.
- Consult with customer and development team.
- Ensure consistency between the functional and technical side of the mobile application.
- Develop applications (in collaboration with the rest of the development team).
- Ensure backend and frontend are properly meshed.
- Be up to date with terminology, concepts and best practices for coding mobile apps.

Salary of mobile app developers is divided into 2 types

1. If a developer works alone or with a team without a custom job, the salary depends on the incoming orders.

2. If a programmer works for a company, the salary in Uzbekistan will be:
iOS programmer 2.6mn-9.8mn sums. Android Programmer 2.2 mln - 7.8 mln sums

Data Scientist (Specialist in processing, analyzing and storing large data sets)

A Data Scientist (data scientist or datascientist) processes and analyzes Big Data arrays to find new relationships and patterns in them using machine learning algorithms and build a predictive algorithmic model that can be used to solve

problems in business, science, and everyday life. Big Data arrays are categorized into 3 types:

- structured (e.g., cash register data in commerce);
- semi-structured or weakly structured (email messages, statistics from event trackers: Yandex.Metrika, GAnalytics, etc.);
- unstructured (video files, images, text posts on social networks, weather reports, audio recordings, sports match results, genome databases, and more).

Data Scientist's main tasks:

- retrieve relevant information from a wide variety of sources using real-time information flows;
- Establish hidden patterns in data sets and statistically analyze them to make sound business decisions.

Data Scientist's salary: 2 mln-11 mln sums

Discussion: Uzbek society has seen a growing interest in the IT industry, which makes the profession of programmers very much in demand. Currently, there are several types of programmers that are most in demand on the labor market in Uzbekistan.

Mobile application development specialists are one of the most in-demand categories of programmers. With the development of smartphones and tablets, more and more companies are seeking to create mobile applications to improve their business. Therefore, specialists who are skilled in mobile application development and design can easily find a job in the Uzbek IT industry.

Data analysis and machine learning specialists are also in high demand in Uzbekistan. Every year, companies are increasingly realizing the value of data and are looking for specialists who can help them gain valuable insights from large volumes of data. Therefore, data analytics and machine learning specialists can expect high-paying and promising job opportunities.

Finally, web development specialists also remain one of the most in-demand categories of programmers in Uzbekistan. Web development remains a key element of any business, so specialists who are skilled in creating and maintaining websites will always be in demand in the labor market.

CONCLUSIONS:

Among the most popular programming languages in Uzbekistan are Java, Python, JavaScript, PHP, C++ and C#. These languages are in demand on the labor market and allow programmers to work both domestically and on international projects.

Earnings of programmers in Uzbekistan depend on the level of qualification, work experience and specialization. On average, a beginner can expect a salary from \$300

to \$1000 per month, while experienced developers and specialists with a high level of skills can earn from \$2000 and higher.

Thus, the profession of a programmer in Uzbekistan is promising and brings good income. Due to the rapid development of the IT industry in the country, programmers have the opportunity to realize their potential and participate in interesting and innovative projects.

LIST OF REFERENCES USED:

1. <https://ru.hexlet.io/blog/posts/8-samyh-vostrebovannyh-yazykov-programmirovaniya-v-2024-godu>
2. <https://uzbekistan.paylab.com/ru/zarabotnaya-plata/informacionnye-tehnologii-it#>
3. <https://cyberscience.uz/uz/news/statistics>
4. <https://postupi.uz/news/karera-i-trudoustroystvo/obzor-it-professiy-v-uzbekistane>
5. <https://it-park.uz/ru/itpark/news/obzor-it-rynka-uzbekistana>