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# AREAS OF APPLICATION PROGRAMMING LANGUAGES PYTHON AND RUBY

**ОБЛАСТИ ПРИМЕНЕНИЯ ЯЗЫКОВ ПРОГРАММИРОВАНИЯ ПРИЛОЖЕНИЙ PYTHON И RUBY**

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*Abstract. The purpose of the article is to describe the programming languages Python and Ruby, disclosing their advantages over other programming languages. The content of the article is an overview, while the possibilities are revealed and the areas of application of the Python and Ruby programming languages are indicated. Scientific novelty. The high productivity of Ruby allows you to use this programming language more often in the development of websites - in Python, the code, due to its structure, is very flexible and takes up less space and is easy to create prototypes. Results. Both programming languages are popular in web development and have many advantages over other programming languages, most popular for developing websites and web services.*
*Key words: programming languages, Python, Ruby, web-development.*

**Introduction.**

Python and Ruby are similar programming languages, but at the same time they have a different approach to solving problems. Both are among the most popular programming languages for developing websites, applications and web services, as well as various system utilities.

These programming languages have a lot in common. Visually, they are very similar. Both languages provide a high-level programming interface with an objective-oriented approach, an interactive shell, standard libraries, and state support.

However, Python and Ruby are different in their approach to solving problems. They have a different history of development, different syntax and philosophy.

**Main part.**

Python is a high-level general-purpose programming language focused on increasing developer productivity and reading code. This programming language was introduced in February 1991 and was introduced by the author Guido van Rossum as an extensible language for Amoeba OS. The Python programming language has borrowed many features from languages like C, C ++, Modula-3, and Icon, as well as some features of functional programming from Lisp. The name of the language was given in honor of the popular British comedy series of the 70s "Monty Python Air Circus". The features of the Python programming language include: minimalistic syntax of the kernel and the standard library includes a large amount of useful functions [7].

Python web development has a great advantage over other languages. Due to its structure, Python code is very flexible and takes up less space and is easy to create prototypes. Also for this programming language created many different web development environments, of course is a plus for it [9]. Web scripts delivered with standard Python interpreter modules provide the ability to perform various network operations in server mode or client mode: processing XML files, transferring files via FTP, retrieving information, sending, receiving, creating and parsing email, downloading web files. pages with URLs. In turn, Python is suitable for creating tools for game design, such as level design, or creating a dialog box tree, and includes exporting these tools that work in a format that the main game engine can use [10]. But not one GUI is limited to Python. Many programs need testing in a similar environment, but not always these programs are quickly executed with a graphical interface. Programs that were written in the Python language can be faster tested thanks to the command interface (CLI). Since the code in this language is compact, it is more likely to be executed, which is necessary for a programmer who does not have much time for a project [8]. Moreover, Python has simple syntax and libraries for creating programs that automate processes in the OS and on websites. For this

purpose they use AR router (in Python). This programming language has many advantages over others, such as parsing the log or configuration file using regular expressions, collecting and analyzing statistics of Internet traffic from several IP addresses and others [9].

Ruby is a dynamic, reflective, high-level programming language that is interpreted. This programming language was created by Yukihiro Matsumoto, who began working on Ruby on February 24, 1993. The goal was to create an object-oriented, easy-to-develop, interpreted programming language. The first publicly available version 0.95 was released in 1995. "Ruby" was so named because of the joke that went around with Matsumoto's friends, and was an allusion to the name of the Perl programming language (pearl). The features of the Ruby programming language include: operating system independent multithreading, strong dynamic typing, garbage collection, and many other features [4].

According to 2018 data, Ruby ranks 8th in the world rankings for the use of programming languages [5]. Ruby is most often used to develop websites where high-performance programming language is needed, which is what Ruby gives. One of the main reasons for Ruby's high performance is that it allows you to create new applications without writing a lot of code and hacks. Simply put, combining a language (Ruby) with a framework (Rails) means you can do more with less code. A small amount of structured code allows relatively painless to make changes and experiment [2]. Often in the process of developing large projects there is a question about testing, and it is not uncommon when there are no additional funds for a separate team of testers. Ruby has a solution to this problem. If you compare RoR with other frameworks in the context of the testing program, you will find a lot of ready-made solutions for any type of test, be it integration or unit. All of these libraries work out of the box. Ideally, no code is written in a Ruby on Rails project until tests are written for it. RoR ideology provides for the initial use of the methods of BDD (Behavior Driven Development) or TDD (Test Driven Development) [6].

Also, Ruby is used in the development of applications for Android and IOS. One of the advantages of using this language is operating system independent

multithreading, strict dynamic typing, garbage collection and many other features. Cross-platform implementation of the language interpreter is completely free. Rails in the basic configuration has very powerful tools for localizing the project. It is possible to both predict the support of several languages first, and implement it later. The project contains special files for translation of terms, tools for displaying templates in different languages, and much more. Simple code writing, easy syntax and a little memory waste prefer Ruby over other programming languages in order to create scripts for programs on them [3].

**Conclusions.**

Summing up, we can say that both of these languages are popular in web development. And therefore in which tasks they would not be used together, they are always competitive. And yet, one should not forget that each of these languages has its own advantages, its own drawbacks and its own unique tools for working with data. But still, in certain cases, we can combine these two languages to get the best result in the development of a project.

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*Аннотация. Целью статьи является описание языков программирования Python и Ruby, раскрытие их преимущества над другими языками программирования. Содержание статьи представляет собой обзорный характер, при этом раскрываются возможности и указываются области применения языков программирования Python и Ruby. Научная новизна. Высокая продуктивность Ruby позволяет применять данный язык программирования чаще в разработке веб-сайтов – на Python код, благодаря своей структуре, очень гибкий и занимает меньше места, легок в создании прототипов. Результаты. Оба языка программирования пользуются популярностью в веб-разработках и имеют много преимуществ над другими языками программирования, наиболее популярны для разработки веб-сайтов и веб-сервисов.*