

## PYTHON DASTURLASH TILI FANIDAN ELEKTRON QO'LLANMANI JORIY ETISH SAMARADORLIGI

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*Annotatsiya: Ushbu maqolada Python dasturlash tili fanidan elektron qo'llanmani joriy etish, undan foydalanish, ularning imkoniyatlarini kengroq yoritib berilgan. Jumladan, Python dasturlash tili fan dasturi sillabusi, mavzulari, ular haqida qo'llanmalar, amaliy topshiriqlari, ma'ruza matnlari videodarslar qo'llanilgan.*

*Kalit so'zlar: python, elektron qo'llanma, ma'ruza, amaliy, testlar, videodars, glossarilar, interaktiv, realistik misollar, o'rganishda qulaylik, o'quv resurslari, onlayn havolalar, elektron kitoblar, taqdimotlar.*

## EFFECTIVENESS OF PUBLISHING ELECTRONIC MANUAL OF PYTHON PROGRAMMING LANGUAGE

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*Annotation: This article discusses the current compilation of an electronic resource on the Python programming language, its utilization, and provides a more extensive explanation of its capabilities. Specifically, resources such as the syllabus of the Python programming language course, topics covered, available references, practical assignments, lecture texts, and video tutorials are highlighted.*

*Keywords: python, e-manual, lecture, practical, tests, video lessons, glossaries, interactive, realistic examples, ease of learning, learning resources, online links, e-books, presentations.*

## ЭФФЕКТИВНОСТЬ ИЗДАНИЯ ЭЛЕКТРОННОГО РУКОВОДСТВА ПО ЯЗЫКУ ПРОГРАММИРОВАНИЯ PYTHON

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*Аннотация: В данной статье рассматривается текущее состояние создания электронного ресурса по языку программирования Python, его использование, а также предоставляется более подробное объяснение его возможностей. В частности, выделены ресурсы, такие как учебный план курса по языку программирования Python, рассматриваемые темы, доступные ссылки, практические задания, лекционные тексты и видеоуроки.*

*Ключевые слова: Python, электронное руководство, лекция, практика, тесты, видеоуроки, глоссарии, интерактивные, реалистичные примеры, простота обучения, учебные ресурсы, онлайн-ссылки, электронные книги, презентации.*

**INTRODUCTION.** Information technologies and IT, like in contemporary educational institutions, are in high demand today, just like everywhere else. One of the significant directions in teaching is the Python programming language. It is widely used in software development, scientific research, data analysis, machine learning, and artificial intelligence, among various fields. Recognizing the growing interest in this language, developing effective methods for teaching and mastering it is of paramount importance. Python programming skills are increasingly demanded in the labor market. Professionals proficient in this language can effectively work in various fields, which makes learning it essential for university students. Modern technologies are changing educational approaches. Developing interactive teaching methods that ensure active student participation and further enhance the effectiveness of learning materials is crucial. Innovative approaches to teaching based on the Python programming language can improve the quality of the learning process in higher education institutions. The Presidential Decree No. PF-60 dated January 28, 2022, «On the Strategy for the Development of Uzbekistan for 2022–2026,» and the Decree No. PF-5847 dated October 8, 2019, «On Approving the Concept for the Development of the Higher Education System of the Republic of Uzbekistan Until 2030,» emphasize individual creative

development as one of the key objectives of education, requiring the creation of appropriate pedagogical conditions. Therefore, in this article, we aim to demonstrate that many electronic resources and materials created for teaching Python programming can be highly effective for students, as they facilitate self-learning and provide step-by-step guidance.

#### LITERATURE ANALYSIS:

One of the most common indicators of the popularity of the programming language is the dynamics of the number of links on Stack Overflow, where Python's growth can be observed graphically, starting in 2010 and accelerating in 2015. We can attribute Python's rise to its being an older language, having emerged in 1991. Python and Java were contemporaries in terms of their emergence. Guido van Rossum, a mathematician and the creator of Python, developed the ABC language for teaching programming over a long period of time.

#### RESEARCH METHODOLOGY.

The article elaborates on the creation and utilization of electronic resources for teaching Python programming language, providing insights and information on their capabilities. Specifically, it extensively elucidates on the significance of Python programming language in today's context through the analysis of the electronic resource formed from this field.

#### ANALYSIS AND RESULTS.

The significance of Python programming language is based on the following main reasons:

**Order and Structure:** Educational resources help in teaching Python's important concepts, syntax, and programming principles in an organized manner. Their structure and arrangement facilitate a correct understanding of Python's rules and make learning programming easier.

**Convenience of Learning:** Educational resources contain explanations, examples, exercises, and practical applications within them. This facilitates efficient learning because educational resources enable learning programming step by step.

**Realistic Examples:** Educational resources include realistic examples and exercises within them. Through these examples and exercises, learners gain practical experience and help reinforce and enhance Python's basic concepts.

**Coverage of Topics:** Educational resources cover various topics of Python programming. They provide insights into concepts such as data, variables, arrays, functions, files, modules, and other various concepts. This allows learners to explore topics related to Python's wide range of applications.

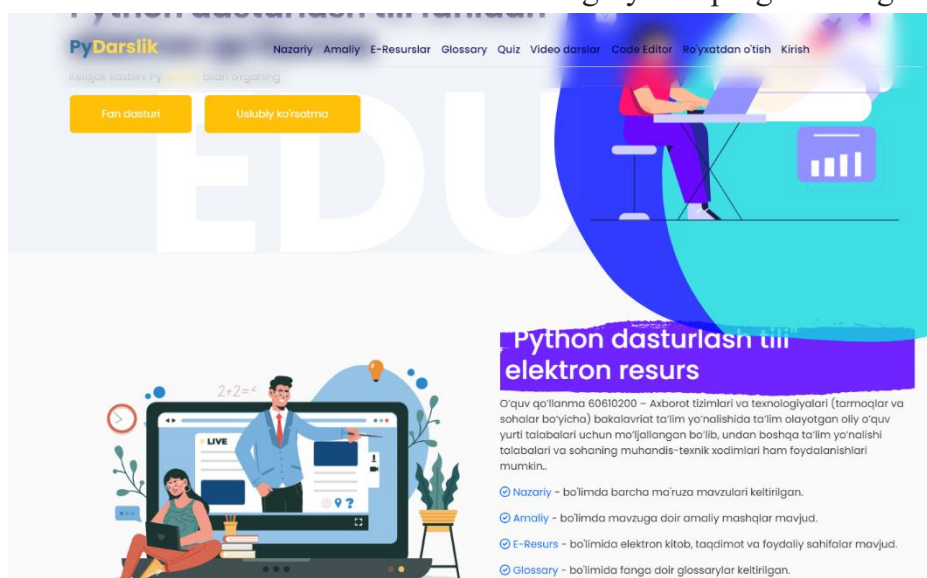
**Learning Resources:** Educational resources also point to other necessary resources for learning Python programming. Among them are high-quality books, online courses, video lectures, exercises, and projects. These resources, along with educational materials, help further enhance the learning process.

Educational resources play a crucial role in learning Python programming, providing learners with proper guidance and practical experience. By utilizing them, learners can easily understand Python's rules, syntax, and programming principles.

We have also developed an electronic resource for learning Python programming for this purpose.

The website <https://pydarslik.pythonanywhere.com/> provides comprehensive Python programming language resources. These resources cover various topics ranging from the fundamental concepts of Python to standard libraries, modules, and various features and techniques of Python programming [2]. It offers a convenient source for learning Python programming. This website provides information on Python's basic concepts, such as data, variables, arrays, functions, files, error handling, and many other topics. It assists in learning Python programming through its examples, short videos, and tutorials, which demonstrate key concepts in an effective manner. The site presents valuable resources for learning Python programming. Starting from Python's fundamental concepts to variables, arrays, functions, modules, files, and many other concepts, it provides ample opportunities for learning. The website <https://pydarslik.pythonanywhere.com/> can also serve as a valuable reference for the developer community to address various Python-related issues posed by other developers. It is specifically designed to solve a multitude of problems related to Python programming [3]. Through this website, you can learn Python programming and interact with instructors. Additionally, it offers resources such as tutorials, books, and online courses, allowing you to enhance your practical learning experience (Image 1).

Image 1. Overview of the electronic resource for learning Python programming language.



Various methods and techniques have been employed in this resource to structure the lessons, aiding learners in progressing step by step in their Python education.

**Learning Materials:** The resource provides lessons and learning materials for Python education. The lessons introduce Python's fundamental concepts and techniques through examples and exercises, facilitating practical application. The learning materials allow learners to review the material taught in lessons, complete exercises in the resources, and create customized examples [4].

**Practical Exercises:** Practical exercises are extensively utilized for Python education. These exercises help reinforce learners' understanding of Python concepts, principles of programming, and problem-solving. Practical exercises enable learners to apply their own ideas and utilize the concepts learned in practical situations [5].

**Examples and Projects:** Examples and projects are widely used in Python education. Examples demonstrate specific aspects of Python or demonstrate functionality. Through examples, learners can examine Python code and gain an understanding of it. Projects, on the other hand, are used for creating larger programs, applications, or systems. Projects help learners understand important program structure, functions, modules, and more [6].

This website facilitates offering interactive lessons, exercises, and tests to learners. These platforms allow learners to submit their code and verify results. This resource is designed to assist learners, providing materials to simplify their learning process.

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