THE CONTENT OF THE COURSE OF MODERN PROGRAMMING LANGUAGES IN THE CONTEXT OF HIGHER EDUCATION AND THE TECHNOLOGY OF ITS TEACHING

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Abstract. This article reports on our approach and experiences in incorporating the Python programming language into programming-related curricula. First, we provide insight into our choice and approach to using the Python programming language. We discuss the findings for programming languages taught to computer science and engineering students, both of which place a strong emphasis on developing students' practical programming skills. We report our approach and findings, including issues identified and results obtained and proposed future improvements.

Key words: Computer programming, Python, computer science and engineering education.

СОДЕРЖАНИЕ КУРСА СОВРЕМЕННЫХ ЯЗЫКОВ ПРОГРАММИРОВАНИЯ В УСЛОВИЯХ ВЫСШЕГО ОБРАЗОВАНИЯ И ТЕХНОЛОГИЯ ЕГО ПРЕПОДАВАНИЯ

Аннотация. В этой статье рассказывается о нашем подходе и опыте включения языка программирования Python в учебные программы, связанные с программированием. Во-первых, мы даем представление о нашем выборе и подходе к использованию языка программирования Python. Затем мы обсудим результаты изучения языков программирования для студентов, изучающих компьютерные науки и инженерные науки, которые уделяют большое внимание развитию практических навыков программирования у студентов. Мы сообщаем о нашем подходе и выводах, включая выявленные проблемы и полученные результаты, а также предлагаемые будущие улучшения.

Ключевые слова: Компьютерное программирование, Python, информатика и инженерное образование.

INTRODUCTION

The effectiveness of teaching, in our opinion, depends on the methods and approaches of teaching computer science in schools. For example, a well-structured programming course helps students understand basic concepts such as algorithms, programming languages, computer architecture, and more. Programming gives students the opportunity to express themselves as creators or designers; knowing a programming language, you can write almost any program. Interesting and relevant topics for development help to stimulate the development of children's creative abilities. At the same time, the skills acquired by schoolchildren as a result of mastering the designer's experience serve to develop critical thinking and master the methods of solving problems in other directions. However, Uzbekistan and many other countries need to reform their school curricula at the state level.

In the world of high technology, programming languages are an integral part. Computers have been in our lives for a long time and anyone who has to spend at least some time on a computer will encounter programming. Forums, social networks, online stores, online newspapers, various applications, etc. - all these are based on programming and are supported by experts in this field. In turn, programming today is very diverse, but according to the statistics of

Tiobe Software in June 2019, it is based on the most common and popular programming language. Java, C, C ++ and in 4th place Python programming language is developing rapidly.

LITERATURE ANALYSIS AND METHODOLOGY

Created in 1992 by Dutch programmer Guido Van Rossum, Python is a general-purpose programming language that you can use to create anything from websites to robots and system services. It is characterized by a syntax that is quickly mastered by beginners in the field of programming and the simplicity of writing quick code. Python was not widely used in the past, but has become especially popular in recent years thanks to Google's investment. Because the range of tasks that can be solved with its help is very large, and the simplicity of writing code gives it an advantage over many other languages. Peter Norvig, director of research at Google Corporation, says of Python: "Python has been an important part of Google since its inception and will continue to be so as the system grows and evolves. To date, dozens of Google engineers use Python, and we're looking for more people who are proficient in the language".

RESULTS

Since 1985, the basics of programming have been taught in schools, starting with a simple algorithmic language. In the past few years, students have been taught to write simple programs in Pascal, less Visual Basic and Delphi. Since 2015, in connection with the popularity of the Python programming language, in computer science, program examples have been written in all variants of KIM USE, because practice shows that it is easier to write tasks like C4 in Python than in a classical language. This leads to the problem that Python is not taught in schools at the moment, there are no textbooks and specialists in general education institutions. In-depth study of the topic "Algorithm concept. Programming" subject is always conducted along with the teaching of elective courses, which does not help to achieve a sufficient theoretical and practical level. The research problem is that there is currently a clear lack of information resources dedicated to Python programming, and there are not enough Python programming courses for students, even though the language is generally becoming popular and preferred for use in modern web development. regardless.

CONCLUSION

Today, universities offer a wide range of bachelor's programs in IT, but the lack of basic training makes it difficult to learn computer science directly in the first years of study, which is necessary during employment in modern software. Indefinitely delays the development of basic practical skills. Of course, there are strong and enthusiastic young people among school graduates, but their presence is not the rule, but the exception.

The purpose of the study is to teach Python programming language to students of higher education. The purpose of the work is to develop an elective course on Python programming to prepare senior students for USE. To achieve this goal, the following tasks must be performed:

- forms of pre-education (elective courses: purpose, goals, types, transition to creation and organization of an elective course);

- teaching programming at the higher level of modern higher education institutions;

- analysis of available elective programming courses;

- development of an elective course on Python programming for students;

- lesson planning;

- approval

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