



## USE OF OPEN INFORMATION-EDUCATIONAL ENVIRONMENTS IN TEACHING PROGRAMMING LANGUAGES.

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Learning programming languages requires a lot of time and independent research from the student. Therefore, it is effective to use modern teaching tools, including open information - educational environment, in teaching programming languages.

An open information - educational environment is a system in which the user has the opportunity to use educational information of science and educational importance online at any time.

In this regard, according to A.O. Norbekov, an open information - educational environment is an online education system that combines various components. However, today such an environment is more typical for higher education institutions [1]. According to L.I. Anikushina, the open information - educational environment is a pedagogical technology that combines various didactic electronic educational resources, online evaluation and control systems, and is formed on the basis of pedagogical technologies to form a creative, socially active person, as well as independent education of students. is an open pedagogical system. Also, it is a set of services to support the use of information and communication technologies in the educational process to solve educational and professional tasks [2].

From a technological point of view, an open information - educational environment is understood as a unique information space for the interaction of the participants of the educational process. This space was created with the help of information and communication technologies consisting of a complex of computer equipment and technologies, which in turn allows to control the content of the educational environment and the communication of the participants.

Taking into account the above possibilities of the open information - educational environment, we created the programm-edu.uz information - educational environment within the framework of the research (see Figure 1).





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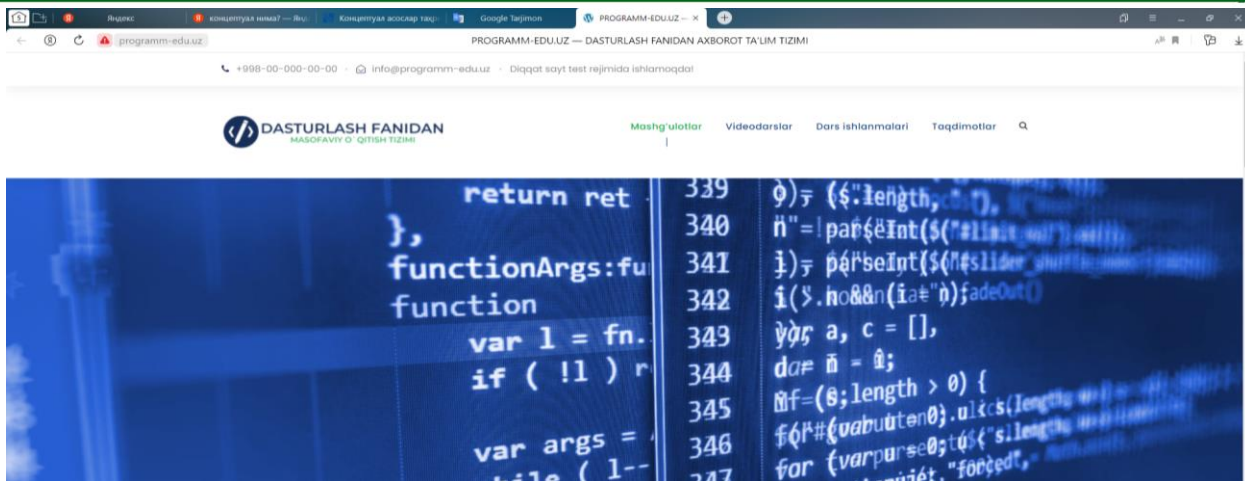
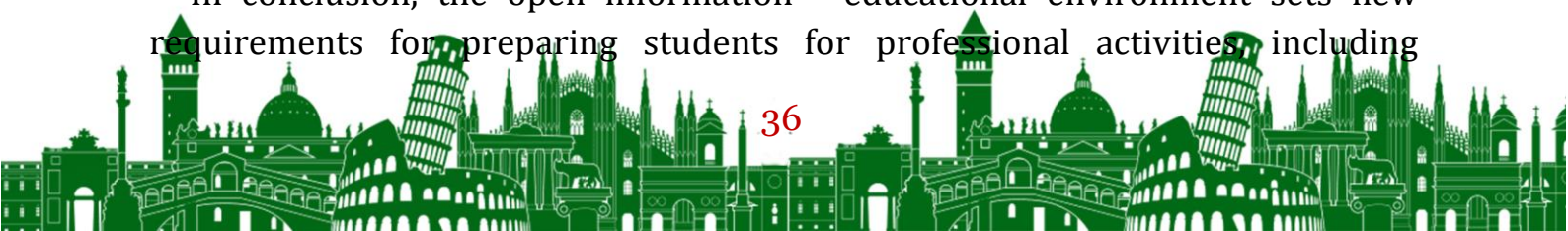


Figure 1.main window of program - edu.uz information - educational environment.

The information-educational environment created within the framework of the research is aimed at teaching "Algorithm and programming languages" and "Programming languages" as professional subjects taught in the training of future informatics, future mathematics and informatics teachers, and has the following capabilities:

- Compliance with the sanitary and hygienic norms and rules of the Republic of Uzbekistan;
- Ensuring improvement of state education standards and implementation of innovative technologies;
- education taking into account the individual characteristics of students;
- the availability of learning about programming languages not only from one source, but also through the hyper-linking of a well – thought - out topic - oriented data bank to various educational environments;
- that it is intended to be implemented in a hierarchical order;
- educational tools are made up of separate modules;
- to ensure that different parts and elements become a whole based on their interdependence and complement each other;
- hierarchical structure and e – learning resources in various formats are designed to work at high speed;
- that education is provider not only from one source but also through the hyper – linking of a well – thought – out, thematically oriented data bank to various educational environments;
- the ability to learn learning material remotely;
- availability of independent self – assessment.

In conclusion, the open information - educational environment sets new requirements for preparing students for professional activities, including





teaching programming. This environment implies significant changes in the system of training future programmers, strengthening its professional orientation. Therefore, it is considered appropriate to improve the mechanism and methodology of using information - educational environments in the training of future informatics specialists and teachers in higher education institutions.

### References:

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