

DEVELOPMENT OF AUTOMATED DISTRIBUTED EDUCATIONAL SYSTEMS

Kapiton A.M.

The urgency of the problem. In modern conditions of extremely rapid development of information technologies, the relevance of creating training and testing systems is extremely high. Their influence on modern education is so great that almost everyone has faced the need to search for information on the Internet. Therefore, the issue of developing an automated distributed learning system should be solved based on the needs of users. Recently, systems of this kind have gained popularity very quickly, as it is much easier and faster than searching for information yourself[1]. The information in them is collected and classified, and the testing system works more efficiently, as it reduces the probability of error and is more flexible than the usual testing principle. This kind of system will allow each user to learn remotely, without spending time and resources to search for information.

Analysis of recent research and publications. Constant analysis of the research works of scientists analyzing the issues of this direction allows us to claim that these tasks are quite relevant today. Thus, A. Berko, O. Veres investigate the issue of the optimal choice of a database management system for solving these tasks. Cardelli L., Wegner P. study Understanding Types, Data Abstraction [2, 3].

The aim of the study. The purpose of the development is to create an automated distributed system that allows students to review educational materials and take tests to verify the knowledge they have acquired. Requirements for the software product being developed: the software product must provide the ability to register the user, the ability for the user to add educational and scientific materials, view materials with content search and filter it by categories, undergo testing, and the ability to write reports and reviews.

Presenting main material. The analysis of existing solutions allows you to highlight the most important advantages of each of them and take them into account when building your own solution. And it also shows that this type of system is widespread and necessary for users who are engaged in self-education, therefore the actual development of this project is relevant. Such platforms provide an opportunity to study the necessary materials, as well as to show your result based on the passed test. In the developed application, the result can be displayed as absolute (the percentage of correct answers from the number of total questions) and relative (based on the results of other users). Also, the relative result can be displayed within universities, city or even country, or based on the result of all users. When calculating the result, you can use a system with a graph, the branches of which will have different weights, which allows you to solve the problem that some questions may be more difficult than others, so you need to give a certain weight to each question, which will make the evaluation system more fair [4, 5].

The analysis of advantages and disadvantages made it possible to highlight the most important ones and draw conclusions of this kind. For the full functioning of the application, it is necessary to store a large database of information, as well as

to divide it into topics and subtopics for convenient search and access to them. It is necessary to provide an opportunity for users to publish their own topics and tests for them, which implies the openness of the platform and to provide an opportunity for discussion for articles. The task is to automate the system in such a way that the evaluation takes place without the participation of a human resource. There is a need to create a design that will satisfy modern users and help attract new ones. In development, a convenient transition through the site should be implemented. It is also necessary to make the system free, to support the platform at the expense of users.

That is why for the development of such a software product it is necessary to: develop the project architecture; to develop an aggregate entity in the database management system for storing information; develop a web presentation; to implement an algorithm for a graph-based evaluation system; test the received application.

First of all, it is necessary to analyze the main technical solutions and compare them and select the most suitable ones. The general technology of the web application being developed, the main technologies that will be used, are considered. A comparison and selection of servers is also carried out and a suitable one for this project will be selected. Also, one of the tasks that must be chosen is the development of the database and the organization of the interaction of web servers.

Conclusions. In the course of the research, the data was analyzed for the construction of the server part of the automated distributed training and testing system, taking into account the advantages and disadvantages of already existing systems. A search and analysis of already existing platforms and systems was carried out, the comparative characteristics of these systems were carried out, and their main advantages and disadvantages were highlighted. After aggregating the advantages and taking into account the disadvantages, a theoretical basis was built for the implementation of one's own solution. The main aspects of building one's own solution were also highlighted and a plan for its development was drawn up.

References

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