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MINISTRY OF EDUCATION AND SCIENCE
OF UKRAINE
V. N. KARAZIN KHARKIV NATIONAL UNIVERSITY

**IT-SPACE OF TODAY:
TRENDS, INNOVATIONS
AND DEVELOPMENT PROSPECTS**

Collection of abstracts
of the II International Scientific and Practical
Student Conference

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DEVELOPMENT OF AN INFORMATION SYSTEM FOR DISTANCE LEARNING TO SUPPORT THE PROCESS OF STUDYING HISTORY

The purpose of the study is to develop the "History" module within the distance learning information system, which will allow distance learning of the subject area, namely history. The object is the design of computer problems, information, software and hardware support of the "History" module of the distance learning information system. To solve the tasks, methods of website development, algorithms for searching information by keywords, recommendations for the appearance of the user interface were used. The result of the project is a software module that allows you to study the subject area, namely history, remotely. The application of the developed module will make it possible not only to learn important information about historical events and outstanding personalities, but also to discover little-known, but quite interesting historical facts. This opens up additional opportunities to increase the level of interest of the user in more thorough learning. The developed software module also significantly expands the opportunities for communication between participants, which contributes to a detailed discussion of an interesting topic, its comprehensive

analysis. As tools for modeling, the modeling tools Aris Toolset and Ramus Educational were used. The analysis showed that distance learning is a necessary and integral part of modern life, and it is quite relevant for a wide variety of categories of the population - both for schoolchildren who want to get acquainted with the discipline they are interested in to a greater extent than provided for by the school curriculum, and for adults who want to acquire new skills and knowledge, the need for which is acutely felt in the rapidly changing labor market. Also, thanks to the use of distance education, those who study can receive specialized education while studying even at school. Another indisputable advantage of using distance learning technologies, which are available both online and in distance education institutes, is the ability to independently plan your study time [1–3].

However, people do not always resort to distance learning, for example, due to the usual lack of time. The form of distance learning allows people who cannot attend "real" classes due to health reasons, pensioners and disabled people to study on an equal basis with everyone else. Thanks to modern technologies, they have the opportunity to study any subject without leaving their own room. The most significant advantage of using distance education is the ability to choose any time for classes and the ability to independently regulate the intensity and duration of classes. Different people have different abilities and talents, also, sometimes they have different levels of training, and, accordingly, they will spend different time to assimilate the same material. Thus, when studying "full-time", both students and teachers are forced to focus on the curriculum, which is designed for the "average" student. This leads to the fact that in the case when a person needs less time to assimilate the material, the rest of the time he will have to wait aimlessly. Conversely, if the student does not understand any part of the material, the teacher will not be able to immediately explain to him what he did not understand. Also, when a student missed a class, for example, due to illness, the teacher simply will not have time to explain personally for him the topic he has already covered with others. By using distance learning technologies, you can avoid the above problems. Thanks to distance learning technologies, you can contact your teacher at any time, for example, by e-mail or in real time, and ask him any question on the topic that is currently being studied, or ask him to explain any material, get additional advice, etc.

Distance learning also has another very interesting feature, namely, the student's assessment becomes more objective. This form of education does not cause personal sympathy or antipathy of the teacher to the student, in many cases tests are submitted for verification anonymously, under registration numbers, which guarantees the impartiality of the assessment [2–4].

This leads to the fact that teachers have the opportunity to evaluate only knowledge, not people, and students gain confidence in the objectivity of the assessment of their knowledge. Also, a fairly significant advantage of distance learning is its low cost. In most cases, distance learning programs are much cheaper than similar "traditional" ones. This is due to many factors. For example, students who study remotely do not occupy classrooms, do not require printed educational materials. Also, since they study a lot of time on their own, and therefore require less "teacher's" time, there are savings in salary. That is, at a price, distance learning is

more affordable. An excellent example is IBM, which has developed an introductory e-Learning course for each new manager. The traditional full-time six-week course is now taught in the following ratio: 75% e-Learning and 25% in the classroom. This program saved \$ 24 million, the cost of one day of training decreased by 3 times - from \$ 400 to \$ 135. Moreover, the volume of educational content has increased by 5 times. It should also be noted that a student who studies remotely becomes more independent, more mobile and more responsible. Without such qualities, he simply will not be able to study. Even if they were not there at first, but the motivation for learning is great, these qualities develop in the process of learning and at the end of it, specialists who are really in demand in the market come out [5].

Also, distance learning makes the learning process more creative and individual, opens up new opportunities for creative self-expression of the student. Unfortunately, for all its advantages, distance learning has a very significant drawback, namely, the lack of social interaction. One way or another, almost always a person strives to be a full-fledged part of society. With distance learning, she may have a rather unpleasant feeling of loneliness, which can provoke a loss of interest in learning, even to a complete loss of motivation, while with full-time study, there is an opportunity to see other students and feel that you are not alone in mastering new knowledge. You can also discuss with students the difficulties that have arisen in the learning process, outline ways to solve them. One way or another, this will contribute to psychological relief. Since the relevance of distance learning in our time and its expediency are beyond doubt, the object of the diploma project is the design of computer problems, information, software and technical support of the "History" module of the distance learning information system, and the purpose of the diploma project is the development of the "History" module, which will allow distance learning of history. In the module under development, it is necessary to implement the functions of viewing the necessary information, as well as adding, editing and deleting it. It is also necessary to implement the ability to communicate on the forum by creating functionality for adding, editing and deleting topics, adding comments to them, editing and deleting comments [4–5].

Summing up, it can be stated that the project designed and developed the module "History" of the distance learning information system, which allows distance learning of history. During the work on the project, a detailed analysis of the subject area was performed, existing software products that implement the functions of the subject area were considered in detail, and their comparison was carried out. Conclusions were made about the feasibility of developing a new software product for a more specialized study of history and with a simpler user interface. Software requirements were also developed and analyzed. A glossary was compiled, use cases were developed: a use case diagram was created, a use case specification was compiled, a storyboard of use cases was performed. The specification of functional and non-functional requirements was highlighted. The models that were used were modeled using the tools of the BPWin and RationalRose software products. A mathematical statement of the problem was given. Also, a database scheme was designed to solve the problem, its physical implementation was described. A software implementation of the database was created. A description of the application

architecture was performed. The application was tested. The software product was deployed. Modeling is performed by Aris Toolset and Ramus Educational modeling tools, IBM Rational Rose visual modeling package; software development environment – Microsoft Visual Studio 2010; programming language – C#. The developed "History" module can be used anywhere and by anyone who wants to study history.

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DEVELOPMENT OF THE MODULE "SOFTWARE TESTING" OF THE PROJECT MANAGEMENT INFORMATION SYSTEM

The analysis showed that the most common problems that arise in the process of software development are considered to be insufficient reliability and high complexity. Thus, it has been proven that finding and correcting errors in software products is the most difficult process.

There are many approaches to solving the problem of software verification and testing, but effective testing of rather complex software products is an extremely creative process that is not reduced to following strict and clear procedures or creating such.

From the point of view of ISO 9126, the quality of software can be defined as a cumulative characteristic of the software under study, taking into account the following components: reliability, practicality, efficiency, mobility, functionality.

Skorin Yuriy	
APPLICATION OF THE MECHANISM OF INTEGRATION OF THE AUTOMATED BANKING SYSTEM WITH MONEY TRANSFER SYSTEMS.	201
Skorin Yuriy	
APPLYING AI TECHNIQUES TO CREATE TYPICAL WEB APPLICATIONS.	204
Skorin Yuriy	
DEVELOPMENT OF AN INFORMATION SYSTEM FOR DISTANCE LEARNING TO SUPPORT THE PROCESS OF STUDYING HISTORY.....	207
Skorin Yuriy	
DEVELOPMENT OF THE MODULE "SOFTWARE TESTING" OF THE PROJECT MANAGEMENT INFORMATION SYSTEM.	210
Skorin Yuriy	
IMPROVING THE INFORMATION SYSTEM OF A LOGISTICS COMPANY BY IMPLEMENTING TELEGRAM BOTS.	213
Skorin Yuriy	
INTELLIGENT METHODS FOR DIALOGUE SYSTEMS WITH NATURAL LANGUAGE INTERFACE.	216
Skorin Yuriy	
NEURAL NETWORK IMPLEMENTATION OF SOLVING DISCRETE OPTIMIZATION PROBLEMS.	219
Skorin Yuriy	
USING NEURAL NETWORK AND DATA VISUALIZATION ALGORITHMS FOR MEDICAL ANALYSIS.	222
Skorin Yuriy, Gerasimova Victoria	
DEVELOPMENT OF A WEB APPLICATION TO SUPPORT THE PROCESS OF LEARNING FOREIGN LANGUAGES.	226
Skorin Yuriy, Khusainov Nikita	
DEVELOPMENT OF A WEB APPLICATION FOR ACCOUNTING FOR DEMAND FOR TRAVEL SERVICES.	229
Skorin Yuriy, Koltsova Elizaveta	
DEVELOPMENT OF A WEB APPLICATION FOR ACCOUNTING FOR ORDERS IN A FLOWER SHOP.	232
Skorin Yuriy, Mizyak Denys	
ANALYSIS OF APPROACHES TO THE CONSTRUCTION OF ELECTRONIC DOCUMENT MANAGEMENT SYSTEMS.	235
Skorin Yuriy, Shchur Vitaliy	
DEVELOPMENT OF A WEB APPLICATION FOR TRACKING POSTAL TRANSPORTATION.	238

Електронне наукове видання
комбінованого використання
Можна використовувати в локальному та мережному режимах

ІТ-ПРОСТІР СЬОГОДЕННЯ: ТЕНДЕНЦІЇ,
ІННОВАЦІЇ ТА ПЕРСПЕКТИВИ РОЗВИТКУ

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