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DEVELOPMENT OF COMPUTER SOFTWARE AND TOOLS FOR ELECTRONIC DOCUMENT MANAGEMENT

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Abstract. It is proposed to develop training computer programs and manuals for studying electronic document management tools. It is shown that the modern education system uses information technology and computer telecommunications, however, training on real equipment, as a rule, is unacceptable because of security threats. It is proposed to replace real hardware with virtual telecommunication devices and networks.

Keywords: electronic document management, telecommunication systems, security, virtualization, electronic manuals.

Introduction

At the present stage of development of computer and telecommunication technologies, each enterprise is already capable of having its own computer network both for internal communication and interaction, and for accessing the Internet and communicating with representatives of other enterprises, customers and charterers.

Recently, many enterprises and organizations are equipped with videoconferencing systems in connection with the advantages of this type of communications and reasonable costs for its organization. An electronic document can be used in all areas of activity where software and hardware are used to create, process, store, transmit and receive information. With the help of electronic documents, transactions and settlements can be made (contracts are concluded), correspondence and transfer of documents and other information are carried out. Electronic documents can be sent using any means of communication, including information systems and networks.

Information Security

Electronic document management systems have caused a number of problems, one of which is the security of data processing and transmission. The data transmitted in global telecommunication networks turned out to be especially "defenseless". Currently, a large number of specialists in almost all economically developed countries of the world are working on the problem of the security of information transmitted over networks. It can be said that information security has been formed into a separate rapidly developing discipline. However, despite the efforts of numerous organizations involved in the protection of information, ensuring information security continues to be an extremely acute problem.

Certain difficulties are associated with changes in information processing and transmission technologies. On the one hand, the use of information technologies provides a number of obvious advantages: increasing the efficiency of management processes, processing and transmitting data, etc. It is no longer possible to imagine a large organization without the use of the latest information technologies, ranging from the automation of individual workplaces to the construction of corporate distributed information systems.

On the other hand, the development of networks, their complication, mutual integration, openness lead, to the emergence of qualitatively new threats, an increase in the number of intruders who have the potential to influence the system.

To ensure the protection of information, it is required not only the development of private protection mechanisms, but the implementation of a system approach that includes a set of interrelated measures (use of special technical and software tools, organizational measures, legal acts, moral and ethical countermeasures, etc.). The complex nature of the defense stems from the complex actions of intruders seeking by any means to obtain important information for them.

The complexity of the computer network requires additional special protection tools in addition to those available in standard network systems. To do this, it is necessary to study cryptographic security methods in telecommunication systems and security methods in existing web-server networks, develop of methods and algorithms for improving security in web-server networks. Regardless of the objects of management, it is desirable that the management system performs a number of functions that are defined by international standards, summarizing the experience of using control systems in various fields.

Specialist training

Training of specialists who are able to design and maintain these systems on the equipment of real-life networks, as a rule, is unacceptable for many reasons, and primarily because of the threat of violation of security policies. It is hard to forecast what might happen if a large number of students grant the rights of administrators to reveal passwords and allow experiments to be performed at their discretion on real equipment.

Therefore, the modern education system uses information technology and computer telecommunications. The system of distance education is especially dynamically developing, where electronic textbooks are widely used. The advantages of these textbooks are follow. Firstly, work on virtual devices and systems that are not related to real hardware, which reduces the cost and makes the learning process completely safe. Secondly, accessibility due to the presence of computers and software, which allow to model complex systems with functionality close to the capabilities of real systems. Thirdly, the adequacy of the level of development of modern scientific knowledge. Fourthly, a computer program can train, control, assist and evaluate learning. On the other hand, the creation of electronic textbooks contributes to the solution of such problems as the constant updating of information material, exercises and examples. In addition, with the help of electronic textbooks and programs, effective training and knowledge control, computer testing, is carried out.

Conclusion

The theoretical part of the electronic manual developed by the authors contains a large number of examples, figures, diagrams. All material is divided into small sections and subsections, which greatly facilitates the perception and contributes to a better assimilation of information.

Testing includes only those questions whose answers can be found in the electronic textbook. If there are errors, the user can analyze them, since the program provides the ability to view all erroneously performed tasks and suggests ways to find the correct answers. If necessary, the student has the opportunity to re-take the test.

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