STATE COMMITTEE OF COMMUNICATIONS, INFORMATION AND
TELECOMMUNICATION TECHNOLOGIES

TASHKENT UNIVERSITY OF INFORMATION TECHNOLOGIES

FINAL QUALIFICATION WORK

on the theme:

«DEVELOPMENT OF TRAINING PROGRAM OF SYSTEM ADMINISTRATORS OF CORPORATE INFORMATION SYSTEMS»

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Tashkent 2014

STATE COMMITTEE OF COMMUNICATIONS, INFORMATION
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TASHKENT UNIVERSITY OF INFORMATION TECHNOLOGIES

Faculty   Professional education in sphere ICT
Department   "Information educational technologies"
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_____

« ___ »_____ 20 ___ y.

TASK
for final qualification work of
Bulanik Anna Vladimirovna
On the theme: «Development of training program of system administrators of
corporate information systems»

1. *The theme was claimed with order of university*: «29» December 2013 y.
№ 1219-20

2. *The deadline of delivery finished work:* «27» May 2014 y.

3. *Data source of the work:* scientific and technical literature.

4. *Content of calculation and explanation summary*: annotation, introduction, theoretical part, practical part, part of SVA, conclusion, bibliography, application.

5. *List of materials:* code of the navigation menu of electronic guidance for system administrator of the corporate information system «FAN», code of style sheet, electronic «System Administrator's Guide».

6. *The date of issue the task:* «25» January 2014 y.

Consultant _____

Task taken _____

7. Consultants of separated sections of the final qualification work

Name of the part	Consultant	Signature, the date of issue	
		Task given	Task received
PART I. Features and types of corporate information systems	Kogay V.N.		
PART II. Development of methods of training system administrators to work with corporate information systems	Kogay V.N.		
PART III. Safety of vital activity	Abdullayeva S.M.		

8. Graph of the performing the work

№	Name of the part	Execution date	The signature of consultant
1	PART I. Features and types of corporate information systems	25.02.2014-30.03.2014	
2	PART II. Development of methods of training system administrators to work with corporate information systems	31.03.2014-10.05.2014	
3	PART III. Safety of vital activity	11.05.2014-20.05.2014	

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Consultant Kogay V.N. «____»_____20 __ y. _____

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The theme «Development of training program of system administrators of corporate information systems» in the final qualifying work studied basic theoretical information about corporate information systems and problems at the stage of implementation, in particular at the personnel training stage. To solve identified problems have been developed: the curriculum plan, the electronic «System Administrator's Guide» and the electronic simulator. During the development of training material were used programming language C #, universal method tomarkup the pages HTML and CSS.

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«Корпоратив ахборот тизимларни маъммурларни ўқитиш услубларни ишлаб чиқариш» мавзусидаги битирув малака ишида корпоратив ахборот тизимларни хақида асосий теоретик маълумотлар ва уларни амалда қўллаш хамда, ходимларини ўқитиш муаммолари кўриб чиқилди. Аниқланган муаммоларнинг хал етиш учун ишлаб чиқилган : ўкув режаси, «Система маъмурлари учун»электрон қўлланма ва электрон тренажёр. Ўқитиш материални ишлаб чиқариш жараёнда C # дастурлаш тили, хамда HTML , CSS ишлатилган.

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В выпускной квалификационной работе на тему «Разработка методики обучения системных администраторов корпоративных информационных систем» изучены базовые теоретические сведения о корпоративных информационных системах и проблемах на этапе их внедрения, в частности при обучении персонала. Для решения выявленных проблем были разработаны: план учебной программы, электронное «Руководство системного администратора» и электронный тренажер. В процессе разработки обучающего материала были использованыязык программирования C#, универсальный метод разметки страниц HTML и таблица стилей CSS.

Content

Introduction

On the trends of development of information technologies in the field of information systems development in the Republic of Uzbekistan evidenced by the adoption of the set of legal acts. These acts include: the Law «About Informatization» adopted on 11 December 2003, the purpose of which is to regulate relations in the field of information , use of information resources and information systems, as well as Presidential Decree «About measures to further strengthen the incentives of domestic software developers» adopted 20 September 2013, in order to develop in the country of production software for information and communication technologies in accordance with international standards, to strengthen the motivation of domestic developers to expand the production of high quality, competitive software products.

The adoption of these legal acts directly promoted the development of a large number of information systems for specific organizations - corporate information systems intended for automation of activity of these organizations.

It is noteworthy that any software products provide documentation that provides the information necessary for the operation, maintenance, modernization, conversion and transfer software products. Documentation of software products is the only assistant for users of corporate information systems, which include the system administrators that provide its functioning properly.

During the implementation phase of software products occurring the process of training organization working with it. However, the so-called "training" comes down to that personnel provides documentation of software products with which they have to learn on their own.Thus, users are provided with «User's Guide», and system administrators with «System Administrator's Guide», which testifies to absence in practice of training, which has a specific result - knowledge and ability to work with the corporate information system.Definitely the result of personnel training influences the quality of exploitation, maintenance, modernization, conversion of software products, and hence the quality of the developed system

directly.Further, the conclusion follows: process of training is unthinkable without using the pedagogical technologies, including the development of a software product documentation.

Topicality.Need to ensure reliable service of corporate information systems by system administrators.

The purpose of the research.Development of methods to training system administrators of corporate information system «FAN».

Tasks of research:

– to study the features and types of corporate information systems;

– to study methods of personnel training;

– to develop the method of training of system administrators of corporate information systems.

Objects of research: Development Center of software products and hardware-software complexes under Tashkent University of Information Technologies, Committee for coordination science and technology development.

Subject of research: innovative pedagogical technologies for training system administrators at the implementation stage of the corporate information system «FAN».

Practical importance. The developed method increases the efficiency of training system administrators of corporate information systems that ensure reliability of corporate information system.

Final qualifying work consists of annotation, introduction, three chapters, conclusion, bibliography and application, contains 70 pages, 30 pictures, 2 schemes, 1 table. Each chapter reflects the results of final qualifying work solving research tasks and characterizes research phase.

First stage includes studying and analysis of features, kinds of corporate information systems, management processes and maintenance of such systems, their implementation and, especially, the training phase.This step allows to identifythe issues related with the influence of the process of personnel training on

the quality of maintenance the corporate information system.For solving the identified problems explore innovative pedagogical technologies. The results are given in the first chapter of the final qualifying work.

The second stage is directly required for the development of training system administrators of the corporate information system«FAN» methodological support.Result of this stage are the training program and electronic «System Administrator's Guide», which includes the demonstration material and electronic simulator.The results are given in the second chapter of the final qualifying work.

The third stage includes the study of possible negative factors affecting the person during of working with corporate information systemsand the safety rules that must be followed. Theresultsaregiveninthethirdchapterofthefinal qualifying work.

The developed program of training method to work system administrators with corporate information systems has passed approbation during the implementation stageof the corporate information system«FAN» and used by the Center of software products and hardware, software complexes development by Tashkent University of Information Technologies at the implementation stage of other corporate information systems.

Chapter 1. Features and types of corporate information systems

1.1. Thenotionofacorporateinformationsystem

There are so many definitions of the term «corporate information system», and we can hardly choose any one of them, which would be the most complete and unambiguous. Therefore advisable at first to define the meaning of each word, that forming the term «Corporate information system»–«system», «information» and «corporation», and its combinations.

Thus, the system (from al-greekΣύστημα - whole composed of parts; connection) - the set of elements that are in relationships and connections with each other, which forms a certain integrity, unity [1].

Information - data about persons, objects, facts, events, phenomena and processes, regardless of its format [2]. Information System - system dedicated for storage, processing, retrieval, distribution, transmission and presentation of information [3]. Thus, the modern information system - a system consisting of hardware and software, the main object of which is information.

Corporation, from an economic perspective - is often a big commercial enterprise, holding structure, which combines several companies of different activities. From the viewpoint of informatics and management theory it can be called as«monolithic» not holding structure company (they «association units» can be considered simply departments), and government institutions and other organizations. «Corporate» - primarilythe «unifying».

Consequently, the corporate information system (CIS) - this is such an information system that covers all activity (or its most part) of the company or organization that permeates the main business processes and organizes single information space.

Considering the specificity of the activity of different people,CIS can be defined using professional terminology:

Corporate information system–is a set of specialized software and computing hardware platform on which the software is installed and configured;

Corporate information system - is a managerial ideology that unites the business strategy of the company (with the favored structure for its implementation) and advanced information technology;

Corporate information system – is such an information system which encompasses main business of company in order to provide operational information for decision-making;

Corporate information system - is the entire infrastructure of company involved in the management of all information and documentary flows, which includes the following mandatory elements: information model, its development regulations and rules of making modifications to it, the human resources software complex, rules changes in its configuration, the corresponding hardware technical base, user manuals, rules of their training and certification[4].

Currently, no large enterprise cannot exist and develop without high management system based on the latest information technology.Constantly changing market requirements, the huge flows of information science and technology, technological and marketing character require persons responsible for the strategy and tactics of the development of high-tech enterprises, speed and accuracy of decisions aimed at obtaining the maximum profit at minimum cost.Partly for that reason has recently become so popular the idea of building corporate information system.

1.2.Classificationofcorporateinformationsystems

Corporate information system includes a computer infrastructure of the organization and based on her interrelated subsystems that provide tasks solving of organization.

As such subsystems may be:

- information and referral system, including hypertext and GIS;
- document management system;
- transaction processing system (actions to change the information in the database);
- decisionsupportsystem.

By the way of organizing CIS are divided into:

- file server system;
- client-server system;
- three-tiersystem;
- system based on Internet / Intranet technologies.

Under the server understood any system (a single computer with the appropriate software or a separate software system in the software) intended to provide some computational resources to other systems (computers or programs), called clients.
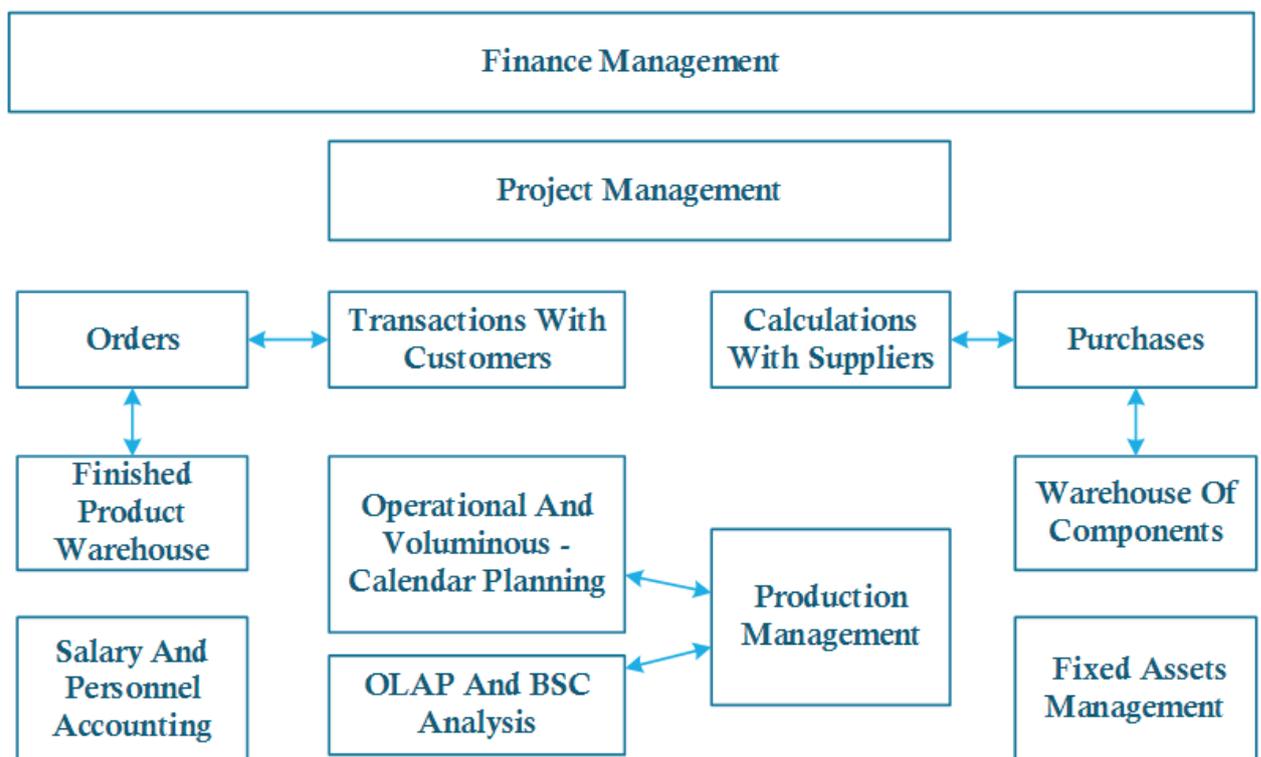
Corporate information systems devided into:

1. ERP (Enterprise Resource Planning System);
2. CRM (Customer Relationship Management System);
3. MES (Manufacturing Execution System);
4. WMS (Warehouse Management System);
5. EAM (EnterpriseAsset Management);
6. HRM (HumanResource Management).

1. Modern ERP emerged from nearly four decades of evolution of management and information technology. They are intended primarily for building a unified information space (the union of all departments and functions), effective management of all company resources associated with sales, production, accounting orders. ERP-system is constructed in a modular fashion and usually

includes a security module to prevent both internal and external theft of information (picture 1).

Problems do arise mainly due to malfunction or initial construction plan implementation. For example, trimmed investment in training personnel to work in the system significantly reduced the effectiveness. Therefore, implementing ERP-systems usually do not immediately in full, and the individual modules (especially at the initial stage).

Finance Management

Project Management

Orders	Transactions With Customers	Calculations With Suppliers	Purchases
Finished Product Warehouse	Operational And Voluminous - Calendar Planning	Production Management	Warehouse Of Components
Salary And Personnel Accounting	OLAP And BSC Analysis		Fixed Assets Management

Picture1FunctionalcompositionofERP

2. Widespread in recent years has become a class of systems for customer relationship management . CRM- system helps automate the enterprise with customers, create customer base and use it for their business effectiveness .

After the success of the company, regardless of its size depends on the ability to better understand customer needs and market trends, as well as to realize the opportunities that arise at different stages of interaction with customers. Features such as the automation of business processes , customer relationship is control of all transactions (it is important to keep track of important and complex

transactions) , a permanent collection of customer information and analysis of all phases of the transactions are the main duties of this class of systems .

Most experts estimate the Russian market of CRM-systems in the $ 50-70 million, and talking about his constant growth. The current domestic market characterized by the accumulation phase companies experience on the application of CRM in their business.

The most actively used CRM companies in the financial, telecommunications and the insurance market.

3. MES class system designed for the production environment of the enterprise. Systems of this class track and document the entire production process, display production cycle in real time (Figure 2). In contrast to ERP, which has no direct effect on the process by MES becomes possible to adjust (or completely rebuild) the process as many times as you need it. In other words, a system of this class are designed to optimize production and increase its profitability.

Collecting and analyzing the data obtained , for example, production lines , they give a more detailed view of the production activity of the enterprise (from order placement to shipment of finished products) , improving the financial performance of the company. All major indicators that are included in the main course of the economy sector (returns of fixed assets, cash flow , cost, profit and productivity) are displayed in detail during production. Experts call MES bridge between the financial operations of ERP-systems and operational activities of the company at the shop, or plot line.
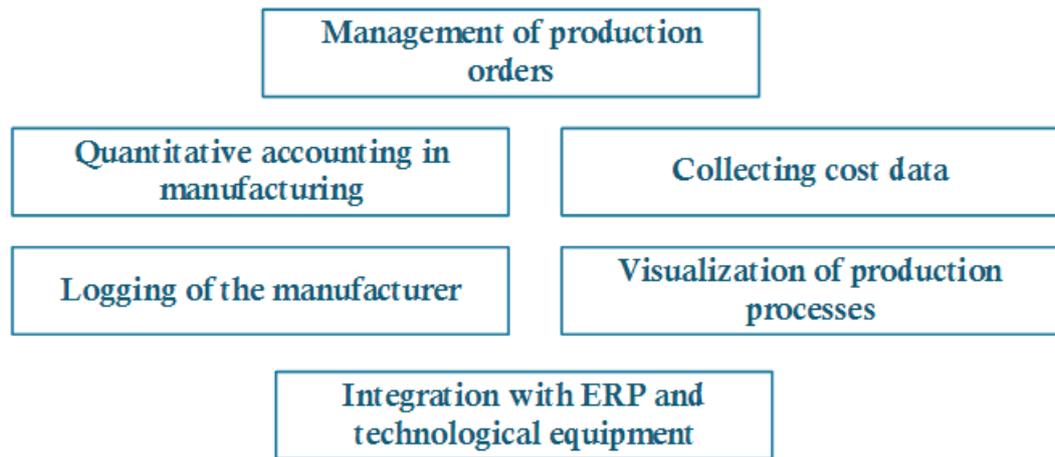
Picture 1 Functional composition of MES

4. As the name implies, WMS - a management system that provides comprehensive automation of warehouse processes. Necessary and effective tool for modern warehouse (for example, "1C: Warehouse").

5. EAM - a system asset management company, which allows to reduce downtime, maintenance costs, repairs and logistics. Is a necessary tool in the asset-intensive industries (energy, transport, mining, etc.).

Fixed assets - it means work which repeatedly involved in the production process, while maintaining its natural shape, gradually wearing, carrying their value in part on newly created products. In the accounting and taxation reflected in monetary terms are called fixed assets fixed assets.

Historically EAM-system arose from CMMS - systems (more than one class of information systems maintenance management). EAM modules now also includes part of the large blocks of ERP-systems (such as mySAP Business Suite, IFS Applications, Oracle E-Business Suite, etc.).

6. HRM - a system of personnel management - one of the most important components of modern management. The main purpose of these systems - the attraction and retention of human resources for the company specialists. HRM-systems solve two main problems : the ordering of all accounting and settlement processes associated with staff and decreased nursing staff. Thus , HRM- system in a certain sense be called «CRM- systems on the contrary ," to attract and retain

customers do not , and own employees . Of course, the methods used here are completely different , but the general approach is similar .

Functions of HRM - systems:

– search personnel;

– recruitment and selection of personnel;

– evaluation of staff;

– training and staff development;

– management of corporate culture;

– staff motivation;

– work organization.

1.3. Administration of corporate information systems

Administration (administrative mechanisms) - is a management procedure, regulatory processes or some part of them.

Administration is the responsibility of the administrator of corporate information systems that captures and directs his powers relevant processes and situations that need to target and control restrictions. To those processes include work planning, building, operating and maintaining an efficient IT infrastructure that is integrated into the overall architecture of the information system - one of the critical factors for successful implementation of the strategic business objectives of the organization.

Infrastructure includes solutions for software and hardware systems and organizational maintenance of the information system, which corresponds to the understanding of modern standards such ISO / IEC 15288.

IT infrastructure includes:

– computingandtelecommunicationsequipment;

– communicationchannels;

– engineering equipment, providing work computing and telecommunications;

– software applications that implement the functionality of the systems (application software) and ensure the functioning of the equipment (system software);

– management and staff, operating an information system;

– internal regulations and instructions governing the personnel information systems;

– source software applications included in the information system (application and system software);

– system and user documentation for software applications and hardware systems, etc.

Modern IT infrastructure of corporate information system must have high performance, reliability, flexibility, scalability, and other qualities.

Collection of network software and hardware of of corporate information system forms its architecture. For corporate information systems focused primarily on getting the economic effect important criteria is reliability.

*Tasks and administrative functions in corporate information systems.*Administration of the corporate information system is to provide users of the relevant rights opportunities to work with the system (base data bank); ensure data integrity, as well as the creation of multiuser applications.

Administration of the corporate information system - is directly installation (installation) information system to control access to it, ensuring its integrity, etc.

Formation (installation) of the corporate information system on the computer is to prepare one or more data files that will be installed and used as a single information system. This information system is created only once, regardless of how many datafiles it has, and how many hits it will be done.

The process of creating an information system can be used, if you delete the information in the existing information system. This will be an information system with the same name and the same physical structure.

Development of information system includes the following operations:

– the creation of new data files, or erasing data stored in the previous data files;

– establishment of structures required to access and work with the information system;

– initializing the control files and log information for the system.

To provide protection of information systems use different data integrity constraints, logging, replication, and backup.

Created journal usually contains information about downloading, including:

– names included in the database file;

– the input data and the associated table definition;

– errors and the results of the database working;

– summarystatistics.

Before creating the information system necessary:

– plan tables and indexes, as well as to evaluate the space they need;

– defense planning system, including its configuration magazines considering they occupy space and backup strategy.

Administration of the corporate information system has the following objectives:

1. Installing and configuring the network.
2. Support its future performance.
3. Installing basic software.
4. Monitoringnetwork.

There are three main categories of information systems users: developers, administrators, and users.

Administration of the corporate information system by the person manage this information system. Such a person is called by the system administrator.

If the information system is large, these charges can carry several people (administrators group).

System administrator information system carries its starting and stopping. He can use the table spaces for the following functions:

- management of storage allocation for objects of the information system;
- memory quotas for users of the system;
- data access control, including modes online or offline;
- upandrestoringdata;
- devices for the distribution of data to improve performance.

During its activity the system administrator of the corporate information system interacts with other categories of its users as well as external experts who are not users of the system.

*System administration.*The main purpose of system administration is to bring the network in line with the objectives for which this network is designed. This goal is achieved by controlling the network to minimize the time and resources devoted to managing system, and at the same time maximize the availability, performance and efficiency of the system.

Functional areas of management related to system administration, defined in the specifications of ISO, and focus on:

- problem solving (diagnosis , localization and troubleshooting, error logging , testing);
- resource management (accounting, resource usage control , invoicing for the resources used and the restriction of access);
- configuration management, aimed at ensuring reliable and efficient operation of all components of the information system;
- performance monitoring (data collection and analysis of information on the work of individual resources , forecasting power to meet the needs of users / applications , measures to increase productivity);
- data protection (control user access to resources , data integrity and management of encryption).

The main result of prolonged development of the industry system administration expressed that from a functional point of view, the main control platform quite similar to each other. The differences between them lie in the field of structural performance and, moreover, related to the initial goals that were set at the initial stages of their development.

*Network administration.*Network administration arises when network administrator the need arises and the ability to operate a consolidated view of the network, as a rule, it applies to networks with complex architecture. Thus the transition from the operation control of individual devices to analyze traffic on the individual sections of the network, the logical configuration of its management, and specific operating parameters, wherein all of these operations it is advisable to perform a control console.

Then added to the controlled objects network operating systems, distributed database and data warehouse applications, and finally by its users.

The problems solved in this field are divided into two groups:

1. Monitoring the work of network equipment;
2. Managing the operation of the whole network.

In the first group we have to monitor the individual network devices (hubs, switches, routers, access servers, etc.), set up and change their configuration, troubleshoot these failures. These tasks are called traditional reactive administration (reactive management).

The second group is responsible for monitoring network traffic, identify its trends and analysis of events in order to implement schemes to prioritize and proactively resolve problems related to lack of throughput (preemptive or prophylactic administration, proactive management).

To implement preemptive administration, it should be supplemented by a powerful tool retrospective analysis of the behavior of an information system. The main role in this process may play a partition of the set of possible states of the system into classes and forecasting its probability of migration from one class to another.

It also includes the formation of a unified view of the network in order to make changes to its configuration, network resource accounting, management IP-address of the user packet filtering in order to ensure information security and a number of other tasks.

Laboriousness of administrative processes distributed computing environment was one of the incentives for the emergence of distributed computing reduced models.

To avoid such troubles, need to think again about the architecture of the information system and replace it if in the foreseeable future are expected such precedents. Using server databases in this case is the best solution.

The ultimate purpose of network management is to achieve functioning parameters of corporate information systems that meet the needs of users.

Users evaluate the work of the corporate information system not on the characteristics of network traffic, protocols used, the response time for requests of a specific server type and specific application management scenarios by the behavior of applications running on a daily basis their desktops.

*Dynamic administration.*The general trend in the world of network and system administration - shift of emphasis from monitoring individual resources or groups, with the performance management information system for maximum satisfaction of end-users of information technology contributed to the emergence of the concept of dynamic administration.

This approach assumes, first of all, the availability of tools for analyzing users behavior, in which shall be identified as their preferences and problems in their daily work. The results obtained at this stage should be the starting point for the active management of the interaction between the main objects of the administration - users, applications and the network.

The term «active» refers to continuing monitoring (monitoring) the nature of custom applications and surgical intervention in this process, when the level of service received by the user, not as expected.For the most adequate response to problems are encouraged to use analytical decision support tools.

These factors give reason to believe that instead of network and system administration is the management of applications and quality of service, independent of the used computing platforms or networks.

Another problem involves the creation of integrated «through» management tools that combine administration systems installed in partner organizations. The urgency of this problem increases with the increasing spread of networks Intranet.

Implementation of corporate information systems of Intranet technologies is not without administration. So widely practiced work of employees in the corporate network from home requires suppliers to create new tools in the area of access control and information security.

Independent value represent management tools Web-resources, not only in relation to the networks Intranet and Extranet, but mostly due to the proliferation of e-commerce.

Evolution of concepts touched not only the administration of systems architecture. New problems have arisen in distributed environments, have led to the fact that for some time network management has been regarded as a major concern of information systems administrators.

The situation changed after the number of distributed applications and databases, operating in the network exceeds a certain threshold value. At the same time increased the role of system administration, and the inevitable process of integration proved to system and network administration. It should be noted that the management of complex heterogeneous networks is a more challenging task than, for example, control over the functioning of network printers.

Integrated network management system (INMS) - system of management that provides the resources relating to the analysis, diagnostics and network management.

In this case network administration was sometimes seen as one of many components of the system administration, and network - as one of the managed resource along with computers, peripherals, databases, applications, etc.

The complexity of administrative processes distributed computing environment has led to the fact that the fall of 1996, Oracle and Sun Microsystems offered to create a network of computers, and six months later, Intel and Microsoft - the concept of networked personal computers (Net PC). Despite the significant differences between these two architectures, they marked a partial return to a centralized computing model and the corresponding organization of all administrative processes.

Thus, the evolution of tools and systems administration is directly related to the development of basic information technology.

Projects of development administrative arrangements typically include problem formulation of strategic management, policy development and information provision of access to information resources, as well as software and hardware devices, systems and complexes, staging and development of the system, improving the continuous control.

1.4. Implementation of corporate information system

After the development of corporate information systems comes the stage of implementation, the importance can not be overestimated. Indeed, all the declared corporate software developers the benefits and advantages resulting from the acquisition of a specific corporate information system, will only be felt in the case of its successful implementation.

The main difficulty in the implementation of corporate information systems for developers are:

– insufficient formalization of management processes in the enterprise;

– lack of full understanding by the mechanisms of implementation of the decisions and how artists work ;

– need to reorganize the enterprise information system;

– need to change the business process technology;

– need to attract new professionals to manage information system and retrain its own specialists to work in the system;

– resistance of workers and managers (now played no small role because people are not used to integrate computer technology into the enterprise);

– need to build a skilled team of implementers , it includes employees of the company and one of the senior leaders of companies interested in implementing (in the absence of interest pragmatic aspect of implementation of the corporate information system is minimized).

Factors of successful implementation of corporate information systems are:

– participation of the leadership in the implementation; availability and compliance with the implementation plan;

– the presence of managers clear objectives and project requirements;

– participation in the implementation of the company's specialists - the client;

– quality of corporate information system with the team and solution provider;

– reengineering business processes before implementation; availability of the strategy of the enterprise.

Any large modern information system in any subject area, usually carries a different culture management. The problem of such systems - is a problem of perception, development and implementation of other management culture.

For most domains implementation of information technology is characterized by high demands on the quality of their work and reliability of the operation, which largely depends on efficiency and return on investment. These requirements apply to the problems associated with the administration of information systems that are network hardware and software and information resource.

1.5. Problems during training system administrators working with the corporate information system

Necessary also take into account the negative factors in the implementation of corporate information systems developed. These factors include:

– management's inattention to the project;

– lack of clear project objectives;

- neformalizovannost business processes in the company;

- unwillingness of companies to change;

- instability and corruption in law firms;

- low qualification of personnel in the company;

- inadequatefundingofprojects.

Based on the nature of the above factors, only low-skilled personnel can directly affect the company in the process of training staff to work with the corporate information system. This process is particularly important for system administrators because on their skills and knowledge of the corporate information system depends on your whole system. In addition, when accompanied by a corporate information system administrator must know all of its features to effectively manage, configure, and modify parts of the system.

Improve the efficiency of training, namely, system administrators allows the use of innovative teaching techniques. Application of pedagogical techniques can provide effective results on the formation of the trainees the necessary knowledge and skills.

1.6. Using innovative pedagogical technologies in the development of training programs

1.6.1. Constructionprinciplesoftrainingprogram

Training program - is a document containing the list of disciplines (subjects), the sequence of their study and the total allotted time for this.

Traditionally, there are two principles of constructing courses : linear and concentric . When constructing a linear content of educational material , without returning to the previously studied (it is assumed that students already know traveled) is the theme of this topic . In particular it relates to subjects such as physics, chemistry ; often - mathematics . The study goes faster using a linear arrangement of the material principle . But the difficulty here is the following: if a topic is not assimilated by the students , further progress will be impossible because all subsequent builds upon the previous .

When the concentric arrangement of the material the same content is repeated over time, returning to the previously learned material. In the new stage content expands and deepens. Concentric principle of training programs has a positive side in that the material is better absorbed and retained longer in the memory, because repetition prevents forgetting. The disadvantage of using this principle: students think that they already know this stuff, and because many do not receive interest of novelty. The concentric construction program tempo slows down studying the full course.

More detailed training programs studied in course of teaching methods of private educational disciplines. The training program is then deployed in the textbooks. Tutorial - this is a book for students, which are set out in a systematic material constituting detailed the specific content of the discipline. It provides a basis of scientific knowledge at the present level to the extent that is provided by the curriculum. The tutorial material is presented in chapters, paragraphs, topics. Pedagogical aid textbook contains illustrations: pictures, drawings, maps, charts, plans, graphs, tables. Also informative material in the textbook have questions and tasks designed to help the student to understand and systematize knowledge; sometimes referred to literature for self-education.

During training personnel to work with corporate information systems in the preparation of the training program should take into account calendar plan, because this document regulates the total time allotted for learning system administrators.

1.6.2. Training methods and its classification

When training program developed it needs to develop a work program, which provides for the use of certain methods, techniques and training tools on each lesson.

Under the method means a set of practical techniques and theoretical knowledge, which combine to give the knowledge of reality.

Teaching method for a great time of its existence, has acquired very different interpretation of the leading scientists in the field of pedagogy, but on the basis of the interpretation of the method, it is possible to characterize the method of

teaching, as a set of practical and theoretical knowledge needed to teach the student to an educational subject.

Teaching methods are classified according to three main features:

1. By source and type of information presentation:

− conversational method using speech paraphrase work, informative lecture about the subject or the author, an interview with the student;

− visual method, working on the visual perception of information: drawing images, run benefits;

− practical method: laboratory work, writing summaries, essays.

2. For interaction of the teacher and the student:

− method of joint searching for truth;

− method of research and knowledge.

3. By the basic methods, teacher uses in his work:

− organizational methods;

− methods of stimulation and motivation of the learning process;

− controlmethods.

In a number of these classifications learning methods could be to add two or three dozen. All of them are not devoid of drawbacks and, at the same time have many positives. Generic classifications, there can be.

Educational process - a dynamic design, it should be understood. In vivo pedagogical process and methods derive their development, taking on new properties. Combining them in groups of rigid scheme is not justified, as it hinders the improvement of the educational process.

Apparently, need to follow the path of their universal application and combinations in order to achieve a high degree of adequacy to solve educational problems. At each stage of the learning process some methods dominate others - a subordinate position.

Some methods are more and more in the solution provide less learning tasks. Note also that the non-inclusion of at least one of the methods even in its

subordinate position to the objectives of the lesson significantly reduces its effectiveness. Perhaps, it is comparable to the lack of at least one of the components, even in very small doses, as part of a drug (it reduces or even changes its medicinal properties).

There are two methods of classes for training program: active and interactive.

Active method (picture 3) - a form of interaction between students and teachers, in which the teacher and students interact with each other during the lesson and students are not passive listeners, but active participants in the lesson.

If passive lesson main actor and manager of the lesson was the teacher, the teacher and the students here are on an equal footing.

If passive methods assumed an authoritarian style of interaction, the active involve more democratic style. Many among the active and interactive methods equate, however, despite the common, they have differences. Interactive methods can be considered as the most modern form of active methods.
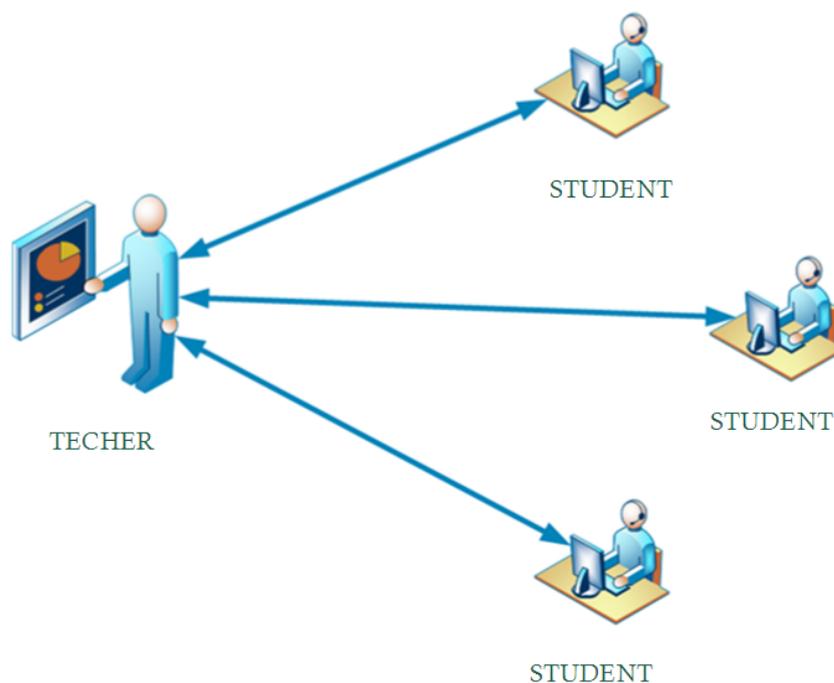

Picture2Active method (inverse relationship between teacher and students)

Interactive method (picture 4). Interactive («inter» - a mutual, «act» - act) - means to interact , is in conversation and dialogue with anyone.

In other words, in contrast to active methods, interactive focused on greater interaction with students not only a teacher but also with each other and to the dominance of activity of students in the learning process.

Teacher's place in interactive lessons is reduced to the direction of activities of students to achieve the objectives of the lesson.

The teacher develops a lesson plan (usually interactive exercises and activities, in the course of which the student is studying the material).

STUDENT

TECHER
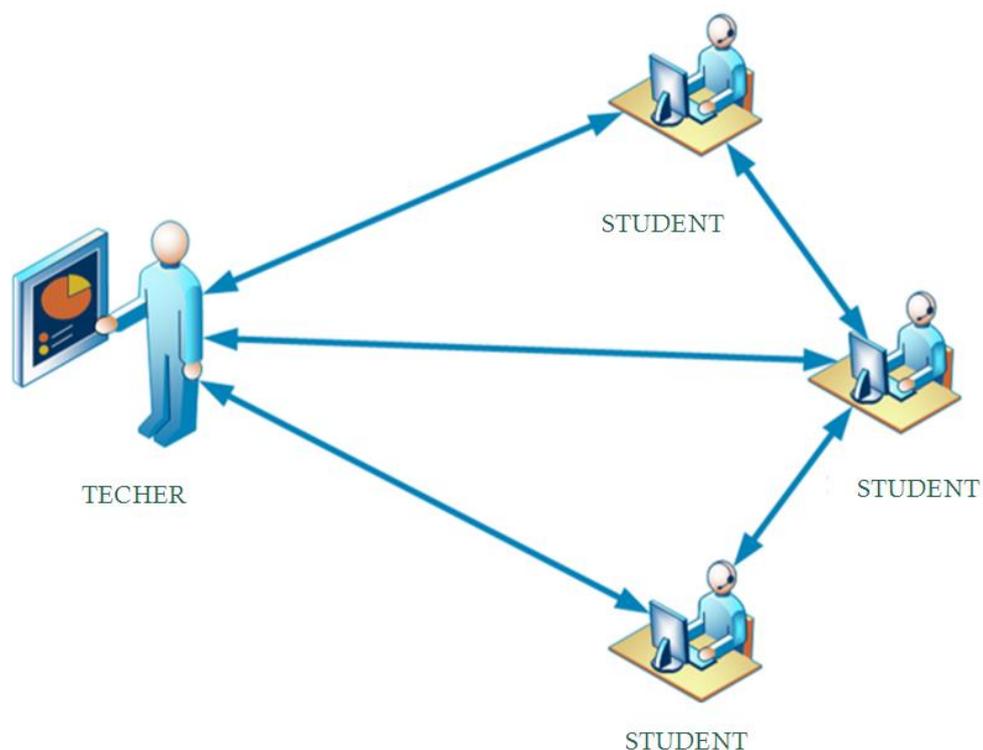
STUDENT

STUDENT

Picture3Interactive method (interaction between all participants of the learning process)

Consequently, the main components of interactive lessons are interactive exercises and activities that are performed by the students.

An important difference of interactive exercises and activities from normal that fulfilling their students not only and not so much secured the material studied already as a new study.

1.6.3. Teachingtools

Tools of training in pedagogics are absolutely all the materials used by the teacher in the implementation of the educational process.

In modern typology classification of teaching tools presented: printed textbooks (textbooks, manuals and books for further reading, reading books, workbooks, atlases and handouts for the tests and examinations), visual aids planar (wall maps, posters, magnetic boards and wall illustration), demonstration of visual aids (models, models, stands, sectional model and herbaria), electronic educational resources (multimedia textbooks and encyclopedias, computer programs and games educational and training nature, various educational resources of the global Internet), audiovisual visual aids (slides, presentations, training and educational videos, placed directly in digital form on computer hard drives or various digital storage media).

Teaching tools also include: training apparatus (flasks, test tubes, retorts, barometer, avometr, compass), sports equipment (sports equipment, fitness equipment, balls). Another means of learning is different training techniques such as cars, cars and tractors.

Of all the diverse resources of the modern teacher of training for system administrators of corporate information system identified the most necessary and effective - multimedia training software electronic guidance system administrator demonstrations implementations of basic functions, as well as a simulation of a database on the electronic simulator. Use of this software implies the following equipment: personal computer (PC) and the projector.

The main feature of the teaching methods of system administrators of corporate information systems is to conduct lessons as the training form.

Training (english «training» by «train» - train, educate) - method of active learning designed to develop knowledge, skills and attitudes. Training is often used if the desired result - it is not only new information, but also the application of acquired knowledge into practice.

Training can be viewed from the perspective of different paradigms:

– training as a unique form of training in which using positive reinforcement form the desired patterns of behavior, and by means of a negative – «erased» undesirable;

– training as training, which results in the formation and development of skills;

– training as a form of active learning, which aims to transfer knowledge, the development of certain skills;

– training as a method of creating the conditions for reopening the participants and independent search of ways to solve their psychological problems.

During the training, the following methods: play (business, role-playing games), case studies, group discussion, brainstorming, video analysis, moderation, etc.

Case - a problem situation that requires an answer and find solutions. Solution to a case may occur, both individually and as a group. The main objective of the case to learn how to analyze information, identify key issues and solutions, to form a program of action.

Business game - simulation of various aspects of professional activity, social interaction.

Role Playing Game - it is the fulfillment of certain roles participants to address a particular situation or study.

Group discussion - a joint discussion and analysis of the problem situation, issue or problem. Group discussion can be structured (ie controlled via coach of the questions or topics for discussion) or unstructured (for it depends on the participants of the panel discussion).

Brainstorming - one of the most effective methods to stimulate creative activity. Allows you to find solutions to complex problems through the application of special rules - first, participants are invited to give as many options and ideas, including the most fantastic. Then the total number of ideas expressed select the most successful, which can be used in practice.

Warm-up Game- a tool used to manage group dynamics. Warm-up games are relaxing and allowing relieve stress, group assignments.

Facilitation - a tool to stimulate the exchange of information within the group. Facilitation can accelerate the process of awareness, encourage group dynamics. Coach during the facilitation process helps the group discussion, directs this process back on track.

Video analysis - a tool, which is a demonstration video produced coach or video, in which participants will exhibit different behaviors. Video analysis allows visually examine the advantages and disadvantages of different types of behavior.

Chapter 2. Development of methods of training system administrators to work with corporate information systems

2.1. Development of training program of system administrators working with the corporate information system «FAN»

During training personnel to work with the corporate information system designed to be understood that this process is intended for direct employee training on new production functions for him, new challenges, new knowledge, and thus includes a set of measures for planning its future activities. Namely, conducting classes, aimed at acquiring new knowledge and skills.

To develop effective personnel training program necessary to carry out a preliminary assessment of personnel and only with the results obtained, draw up a list of activities for each employee or group of employees. Must take into account the time necessary to study the material and the time able to allocate staff to attend classes.

Developing of training program personnel development involves the following steps:

1. Identifying the staff needs in training.

2. Evaluation of professional-level employees.

3. Developing training program.

4. Developingthe support system of learning outcomes.

5. Organization of training activities.

6. Analysis of learning outcomes.

7. Carrying the personal consultations on learning outcomes.

Look at each stage of trainingconsidering that need to train administrators manage corporate information system «FAN».

The first step is to define learning objectives. Because system administrator is, in fact, the system manager, the main purpose of his education becomes knowledge information system and the ability to manage all of its features.

The second step is to identify the level of knowledge and skills to operate the software that offers an enterprise information system «FAN».

On the third step is to develop a training program directly system administrators, given the results at the end of the second stage.

The fourth step requires the development of additional supporting material helps to raise the learning outcomes.

At the fifth stage encompasses all the necessary training activities according to the training program (lectures, seminars, training, etc.).

The sixth stage involves the comparison of learning outcomes with the results obtained in the second stage of training, as well as evaluating the totality of the results, thus allowing to determine the degree of achievement of learning objectives.

Seventh stage suggests the possibility of failing to set goals and means necessary to carry out additional activities, such as advice on the problems encountered in the process of working with the corporate information system «FAN».

Training program of system administrators of corporate information system «FAN» presented at the table 1.

Table 1.The training program of system administrators of the corporate information system «FAN»

The subject of lesson	Hours	Type of lesson	Training method	Equipment, materials	Methodical maintenance
Introductory lesson. Technicalproject	2	Combinedless on - lecture + discussion	Active	PC, projector, presentation	Technicalproject
Basictechnicalsolutions	2	Combinedless on - lecture + discussion	Active	PC, projector, presentation	Technicalproject
Functional structure of CIS «FAN»	2	Combinedless on - lecture + discussion	Active	PC, projector, presentation	Technicalproject

Automatable functions of CIS «FAN»	2	Combinedless on - lecture + discussion	Active	PC, projector, presentation	Technicalproject
Structural diagram of the technical facilities complex	2	Combinedless on - lecture + discussion	Active	PC, projector, presentation	Technicalproject
Descriptionofthesoftware	2	Combinedless on - lecture + discussion	Active	PC, projector, presentation	Technicalproject
Input and output data, array of information	2	Combinedless on - lecture + discussion	Active	PC, projector, presentation	Technicalproject
Information base. The organization of information base	4	Combinedless on - lecture + discussion	Active	PC, projector, presentation	Technicalproject
Management of Admin Console of the portal	4	Combined lesson - lecture + discussion + practice	Interactive	PC, projector, demonstration, electronic simulator	Electronic «System Administrator's Guide»
Database management in SQL Server 2008 R2 in Microsoft SQL Management Studio	4	Combined lesson - lecture + discussion + practice	Interactive	PC, projector, demonstration, electronic simulator	Electronic «System Administrator's Guide»
Summary	**26**				

Developed methodological support is the main assistant, not only in training but also in the subsequent work.

The method of teaching system administrators of corporate information systems are based on technology of training.

The advantages of the developed method are:

- participants do not disturb each other, and help;
- one learns by doing;
- learning environment as close as possible to the real;
- promotes creative work;
- development of personal qualities of the student;
- psychological sense of security;
- the teacher evaluates and recommends and comments (points);
- relative freedom in choosing imetodov training;
- the possibility of combining education and training functions.

The disadvantages of the developed method are:

- not everyone is ready for open communication;
- increase in teacher preparation time for the lesson (teacher competence - the basic principle);
- the complexity of implementing the current educational process (the duration of the training takes different amounts of time).

However, these disadvantages may be avoided and the advantages of considerably greater.

2.2. Development of «System Administrator's Guide» in the multimedia form

2.2.1. ContentDevelopmentof«SystemAdministrator'sGuide»

Content of «System Administrator's Guide» includes two main sections:

- managing console of corporate information system «FAN»;
- database management of corporate information system «FAN».

Section console management of corporate information system «FAN» contains instructions for performing all the functions of a system administrator. Functions of system administrator for of corporate information system «FAN» are:

- adding users and assigning user roles;
- editing user data;
- removing the user;
- adding instructions;

- editing the added instructions;

- removal instructions;

- adding news;

- data editing news;

- removalthenews.

Section database management of corporate information system «FAN» contains instructions for performing all the functions of the system administrator to program Microsoft SQL Server 2008 R2. The main functions of the system administrator of the corporate information system «FAN» database include:

- creation of a database;

- creation of database users;

- managing user access database;

- backup of the database;

- restore the database from backup.

After the developed a plan of guidance begins the stage of filling plan items content.

For guidance important feature is the completeness, clarity of the material presented, as well as its availability. To provide leadership for all necessary information has been described in detail the process of performing each function. Understandability ensured by the fact that every action is supported by images (screenshots). To leadership was convenient to use different storage formats used, such as PDF and. Doc (electronic form) and A4 (printed form).

2.2.2. Choosingmultimediatoolsforcreatingelectronic«SystemAdministrator'sGuide»

Electronic «System Administrator's Guide» (ESAG) is a software application that is loaded in the browser. To develop ESAG was used software company Adobe Systems-Dreamweaver CS5.

Dreamweaver CS5 is the professional choice for building web sites and applications. Dreamweaver CS5 provides a powerful combination of visual layout

tools, application development features , and code editing support, enabling developers and designers at any skill level to create visually appealing, standards-based websites and applications quickly. From leading support for CSS -based design to hand-coding features, Dreamweaver provides tools to help professionals in a complex environment. Developers can use Dreamweaver with the server technology of choice to build powerful Internet applications that can connect users to databases, web services, and legacy systems.

Dreamweaver - professional HTML editor to visually create and manage sites of varying complexity and the pages of the Internet.

Dreamweaver includes many tools and techniques to edit and create a professional website: HTML, CSS, JavaScript, code editors (code review and code inspector), which allows you to edit multiple text documents that are supported in Dreamweaver.

Possibility of visual editing in Dreamweaver also lets you quickly create and change the design of the project without writing code. Dreamweaver refers to the so-called «visual» editor, so you can immediately see on the screen (at least approximately) a result of their work. Easy to use with the editor Dreamweaver is that it is possible to consider all elements of centralized and drag them with convenient panel directly into a document.

It is noteworthy that the development of a software application (electronic manuals) in Dreamweaver is essentially a development site. The only difference is the absence of authorization forms electronically "System Administration Guide" corporate information system «FAN».

For the development of multimedia content software was used Captivate 5 produce the same company Adobe Systems.

Adobe Captivate - refers to the rapid development tools, online training materials for Adobe Acrobat Connect Pro, and just for posting on the Internet, successfully importing Microsoft PowerPoint presentation format and converts to Flash animation. Working with audio, video, captures the selected area of the screen.

Software Adobe Captivate 5 today, is the best solution for the rapid creation and maintenance projects for e-learning without having to write code.

Combine software demos, application model, complex scenarios and tests with the use of multimedia and interactive elements.

Popular new functions of the program Adobe Captivate:

– optimized user interface;

– object styles;

– new slide masters;

– professional animation effects;

– support for simultaneous work with several videos;

– trackingandloggingprogram.

Using Adobe Captivate 5 softwarepossible to create e-learning courses on any subjects. Conventionally, these courses can be divided into three categories.

Linear - training is performed sequentially: after reviewing the material current slide student moves to the next slide on the account (scheme 1).

Scheme 1.Line training course

ŒNonlinear (with branches) - training is conducted in accordance with the given scenario, which is based on the results of the «interaction» with the student tutorial. For example, the student is invited to answer the question on the answer depends on what kind of educational material will be displayed after this (scheme 2).
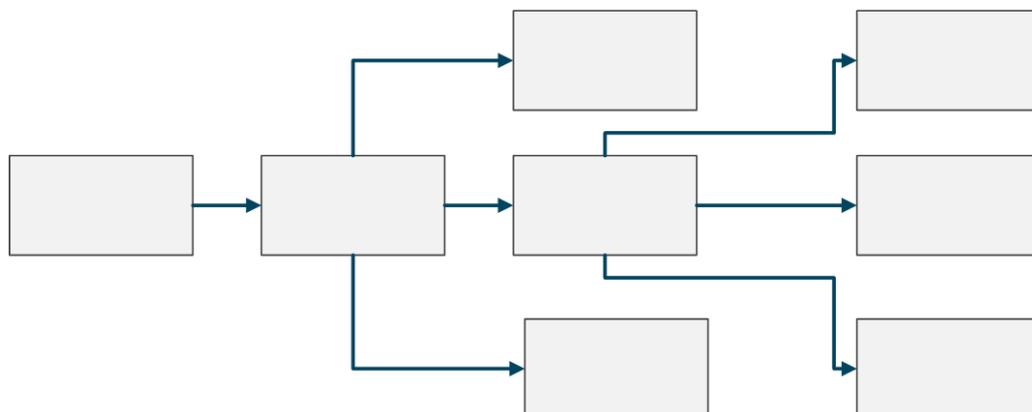
Scheme 2.Nonlinear training course

Simulator with software - Adobe Captivate 5 is used to demonstrate the capabilities of the software, creating video tutorials, simulations and applications to develop training presentations. An example of a course that simulates the software can be any video tutorial from the number on the site adobe.com.

In addition, this program can develop tests involving selection of one option from several proposed, in response input field is empty, determining the proper course of action, etc.

Adobe Captivate 5 program allows you to import and use images in teaching materials , presentations, videos (including the format of " picture in picture") , audio , and edit the recorded course , add transitions , smart shapes and subtitles . hence , it is possible to reuse the existing collection of training material and based on them new materials. Generated in Adobe Captivate 5 , you can convert videos to MP4 files and download with one click on the video hosting sites . Can also be used to convert a Microsoft Power Point presentations in Adobe Flash format , or PDF.

2.2.3.Developmentofelectronic«SystemAdministrator'sGuide»ofCIS«FAN»

Workspace Dreamweaver adjusts for different styles and levels of knowledge. With the development of electronic management system administrator corporate information system «FAN» used the following components:

– document window that displays the current document;

– navigator panels containing buttons for opening and closing the most frequently used inspectors and panels;

– toolbar (toolbar), which contains buttons and pop-up menus that allow you to view the Document window in various ways to set view options , and access to certain operations , such as viewing in the browser;

– context menu that allows you to quickly access the useful commands relevant to the current selection or region;

– panel objects that contains buttons for creating and inserting various types of objects, images , tables, layers , frames;

− property inspector, which displays the properties for the selected object or text , and allows you to change these properties;

− codeinspectortools.

To open the window Dreamweaver, inspectors and panels, use the menu Window. Mark next to the item in the Window menu indicates that this element is currently open (although it may be hidden behind other windows). To display an item that is not currently open, select the name of an item in the menu. If the panel or inspector checked, but does not appear, choose Window> Arrange Panels.

At the same time DreamWeaver are two types of windows: the website and the document window.

Window site is intended for work with the site as a whole. It is called the F8 key, and allows you to switch between sites, create new folders and files to publish your website and manage the Network ID on the server.

Document window is intended to directly edit the page. It has three modes of operation: code, code and design, design, and the second - very convenient for exploring the HTML.

The toolbar of the document window contains:

− 3 buttons switch between windows;

− field enter a title page;

− File Management - for publication on the web site;

− browse button in an external browser;

− 4 buttons editor: update page, the description tag, set bookmarks, setting window.

Best mode include Word Wrap (word wrapping) for HTML-code.

The status bar of the document window contains:

− button to highlight the tag;

− adjusting the size of the viewing area;

− document size and download time on the speed defined in the settings (Edit - Preferences - Status Bar);

‒ quick access to: Site window, the object manager (Assets), two styles of windows, window behavior of objects (Behaviors), windows command history and code inspector.

Floating panels are designed to control the various elements of the page. Eleven panels are grouped into five blocks. Panel, you can quickly hide/cause all at once by pressing F4 or selectively via the menu Windows.

Panel «Properties» located at the bottom of the screen, caused by a combination of keys Ctrl+F3 and is used to configure all the parameters of objects selected in the editor window. Button in the lower right corner of the panel to reduce its size.

Window Site caused by key F8. Site Map opens shortcut Alt + F8. Unlike FrontPage, you can not drag and drop to change the structure of the site , however, you can create links by dragging the icon "Point To File" from the properties window for the file in the site (reception, coined for the owners of 21-inch monitors) . You can perform the opposite effect to create a link - drag and drop files from a window in the input field site links in the properties window when the selected object in the editor window .Button in the lower left corner of the site to reduce its size.

Menu contains many commands of necessary:

‒ File - Revert - allows you to delete all changes and return to the last recorded version of the document ;

‒ File - Check Links - search for broken links ;

‒ File - Destination Notes - writing notes for a site or page (easy to do this by double clicking on the appropriate column in the site);

‒ Edit - Preferences - settings (Russification viewing notation tags , etc.);

‒ View - Design - View on Top - moves the window up design ;

‒ View - Visual Aids - on / off . «assistants» : the boundaries of objects , invisible elements , etc.

−   View - Code View Options - including hyphenation , highlighting incorrect references , syntax highlighting mode HTML);

−   View - Rulers and Grid - output lines and nets ;

−   Insert - insert various objects and HTML- tags;

−   Modify - Page Properties - Shows the properties window page , including background and wallpaper , color options , etc.;

−   Modify - Selection Properties - Shows the properties window of the selected object ;

−   Modify - Quick Tag Editor - fast editing tag in a separate window ;

−   Modify - Make Link - create a hyperlink to an object;

−   Modify - Library - adding the object to the library for future use ;

−   Text - text formatting ;

−   Commands - Clean Up HTML - clears the document from the «extra» from the standpoint of DreamWeaver, tags;

−   Commands - Clean Up Word HTML - cleans a document created in Word from the «excess» ;

−   Commands - Optimize Image In Fire Works - optimizing graphics (when the FireWorks);

−   Commands - Set Color Scheme - to change the color scheme of the site.

The main objects that you can insert into your own Web-page objects are represented on the Panel.

Panel objects located on the left side of the screen, caused by a combination of keys Ctrl + F2 and contains palette:

−   Common - shared objects (drawing, navigation bar, line, table, date, mail link, etc.);

−   Charset - symbols;

−   Forms - forms to fill in the pages;

−   Frames-creation of the frame structure;

−   Head - descriptions and properties of a page;

- Invisibles - invisible objects (anchor comment);
- Special - symbols copyright, trademark, etc.

In the bottom of the objects placed 4 buttons to work with the regime of planning the page layout.

Default palette is always common objects (basic facilities), which includes:

- image - inserts the page graphic element;
- rollover image - specifies the picture file that will appear when you hover the mouse on our object (sub Preload Rollover image is recommended to leave on, as may occur when the mouse is over an empty object like pictures).

When you insert it dialog box appears . We see four main fields are:

- image name - the name of the image (used by java-script, to separate the different objects of this type on the page);
- original image - here we specify the location of the file with a picture of «default», that is, that the picture that will be displayed initially;
- rollover image - this specifies the image file that will appear when you hover the mouse on the object;
- go to url - here you need to write a link where the user goes when you click on our object.

Table - inserts the page table . Each cell in the table can be both text and image . Tables in the construction sites are used not only in Word or Excel, and as modular grid (actually a frame on which both web pages hold all objects) . Tabular data (tabular data) - inserts ready table with ready data. Tabular Data object appeared only in the third version and is a very convenient interface for inserting external tabular data in Dreamweaver. Horizontal Rule (ruler) - inserts a decorative element - a line (usually used as a separator paragraphs) . Viathecontextmenu, youcansettheparametersofthiselement.

Palette «Head» helps to add different descriptions and properties page (meta tags, keywords, description pages), install the update settings page, specify the base link (default link) and indicate other references.

Palette«Frames»helpsmake one click on the complex frame-based structure.

Frame - a way of creating web- pages inside the window to display other web- pages, implemented using tag <frame>. If the page is loaded into the frame, it can be replaced without replacing the other containing the page frame. This feature is the only advantage of frames. Same drawbacks - the mass. First, the page loaded into the frame, so you cannot just save to local disk. Secondly, on the web- page in a frame cannot just bookmark it - it will be placed on the main page of the application. Page in a frame cannot restart button «Update» - you have to use the appropriate option from the right-click menu.

Working with text - occurs in a text editor Dreamweaver, which has more features than previous versions of Dreamweaver, and allows you to work with text at the word processor.

Auto-alignment, quick insert tags and JavaScript functions from the dropdown menu - these are just some of its capabilities. Now to work with it there is even a special mode Code View, which DreamWeaver turned into a normal non-visual HTML editor. And mode Split View, where the main window is divided into two panels: Code View and Design View.

Dreamweaver has a wide range of options for formatting text.

It should be noted that the definition of a group of fonts used, and not one name - if the first of the missing fonts on the end user's computer, the browser automatically fills in the second, but if not, and the second - it looks like (instead of Arial - any sans-serif, for example) while the overall design of the page has not lost. If you do specify a specific font, then in its absence does apply font used by default (for example, instead of Arial - Times New Roman), and a serif font spoil elaborate design.

Font size is determined in relative units - in this method of formatting the font size in the browser end user will depend on the settings of the user itself (selectable in the browser menu «View» font sizes - large, medium , etc.). Next comes the font color button (functions the same as those described above buttons color elements) button «bold» (bold) and «italic» (oblique), the alignment buttons.

Automatic width adjustment, unfortunately, is not supported, but if the source file for the current paragraph prescribe align = "justify", it is easy to agree Dreamweaver and will attach to all subsequent paragraphs (after each pressing Enter) similar alignment.

To then do not waste time configuring each page online manual before entering text using CSS.

CSS - means «cascading style sheets». This indicates an approximate translation of the main feature of CSS - cascading inheritance of object properties.

For e-guidance has created a new CSS-style called «New_style_from_Ann».
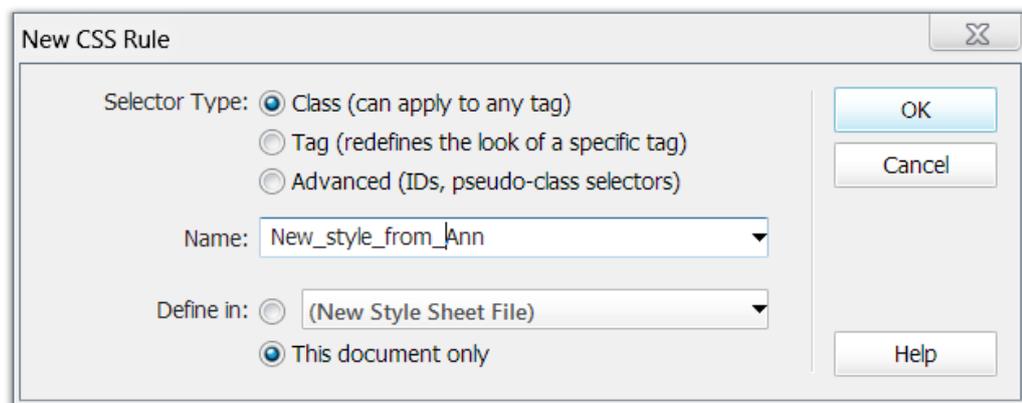
Picture4CreatingCSS

After specifying the style name (or select the default style for remapping) we find ourselves in the «settings» style.

Type tab determined will look like a single letter of the text:

1. Specifies the font.

2. Specify size.

3. Adjustable degree of «weight» of the letter or its thickness.

4. Writing Style - oblique (itallic), standard (normal)

5. Variations of writing - for example, all text typed all lowercase or uppercase letters only.

6. Adjustable height baseline of a font in points, PostScript points, or any other terms.

7. Which letters we use - big, small or standard.

8. Decorating - underline, flashing and stuff.

9. Textcolor.
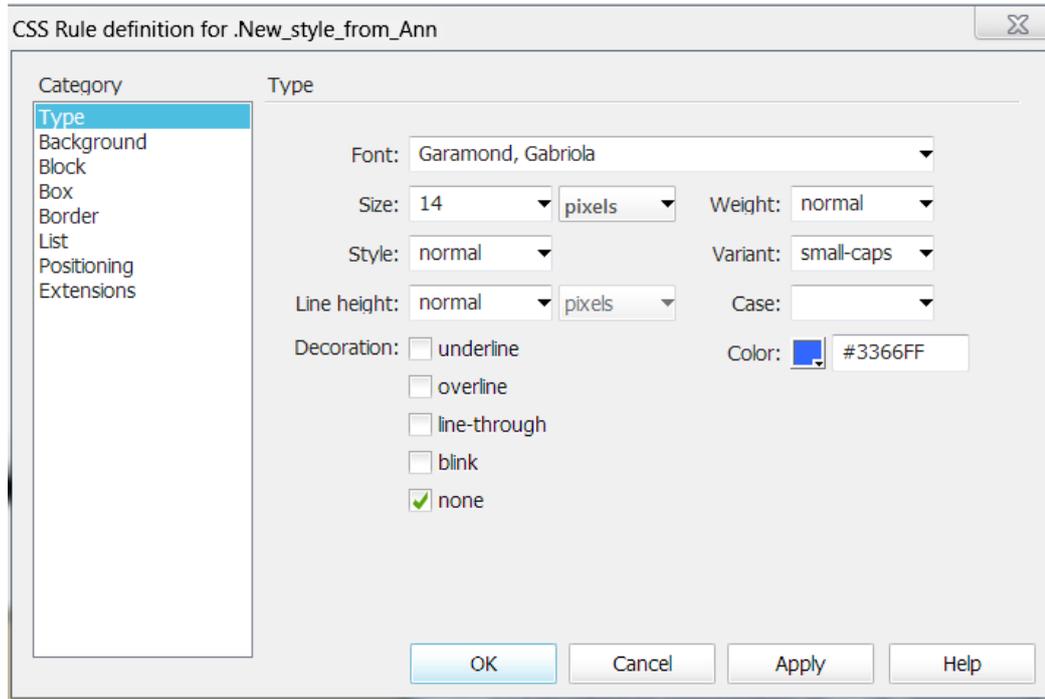
Picture5Choose settingsType

In the Background tab, the settings for the background.

1. Background Color (select an option from the standard 256 colors or create your color)

2. File with a background image

3. Setting repetition (reproduction) of the background image on the page, for example, you can choose to copy only the image on the axis X.

4. Specify the behavior of the background image while scrolling - scrolls along with it or stand still

5. Specify the horizontal start position of the background

6. Specify the vertical start position of the background
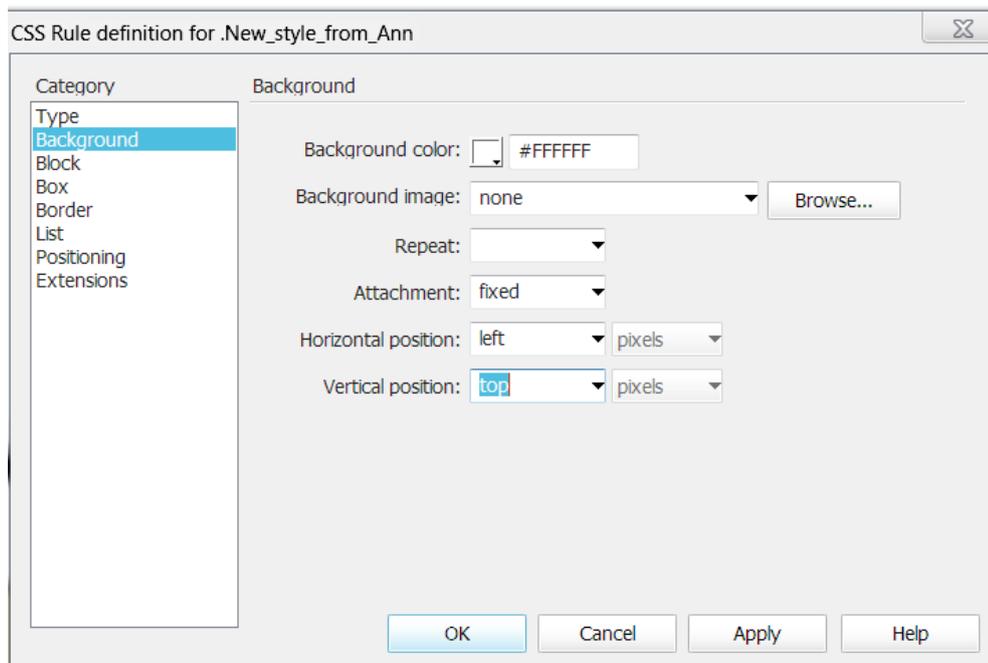
Picture6ChoosesettingsBackround

In the tab «Block» configured parameters of the text block.

1. Setting the distance between words

2. Setting the space between letters or tracking

3. Vertical alignment of text line

4. The horizontal alignment of text

5. Indent the first line of text

6. Configure the system arrangement of extra space between words and sentences (multiple)
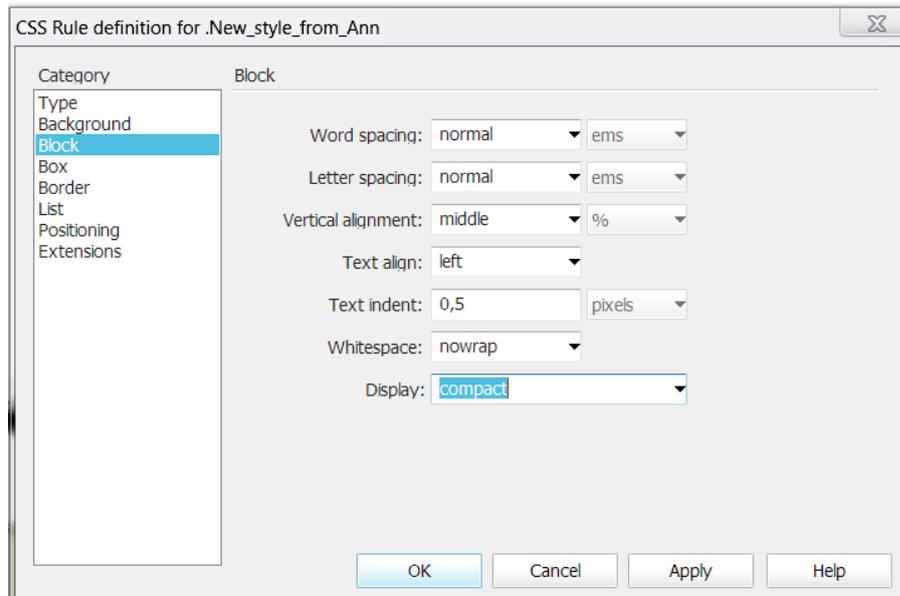
Picture7Choose settings Block

Box - tab that defines constraint management of this part of the text on the page (which restricts its location in the specified rectangle).

1. Width of the rectangle

2. Height of the rectangle

3. Adjusting left or right justification

4. Configure how text behaves when you use the Align with the left or right (as text flows like object)

5. Setting indentation from the edge of the rectangle to the other adjacent elements

6. Setting indentation from the edges of the rectangle and the text.
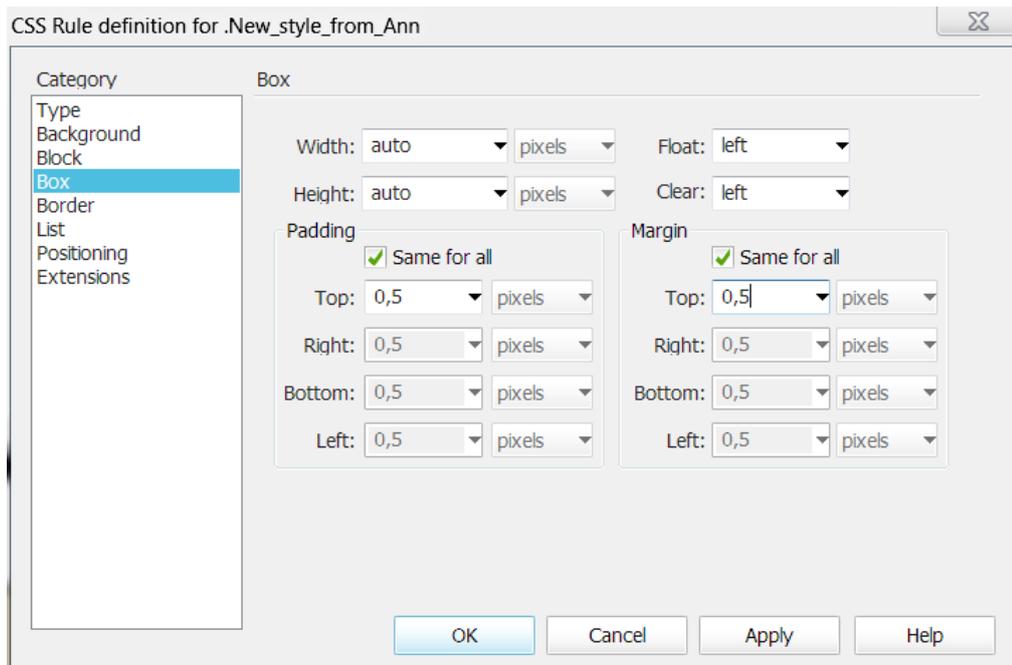
Picture8Choose settings Box

Border tab presents a variety of decorative settings.

1. Specify the border width of the left, right, top and bottom

2. Define boundaries for each color

3. Border style - a combination of different variants of dots and dashes.
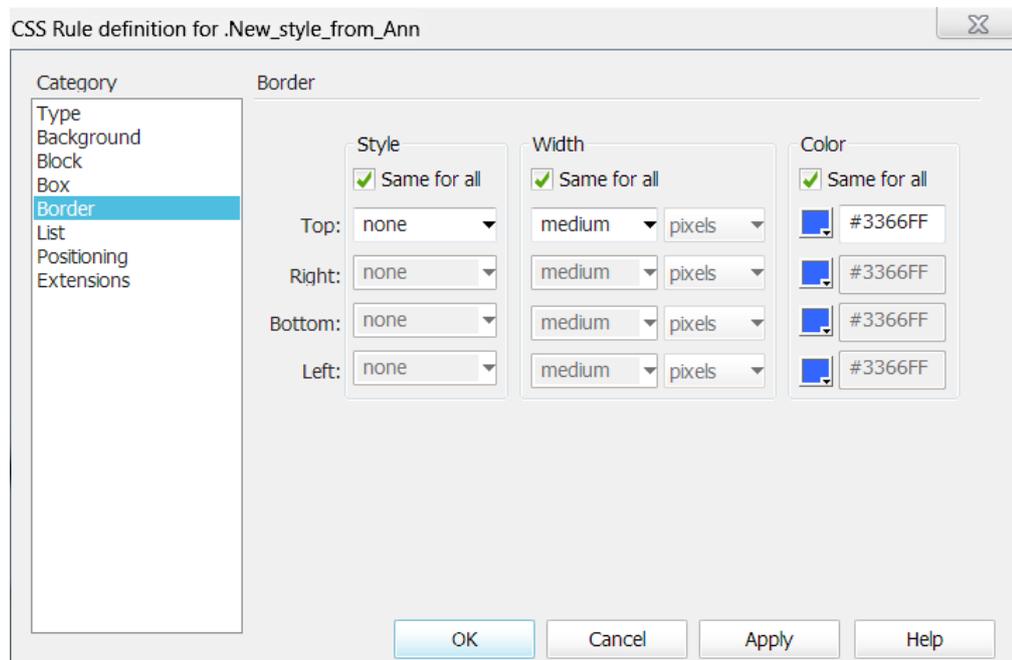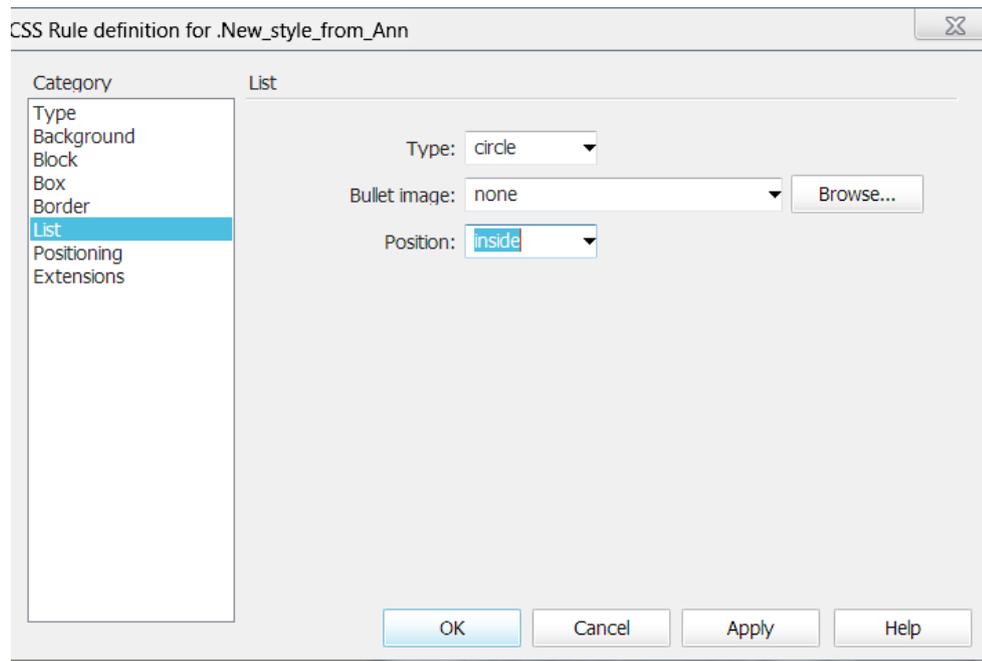

Picture9Choose settings Border

List - tab to configure lists (numbered and bulleted list).

1. Bulletless type design (multiple).

2. Use as bulletless images.

3. Rankingbulletless.

Picture10Choose settings List

Positioning - allows you to adjust the placement of objects on the page.
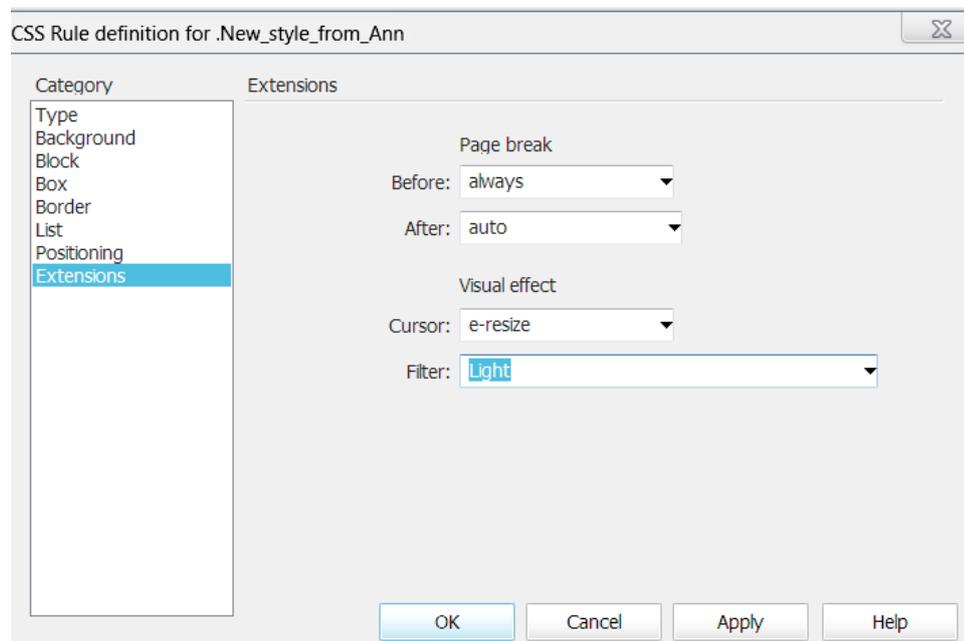
1. Type positioning (relative, absolute, etc.).

2. Location along the Z-coordinate - which layer will be the object resides.

3. Visible or invisible object (can be used to create empty fields in the document.).

4. Parameters overflow.

5. Facility - an indication of vertex coordinates, width, and height.

6. Margins on all sides in pixels or another unit.
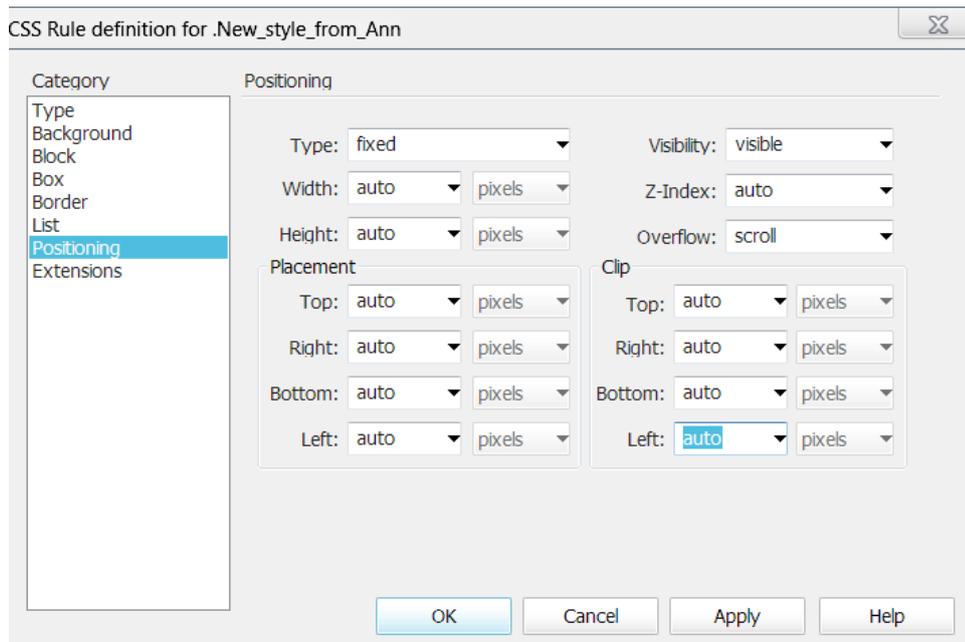
Picture11Choose settings Positioning

Extensions - tab settings for expansion.

1. Specify page break (mainly print).

2. Visual effect - when you hover the cursor on the object it can change its shape or loading facility operates one of the standard filters (the latter is only true for Internet Explorer).

Picture12Choose settings Extensions
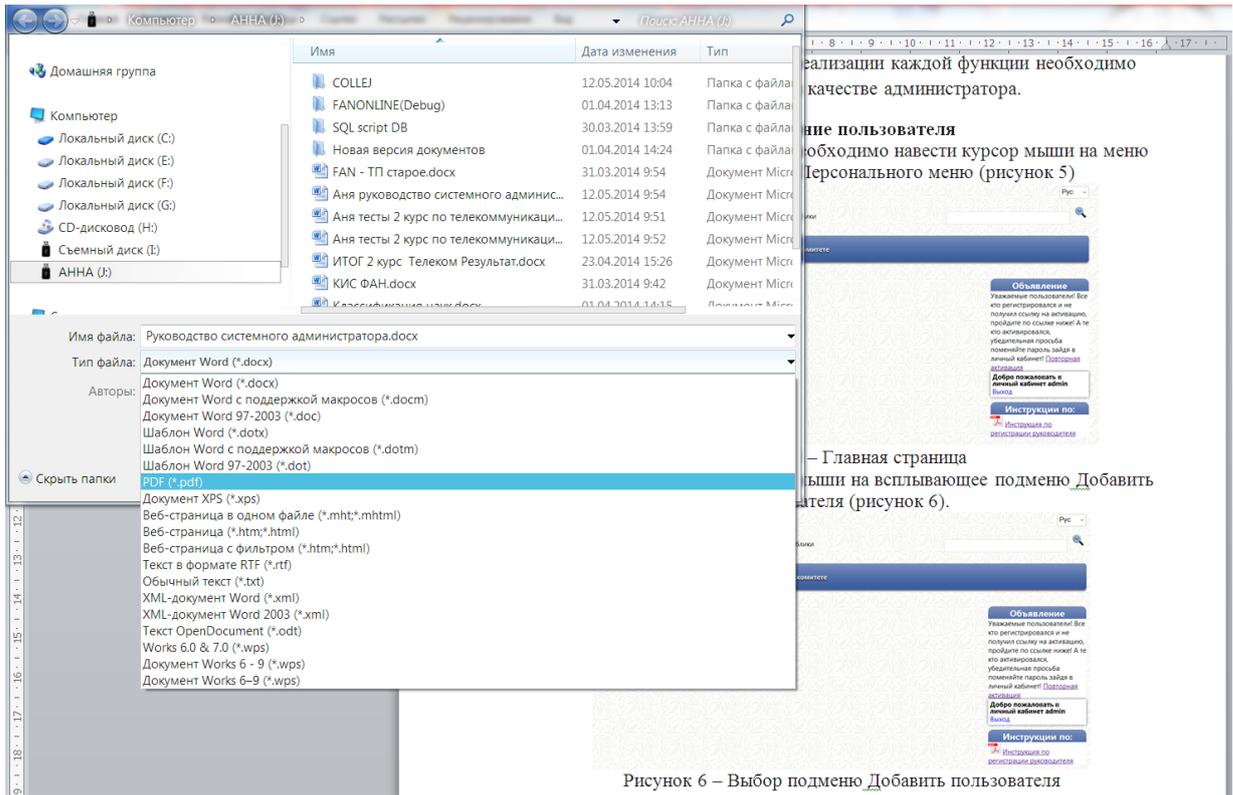
Style code presented in Application.

Selected style settings can be changed either in code or in the properties panel style.

Properties for ".New_style_from_Ann"	
background	#FFFFFF url(none) fixed le...
border	medium none #3366FF
bottom	auto
clear	left
clip	rect(auto,auto,auto,auto)
color	#3366FF
cursor	e-resize
display	compact
filter	Light
float	left
font	small-caps normal 14px/n...
height	auto
left	auto
letter-spacing	normal
list-style	circle url(none) inside
margin	0,5
overflow	scroll
padding	0,5
page-break-a...	auto
page-break-b...	always
position	fixed
right	auto
text-align	left
text-decoration	none
text-indent	0,5
top	auto

Picture13PropertiesforCSS

2.2.4.Developmentofmultimediacontent

Filling ESAG content was developed multimedia content, which includes the system administrator guide in PDF format, demonstration material and electronic simulator.

Forcreatingsystemadministrator'sguidewasoriginallyusedtexteditor Microsoft Word.

For this guide were made screenshots of each step when performing a separate function of the corporate information system «FAN». Then, in the desired

sequence screenshots have been inserted in the Word-document. For each action to enter a text description of the function, explaining screenshots (picture 3).

Picture14An example of guidance using Microsoft Word

Thenthetextdocumenthasbeensavedin PDF.

Picture15 The process of saving a text guidance in PDF format

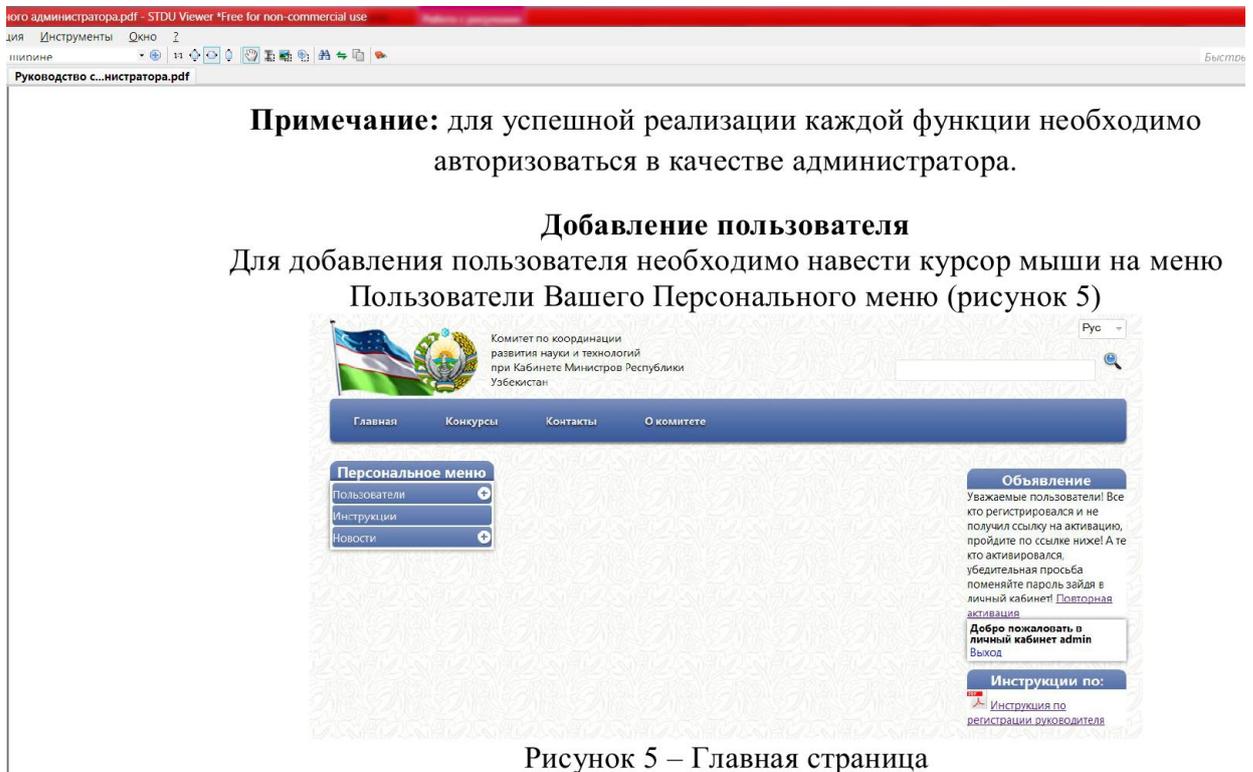An example of of the resulting PDF document is presented in picture 17.

Picture16 An example of guidance in PDF format

Thus, the developed PDF document can be printed and used in electronic "System Administration Guide" corporate information system «FAN» as

methodological support. The format of the document can be viewed directly in the browser.

Next, a description of the process of creating demonstration material in the program Adobe Captivate 5.

For creating demonstrations run the program Adobe Captivate 5 and select the option to create a new project Software Simulation (picture 18).
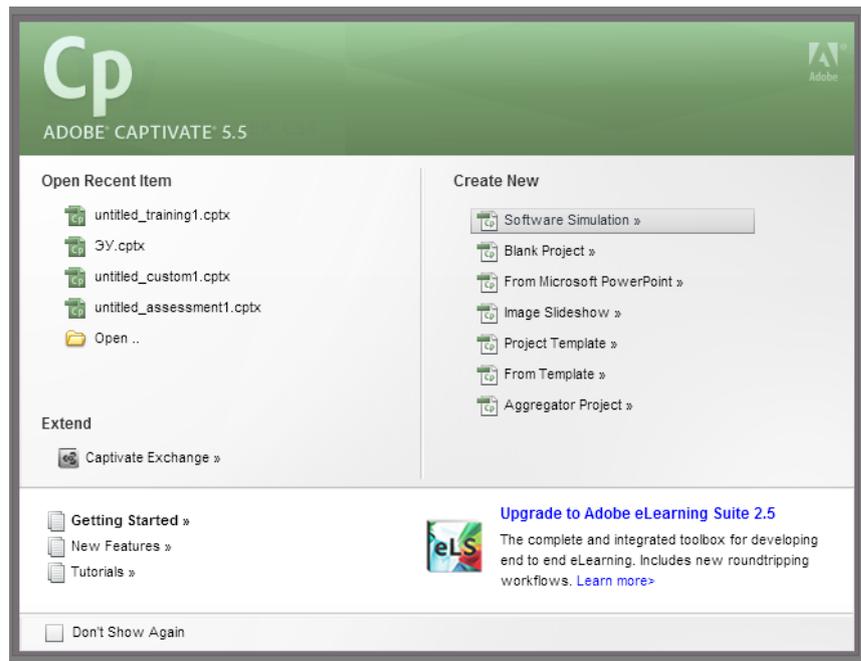

Picture17Creating of new project

Then you must configure the recording screen. Necessary to demonstrate the following options are selected (picture 19):

− recordingarea«Fullscreen»;
− automaticinputrecordingmode,«Demo»mode.
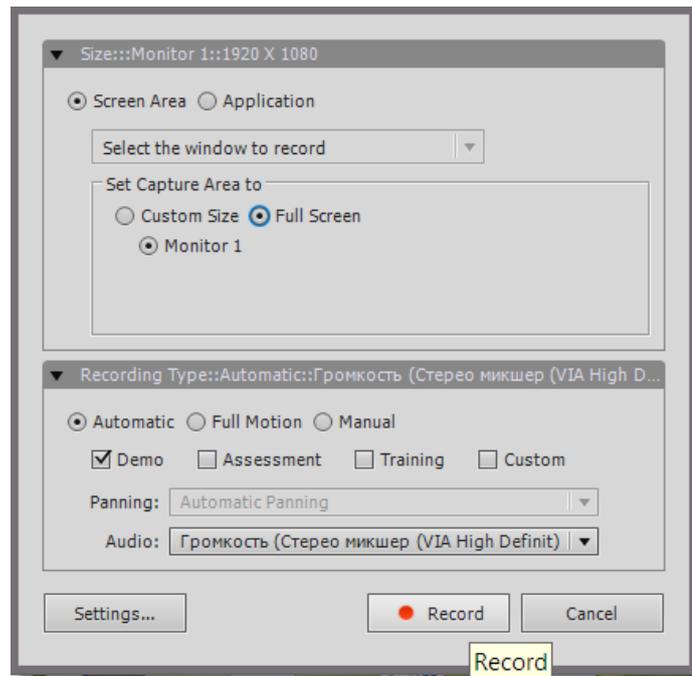
Picture18Project setup

Before you start entries can check the settings in menu Settings.In the settings chosen path of, saving the file «E:\аня\ДИПЛОМНАЯ», 32-bit color rendering, the highest resolution Video (picture 20). In essence, the program Adobe Captivate 5 was chosen because of the possibility of creating demonstrations like my video, but the smaller the file size.
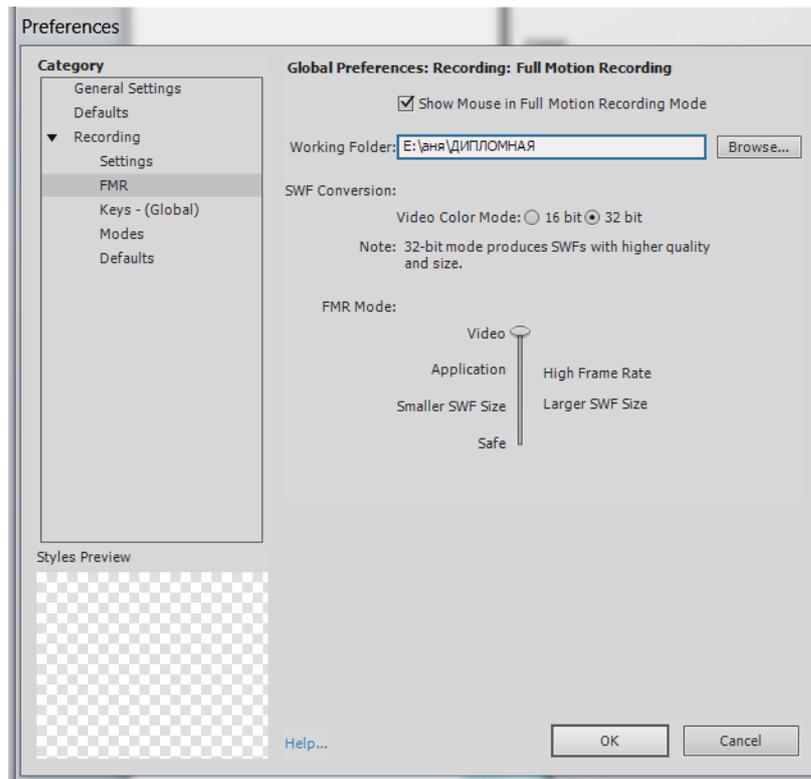
Picture19Setting recording project

Then you can start recording by pressing the Record. To stop recording, you must press on the keyboard END. Then the project opens automatically divided into slides. Now you can provide the necessary slides in plain text and audio accompaniment.

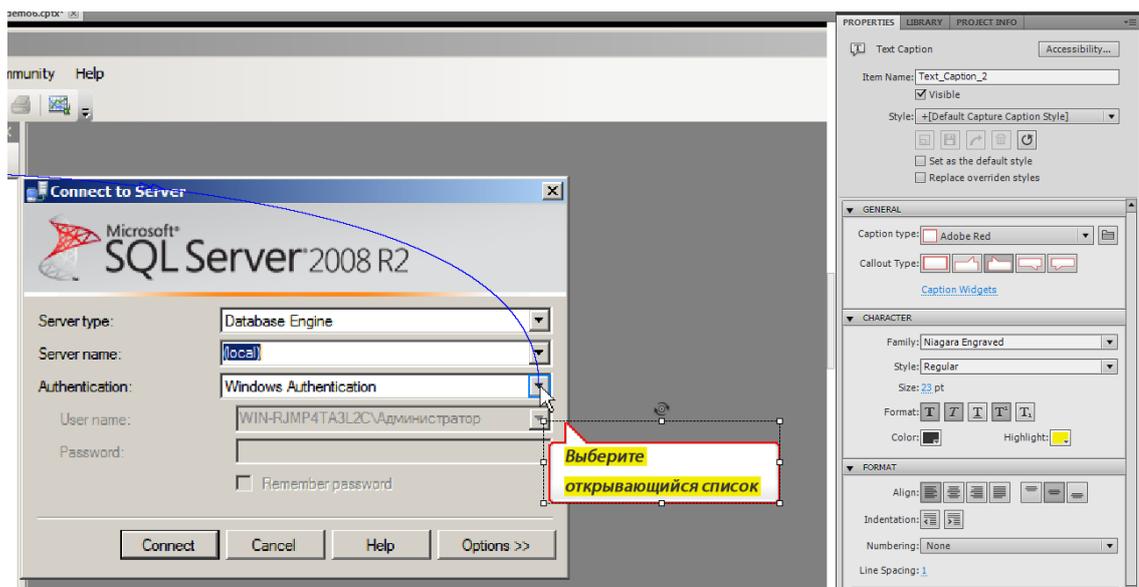To add explanatory inscriptions in the Tools menu, select Insert Next Caption (picture 21).
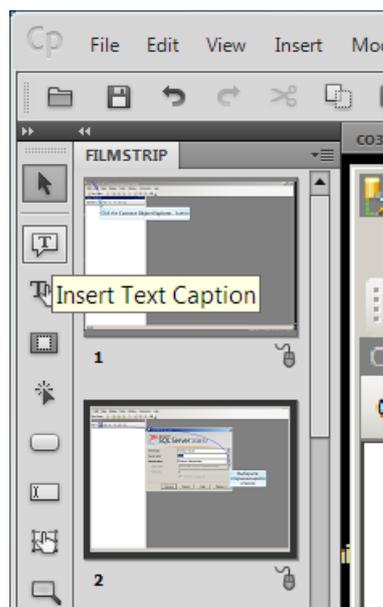
Picture20Tools

Then in the text box, enter the required explanation: «Выберитеоткрывающийсясписок» («Select the opening list») as in picture 22.
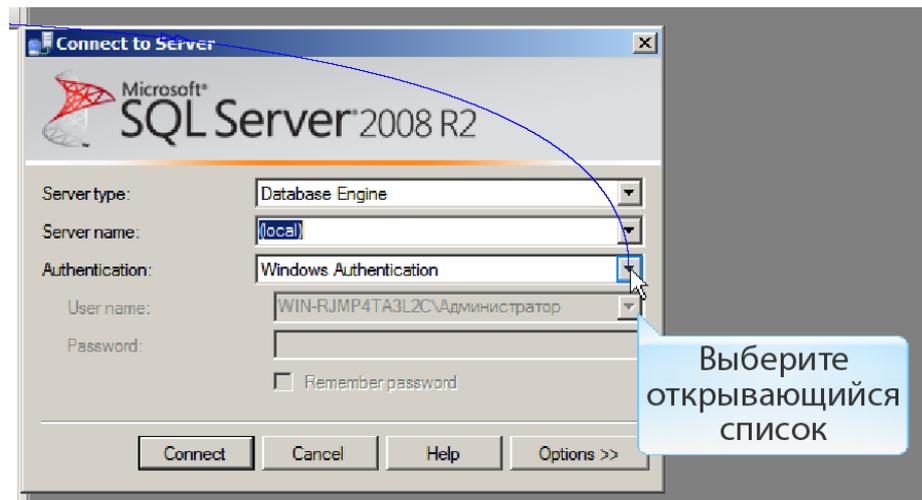

Picture21Examples of explanatory text

For explanatorytext can also be selected settings.

Picture22Settings for explanatory text

For audio support can be in the settings menu to add an existing audio tape or start recording using a microphone. Selecting the settings menu «AUDIO», action «Add Audio ...» as shown in picture 24, will accompany the audio settings form (picture 25).
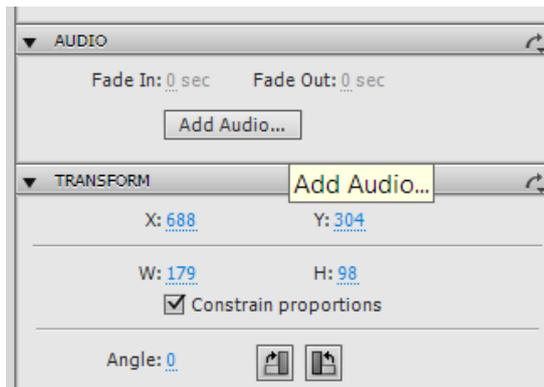
Picture23CreatingAudio
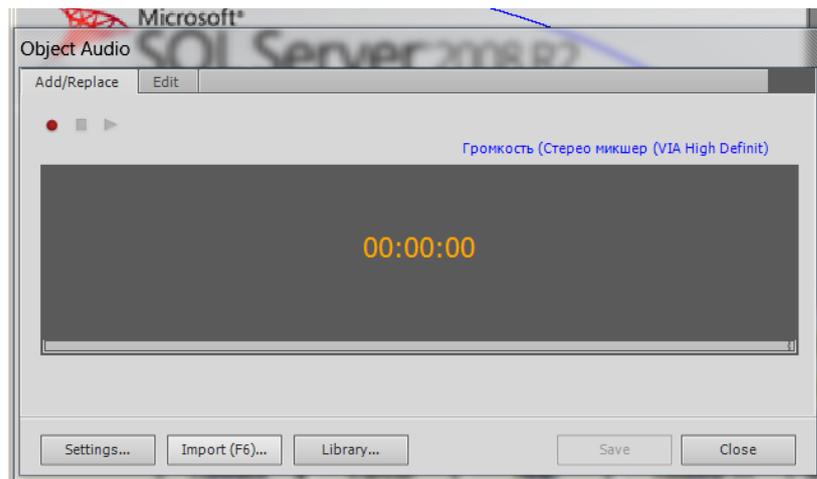
Picture25Parameters ofAudio

In the menu «Object Audio» you can start recording in real mode, and add an existing entry. Picture 26 shows an example of the selected audio recording.
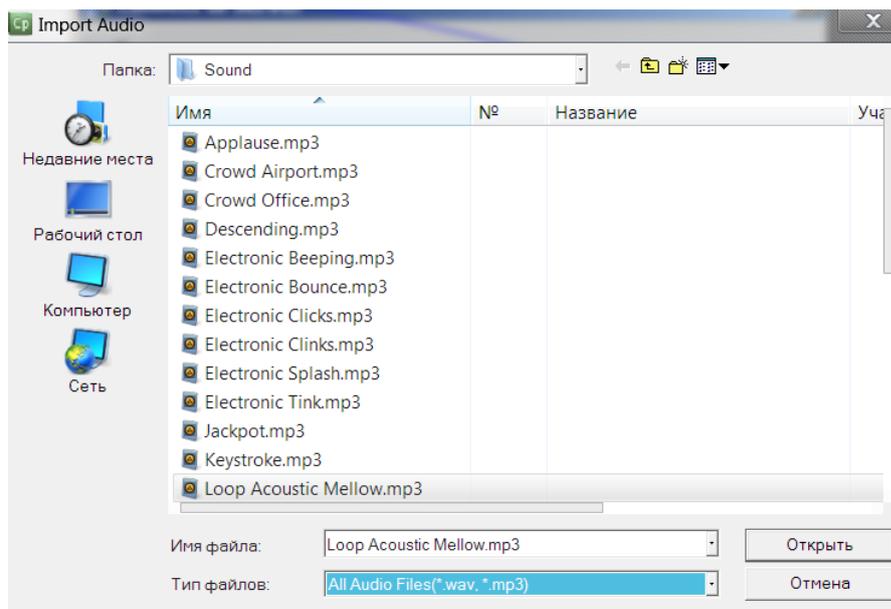
Picture24Select audio recording

When editing a single file is completed, there is a need to select a format for saving.

To save the file in Captivate, you must select the File menu action «Publish...», then open the form to generate a file with the desired properties.
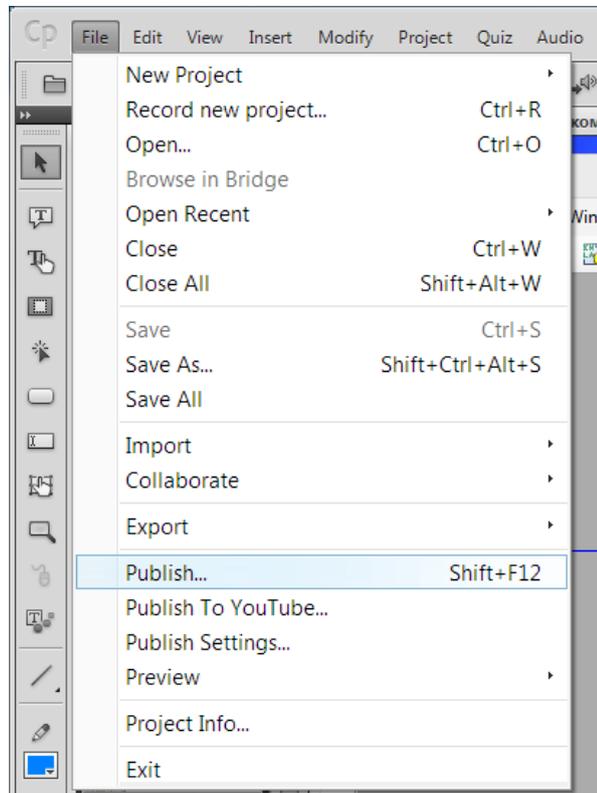
Picture25Saving a project

Figure 28 shows the settings for storing electronic simulator, so format is selected.exe (downloadable file). Also in the settings selected fullscreen playback applications to the user's attention was completely focused on the real work environment software.
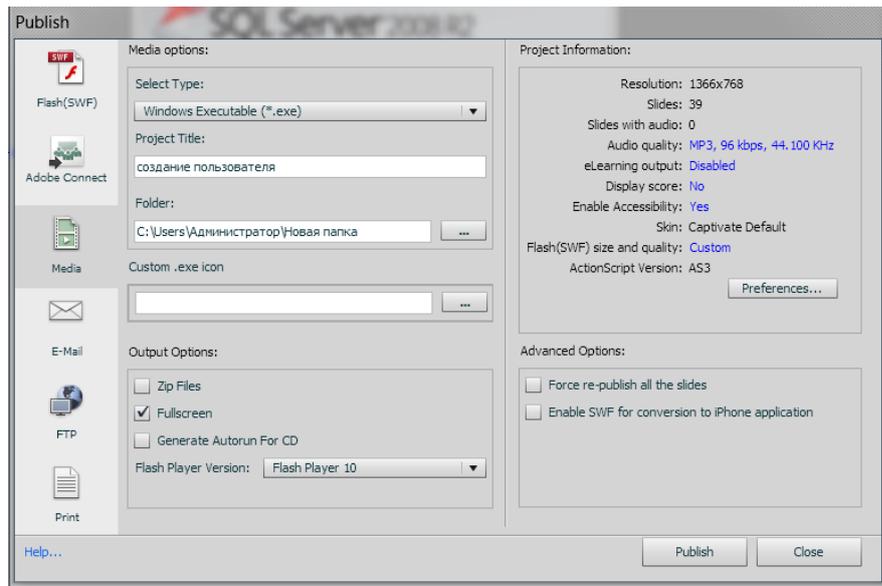
Picture26Select a format for the simulator

To save the file - demonstration format is selected .mp4 (video format).
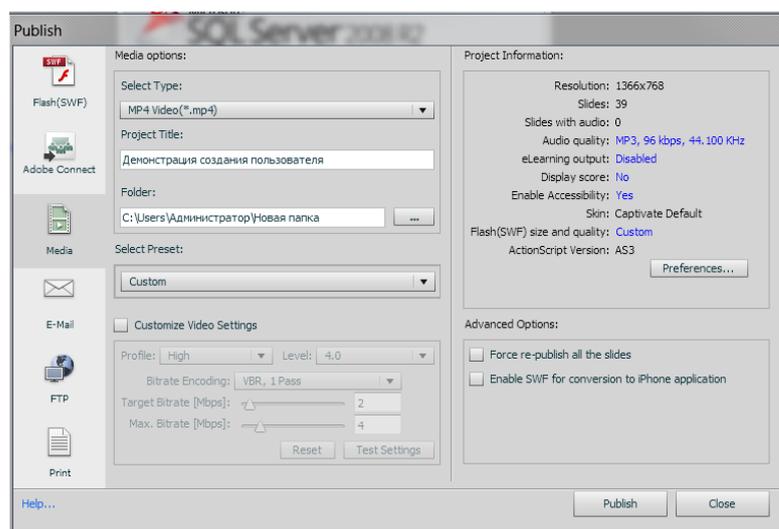
Picture27Selectingof the format for demonstration

To view a demonstration of the simulator and directly in the browser chosen format.SWF.

2.2.5.Developmentofelectronic«SystemAdministrator'sGuide»modules

Initially, it is necessary to define the notion of a module.

Module (programming) - functionally complete program fragment is decorated in a separate source file or a named continuous part.Изначальнонеобходимодатьопределениепонятиюмодуль.

In teaching module - is a complete block containing educational material.

Thus, the developed electronic «System Administrator's Guide» includes the following modules:

– «Главная»;

– «ЭРСА»;

– «ЭРСА БД»;

– «Демонстрации»;

– «Электронный тренажер».

Module «Главная» является одновременно страницей, на которой представлено описание остальных модулей, а также обеспечивающей удобную навигацию по электронному «Руководству системному администратору», т.е. возможность перехода в конкретный раздел любого модуля.

Module «ЭРСА» containsmaterial (System Administration Guide corporate informationsystem «FAN») intheformat PDF, foreasyviewinginthebrowserandtheabilitytodownload a file.

Module «ЭРСА БД» containsmaterial (System Administration Guidedatabaseof corporate informationsystem «FAN») intheformat PDF, foreasyviewinginthebrowserandtheabilitytodownload a file.

Module «Демонстрации» contains material format.swf file that can be viewed in a browser that supports playback of video files (example: Uran, Mozilla Firefox, Google Chrome and others).

Module «Электронныйтренажер» contains material format. swf. Thus, wecanrepeatedlyimprovetheirskillsbyperforming a specificfunction.

Then, the above modules have been implemented as the main menu on the main page of the electronic «Administrator Guide corporate information system « FAN».

The main menu provides navigation in the program, thus allowing the user to move from one section of the module section of another module. Thusimplemented a convenientuserinteractionwith ESAG.

2.2.6.Navigationofelectronic«SystemAdministrationGuide»

Adobe Dreamweaver allows to develop applications based on hypertext.

Hypertext-a term coined by Ted Nelson in 1963 to refer to the text of «branching or performing the action on the request».

Usually hypertext set of texts containing nodes transition between them, allowing elect readable sequence information or reading. Well-known and pronounced example of hypertext serve web pages - documents HTML (Hyper Text Markup Language) posted on the Internet. Incomputerterminology, hypertext - thetextgeneratedfromthemarkup, potentiallycontaining a hyperlink.

Hyperlink - partof a hypertextdocumentthatreferstoanotherelement (command, text, title, note, image) inthedocumenttoanotherobject (file, folder, application), locatedon a localdriveoron a computernetwork, oronelementsofthisobject .

Hyperlink to the user - a graphical image, video or text on the site, in a letter to e-mail or in any electronic document establishing the connection and allows you to navigate to other objects of the Internet.

For communication modules ESAG used hyperlinks to other HTML-page. Eachmoduleis a separate HTML-page.To determine the links in the HTML used the tag <a>, whose structure has the form text of link , where «filename» - file name or Internet address to which you want to refer and link text - the text of hypertext links to be shown directly in the HTML-document. You can also use the argument TARGET, which shows the window in which the link will be opened (value - _blank (new), _self (current)). target = "window name">.

For example, a hypertext link to the HTML-page with the name «ЭРСАБД»:

```
<a href="ЭРСА%20БД.htm">
```

In picture 30, a menu consisting of five buttons with the names of the electronic modules «System Administration Guide».
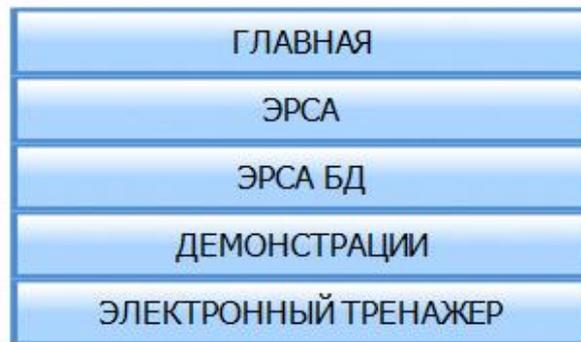
Picture28Mainnavigationmenu

Application shows HTML-code for this menu.

2.2.7.Design ofelectronic«SystemAdministrationGuide»

Information design - the design industry, the practice of artistic and technical execution and presentation of various information with ergonomics in mind, features, psychological criteria of perception person aesthetics of visual forms of information and some other factors.

In traditional information design and new design principles are applied to the process of transforming complex and unstructured data into valuable, meaningful information [3]. With the help of pictures, symbols, colors, words, there is a transfer of ideas, illustration or visualization of data relationships [4].

Information design:

− makes a complex set of facts available to perception;

− requires an interdisciplinary approach to communication, for example, combining the skills of graphic design, three-dimensional design, digital technology, cognitive science, information theory, cultural studies;

− shouldbedevelopedinthedirectionofexperimentation, expandingtherepertoireoftoolsand, withoutexcludingconsiderationofcomplexsystems.

The collection «Information design» JefRaskin said that «information design» - a misnomer, since it is impossible to design the information itself, unlike the methods of its transmission and presentation.

The main purpose of information design is clarity of communication: communication should not only be accurately delivered by the sender, but also well understood by the recipient.

Information design is based on the functional and aesthetic principles.

The functional principles are:
− facilitating understanding and learning;
− clear message structure;
− clarity;
− simplicity;
− unity (born unity) elements of the message;
− providinghighqualitycommunications;
− reductionofcost.

For aesthetic principles include:
− harmony;
− proportionality.

When decoration ESAG corporate information system «FAN» used the following design methods:
− emphasis;
− adding«air».

Accent - to change various parameters of the text (font style and size, position, etc.) to achieve contrast to parts of the text to which you want to draw the reader's attention.

Adding «air» means the release of significant parts of the material surrounding it empty space – «air». «Air» document and its parts nicer and easier to read, the text gives grace.

One of the problems with the information design can consider it «over-designed», which can be expressed in the presence of distracting elements. Therefore, the design of corporate information systems ESAG «FAN» made in a

simple style. All images (pictures) are a practical sense, because are screenshots of the interface software.

The main colors chosen 3 colors:

− white (# FFFFFF);

− black (# 333300);

− blue (# 3366FF).

The main font used - «Tahoma».

2.3.Approbation of developedtrainingprogram

Developed training program used during the stage of training system administrators within two weeks according to the schedule of technical specifications for the development of corporate information system «FAN» by staff of the Center of development of software products and hardware-software complexes under the Tashkent University of Information Technologies.

Throughtheuseofthetrainingprogramand, accordingly, developedmultimediacontentwereachievedtheirgoaloflearning - teachingprocessefficiencyincreasedby 30%.

For performance results according to the training program were conducted to identify lessons initial level of knowledge of system administrators (before training) and the level of knowledge at the end of the learning process.

The results are then compared and performed their analysis. Analysis of the results showed that the best result helped developed electronic simulator. Learning objects note that the use of electronic simulator helped to improve skills for system administrator functions, reducing the time required for their implementation.

Chapter 3.Safety of vital activity
3.1.Negative factors in the «man – environment» system

Safety of vital activity ―the science of comfort and safety of human interaction with the technosphere.

Scientific classification of negative factors to determine the place and importance of each factor in solving the problem of security of life of people. State standards and other regulations, as well as in the literature contains numerous classifications of negative factors.

Thenatureofmanonnegativefactorsaredividedintofourgroups: physical, chemical, biologicalandphysiological.

By industries displays danger negative factors acting in the «man – environment», divided into domestic, industrial, traffic, sports, military, etc, etc.

Considerinmoredetailclassificationofnegativefactorsonthenatureofhumanexposure.

Chemical negative factors due to the action of harmful substances on the human body through his respiratory system, gastrointestinal tract, skin and mucous membranes. Harmful substance called substance which when applied to the human body can lead to death, injury, occupational disease or cause a temporary health problem.

Literary sources are other classifications of hazardous substances on the nature of their effects may cause a metabolic disorder, and large - fatal poisoning of the human body.

Biological negative factors are divided into two groups of pathogens and toxins. Pathogens - infectious agents is extremely small size, without color, smell and taste. Depending on their size, structure, and biological properties, they are divided by bacteria, viruses, rickettsia, spirochetes, fungi, and protozoa. Toxins - it's toxic waste products of microbes, fungi and viruses that cause various diseases and poisoning of people and animals.

Physiological negative factors are divided into physical and neuro-psychological overload of the human body. Physical overloads are static and

dynamic. Neuropsychiatric overload divided into four types: mental tension, overexertion analyzers central nervous system, the monotony of work and emotional overload.

Harmful factor negative effects on people, which leads to the deterioration of health or disease.

Harmfuleffectsonthehumanimpactofenvironmentalfactors, whichthreatensthelifeandhealthoffuturegenerations.

Aggregate and leve of lvarious environment factors significantly affect the working conditions, health and morbidity of workers. Featuresarisingfromthisnegativechangesinthebodyandmeasurestopreventthemdeter minedbythenatureexposuresproductionenvironment.

When assessing the impact of negative factors on the person should consider the degree of their influence on human health and life, the level and nature of changes in functional status and capabilities of the organism, its potential reserves, adaptive abilities and possibilities for development of the latter.

In assessing the admissibility of exposures on the human body come from the biological law quantifying subjective stimulus Weber Fechner. It expresses the relationship between the change in the intensity of the stimulus and the force caused by the sensations.

On the basis of the Weber Fechner built rationing harmful factors. Toexcludeirreversiblebiologicaleffects, theimpactoffactorslimitedthemaximumallowableconcentrations.

Maximum permissible level (MPL) ormaximum permissible concentration (MPC) is the maximum value of the factor, which is influencing the person (alone or in combination with other factors), does not cause him and his progeny biological changes and even hidden temporarily compensated, including diseases, reactivity changes, adaptive and compensatory abilities, immunological reactions, physiological disorders cycles, as well as psychological disorders (loss of intellectual and emotional abilities, mental health).

MPCandMPLset for production and environment. Withtheirdecisionguidedbythefollowingprinciples:

− the priority of medical and biological evidence to establish sanitary regulations over other approaches (technically achievable, economic demands);

− threshold impact of adverse factors (including chemical compounds with mutagenic or carcinogenic action of ionizing radiation);

− lead the development and implementation of preventive measures until the dangerous and harmful factors.

To ensure the comfort and safety of a particular activity should be solved the following problems:

− identification (recognition, quantification, ie analysis) the negative impact of the environment (ie, sources and causes of hazards);

− protection from hazards or warning negative impact on human factors;

− elimination of negative impacts of hazardous and harmful factors and the development of protection against residual risk;

− creationof a comfortablestateoftheenvironment.

The main task of the science of life safety is to analyze the sources and causes of hazards, prediction and evaluation of their effects in time and space.

The main direction of practical activities in the field of life safety is the prevention of the causes and prevention of conditions of dangerous situations. All real danger then when they affect specific objects of protection. The main objects of the desired state - safe. Safe state protection objects implemented in the absence of adverse effects of hazards or reduce them to the condition of valid values.

SVA problem as a science reduce to the following:

− theoretical analysis and development of methods for identification (identification and quantification) of dangerous and harmful factors, generated by elements of habitat (hardware, processes, materials, buildings and structures, elements of the technosphere, natural and social phenomena);

− develop the principles and methods of protection against hazards;

– development and sustainable use of plant protection and human habitats from the negative effects of man-made sources and natural phenomena;

– continuous control and monitoring of habitat;

– modeling and forecasting of emergency situations;

– teaching people the basics of protection from the hazards;

– development of measures to eliminate the consequences of hazards manifestations;

– developmentofmeasurestoensurenationalandinternationalsecurity.

Today SVA is based on the perceived needs of society, the rules of safe command, developed practice or related fields of science, the laws of the state and international law on safety and protection of the population. However, this is not enough. At the heart of SVA must lie systematized and generalized knowledge of the objective laws of existence and development of nature, man and society.

SVA specific feature is that it can not be studied by methods of particular sciences or a simple summation of their methods. It covers many issues, if not all, human knowledge and is the result of interaction, holistic interconnected manifestations of diverse but essentially homogeneous problems. Therefore, itrequires a kindofsynthesismethodologiesmanysciences.

3.2.LifeSafety

Life Safety (LS) - obsolete term that denotes a part of the function «labor protection»- management of production activities aimed at preventing injuries and illnesses associated with the production. Currently, almost never used and is not found in the official documents. The modern name of the function – «labor protection» (LP), in international companies - «Health & Safety» (H & S).

Sphere of «labor protection» only to a small extent coincides with the sphere «Life Safety» («health and safety»). «Labor protection» includes, above all, legal issues - the rights and responsibilities of workers and employers to ensure compliance with requirements of the Labor Code. «Labor protection», in contrast, is a set of requirements for the behavior of employees and the performance of their

job function, to prevent hazards to life and health of both the workers and their environment.

Purpose of life safety is to minimize the injuries and illnesses associated with the production.

Ensuring safe working conditions determined by the following facts:

− the most important are the life and health of humans as compared with the price of the product produced and the cost of services rendered;

− reducing the need for emergency situations to a minimum;

− reducing the need for workers to minimize injuries to improve performance;

− reducing the need for time due to lack of skilled occupational injuries and / or diseases in the workplace to a minimum.

Failure to comply with safety leads to occupational injuries.

In accordance with the Law of the Republic of Uzbekistan «On Labour Protection» for the prevention and early detection of occupational diseases, maintain health personnel now organized periodic medical examinations, has agreements with companies medical institutions ofHealth for health care workers of the Company and members of their families.

Because exploitation of corporate information systems in the personal electronic computer, further consideration safety when working with a computer.

Beforestartingworkmakesurethatthewiring, switches, sockets, withwhichtheequipmentpluggedin, thecomputerisgrounded, itisworking.

To avoid damage to the insulation of wires and short-circuits are not permitted: hang anything on the wire, paint and whitewash cords and wires, lay the wires and cords for gas and water pipes, heating system for the battery, pull the plug out of the socket by the cord, pull should be attached to the body of the plug.

To exclude electric shock, do: turn on and off frequently computer without the need to touch the screen and the back of the computer units, working on computer hardware and peripheral equipment with wet hands, work on the computer hardware and peripheral equipment with case integrity breach, violations

of the wire insulation, faulty display power-voltage with signs on the body, put on computer equipment and peripherals foreign objects.

It is forbidden to live free of dust and dirt electrical equipment.

It is forbidden to check the efficiency of electrical equipment in areas unsuitable for use with conductive floors, wet, do not allow grounded accessible metal parts.

Inadmissible energized to carry out repairs of computer hardware and peripherals. Repair of electrical equipment made only technical specialists with the necessary technical requirements.

To avoid electric shock when using electrical appliances at the same time can not touch any piping, radiators, metal structures connected with the ground.

When using electricity in damp areas particularly careful.

When a fault is detected immediately disconnect electrical notify administration. Youcancontinueonlyafterthemalfunction.

Upon detection of broken wires should immediately inform the administration to take measures to prevent contact with them people. Touchingthewireislife-threatening.

In all cases of electric shock to persons immediately call a doctor. Before the arrival of the doctor you need without wasting time, start first aid to the victim.

Must immediately begin to produce artificial respiration, the most effective of which is the method of "mouth to mouth" or "mouth-to-nose", as well as external cardiac massage.

Artificial respiration electric shock produced until medical help arrives.

Prohibited at the workplace have flammable substances.

The premises is prohibited:

− to light a fire;
− to turn on electrical equipment, if the room smells of gas;
− to smoke;
− to dry anything on heating devices;
− to cover the ventilation holes in the board is.

Ignition sources are:

- spark discharge static electricity when;
- sparks from electrical equipment;
- sparks from impact and friction;
- openflame.

In the event of fire hazard or fire personnel should immediately take the necessary measures to eliminate it, at the same time inform the fire administration.

After work you must remove all the computer equipment and peripherals. In the case of a continuous production process is necessary to leave only the necessary equipment.

Compliance with the above safety rules is the key to the security of each user when working at the computer.

Conclusion

In the final qualification work described the process of developing training program for system administrators working with corporate information systems, as well as e-methodical support: e-guide, demonstration material and electronic simulator.

Through using of the training program and, accordingly, electronic methodical maintenance were achieved their purpose of training – teaching process efficiency increased by 30%.

Developed training program for system administrators working with corporate information systems has been tested during the implementation of the corporate information system «FAN» and used by staff of the Center of development of software products and hardware-software complexes under the Tashkent University of Information Technologies for implementation other corporate information systems.

Bibliography

1. Большой Российский энциклопедический словарь. — М.: БРЭ. — 2003, p. 1437

2. ГОСТ Р 50922-96 «Защита информации. Основные термины и определения» ApplicationВ 1

3. ГОСТ 7.0-99 «Система стандартов по информации, библиотечному и издательскому делу»,article 3.1.30

4. Верников Г. «КИС: не повторяйте пройденных ошибок» / Г. Верников // Corporate management. – М.: Corporate management, 2002y.

5. The Gartner Glossary of Information Technology Acronyms and Terms (англ.) (pdf). Gartner (2004 y).

6. Meer, Kamran H. Best Practices in ERP Software Applications. — Lincoln, NE: iUniverse, 2005 y. — 232 pages — ISBN 0-595-31513-1

7. Вачков, И. В. «Основы технологии группового тренинга, учебное пособие» — Moscow: PublishingHouse«Ось-89», 1999 y. — 136 pages

8. DavidLi. Practice of group training, practical guide - 3rd edition - Publishing House «Питер», 2001 y - 224 pages

9. «Examples in Action: Our List of Open Curriculum Colleges & Universities». Open Jar Foundation.

10. Jackson, Philip W. «Conceptions of Curriculum and Curriculum Specialists.» In Handbook of Research on Curriculum: A Project of the American Educational Research Association, edited by Philip W. Jackson, 3-40. New York: Macmillan Pub. Co., 1992.

Code of navigation menu of electronic guidance for system administrator of the corporate information system «FAN»:

```
</head>
<body
onload="FP_preloadImgs(/*url*/'button2.jpg',/*url*/'button3.jpg',/*url*
/'button5.jpg',/*url*/'button6.jpg',/*url*/'button8.jpg',/*url*/'button
9.jpg',/*url*/'buttonB.jpg',/*url*/'buttonC.jpg',/*url*/'button17.jpg',
/*url*/'button18.jpg')">
    <p align="center">
    <imgborder="0" id="img5" src="button16.jpg" height="38" width="190"
alt="Главная"
onmouseover="FP_swapImg(1,0,/*id*/'img5',/*url*/'button17.jpg')"
onmouseout="FP_swapImg(0,0,/*id*/'img5',/*url*/'button16.jpg')"
onmousedown="FP_swapImg(1,0,/*id*/'img5',/*url*/'button18.jpg')"
onmouseup="FP_swapImg(0,0,/*id*/'img5',/*url*/'button17.jpg')"      fp-
style="fp-btn:SimpleLine 1" fp-title="Главная"></p>
    <p align="center"><a href="ESAG.htm">
    <img border="0" id="img1" src="button1.jpg" height="38" width="190"
alt="ESAG"   fp-style="fp-btn:  Simple  Line  1"   fp-title="ESAG"
onmouseover="FP_swapImg(1,0,/*id*/'img1',/*url*/'button2.jpg')"
onmouseout="FP_swapImg(0,0,/*id*/'img1',/*url*/'button1.jpg')"
onmousedown="FP_swapImg(1,0,/*id*/'img1',/*url*/'button3.jpg')"
onmouseup="FP_swapImg(0,0,/*id*/'img1',/*url*/'button2.jpg')"></a></p>
    <p align="center"><a href="ESAG%20БД.htm">
    <img border="0" id="img2" src="button4.jpg" height="38" width="190"
alt="ESAGБД"   fp-style="fp-btn:  Simple  Line  1"   fp-title="ESAGБД"
onmouseover="FP_swapImg(1,0,/*id*/'img2',/*url*/'button5.jpg')"
onmouseout="FP_swapImg(0,0,/*id*/'img2',/*url*/'button4.jpg')"
onmousedown="FP_swapImg(1,0,/*id*/'img2',/*url*/'button6.jpg')"
onmouseup="FP_swapImg(0,0,/*id*/'img2',/*url*/'button5.jpg')"></a></p>
    <p align="center">
    <img border="0" id="img3" src="button7.jpg" height="38" width="190"
alt="Демонстрации"   fp-style="fp-btn:  Simple  Line  1"   fp-
title="Демонстрации"
onmouseover="FP_swapImg(1,0,/*id*/'img3',/*url*/'button8.jpg')"
onmouseout="FP_swapImg(0,0,/*id*/'img3',/*url*/'button7.jpg')"
```

```
onmousedown="FP_swapImg(1,0,/*id*/'img3',/*url*/'button9.jpg')"
onmouseup="FP_swapImg(0,0,/*id*/'img3',/*url*/'button8.jpg')"></p>
    <p align="center">
    <imgborder="0" id="img4" src="buttonA.jpg" height="38" width="190"
alt="Электронный                                                 тренажер"
onmouseover="FP_swapImg(1,0,/*id*/'img4',/*url*/'buttonB.jpg')"
onmouseout="FP_swapImg(0,0,/*id*/'img4',/*url*/'buttonA.jpg')"
onmousedown="FP_swapImg(1,0,/*id*/'img4',/*url*/'buttonC.jpg')"
onmouseup="FP_swapImg(0,0,/*id*/'img4',/*url*/'buttonB.jpg')"          fp-
style="fp-btn:SimpleLine 1" fp-title="Электронный тренажер"></p>
    </body>
    </html>
```

Code of style sheet:

```
.New_style_from_Ann {
 font: small-caps normal 14px/normal Garamond, Gabriola;
 color: #3366FF;
 text-decoration: none;
 background: #FFFFFF url(none) fixed left top;
 letter-spacing: normal;
 text-align: left;
 text-indent: 0,5;
 vertical-align: middle;
 word-spacing: normal;
 white-space: nowrap;
 display: compact;
 margin: 0,5;
 padding: 0,5;
 clear: left;
 float: left;
 height: auto;
 width: auto;
 border: medium none #3366FF;
 list-style: circle url(none) inside;
 overflow: scroll;
 position: fixed;
 visibility: visible;
```

```css
    z-index: auto;
    left: auto;
    top: auto;
    right: auto;
    bottom: auto;
    clip: rect(auto,auto,auto,auto);
    cursor: e-resize;
    filter: Light;
    page-break-before: always;
    page-break-after: auto;
}
```