THE MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN

Kazakh National Research Technical University named after K. I. Satpayev

Institute of Information and Telecommunication Technologies

Department of Cybersecurity, Data Storage and Processing

Bussegen Kairat

Development of the Electronic Online Library

DIPLOMA WORK

specialty 5B070300 – «Information systems»

Almaty 2019

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Department of Cybersecurity, Data Storage and Processing

ADMITTED TO DEFENSE
Head of Department Cybersecurity
Data Storage and Processing,
PhD, associate professor
_____N.A.Seilova
«13» 05 2019.

DIPLOMA WORK

Theme: «Development of the Electronic Online Library»

specialty 5B070300 – Information systems

Performed Bussegen Kairat

Reviewer,
PhD, professor of AlmaU
_____T.I. Bakibayev
«12» May 2019.

Scientific advisor,
Tutor
_____B.N. Orazov
«13» 05 2019.

Almaty 2019

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Department of Cybersecurity, Data Storage and Processing

5B070300 – Information system

AFFIRM
Head of Department Cybersecurity
Data Storage and Processing,
PhD, associate professor
_____N.A.Seilova
«13» 05 2019.

TASK
to perform the Diploma work

Student Bussegen Kairat
Theme: Development of the Electronic Online Library
Approved by the order of the University №1108 from «16» 10 2018
Deadline for completion of work «13» 05 2019
Source data to diploma work: Online libraries, the results of pre-diploma practical work and the literature review, based on theoretical data.
The list of subject to the development of the thesis or a summary of its content:
a) the development of the Electronic library (website);
b) the development of library database;
c) the creation of effective Electronic Library Management System.
The list of graphic material presented 10 slides presentation work
Recommended main literature: 20 sources

SCHEDULE

of preparation of the Diploma work

The name of the sections, a list of issues	Deadline for submission to supervisor and consultants	Notice
Overview and analysis of existing IS on the market	10.01.2019 - 08.03.2019.	
Writing the functional structure of IS	05.02.2019-10.03.2019.	
Writing program part	11.03.2019-28.04.2019.	

Signature

Consultants and normocontrol to complete a thesis indicating the related sections of the Diploma work

Section titles	Consultants, Full name (academic degree, rank)	Data of signing	Signature
Program software	M. B. Bauyrzhan, Master of Technical Sciences, tutor	8.05.19г	
Normocontrol	O.V. Kisseleva, PhD, senior-lector	8.05.19	

Scientific adviser _____ Orazov B. N.

Task was accepted for execution by the student _____ Bussegen K.A.

Date «13» 05 2019

THE MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN
SATBAYEV UNIVERSITY

REVIEW

of Diploma work
(name of the type of work)

Bussegen Kairat
(student full name)

Specialty 5B070300 – «Information systems»

Theme: **Electronic online library**

Performed:
a) software part on 9 pages
b) the volume of work 32 pages

This diploma work is focused developing web applications constructor. The goal of this diploma thesis has been rather ambitious and covered Information System. In introduction chapter author gave overview to basic web form and constructor in the enterprice-level for software solutions.

The second chapter has shown programming languages and software platforms to developing form builder. The last chapter introduces sofrtware solution of this taks. For processing author used programming language JavaScript, ReactJS with integrated development environment Visual Studio.

On my mind the work belong to more difficult work, needs to complete knowledge of student. The given taks was not completely fulfilled, but methods of solution were correctly chosen. Student demonstrated his abilities to process given task including to learn new needed knowledge. Formal level of these diploma work is better than usual; language level I considered meduim level, so I can to review.

Performance evaluation

The diploma work is executed on «good» (75 %) and its author deserves to have an academic degree «bachelor» in specialty 5B070300 – «Information systems».

Reviewer
PhD, professor of AlmaU
_____ T.I. Bakibayev
«13» May 2019.

School of Engineering Management

THE MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN
SATBAYEV UNIVERSITY

REVIEW

of Diploma work
(*name of the type work*)

Bussegen Kairat
(*student full name*)

Specialty 5B070300 – «Information systems»

Theme: **Development of the Electronic online library**

Performed:
a) software part on 9 pages
b) the volume of work 32 pages

When working on his diploma work, Busegen Kairat proved himself to be a thoughtful, organized and responsible researcher, able to clearly define and formulate goals and objectives, analyze the results obtained, and independently determine ways to overcome the difficulties encountered. It should be noted that the work on the subject started by him at the beginning of the 4th year, and the work on the graduation project served as the basis for further application in the areas of information support of the educational process in the universities of the Republic of Kazakhstan.

While working on his thesis, he studied a large amount of literary sources devoted to the study of digitalization for creating digital libraries.

And it was also proposed to connect the search engine to the work itself.

Performance evaluation

Reviewer
Master of technical science, lecturer
Orazov B.N.
«13» 05. 2019.

Протокол анализа Отчета подобия

заведующего кафедрой / начальника структурного подразделения

Заведующий кафедрой / начальник структурного подразделения заявляет, что ознакомился(-ась) с Полным отчетом подобия, который был сгенерирован Системой выявления и предотвращения плагиата в отношении работы:

Автор: Бусеген Кайрат.

Название: Electronic library

Координатор: Бауыржан Оразов

Коэффициент подобия 1:10,7

Коэффициент подобия 2:7

Тревога:0

После анализа отчета подобия заведующий кафедрой / начальник структурного подразделения констатирует следующее:

☑ обнаруженные в работе заимствования являются добросовестными и не обладают признаками плагиата. В связи с чем, работа признается самостоятельной и допускается к защите;
☐ обнаруженные в работе заимствования не обладают признаками плагиата, но их чрезмерное количество вызывает сомнения в отношении ценности работы по существу и отсутствием самостоятельности ее автора. В связи с чем, работа должна быть вновь отредактирована с целью ограничения заимствований;
☐ обнаруженные в работе заимствования являются недобросовестными и обладают признаками плагиата, или в ней содержатся преднамеренные искажения текста, указывающие на попытки сокрытия недобросовестных заимствований. В связи с чем, работа не допускается к защите.

Обоснование:

Заимствования являются добросовестными и не обладают признаками плагиата

13.05.2019г. .....

Дата

Подпись заведующего кафедрой /

начальника структурного подразделения

Окончательное решение в отношении допуска к защите, включая обоснование:

.....
.....Допускается к защите.....
.....
.....
.....

....

Дата 13.05.2019 г. *Подпись заведующего кафедрой /*

начальника структурного подразделения

Протокол анализа Отчета подобия Научным руководителем

Заявляю, что я ознакомился(-ась) с Полным отчетом подобия, который был сгенерирован Системой выявления и предотвращения плагиата в отношении работы:

Автор: Бусеген Кайрат.

Название: Electronic library

Координатор:Бауыржан Оразов

Коэффициент подобия 1:10,7

Коэффициент подобия 2:7

Тревога:0

После анализа Отчета подобия констатирую следующее:

☑ обнаруженные в работе заимствования являются добросовестными и не обладают признаками плагиата. В связи с чем, признаю работу самостоятельной и допускаю ее к защите;

☐ обнаруженные в работе заимствования не обладают признаками плагиата, но их чрезмерное количество вызывает сомнения в отношении ценности работы по существу и отсутствием самостоятельности ее автора. В связи с чем, работа должна быть вновь отредактирована с целью ограничения заимствований;

☐ обнаруженные в работе заимствования являются недобросовестными и обладают признаками плагиата, или в ней содержатся преднамеренные искажения текста, указывающие на попытки сокрытия недобросовестных заимствований. В связи с чем, не допускаю работу к защите.

Обоснование:

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13.05.2019г.

Дата

……

Подпись Научного руководителя

Краткий отчет

Университет:	Satbayev University
Название:	Electronic library
Автор:	Бусеген Кайрат.
Координатор:	Бауыржан Оразов
Дата отчета:	2019-05-04 15:07:29
Коэффициент подобия № 1:	**10,7%**
Коэффициент подобия № 2:	**7,0%**
Длина фразы для коэффициента подобия № 2:	**25**
Количество слов:	10 145
Число знаков:	64 480
Адреса пропущенные при проверке:	
Количество завершенных проверок:	24

[redacted] **Самые длинные фрагменты, определеные, как подобные**

№	Название, имя автора или адрес гиперссылки *(Название базы данных)*	Автор	Количество одинаковых слов
1	URL_ https://www.i2tutorials.com/seo-tutorial/search-engine/		121
2	URL_ https://www.i2tutorials.com/seo-tutorial/search-engine/		96

3	URL_ https://www.i2tutorials.com/seo-tutorial/search-engine/	92
4	URL_ https://www.i2tutorials.com/seo-tutorial/search-engine/	67
5	URL_ https://www.i2tutorials.com/seo-tutorial/search-engine/	67
6	URL_ https://www.i2tutorials.com/seo-tutorial/search-engine/	57
7	URL_ https://www.i2tutorials.com/seo-tutorial/search-engine/	54
8	URL_ https://www.i2tutorials.com/seo-tutorial/search-engine/	48
9	URL_ https://www.i2tutorials.com/seo-tutorial/search-engine/	42
10	URL_ https://www.i2tutorials.com/seo-tutorial/search-engine/	37

Документы, в которых найдено подобные фрагменты: из RefBooks

Не обнаружено каких-либо заимствований

Документы,содержащие подобные фрагменты: Из домашней базы данных

Не обнаружено каких-либо заимствований

Документы,содержащие подобные фрагменты: Из внешних баз данных

Документы, выделенные жирным шрифтом, содержат фрагменты потенциального плагиата, то есть превышающие лимит в длине коэффициента подобия № 2

№	Название *(Название базы данных)*	Автор	Количество одинаковых слов (количество фрагментов)
1	Development of Software for Electronic Library_buriş_2018_kaf33.docx *Azerbaijan State University of Oil and Industry (ASUOI) (Neft kimya texnologiyası və sənaye ekalogiyası -33)*	Hasanov Edgar Hikmet	158 (16)
2	Müasir personal kompüterlərdə prosessorların inkişafının perspektivinin qiymətləndirməsi sisteminin işlənməsi_Abdullayev Rüstəm_62_2017_616.2_bur.işi.docx *Azerbaijan State University of Oil and Industry (ASUOI) (Kompyuter mühəndisliyi 62)*	Abdullayev Rüstəm	120 (14)

3	«APPLICATION OF ICT TO MODERN SERVICE IN LIBRARIES» *Baku State University (Kitabxana&Riyaziyyat)*	Jafarzadeh Aysel Shahin	14 (2)

[redacted] Документы,содержащие подобные фрагменты: Из интернета

Документы, выделенные жирным шрифтом, содержат фрагменты потенциального плагиата, то есть превышающие лимит в длине коэффициента подобия № 2

№	Источник гиперссылки	Количество одинаковых слов (количество фрагментов)
1	URL_ https://www.i2tutorials.com/seo-tutorial/search-engine/	798 (20)

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ANNOTATION

This diploma work is related to the development of a Electronic Online Library.

For research subject area were taken existing workflow, Electronic Library Systems. Analytical work was done on the advantages and disadvantages of Electronic Library Systems. During the development of the system, the following tools were used: PHP programming language, MySQL, XAMPP.

The system processes and verifies information about books, expirings, administrators. It registers users and gives the opportunity to read electronic documents, books and take it for real.

АННОТАЦИЯ

Данная дипломная работа связана с разработкой электронной онлайн-библиотеки.

Для предметной области исследования были приняты существующие рабочие процессы, Электронные библиотечные системы. Была проведена аналитическая работа по преимуществам и недостаткам систем электронных библиотек. При разработке системы использовались следующие инструменты: язык программирования PHP, MySQL, XAMPP.

Система обрабатывает и проверяет информацию о книгах, истечениях, администраторах. Он регистрирует пользователей и дает возможность читать электронные документы, книги и воспринимать их по-настоящему.

АҢДАТПА

Бұл дипломдық жұмыс электронды онлайн-кітапхананың дамуымен байланысты.

Зерттеу тақырыбы үшін электронды кітапханалық жүйе қолданыстағы жұмыс үрдісі алынды. Электронды кітапханалардың артықшылықтары мен кемшіліктері бойынша аналитикалық жұмыс жүргізілді. Жүйені дамыту барысында келесі құралдар пайдаланылды: PHP программалау тілі, MySQL, XAMPP.

Жүйе кітаптар, мерзімдер, әкімшілік туралы ақпаратты өңдейді және тексереді. Пайдаланушыларды тіркейді және электрондық құжаттарды, кітаптарды оқуға және оны нақты түрде алуға мүмкіндік береді.

CONTENT

INTRODUCTION

The Internet is an infinite repository of very different information that is updated every second. Each computer that has a network connection is essentially one of the cells in this storage.

Search engine, search engine or search engine is the most important navigator in the endless oceans of digital information. With the help of a search robot that continuously “walks” through the pages of old and newly created sites, the search system enters into memory every single text, picture, video or any other kind of file.

With help from search engines, people don’t need to go somewhere else to read books or search for them for a long time. They can now easily find everything in the electronic libraries.We live in an era of widespread formation of the information society. Under the influence of the globalization process, the borders of countries are erased: economic, linguistic, and, of course, informational. General processes of informatization are changing our lives, more and more often we meet with computer information systems. They greatly simplify our lives, free up time, facilitate our work. Information becomes the most important resource in modern society. The preservation, multiplication and rational use of this resource has become of paramount importance for each state and society.

Obviously, the "Golden Age" of print editions is coming to an end. More and more information used by us in everyday life comes in an electronic format, moreover, traditional print publications, literary works that have become classics, invaluable museum manuscripts are translated into information format. This form of information presentation allows you to organize work with information and access to it at a completely different qualitative level. Printed publications, of course, will retain their aesthetic value, but they are no longer destined to be the main source of information, is it good or bad, but replacing printed publications with electronic ones is an objective process that cannot be stopped.

Ensuring public (including remote) user access to electronic information resources has become one of the priorities of the information services for science, education and culture. The current information service system allows us to gain access to virtually any information in unlimited quantities, the Internet plays a huge role, which since 1991 has managed to turn into a distinctive and practically inexhaustible information environment. All modern library service systems will be based on providing information to users through the World Wide Web.

In a sense, the term electronic library has been known for a long time - for a number of years, various experts have predicted the beginning of the era of electronic libraries. However, this term can also be considered completely new, referring to an unfamiliar institution. Traditional libraries are not only a collection of documents or sources of information, but also have navigation tools, a directory system, reader assistance services and an automated information management environment, you have to admit that the electronic library is starting to acquire some new features.

1 Search engines

The most popular web service today is just a search engine. Everything is explainable, because those times when the representatives of the first Internet users were able to watch the news on the network have long gone. Information appears and accumulates so much that it became very difficult for a person to find exactly that which he would need. Imagine how you would search on the Internet, if an ordinary user would have to search for information do not understand where. Do not understand where, because you will not find much information by manual search.

1.1 What is a search engine

It is good if the user already knows the sites where you may have the necessary information, but what to do otherwise? In order to make life easier for a person in finding the right information on the Internet, search engines or just search engines were invented. The search engine performs one very important function, without which the Internet would not be the same as we used to see it - this is searching for information on the network.

A search engine is a special web site or, in a different way, a website that provides users with hyperlinks to pages, sites that respond to a given search query. To be a little more accurate, then search for information on the Internet, carried out thanks to the software and hardware functional set and a web interface for interacting with users.

For human interaction with the search engine, a web interface was created, that is, a visible and understandable shell. This approach of search engine developers makes it easy for many people to search. As a rule, it is on the Internet that a search is performed using search engines, but there are also search systems for FTP servers, certain types of goods on the world wide web, or news information, or other search directions.

The search can be carried out not only on the text content of sites, but also on other types of information that a person can search for: images, videos, sound files, etc.

1.2 How is the search engine work

The search on the Internet itself, exactly the same way as browsing web sites is possible with the help of an Internet browser - a browser. Only after the user has specified his query in the search bar, the search itself is performed directly. Any search engine contains the software part on which the entire search engine is based, it is called the search engine - it is a software package and provides the ability to search for information. After referring to the search engine, forming a search query

by a person and entering it into the search bar, the search engine generates a page with a list of search results that are most relevant, according to the search engine, are located above.

Search Relevance - searches for the most relevant materials for a user's request and the location of hyperlinks on a search page with more accurate results than others. The distribution of the results itself is called site ranking.

So how does the search engine prepare for the issuance of its materials and how is the search for information by the search engine? A unique robot for each search engine or, in a different way, a bot that also has a number of other synonyms like a crawler or a spider contributes to gathering information in the network, and the search system itself can be divided into three stages:

The first stage of the search engine operation can be attributed to scanning sites on the global network and collecting copies of web pages to their own servers. This forms a huge amount of as yet unprocessed and unsuitable information for search results.

The second stage of the search engine is reduced to putting in order the information received from the sites at the first stage. This sorting is performed, which in the shortest time will favor the very high-quality search that users actually expect from the search engine. The stage is called indexing, which means that the pages are already prepared for issuance, and the current database will be considered an index. Just the third stage and determines the search results, after receiving a request from your client, based on the keyword or near the keywords specified in the request. This contributes to the selection of the most relevant information request, and its subsequent issuance. Since the information is very, very much, the search engine ranks in accordance with its algorithms.

The best search engine is the one that will be able to provide the most correctly responding to the user's query material. But even here there may be results that are affected by people interested in promoting their website, such sites, although not always, but often appear in the search results, but not for long. Although world leaders have already been identified in many regions, search engines continue to develop their high-quality search. The better the search they can provide, the more people will use it.

1.3 Using a search engine

What is a search engine and how it works is already clear, but how to use it correctly? Most sites always have a search bar, and next to it is the Find or Search button. A query is entered into the search box, after which you need to click the search button or, as it happens more often, press the Enter key on the keyboard and within seconds you will receive the result of the query in the form of a list.

But to get the right answer to the search query, it's not always possible the first time. To ensure that the search for the desired does not become painful, it is necessary

to correctly compose a search query and follow the recommendations described below.

1.4 How to make a search query correctly

Below are tips on using a search engine. Following some tricks and rules in the search for information in a search engine will provide an opportunity to get the desired result much faster. Follow these guidelines:

Proper spelling of words provides the maximum number of matches with the desired information object (Although modern search engines have already learned how to correct spelling errors, but this advice should not be neglected).

By using synonyms in the query, it is possible to cover a wider search range. Sometimes changing a word in the query text can bring more results. Re-generate the query.

Bring concreteness to the query, use exact entries of the phrases that should determine the main essence of the search.

Experiment with keywords. Using keywords and phrases can help determine the core essence, and the search engine will produce a more relevant result.

So such a search engine is nothing more than the opportunity to find information of interest and is usually completely free to use it, learn something, understand something or make the right conclusion for yourself. Many no longer represent their lives without voice search, in which the text does not have to be typed, you only need to say your request, and the input device for information here is a microphone. All this testifies to the continuous development of search technologies on the Internet and the need for them.

2 Libraries

2.1 What is library

A library is a collection of reading materials (and sometimes also a collection of music and video materials) available so that people can use them, but not buy them. The first public library was opened in Greece in 330 BC. er it was intended for certain groups of the population.

The first library with the subscription department, that is, the one in which people could (for a fee) borrow books and return after use, was organized by Benjamin Franklin in Philadelphia, Pennsylvania, in the USA in 1732. But libraries, in which all people could borrow books for free, appeared only by the end of the XIX century.

Today, most of the funds needed for the work of public libraries in localities come from taxes paid by people living in cities and towns.

We can say that in a sense, you and all the other residents of your city or village are the joint owners of the local public library and all the wonderful books, videos, CDs and other materials in it. What is the best reason to come up with so that you treat carefully the materials you take in the library? It turns out that they need to be treated with the same respect with which you treat your own and your friend's things. Do not forget that the materials that you take in the library, you need to return on time, because someone is still waiting for their turn.

2.2 Usefulness of library

Today, the library is not just a repository of books, where we go to search for the necessary information. Despite the fact that useful literature can always be found on the Internet, the age of information technology is not worth it, the new technologies of interactive transmission of information are constantly being created. The library was and will be a peculiar center of informational materials, a place where you can learn a lot of interesting and useful things.

The stationary library is not just a repository of books. This is a center of creative development, providing conditions for communication between people of different generations. The library constantly carries out reference and bibliographic work, which is concluded in the selection of information for visitors on paper and electronic media.

The choice of the reader is given the most common forms of service. This is a reader’s subscription, which in fact means that the book you like can be taken home for a certain period of time to read at home. The second form of service provides visitors with the opportunity to use the reading room, in which the book can be read in a specially designed comfort room, without leaving the library.

Most libraries have an extensive collection of books from which are publicly available. Books from the library fund can be used by anyone. Good libraries are constantly expanding their collections, ordering new and rare editions.

What gives a visit to the library?

Inquisitiveness and aspiration for the new is laid in people since childhood. Developing intellectually and physically, the teenager is experiencing a strong information hunger. Not everyone can figure out what kind of information he needs for leisure, what kind of literature is more to his taste. Sometimes in order to understand this, it is necessary to superficially study several literary sources. The library provides for this unlimited possibilities. The process of finding the right book can and should be fun. Turning over the pages, a person begins to comprehend what information he needs. The liked book is taken to the house, where they read it in a calm atmosphere, then they re-read especially liked moments, worrying again about the fate of the book's heroes.

When writing a thesis or term paper students easier and more convenient to use the services of the library. On the Internet it is not always possible to find exactly the information that is needed. At the stage of research training a student due to the lack of any information on the topic, various questions arise.

This circumstance serves as a kind of guarantor of the uniqueness of a thesis, written independently after studying several literary sources. In addition, when writing a thesis, the value of live communication with library staff, living people who, by virtue of their life experience and duty of duty, can throw interesting material is undeniable.

2.3 Child benefits

The dissatisfied curiosity of the child in the modern world leads to the fact that sooner or later the child begins to receive the necessary information for development from TV and the Internet. Meanwhile, it is not fully understood what damage to the body can be caused by electron-magnetic radiation emitted from working electrical appliances. It has been scientifically proven that a long pastime at a computer increases the child's fatigue, and depresses the immature psyche. As a result, performance drops, the child looks pale and lethargic. To think about why you need to go to the library, parents begin to think about when the child begins to have health problems.

Once they decide to enroll a child for a library membership, they help him to grow and develop spiritually and intellectually. In addition, within the walls of the institution, the child is protected from harmful electromagnetic radiation. The library develops communication skills that the modern generation, limited to the information space of mobile phones and the Internet, is not sufficiently developed. Within the walls of the institution there are constantly interesting exhibitions, intellectual games, taking part in which the child will learn to develop communication skills.

2.4 The benefits of visiting the library

It is impossible not to appreciate the benefits that library visitors receive. The modern library system over the past decades has undergone significant changes. Today the library is trying to be interesting and useful to its visitors. There are at least five reasons why a library visit will be useful for a person of any age.

2.4.1 Territory for scientific work.

Providing space for work and research. The library has the necessary conditions for full-fledged research activities. In the reading room you can hold exhibitions and conferences, presentations and creative evenings.

2.4.2 Free access to archived documents.

The library fund has a rich selection of local history literature, as well as documentation from the archival fund. With invaluable samples of fiction, as well as rare copies of books can be found only in the library.

2.4.3 Assistance in personal self-realization.

The library helps a person to realize his spiritual essence. While studying the material, the library visitor exchanges views with other readers, participating in creative evenings and seminars. Being enriched spiritually, he gains faith in himself, improves himself, strengthening self-esteem.

2.4.4 Free access to information.

The library is ready to assist anyone, regardless of nationality, gender, place of residence, religion and lifestyle. Being the most accessible and stable information source, the institution works according to the schedule convenient for visits.

2.4.5 Implementation of communication needs.

Being at home within four walls, a person feels the need for live human communication. The library provides him with this opportunity. After reading the book, they come back here to share their opinions about what they read with the librarian and others.

2.6 Library in the life of modern society

The library is one of the oldest cultural institutions. Over a long period of human history, its social functions have undergone significant changes. The purpose of the first libraries was the storage of documents. From its inception to the present day, the library has evolved from a repository of knowledge for a select few to the most popular and universal source of information.

At present, there is a noticeable lag in the development of libraries from the level of modern society, and therefore the library plays an ever smaller role in its traditional understanding in the life of modern society.

You can say that an electronic library on the Internet is also a kind of library. But in fact, the similarity ends with the name: there are no librarians, no forms, no

return period in it. And in general, it is created by the readers themselves. It's just a free repository of information from which you can get it in minutes, without getting up from the couch (where you'll read this book later).

So what is a library in modern society? Currently the library is approaching the function of the museum. This repository is no longer information (as it was before), but books. This is exactly the storage of books as objects. The value of more and more presents the book as an instance, as an artifact, if you want. And the information that is in it, you can almost always get, without even opening it. In modern society, the book generally more and more turns into a kind of fetish for the sophisticated.

Of course, there are still scientific libraries and libraries in schools, but I think that the digitization of scientific libraries is a matter of time. And now in scientific libraries you practically don't give a book to your home; you work with it in the reading room. Well, just as you do not give out the museum exhibits! It is good that they are not hidden in the windows and you can touch them, but perhaps this is also a matter of time.

The processes taking place in modern society affect libraries and force them to change not only the entire system of library labor and library resources, but also for the first time raise the question of the "boundaries" of the library space and the very foundations of the existence of traditional libraries and their functions. In the modern world, the library must constantly evolve. It is no longer enough just to store and issue books. The rhythm of life in modern society is very fast now and now the reader does not just need BOOKS, he needs opportunities. Truly modern libraries have begun to introduce information technologies: they create electronic catalogs, digitize books, and even launch Internet analogues of the library.

Imagine the perfect library: you are sitting in a reading room at a computer. You can simultaneously work with books in this library and access additional data from another library via a special interlibrary network via the Internet (Library of Congress in the USA, for example), quickly retrieve this data, print out fragments of books that interest you and make copies.

This is what the modern library user needs right now; such demands are now made by society to libraries. In turn, the ongoing social transformations affect libraries, which changes the entire system of library work and library resources, raises the question of the "boundaries" of the library space and the very foundations of the existence of traditional libraries and their functions. A modern library is destroying its physical boundaries, moving from real space to virtual space. On the one hand, it offers access to information resources belonging to other libraries, on the other hand, it itself becomes interactive, digitizing its funds and cooperating with other libraries via the Internet. It turns out a kind of interlibrary subscription, only without sending the books and even without the direct participation of the librarian, the librarian only models this process.

3. Electronic libraries

3.1 The development of electronic libraries

In a sense, the term digital library (it's also electronic or virtual) has been known for a long time - for a number of years various experts have predicted the beginning of the era of digital libraries. However, this term can also be considered completely new, referring to an unfamiliar institution. If we agree that traditional libraries are not only a collection of documents or sources of information, but also have navigation tools, a metadata system (catalogs), reader assistance services and an automated information environment, then we will have to admit that the electronic library is just beginning to acquire some new features. The greatest influence on information systems was made by steady progress in the automation of all, or almost all, library technologies. This process began in the 1970s. with the automation of library catalogs, then service systems and ended in the late 1970s - early 1980s. creation of integrated library automation systems.

In integrated systems, a single software structure is used to manage all library processes, including cataloging, maintenance, acquisition, financial calculations, as well as many other functions (for example, interlibrary loan).

One of the most significant achievements of this period is the creation of an electronic library catalog, which introduced revolutionary changes in the process of searching for documents. With the advent of the electronic catalog, the idea of creating a distributed fund first appeared.

As part of an integrated automation system, truly complex, useful modules, new document delivery systems for the user were created. The most significant was the development of on-line systems, first for individual service workstations with compact disks, then as network CD-ROM service tools, and more recently through remote servers.

More recently, there are versions of network services related to Internet access. As a result, even a relatively small, modest library acquired the ability to provide access to enormous electronic resources. As a result, the integrated library automation system has ceased to be such an essential element of the library, especially if it does not work with Internet resources.

Digital libraries today are not even a direction, it is an ideology. Electronic libraries are becoming an integral part of activities in almost any field; Today, almost everyone faces the need to have, develop and use the electronic library. As before, everyone wanted to get computers, so now, when a certain saturation of computers has already happened, they speak mostly about two things - the Internet and the electronic library.

And more and more about the electronic library in this sense, ordinary libraries were not so lucky: on the one hand, libraries are one of the main driving forces behind the development of an electronic library, and on the other, the library itself

confuses many in the name of the library and often levels this concept, relegating it to the task of digitizing some fragments or the entire library stock.

Many librarians began to understand electronic libraries as a panacea, which would quickly turn their library into a fully automated electronic system, after which traditional funds would not be needed. All this is not so: simply the word library in the concept of the electronic library is understood much more broadly - as a kind of unifying, somehow ordered (structured) collection of electronic resources. But in general, an electronic library can be represented as a union of heterogeneous and distributed resources within a single ideology of organization and access. However, no one has yet given a precise definition of an electronic library, but many understand the same meaning. As for libraries, then, of course, the concepts of an automated library and an electronic library should be separated, meaning by the first a big list in the direction of technology, and under the second - in the direction of resources. Although there is an intersection, of course, but one thing is important: any electronic library becomes even fragmentary (meaning a part of a digitized fund) only on the basis of the automation already implemented.

Electronic libraries have become widespread in the West, and we are not too late: while in the United States and Western Europe, they started working on these problems in 1992-1994, in Russia the first projects appeared already in 1996-1999, i.e. we learned lessons from the past, so as not to lag behind for 15-20 years, as happened with hardware and software.

More recently, there are versions of network services related to Internet access. As a result, even a relatively small, modest library acquired the ability to provide access to enormous electronic resources. As a result, the integrated library automation system has ceased to be such an essential element of the library, especially if it does not work with Internet resources.

The main difference between the traditional publication (information "on solid media") and e is that the user, accessing the services of the electronic library for the necessary information, as a result, gets the opportunity to work directly with the documents themselves. Digital libraries provide an opportunity parallel use of various search mechanisms and means of access to heterogeneous electronic data banks.

The main thing in the electronic library is the catalog system and the possibility of a convenient and comprehensive search. And then any information will always be found and used. Today's programming possibilities open up truly limitless possibilities for organizing electronic libraries of organizations.

The creation of electronic libraries and full-text databases today is not even a direction, it is an ideology. Electronic libraries and databases are becoming an integral part of activity in almost any field: science, culture, education, government institutions. Virtually any organization that has its own page on the Internet, and often an amateur site, is prone to submitting its own virtual library.

3.2 Electronic library: purposes, tasks, functions, advantages, classifications

3.2.1 Tasks

Regardless of whether the electronic library is local or it is displayed on the Internet (with different access conditions), its creation should be aimed at achieving the main goal, which is seen in meeting information needs. The technologies and methods used should correspond to the specifics of the indicated information needs, the rational organization of the array of electronic documents, formed according to the selected selection criteria. The following tasks can be solved through the electronic library:

– providing wider access to documents that are difficult or limited to readers (rare books, photo albums, manuscripts, dissertations, etc.);

– organization of documents / data funds existing exclusively in electronic form, their cataloging and providing access to them for consumers of information;

– providing users with qualitatively new opportunities to work with large volumes of electronic data.

Like any holistic foundation, an electronic library contributes to the following main functions:

– informational, aimed at meeting the information needs of various categories of users in all branches of knowledge or one of the subject areas;

– educational, implemented, including through the popularization of electronic documents relating to history and culture;

– research, focused on the promotion of in-depth study of the topic (subject) by scientists and specialists, including by providing full texts from remote collections;

– educational, within the framework of which both basic and additional education is supported by providing not only multimedia educational material, but also the necessary literature;

– reference, allowing to obtain reliable information reflected in documents of a certain type.

3.2.2 The advantages of the electronic library

The user receives information regardless of the time and location - his or the library.

The efficiency of providing the necessary literature, documents and data to users is significantly increased.

The user has access to heterogeneous electronic resources.

The use of machine-readable copies prevents the deterioration of the original documents.

The implementation of new forms of library and information services for users, including services for the visually impaired and persons with disabilities in connection with diseases of the musculoskeletal system, is facilitated.

Documents available in libraries in limited quantities are made available to a much larger number of users.

Working with digital electronic documents can go far beyond just reading text or viewing an image. Fragments of the source data can be used in the work, combining, adding and editing materials.

Fast and high-quality search for certain fragments of a document, its semantic analysis and other types of software processing is possible.

Saving of the areas and space in comparison with the usual library is achieved.

3.2.3 Classification of electronic libraries

At the moment there is no built-in classification of the electronic library, taking into account their features and a variety of parameters.

Based on the creation methods, digital libraries can be divided into three types:

-generated electronic library when electronic documents are created by the holders of its fund;

-aggregated from already existing electronic publications or entire collections;

-mixed, consisting of both borrowed publications and those prepared on their own;

3.3 Library Automation System

After the creation of electronic libraries, two problems immediately arise: the integration (integration) of electronic information resources and the development of effective search tools (navigation) in them. Efficiency is understood as the speed of receipt, accuracy and completeness of the information provided.

To understand the essence and place of the electronic library in the system of library information technologies, it is necessary to know the following concepts and prerequisites.

Library automation system, suitable for both traditional and electronic technologies. The role of library automation (including the formation of an electronic catalog, the accumulation of librarians and readers with it) as a preliminary stage of transition to the use of electronic libraries.

The portal is the starting point of a thematic search in a distributed network. Technologies and devices for automated data collection and automatic creation of electronic resource catalogs.

Another definition of a portal in the sense of a “superserver” on the Internet: a server on the Internet that provides users with access to some thematically or logically organized group of servers.

Interlibrary subscription for electronic resources. Document delivery - books, articles, images, electronic publication to a collective or individual user. Delivery mechanism - mail, fax, e-mail, custom scanning, fully electronic delivery (forwarding).

Authenticity of the user (ID) and his authorization (from the point of view of the right of access to electronic library resources, as well as taking into account copyright and licensing, reliability of payments in the case of paid services. Control of legal aspects, including copyright issues (Copyright); deductions to information owners; electronic signature and "watermarks" on documents.

Means of creating electronic resources or converting print resources into electronic ones. Expansion and change of publishing functions of libraries: from issuing professional literature - catalogs, bibliographic indexes, reviews, methodical recommendations, professional publications - to processing the main fund, converting its part into a machine-readable format and creating a full-scale local electronic resource on the main topic of library printed funds.

Changing the technology of publishing and bookselling; electronic technology; link with libraries.

Digital archives and security: inconsistency of requirements for immediate open access and reliable security.

Hierarchical storage systems: low-demand materials in inexpensive formats, often asked for readily available (but possibly more expensive). The problem of migration of machine-readable documents in relation to electronic resources and ensuring long-term storage of material.

Elements of evolutionary development on the way to electronic libraries:

– technical progress;

– new types of informatio;

– storage of electronic publications becomes cheaper than paper;

– an increase in the number of communication channels, the development of telecommunications, the Internet;

– access to information and documents;

– corporatism and resource sharing.

3.4 Electronic libraries' resources

Electronic resources - a set, a set (collection) of electronic documents (bearing in mind that a collection is created, as a rule, intentionally, and a resource can be formed as a result of random actions or events).

Basic, basic properties of electronic resources:

– discreteness;

– machine readability;

– uniformity of the data array, regardless of the characteristics of the reflected object (black and white or color, one-dimensional or multidimensional, text or sound, etc.);

– dependence on software and hardware (including power, computers, system-wide and special programs) for the use of electronic resources;

– ability to combine heterogeneous information (multimedia resources);

– the ability to clone, that is, to create absolutely identical copies of the resource;

– the main types of electronic resources, indicating differences from traditional documents: full-text documents, electronic journals with search capabilities, the presence of hyperlinks and automatic aggregation; tables with advanced data processing and demonstration of the results; bibliographic databases with search capabilities, library electronic catalogs of various types and bibliographic indexes; drawings and images with the ability to process files by size, color, spatial parameters of the image and build multi-dimensional images; audio recordings and music, video, computer animation; digital maps and cartographic information; computer programs, including programs and commands not mediocre performance; viruses as a special type of computer program; multimedia materials (combination of different types of resources, for example, text and sound; text, image, sound; text and animation, etc.); aggregated collections - a new kind of insufficiently studied electronic publications. In fact, this is a special kind of personal thematic publications, a collection of electronic journals and other electronic resources, compiled according to your taste and needs and sent to your address; others.

The basis of nonlinearity of electronic materials is the so-called hyperlinks (or hyperlinks). Network resources are usually provided with hypertext links, but you are free to use them or not to use them.

Types of electronic resources for public purposes:

– scientific;

– e-commerce, production, technology and financial information;

– automation systems for experiments, design work, production.

Types of electronic resources by accessibility:

– free;

– shareware;

– paid;

– closed for public access, including confidential and / or confidential information (security-secret);

– commercial, industrial and technological information, financial and tax information;

– private life .

3.5 Electronic Library Attributes

In order to accurately determine the specific features of digital libraries, as a special information service system, it is necessary to identify common features that make it possible to call the information system a “library”:

3.5.1 A set of objects

Any library creates a set of data, often called collections, specimens, resources, or just material. These may be books, magazines, documents (both printed and

electronic); multimedia objects (pictures, images, magnetic tapes, video films, etc.). Objects must be available either directly in the library or through some kind of network.

3.5.2 Metadata set

The library usually contains metadata: catalogs, manuals, dictionaries, thesauri, pointers, abstracts, reviews, selections, etc.

3.5.3 A set of services

Among them are various means of access (search, viewing, etc.) taking into account the categories and interests of readers, the system of differentiated information dissemination, library management, statistics, performance evaluation, etc.

3.5.4 Area of interest

Each library is characterized by a specific area of interest, in accordance with which the funds are formed. For example: art, science, literature. Libraries are usually created for a specific category of users: academic, public, special, school, national or state.

3.5.5 Quality control

In this case, I mean a thorough check of the funds for compliance with the profile of the library. Incoming material is filtered before inclusion in the funds. Bibliographic resources are constantly updated by creating bibliographic records, pointers, abstracts, etc.

3.5.6 Preservation

Libraries and archives are security centers - this is one of the key functions. The purpose of security procedures is to ensure the protection of information and access to it by future generations; implies regular inspection of materials to detect deterioration; prophylaxis and, if necessary, rehabilitation procedures.

3.6 Functions and tasks of digital libraries

Regardless of whether the electronic library is local or on the Internet (with different access conditions), its creation should be aimed at achieving the main goal, which is seen in meeting information needs. The technologies and methods used should correspond to the specifics of the indicated information needs, the rational organization of the array of electronic documents, formed according to the selected selection criteria. Through electronic libraries the following tasks can be solved:

– providing wider access to documents that are difficult or limited to readers (rare books, photo albums, manuscripts, dissertations, etc.);

– organization of funds of documents / data that exist exclusively in electronic form, their cataloging and ensuring access to them for consumers of information;

– providing users with qualitatively new opportunities to work with large volumes of electronic data.

Like any holistic foundation, an electronic library contributes to the following main functions:

– Information, aimed at meeting the information needs of various categories of users in all branches of knowledge or one of the subject areas;

– Educational, implemented, including through the popularization of electronic documents relating to history and culture;

– Research, focused on the promotion of in-depth study of the topic (subject) by scientists and specialists, including by providing full texts from remote collections;

– Educational, in which support is provided, both basic and additional education by providing not only multimedia educational material, but also the necessary literature;

– Reference, allowing to obtain reliable information reflected in documents of a certain type;

– The function of preserving the creative heritage, especially important in the conditions of the electronic environment.

At the moment there is no built-in classification of electronic libraries, taking into account their features and a variety of parameters.

Based on the creation methods, digital libraries can be divided into three types:

– Generated electronic libraries, when electronic documents are created by the holders of its stock;

– Aggregated from already existing electronic publications or entire collections;

– Mixed, consisting of both borrowed publications, and prepared by their own.

According to the composition of documents, electronic libraries can be divided into monodocumentary and polydocumentary. In general, there are two main models: the formation of a collection of similar electronic documents, mainly texts (modifications - either one type of publication or mixed); the formation of complex multimedia meetings.

Organizationally, electronic libraries can be independent or built into a more general resource, say, in a research and educational complex or a distance learning system; as well as integrated ones (collections are united by a common theme and a single interface, but electronic documents are on different sites, which is close to understanding the virtual library).

In turn, independent electronic libraries can be divided into those associated with the book fund and autonomous (the majority of electronic libraries belong to them), which are an independent system of electronic information resources.

Purposeful electronic libraries can be divided as follows:

– memorials created for the purpose of cumulating documents about a person or an event;

– scientific, intended for in-depth study of the topic (subject) by scientists and specialists;

– educational, educational and methodical, focused on supporting education;

– reference, created as a universal encyclopedia to obtain the necessary brief information on all branches of knowledge;

– educational, having a popular science character and intended for integrated coverage of the topic (subject) at the general educational level;

– without a specific purpose.

According to the creator or initiator of the creation, the following types can be distinguished among electronic libraries - those created by state and public structures; scientific and educational institutions; commercial firms and individual amateurs. Some of them remain open to external users, other electronic libraries are implemented as a commercial project, or differentiate access: to free and paid to different parts of the fund, for example, to reference books for previous years.

Types of electronic libraries by content:

– Universal. Funds of universal electronic libraries are formed as a collection of thematic electronic collections in different fields of knowledge. In such libraries, along with digital versions of works of fiction, you can find articles on scientific topics, philosophical works, etc;

– Specialized (thematic). Funds of such electronic libraries are formed in accordance with a specific area of knowledge, or taking into account the interests and preferences of the creator of the resource. For example: fiction, historical sciences, natural sciences, culture and art, children's literature, encyclopedias. It should be noted that the term "electronic resources" may be overly extended when analyzing practical applications in libraries/

As practice shows, within this concept there is a significant difference between offline documents recorded on physically perceived and portable media, for example, on CD-ROM, floppy disks, cassettes and cartridges of digital tape recorders, etc. (stored in the library), and online (online) resources. Librarians have mastered the handling of offline resources in the services of acquisition, bibliographic processing, storage services. Completely different technologies are used to work with network resources accessible through a local network or via the Internet. There is still much to be done to develop practical skills with them.

Remote resources once uploaded to the server after registration and indexing on large search engines become, in the full sense of the word, "public domain". You provide them for use, but do not control visits by users who come from other sites.

4 Software description

4.1 PHP

This simple introduction to the PHP language explains the basics of PHP and how it can be used to create rich web pages and applications. PHP is a programming language that you can use to write web applications. A web application can be anything from a simple “contact us” form to a complete blogging system, online store, or forum. With PHP you can also insert contextual advertising blocks into the texts of articles on the site.

PHP is known as a server programming language. This means that it runs on a web server. Most web programming languages are server-side languages, but some, like JavaScript, work on the client side, which means they work in a web browser. Server languages give you more flexibility because you can do things that are difficult with JavaScript — for example, working with files, databases, or working with images. It must be said that JavaScript has spread very quickly these days. Running server-side code is a safer way than client-side, as JavaScript does. Since the JavaScript code is sent to a web browser, for site visitors it is easy to view and edit it. Even on one page of the site, you can easily combine PHP and JavaScript. Code located on the server side remains a web server and is inaccessible to site visitors. PHP is a tool that resides on a web server and runs PHP scripts there.

PHP is open source software. This means that any user can access and work in PHP. This helps ensure that PHP will work for a long time. PHP can be freely downloaded and used. This is the reason why many hosting providers make extensive use of PHP. You will find that the vast majority of web hosting support PHP operation.

PHP is focused on web application development.

While many programming languages can be used to create web applications, PHP is one of the languages specifically designed for use on the Internet. PHP has many useful web functions such as:

– reading and processing web forms and cookies;

– functions for creating and working with graphics;

– establishment of connection with popular databases such as MySQL and functions for working with HTML.

Ability to mix PHP code with HTML code. One of the great features of PHP is that you can include blocks of PHP code in your HTML pages.

Separate PHP blocks with special characters. When the web server receives the page information, all PHP blocks are started by the PHP engine, while other parts of the page are sent “as is” to the browser.

This feature makes it easy to make regular web pages interactive. A great tool for feedback forms and forms with similar functions.

4.2 CSS

CSS is a language for shaping the appearance of a document created using a markup language. CSS is usually used as a tool for describing web pages that were previously written in XHTML and HTML.

Additionally, CSS can be used with other documents of type XML, the most commonly used documents are XUL and SVG.

CSS is used to style the document. This includes design development, layout layout depending on the type of devices on which it will be displayed. CSS can be prescribed both as a component of the document, and as an independent file. Which is better: plain HTML or HTML with CSS.

Many site developers wonder why you need CSS if you can use plain HTML. Most likely, they only know the development of the site and have a number of gaps in knowledge. The bottom line is that HTML is used to structure the content of a page. And CSS allows you to format this content, make it more attractive to users.

When the World Wide Web was created, the developers used only one language - HTML. It was used as a means of outputting structured text. The author had scant functional at his disposal. The maximum that could be done - to designate the title, select the paragraph. Tags were not enough.

In connection with the development of the Internet, the base of HTML language tags was expanded to allow the appearance of documents to be adjusted. At the same time, the structure remained unchanged.

Structuring tags, for example <table>, began to spread. It was them who were more often chosen to design the pages instead of the structure itself. Some browsers offered their own tags, which only they could reproduce.

Thus, users often stumbled upon the message: "To view a page, you need to use browser XXX."

To correct the situation and create a single database of tags for formatting was created CSS. He allowed to refuse to bind tags to browsers.

Using HTML with CSS is more convenient than using plain HTML. CSS provides the following benefits:

– Designed to the smallest detail;

– Using a single table, you can manage various documents;

– You can customize the page display options for different devices: computer screen, smartphone screen, etc;

– Website Promotion with CSS.

The emergence and development of CSS has made the development of web resources more efficient and effective. Now it’s much easier and more convenient to control the design. Also, using CSS, we managed to reduce the code of the pages, their size. This had a positive impact on the download speed, the indexing also began to pass faster. The use of an adaptive approach allowed us to make a breakthrough in the field of mobile versions of Internet resources.

To improve the website promotion, experts recommend placing the CSS style sheets in a separate document so as not to increase the amount of code. You can create one or more such files.

Previously, search engines could not read style sheets, which made it possible to use them in black SEO, for example, to create invisible texts. Now it is better to abandon the use of CSS for other purposes.

CSS has several advantages and allows you to improve the site, making it more attractive to visitors. However, it is important to correctly register all the elements.

4.3 HTML

HTML is a hypertext markup language that has become very common on the Internet. The HTML language defines the structure of the pages that you see in the browser. Every website on the Internet uses HTML to display information. HTML defines the structure of the pages that you see in the browser thanks to HTML tags, the browser "reads", processes them, and then displays tags to you on the screen, but in the form of HTML elements, you can even interact with some HTML elements using a mouse or keyboard .

To be precise from a formal point of view, it’s correct not to say the HTML page, but the HTML document, your browser communicates with the web server using the HTTP protocol, sends HTTP requests and receives server responses, the body of which contains HTML.

Like the HTTP protocol, HTML was developed by Tim Berners-Lee in 1991 and was originally used by scholars to share scientific documents. HTML clearly defined the structure of the document and made it possible to highlight certain features of the text of the document, thanks to this and the fact that the syntax of the HTML language was simple, it was widely spread not only in the scientific community, but also went to the masses.

4.4 XAMPP

XAMPP is a free cross-platform software product that contains Apache, MySQL, PHP, Perl, FileZilla, phpMyAdmin and many other additional modules. XAMPP is an abbreviation of X (the first letter of the operating system, say for Windows is WAMPP, for Linux is LAMPP), A is the first letter of the Apache Web server, P is PHP and P is Perl. The version for MacOS, Windows, Linux and Solaris can be found at apachefriends and downloaded in a convenient extension for the corresponding operating system.

4.4.1 Apache

Apache is an HTTP server with high reliability and flexibility; HTTP server should be understood as software for processing HTTP requests. Apache's main job is processing and responding to HTTP requests and generating dynamic page content.

Flexibility is achieved by using the .htaccess file, through which you can override the Apache global settings. It looks like this. Apache has its global settings, but when accessing a site, it searches for the .htaccess file, reads directives from it, and applies them, rather than global ones. Usually, the .htaccess file lies in the root of the site, and determines the server settings for the entire site, but it can also be located in any internal site directory, thus defining the server settings for this particular directory. Webmasters use this file for setting up redirects, error handling, security, access, encoding, etc.

4.4.2 Perl

The word Perl is an abbreviation for the expression Practical Extraction and Report Language. Perl was designed by Larry Wall (Larry Wall) in 1986. Perl has become a programming language that combines text file processing, report generation, system problem solving and low-level programming available in C. It still continues to evolve intensively through the development of packages that implement new language applications to evolving information technologies.

4.5 MySQL

MySQL is one of the most popular and most popular database management system on the Internet. It is not designed to work with large amounts of information, but its application is ideal for Internet sites, both small and large enough. MySQL will have good speed, reliability and flexibility. Working with her, as a rule, does not cause great difficulties. MySQL server support is automatically included in the PHP package.

CONCLUSION

The electronic library is an ordered collection of heterogeneous electronic documents (including books) equipped with navigation and search tools. It can be a website where various texts (mostly literary, but also any other, including computer programs) and media files, each of which is self-sufficient and can be claimed by the reader, gradually accumulate.

Undoubtedly, electronic resources owe their popularity not only to general processes of informatization, they have a number of significant advantages in comparison with traditional libraries:

The user receives information regardless of the time and location - his or the library.

The efficiency of providing users with the necessary literature, documents and data significantly increases.

The user has the ability to access heterogeneous electronic resources.

The use of machine-readable copies prevents the deterioration of the original documents.

Facilitates the implementation of new forms of library and information services for users, including services for the visually impaired and people with disabilities in connection with diseases of the musculoskeletal system.

Documents available in libraries in limited quantities are made available to a much larger number of users.

Working with digital electronic documents can go far beyond just reading a text or viewing an image. Fragments of the source data can be used in the work, combining, adding and editing materials. Fast and high-quality search for specific document fragments, its semantic analysis and other types of software processing are possible.

Achieved savings in space and space compared with the usual library. Whole meaning of electronic libraries is to make everyday life easier for all humans across the world.

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Appendix A

PHP connection to Database

```
<?php

 $db=mysqli_connect("localhost","root","","library");
                                /* server name, username, passwor, database name */
?>

<?php
  session_start();
?>
<!DOCTYPE html>
<html>
<head>
 <title>
 </title>
   <link rel="stylesheet" type="text/css" href="style.css">
   <meta charset="utf-8">
   <meta name="viewport" content="width=device-width, initial-scale=1">
         <link rel="stylesheet" href="bootstrap/css/bootstrap.min.css">
</head>
<body>
    <nav class="navbar navbar-inverse">
     <div class="container-fluid">
        <div class="navbar-header">
          <a class="navbar-brand active">ONLINE LIBRARY MANAGEMENT
SYSTEM</a>
        </div>
        <ul class="nav navbar-nav">
          <li><a href="index.php">HOME</a></li>
          <li><a href="books.php">BOOKS</a></li>
          <li><a href="feedback.php">FEEDBACK</a></li>
        </ul>
        <?php
          if(isset($_SESSION['login_user']))
          {?>
            <ul class="nav navbar-nav">
              <li><a href="profile.php">PROFILE</a></li>
              <li><a href="student.php">
                STUDENT-INFORMATION
```

Appendix A continue

```
                    </a></li>
                   </ul>
                   <ul class="nav navbar-nav navbar-right">
                    <li><a href="profile.php">
                     <div style="color: white">
                      <?php
                       echo "<img class='img-circle profile_img' height=30 width=30
src='images/".$_SESSION['pic']."'>";
                       echo " ".$_SESSION['login_user'];
                      ?>
                     </div>
                    </a></li>
                    <li><a href="logout.php"><span class="glyphicon glyphicon-log-
out"> LOGOUT</span></a></li>

                    </ul>
                  <?php
                 }
                 else
                 {   ?>
                  <ul class="nav navbar-nav navbar-right">

                    <li><a href="admin_login.php"><span class="glyphicon glyphicon-
log-in"> LOGIN</span></a></li>

                    <li><a href="registration.php"><span class="glyphicon glyphicon-
user"> SIGN UP</span></a></li>
                   </ul>
                    <?php
                 }
                ?>
              </div>
             </nav>
        </body>
        </html>
```

Appendix B

Created database

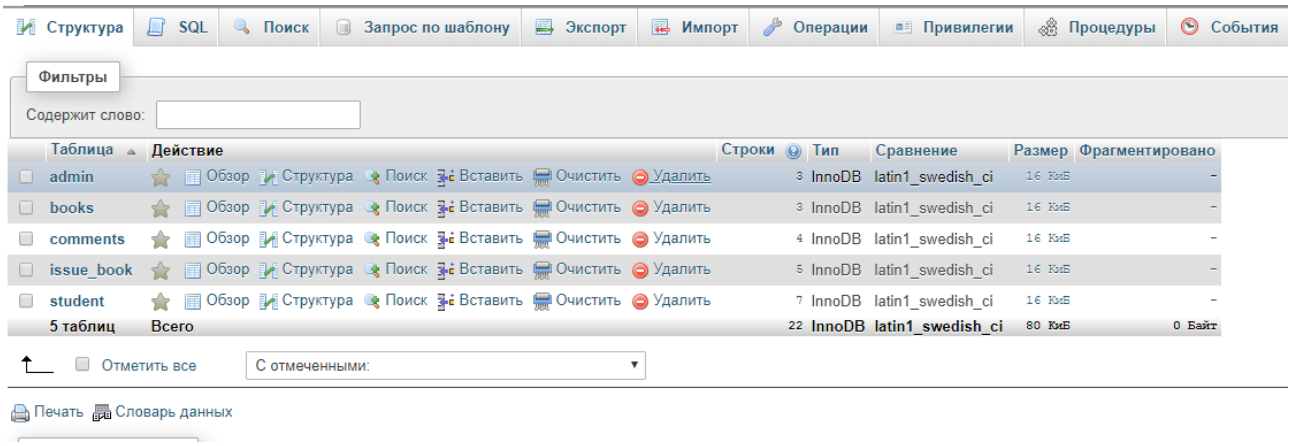


Figure B.1-Database tables

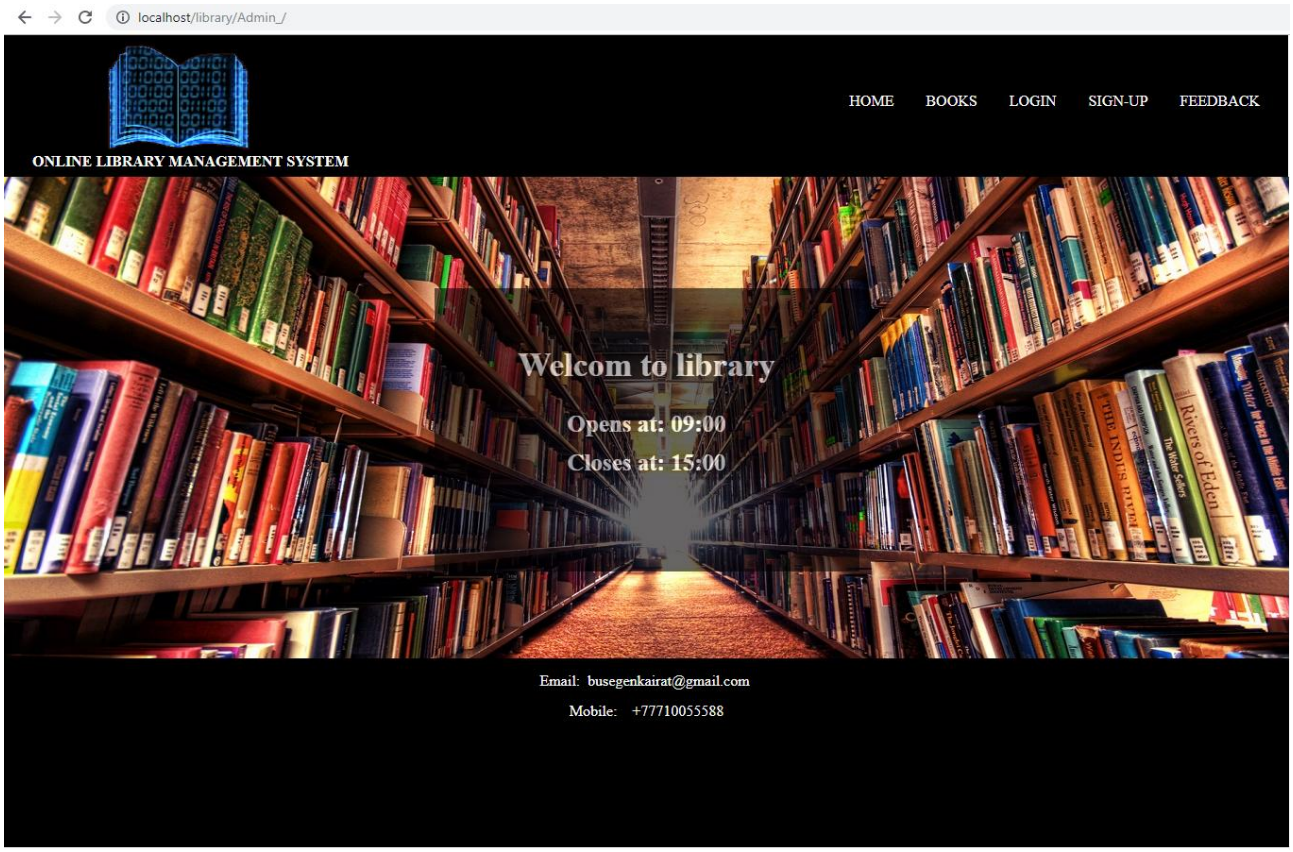
Appendix C

PHP and CSS files of work

a.php	28.02.2019 7:01	Файл "PHP"	1 КБ
add.php	28.02.2019 7:01	Файл "PHP"	5 КБ
admin_login.php	28.02.2019 7:01	Файл "PHP"	3 КБ
approve.php	28.02.2019 7:01	Файл "PHP"	5 КБ
books.php	12.05.2019 11:22	Файл "PHP"	7 КБ
connection.php	28.02.2019 7:01	Файл "PHP"	1 КБ
expired.php	28.02.2019 7:01	Файл "PHP"	6 КБ
feedback.php	28.02.2019 7:01	Файл "PHP"	3 КБ
footer.php	12.05.2019 11:15	Файл "PHP"	2 КБ
index.php	28.02.2019 7:01	Файл "PHP"	2 КБ
issue_info.php	28.02.2019 7:01	Файл "PHP"	6 КБ
logout.php	28.02.2019 7:01	Файл "PHP"	1 КБ
navbar.php	28.02.2019 7:01	Файл "PHP"	3 КБ
profile.php	28.02.2019 7:01	Файл "PHP"	3 КБ
registration.php	28.02.2019 7:01	Файл "PHP"	3 КБ
request.php	28.02.2019 7:01	Файл "PHP"	6 КБ
sidenav.php	28.02.2019 7:01	Файл "PHP"	2 КБ
student.php	28.02.2019 7:01	Файл "PHP"	6 КБ
style	28.02.2019 7:01	CSS-документ	4 КБ
update_password.php	28.02.2019 7:01	Файл "PHP"	2 КБ

Figure C.1-PHP command files

Appendix D



Web-site

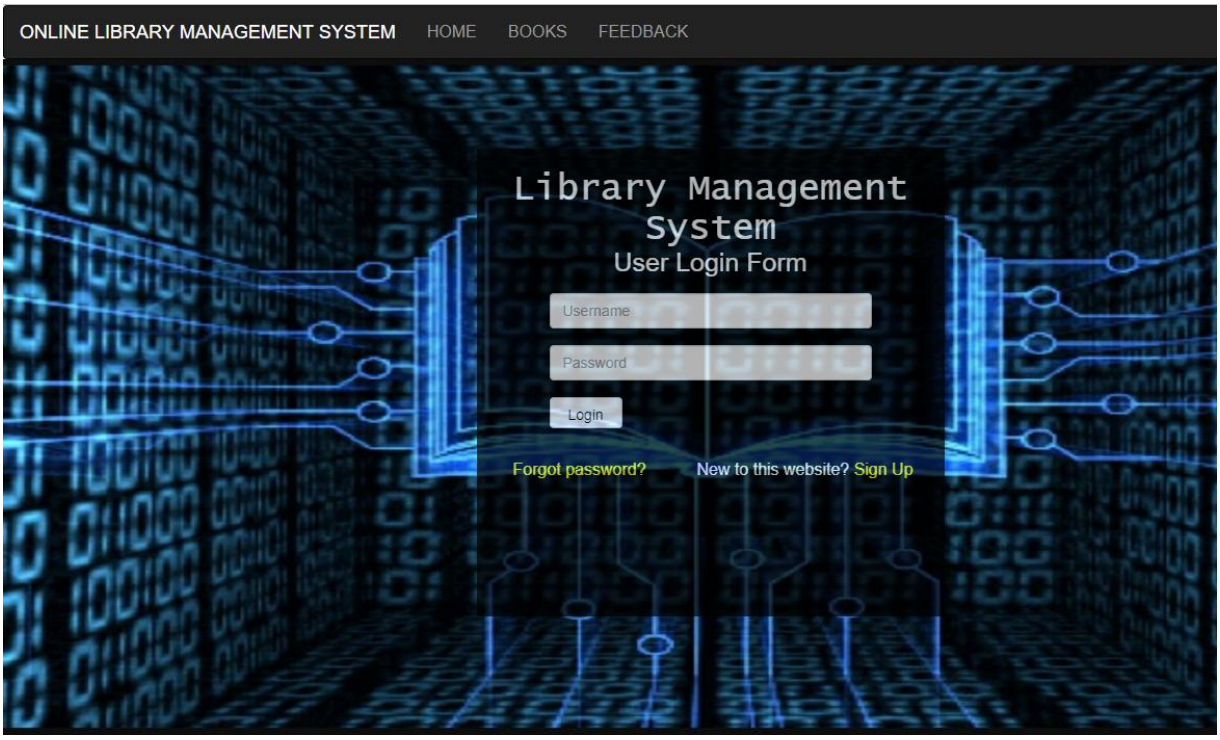


Figure D.1-Landing page

Figure D.2- Login page