DESIGN AND IMPLEMENTATION OF A DIGITAL LIBRARY SYSTEM IMPROVING INFORMATION QUALITY

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PROJECT REPORT SUBMITTED TO THE DEPARTMENT OF COMPUTER SCIENCE, FACULTY OF PHYSICAL SCIENCE, UNIVERSITY OF BENIN, EDO STATE, NIGERIA. IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF BACHELOR OF SCIENCE (B.Sc.) DEGREE IN COMPUTER SCIENCE.

SEPTEMBER, 2023

CERTIFICATION

This is to certify that this project work was carried out by Akhiotu Ebeosetale Mitchel with the matriculation number PSC1808771 of the Department of Computer Science, University of Benin, under my supervision and it is adequate in scope and content for the award of Bachelor of Science (B.Sc.) degree in computer science of the University of Benin.

PROF. (MRS.) V.I. OSUBOR	**Date**
Project Supervisor	

APPROVAL

This project is hereby approved by the department of computer science in partial fulfillment of the requirement for the award of Bachelor of Science Degree (B.Sc.) in Computer Science of the University of Benin, Benin City, Nigeria.

PROF. (MRS.) V.I. OSUBOR	**Date**
Project Supervisor	

PROF. (MRS.) A.O. EGWALI	**Date**
Head of Department	

DEDICATION

I dedicate this work to God, for giving me the strength and guidance to properly carry out and complete the work and also for his protection throughout my time in the University of Benin.

This work is also dedicated to my parents Mr and Mrs Akhiotu, for making this journey as possibly easy as they could, for encouraging me and guiding me.

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I would like to take this opportunity to express my sincere gratitude to all those who have supported me during the course of this project.

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ABSTRACT

The idea of a library has moved beyond the physical world and found a new home in the increasingly digital era. The developing environment of digital libraries and their significant influence on knowledge transmission, preservation, and accessibility are explored in this abstract. Digital libraries act as repositories for enormous and varied informational collections, encompassing anything from scientific research and classic literature to multimedia archives and cultural heritage. They enable people to conveniently access information at any time and from any location, democratizing knowledge in ways that were previously unthinkable. Digital libraries also have a significant impact on the preservation of delicate and endangered artifacts, protecting cultural treasures and priceless historical records. Their comprehensive metadata systems and archiving methods make it possible to permanently preserve knowledge for future generations.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In the current digital age of the ever-shrinking interconnected world, we want to expose our students to our world via the internet. Digital Libraries are an important component for exposing our students to not only a global perspective, but also, access to the knowledge the world has to offer. Digital Libraries will give our students access to a plethora of open-source e-library forums, consisting of tens of thousands of books and other resources from around the world. Furthermore, a digital library would be an excellent way for our students to do research-based work. Our aim is to involve a lot more digital learning for educating our students. (Oluwaseun, 2019).

Traditional methods of collecting, storing, processing, and accessing information have undergone a massive transformation due to the growth of virtual libraries, digital libraries, online databases, and library and information networks. Digital technology, Internet connectivity, and physical content can now be dovetailed, resulting in a digital library. Digital libraries and the digitization of print materials can preserve resources in art and culture, education, science and technology, literature and humanities, media and entertainment, and cultural heritage and history. In India, a substantial number of libraries and information centers have initiated digital library projects including databases and e-journals, or by digitizing their own archival-valuable collections. (Singh, 2018).

(Aliu, 2017) defines a digital library, as an online database of digital objects that can include text, still images, audio, video, or other digital media formats. Objects can consist of digitized content like print or photographs, as well as original produced digital content like word processor files. In addition to

storing content, digital libraries provide means for organizing, searching, and retrieving the content contained in the collection.

Digital libraries can vary immensely in size and scope, and can be maintained by individuals or organizations. The digital content may be stored locally, or accessed remotely via computer networks. These information retrieval systems are able to exchange information with each other through connectivity and sustainability. (Rajashekhar, 2022)

It is essential to provide outstanding service in order to maintain usage and to develop a strong academic communication network that illuminates major value propositions to libraries. Services offfered and marketing support for library services provide value to library. (Pavithrabai, 2022)

Librarians have always provided a wide range of services to library patrons. The whole notion of library and library services has altered to fit the digital world as a result of the advent of ICT. In order to improve the quality of academics, research, and development, librarians have begun to utilise technology to deliver tailored services in digital format. Libraries have re-defined themselves in the digital world to meet the requirements of this current Generation , who were born digital. (Pavithrabai, 2022)

The advent of the digital library has ushered in a new age in library operations and service delivery, allowing it to effectively match the diverse information demands of its patrons while also keeping pace with the times. One of the best ways to keep up with the ever-changing digital world is by using an agile strategy that enables libraries to quickly change and deliver new services. Sharing resources and services have become easier since the rise of digital libraries(Roopa, 2015).

1.1.1 CATEGORIES OF DIGITAL LIBRARIES

Digital libraries can be categorized based on various factors and characteristics. Here are some common categories of digital libraries:

1. Institutional Repositories, National and Government Libraries: These are digital libraries maintained by educational institutions, research organizations, national or government bodies to preserve and provide access to important documents, historical records, cultural heritage, and official publications.

2. Public Libraries: Public libraries have expanded into the digital realm, offering electronic versions of books, audiobooks, periodicals, and other resources that can be accessed by the public for free or with a library membership.

3. Academic Libraries: Digital libraries associated with universities, colleges, and academic institutions often provide access to a wide range of digital resources, including e-books, e-journals, databases, and multimedia materials.

4. Open Access Repositories: Digital libraries that offer free and unrestricted access to scholarly articles, research papers, and other academic resources fall under the category of open access repositories.

5. Digital Archives: Archives preserve historical documents, photographs, audio recordings, videos, and other valuable materials in digital formats for future generations and researchers.

1.2 MOTIVATION

Motivation for designing a digital library stems from the need to address several key challenges faced by traditional libraries. Firstly, a digital library enhances accessibility by eliminating physical barriers. Users can access resources remotely, transcending geographical boundaries and making information

available to individuals who may not have access to physical libraries. Secondly, a digital library allows for greater scalability and preservation of resources. Unlike physical materials, digital resources can be easily replicated and stored securely, ensuring their long-term availability. Lastly, a digital library facilitates efficient searching and browsing of resources through powerful search algorithms and metadata tagging, saving users' time and effort in locating relevant information.

1.3 STATEMENT OF PROBLEM

Books, recommended texts or Materials, Lesson Notes, Projects, Seminars and past examination questions to the different courses for different levels in the every Department can be difficult to come by, and when found, it is either too old and not clear or Outdated and no longer useful. Students face difficulties in finding the right texts to read, the right formats to use when preparing a seminar or writing a Project and also the Areas of Concentration to focus on while preparing for examination. A digital library containing Books, recommended materials, past and present lesson notes, projects, Seminars and past examination questions would aid students greatly. The Digital library which will be designed in this research work for students is a more efficient platform where these Study Materials will be kept for easy accessibility.

1.4 AIM AND OBJECTIVES OF THE STUDY

The aim of the digital library is to assist users by meeting their needs and requirements for managing, accessing, and manipulating the variety of information held in the collection of materials representing library collections. It aims to provide students with access to rare and out-of-print materials that may be difficult or impossible to find in physical libraries. Digital libraries also offer a variety of search and sorting functions, as well as social media-like features that allow users to connect with others to discuss topics.

The objectives are:

- To design a digital library is to create an efficient and effective system for managing and disseminating information.
- To provide access to materials that would otherwise fall to degradation from repeated use.
- To facilitate easy access to a vast range of digital resources, including books, journals, articles, audiovisual materials, and more.
- By digitizing and centralizing these resources, a digital library enables users to access information anytime, anywhere, and from any device with an internet connection.

1.5 SIGNIFICANCE OF THE STUDY

The significance of studying and designing a digital library lies in its potential to revolutionize access to information and knowledge. In the digital age, traditional libraries face challenges such as limited physical space, geographical constraints, and the time-consuming process of finding and retrieving information. A digital library overcomes these limitations by providing a platform for storing, organizing, and retrieving digital resources in a user-friendly manner.

1.6 SCOPE OF THE STUDY

The focus of this work will be on creating a digital library that contains books, recommended texts or materials, lesson notes, projects, seminars and past examination questions for students in the University of Benin. The System will be a website developed by using HTML, CSS, JavaScript and PHP.

1.7 RESEARCH METHODOLOGY

The methodology for designing a digital library involves several key steps.

Data Collection and Analysis : First, there is a need for thorough requirements gathering and analysis, which includes understanding the needs of the users and the types of resources that will be included in the library. This step helps in determining the scope and features of the digital library system.

Dataflow and Infrastructure: Next, a suitable technological infrastructure needs to be chosen, considering factors such as storage capacity, scalability, security, and user interface design.

Once the infrastructure is in place, the digital library requires an efficient system for organizing and categorizing resources. This typically involves creating metadata for each item, which includes information such as title, author, subject, keywords, and other relevant details.

Testing, Maintenance and Feedbacks: Usability testing and continuous user feedback are integral parts of the design process. This helps in identifying any issues or areas for improvement and ensures that the digital library meets the needs of its intended users.

Regular updates and maintenance are also essential to keep the system secure, up-to-date, and in line with evolving technological standards.

1.8 LIMITATIONS OF THE STUDY

Building a digital library offers numerous advantages, such as increased accessibility, searchability, and preservation of information. However, like any other technology, it also comes with its limitations. Some of the key limitations of building a digital library include:

- This proposed system may not take audio and video collections.

- Not everyone has equal access to the internet or digital devices, leading to a digital divide between those who can access the digital library and those who cannot. This can result in unequal access to information, which may exacerbate existing social and economic disparities.
- Digital formats and technologies evolve rapidly, leading to the risk of data becoming obsolete or inaccessible over time. Constant updates and migration to newer formats are necessary to ensure data longevity.

CHAPTER TWO

LITERATURE REVIEW

2.1 HISTORY OF DIGITAL LIBRARY

The digital library concept can be traced back to the famous papers of foreseer scientists like Vannevar Bush and J.C.R. Licklider identifying and pursuing the goal of innovative technologies and approaches toward knowledge sharing as fundamental instruments for progress. Bush devised "a device in which an individual stores all his books, records, and communications, and which is mechanized so that it may be consulted with exceeding speed and flexibility." Of course, he envisaged also support for knowledge discovery ("provision for consultation of the record by the usual scheme of indexing"), access ("to consult a certain book, he taps its code on the keyboard, and the title page of the book promptly appears before him") and management ("new forms of encyclopedias will appear, ready made with a mesh of associative trails running through them, ready to be dropped into the memex and there amplified"). Licklider realized that computers were getting to be powerful enough to support the type of automated library systems that Bush had described and in 1965, wrote his book about how a computer could provide an automated library with simultaneous remote use by many different people through access to a common database. Because of this, Licklider is also considered a pioneer of Internet and in its book he established the connection between Internet and digital library. (Bharat and Rahul, 2020).

Thus, it is not surprising that research and development activity on digital libraries started in the early 1990s, with the Internet proliferation, and that Internet has created unprecedented possibilities to discover and deliver human knowledge.

The first digital library that came into existence was Project Gutanberg (PG). Project Gutenberg is a volunteer effort to digitize and archive cultural works, to encourage the creation and distribution of electronic books . Most of the items in PG collections are full text of public domain books. The project tried to make these resources as free as possible in a form that can be downloaded and used by any computer. To encourage the creation and distribution of eBooks. Its mission is, as much as possible, to encourage all those who are interested in making eBooks and helping to give them away. In fact, Project Gutenberg approves about 99% of all requests from those who would like to make our eBooks and give them away, within their various local copyright limitations. Project Gutenberg is powered by ideas, ideals and by idealism. (Jalobeanu, 2014)

However, the emergence and development of digital libraries at this stage are driven by two main forces. First, digital technological development, especially in multimedia and networking, offered more-efficient and sometimes new ways in information processing and management. Secondly, people wanted to better share important information like library materials, scientific in educational and research materials.

Most early “digital libraries” were various types of digital collection and information system. Personal information resources, work-group and organizational information collections and collaboration environment are some examples. Edward Fox in his book “Digital Libraries Overview” offered a detected account of some early projects in the field, according to his timeline, electronic thesis started as early as 1987. Libraries were also working towards this direction. Many libraries started to replace their card catalog with OPAC systems, and were beginning to store abstracts and periodicals on CD-ROMs. (Asif and Singh, 2018)

In 1989, the World Wide Web project was first proposed and since mid 1993, it quickly grew at an exponential rate. User could browse and set up a node on the network to use information on it. It was

called by some people the beginning of a true digital library. But the web is a library without a catalog, and many search tools or services were crude at the early stage. The term digital libraries was first popularized by the NSF/DARPA/NASA Digital Libraries Initiative in 1994**. (**Bharat and Rahul, 2020).

2.2 BENEFITS OF MODERNIZING DIGITAL LIBRARY SERVICES

Make a Wide Variety of Content Access

The conventional libraries lack the flexibility to include a wide variety of content due to constraints related to physical space. But the digital libraries store a wide range of content – eBooks, magazines, articles, blogs, papers, videos, podcasts, and audiobooks – in a virtual environment. The sophisticated digital libraries these days store the resources in the cloud to make the content available for their users anytime and anywhere.

E-Resource Management in the Libraries

Electronic resource management (ERM) is the practices and techniques used by librarians and library staff to track the selection, subscription, licensing, access, maintenance, usage, evaluation, retention, and rectification of library's electronic information resources. These resources include electronic journals, electronic books, digital media, research databases, CDROMs, and computer software etc. There are two types of e-resources in the library, subscription based and open access. (Asif and Singh,2018).

Latest and updated

Large universities libraries and small libraries sometimes lack adequate resources to purchase new and latest books, magazines, and other content resources. But your university can update the digital library

regularly. Many publishers these days allow digital libraries to make the latest editions and magazines accessible to the readers based on the pay-as-you-read model. Hence, your digital library will engage readers by providing access to the latest publications.

Allow Readers to Access Materials on Demand

The physical books are still more popular than eBooks. But the number of people reading books the digital format has been increasing consistently. The younger readers opt for digital versions of books to read the content anytime and anywhere. Also, they can access the eBooks anytime and anywhere using their mobile devices. Unlike conventional libraries, digital libraries enable readers to access digital resources over the internet using any device like computers, mobile devices, or tablets.

Make Readers Find Resources Instantly

While visiting a conventional library, readers have to put both time and effort to find the right book. Also, fetching relevant information from the physical book takes time. But the digital libraries are designed with built-in search options. Many digital libraries even speed up the content search by leveraging popular search engines like Google, Bing, and Yahoo. That is why; the readers can find the required information instantly. Also, they can use the search option to find and sort digital resources by simply entering relevant words and phrases.

No Opening or Closing Hours

To visit a conventional library, the readers have to check the opening and closing hours and then plan accordingly. They lack the option to access library resources at their convenience. But the digital libraries enable readers to read eBooks, listen to audiobooks, and watch videos 24 hours a day. The readers can access and read the library materials in digital format anytime and anywhere using their

preferred devices. Many readers these days prefer digital libraries to conventional libraries to access the content at their own pace and convenience.

Multiple and Simultaneous Access

While visiting a conventional library, multiple readers cannot read the same book simultaneously. They have to wait for the other reader to return the book. But multiple readers can access the same books, videos, and audio books simultaneously in a digital environment. Many institutions these days set up digital libraries to make a large number of students access the same book simultaneously from varying locations.

Library Management Automation

The digital libraries have converted librarians into cybrarians through automation of routine library services – indexing, issuing, tracking, and preservations. The librarians are no longer required to organize and manage the library resources logically and organizationally. The library management software comes with built-in features to automate library management end-to-end. Automation encourages many institutions and enterprises to set up digital libraries easily.

Real-Time Interactions

The new-age library management software these days comes with features to facilitate interaction between readers and administrators. Also, many software solutions facilitate reader interaction by setting up online communities. These real-time interaction options help readers to collect additional or specific information about a book or article in a few seconds. The dynamic and real-time interaction makes many readers switch from conventional libraries to digital libraries.

Eliminate Deterioration of Resources

The conventional libraries have to invest in the preservation and conservation of library resources. As the physical library resources are accessed and reused by readers regularly, librarians find it difficult to prevent the deterioration of books, vinyl records, cassette tapes, and other resources. Many organizations digitize their libraries to make the digital resources accessible to a large number of readers regularly without focusing on the preservation of physical materials.

Preserve Knowledge for the Future Generation

The physical storage devices like CDs, DVDs, and cassette tapes are prone to destruction and loss. There are many instances when conventional libraries failed to preserve valuable researches, studies, and content due to the vulnerability of physical storage options. The digital libraries these days store resources in the cloud. Also, they implement elaborate security measures to keep the content accessible only to genuine readers. That is why; digital libraries store valuable researches and studies for future generations.

System Quality

System quality affects the perception of users of the performance of a Digital library in knowledge assortment and delivery . In the development of information systems, the quality cycle of the systems is a strong determinant for user satisfaction in various contexts. Accessibility, accuracy, reliability, and quality are the key attributes of Digital library‘s performance measurement systems . Quality, accessibility, and consistency ensure the Digital library requires remote access to the infrastructure to access information wherever and whenever. This also ensures that the Digital library is accurate and functionally usable over time. (Agrey et al. ,2021).

2.3 CHALLENGES OF DIGITAL LIBRARY IN NIGERIA

The challenges and prospects of library in Nigeria especially the universities are enormous. Most university libraries in Nigeria are in a deplorable state due to inadequate funding. This manifests in libraries having few current books, journals and other reading resources, staff shortages, deterioration of facilities, inadequate equipment and even library buildings. Such situations are not conducive environment for reading. The digital library project has the capacity of solving this problem. In this period of information explosion, there is the need for university libraries in Nigeria to use appropriate technology to access the world information in other to enable universities carryout their traditional functions of teaching, research and public service effectively and efficient.

Digital library is being introduced to the library system worldwide. The industrialized world is creating digital libraries because of the high value placed on the availability of information. The increasing acceptance of digital library might be due to the diverse information that they contain, the options for what they can include are virtually endless, as well as becoming more and more boundless as technology advances.

2.4 CONCEPTUAL ISSUES

A library is an organized collection of items which may be in form of books, journals, videos, CD-ROM etc, along with the services required to make them available to a given user group or groups. It can also be referred to as a place to get information and to get help information. The "place" can be physical, virtual/digital or a combination of both.

The digital library can be referred to as a child of necessity arising from the need to use technologies in accessing the world information. There is a need to access information globally through the internet because we are now in the period of information explosion. In order for the universities in the world in

general and Nigeria in particular to function effectively and efficiently, it is necessary to have a digital library system.

2.5 FEATURES OF DIGITAL LIBRARIES

The advantages of digital libraries as a means of easily and rapidly accessing books, archives and images of various types are now widely recognized by commercial interests and public bodies alike.

Traditional libraries are limited by storage space; digital libraries have the potential to store much more information, simply because digital information requires very little physical space to contain it. As such, the cost of maintaining a digital library can be much lower than that of a traditional library. A physical library must spend large sums of money paying for staff, book maintenance, rent, and additional books. Digital libraries may reduce or, in some instances, do away with these fees. Both types of library require cataloging input to allow users to locate and retrieve material. Digital libraries may be more willing to adopt innovations in technology providing users with improvements in electronic and audio book technology as well as presenting new forms of communication such as wikis and blogs; conventional libraries may consider that providing online access to their OP AC catalog is sufficient. Singh, S. (2018). provides the features:

- No physical boundary. The user of a digital library need not to go to the library physically; people from all over the world can gain access to the same information, as long as an Internet connection is available.
- Round the clock availability A major advantage of digital libraries is that people can gain access 24/7 to the information.
- Multiple access. The same resources can be used simultaneously by a number of institutions and patrons. This may not be the case for copyrighted material: a library may

have a license for "lending out" only one copy at a time; this is achieved with a system of digital rights management where a resource can become inaccessible after expiration of the lending period or after the lender chooses to make it inaccessible (equivalent to returning the resource).

- Information retrieval. The user is able to use any search term (word, phrase, title, name, subject) to search the entire collection. Digital libraries can provide very user-friendly interfaces, giving click able access to its resources.
- Preservation and conservation. Digitization is not a long-term preservation solution for physical collections, but does succeed in providing access copies for materials that would otherwise fall to degradation from repeated use. Digitized collections and born-digital objects pose many preservation and conservation concerns that analog materials do not. Please see the following "Problems" section of this page for examples.
- Space. Whereas traditional libraries are limited by storage space, digital libraries have the potential to store much more information, simply because digital information requires very little physical space to contain them and media storage technologies are more affordable than ever before.
- Added value. Certain characteristics of objects, primarily the quality of images, may be improved. Digitization can enhance legibility and remove visible flaws such as stains and discoloration.
- Easily accessible.

2.6 COPYRIGHT AND LICENSING

Digital libraries are hampered by copyright law because, unlike with traditional printed works, the laws of digital copyright are still being formed. The republication of material on the web by libraries may require permission from rights holders, and there is a conflict of interest between libraries and the publishers who may wish to create online versions of their acquired content for commercial purposes. In 2010, it was estimated that twenty-three percent of books in existence were created before 1923 and thus out of copyright. Of those printed after this date, only five percent were still in print as of 2010. Thus, approximately seventy-two percent of books were not available to the public.

There is a dilution of responsibility that occurs as a result of the distributed nature of digital resources. Complex intellectual property matters may become involved since digital material is not always owned by a library. The content is, in many cases, public domain or self-generated content only. Some digital libraries, such as Project Gutenberg, work to digitize out-of-copyright works and make them freely available to the public. An estimate of the number of distinct books still existent in library catalog from 2000 BC to 1960, has been made.

2.7 NEGATIVE ASPECTS OF ONLINE LIBRARIES

(Bharat and Rahul, 2020). Unfortunately, digital libraries, or at least their digital collections, have brought with them their own issues and difficulties in things like

- User identification for collections access
- Copyright
- digital preservation
- equity of access

- interface design
- interoperability between systems and software
- information organization
- ineffective or nonexistent taxonomy practices (especially with historical material)
- training and development, quality of metadata
- the astronomical cost of constructing and maintaining the terabytes of storage, servers, and redundancies required for a functional digital collection are just a few of the issues that need to be addressed. Numerous large-scale digitalization projects are now being perpetuate these problems.

CHAPTER THREE

SYSTEM ANALYSIS

3.1 SYSTEM ANALYSIS

Systems analysis is the process by which a person (or people) study a system in order to assess, model, and select a logical alternative for an information system.

It is a technique for solving problems that makes the system better and makes sure that all of its parts function effectively to serve their intended purposes.

In system analysis and design, a number of approaches are employed, including:

i. Methodology for Object-Oriented System Analysis and Design
ii. Methodology for Structured System Analysis and Design

The Object-Oriented System Analysis and Design (OOSAD) Methodology was used for this project's work. During the software development process, object-oriented principles and visual modeling are applied to analyze and design an application or system. The main aim is *improve the quality and productivity of system analysis and design by making it more* usable.

3.2 ANALYSIS OF THE EXISTING SYSTEM

The General University Library, which includes the John Harris Library (The Main Library), the library extension, faculty libraries, and the Ekehuan campus library, is the current existing system. The library has more than 212,000 book volumes covering all of the university's academic fields as well as other branches of human knowledge. Pamphlets, non-book materials, microfilms, audio-visual materials, etc. are also widely available (Aliu, 2017). Additionally, it includes books and other materials connected to the discipline of computer science and other courses. These books range in age from ancient to modern. Some courses, like Computer science, evolve quickly over time, making some of the books in the current system out of date and potentially useless today. They have also been there for a long time. and have been used by a lot of people. These materials are vulnerable to deterioration. To participate and fully understand classes, students must obtain recommended texts, lesson notes, and other related materials. However, some of these materials can be expensive or difficult to locate, making them unavailable to students who lack the necessary financial resources. The past questions are difficult to find and not included in the current system. The past questions are difficult to find and not included in the current system.

3.3 CONSTRAINTS WITH THE EXISTING SYSTEM

a) It is difficult to find lesson notes and course related materials.

b) Materials are subject to wear and tear overtime.

c) It is difficult to get past questions.

d) There is a rapid growth of resources and it can not updated regularly

e) they are limited and outdated.

3.4 ANALYSIS OF PROPOSED SYSTEM

The proposed system is called DigiLib. It is a website that would contain Lesson notes, related materials and past questions for the different courses in Computer Science and other courses. (Full time)

The proposed system will allow students to upload materials and lesson notes for different courses, give them an interface to access the books on their devices.

The proposed system will be web based, therefore it can be accessed by any device that has access to the world wide web e.g phones, laptops, etc. from anywhere and at anytime. It will provide a catalog of documents and texts that it is easy to access.

Data for the proposed system was gathered by interviewing some students to find out how they get materials, past questions and Lesson Notes and discovered that some shops in the various Faculty

Complex, get these documents from students and make photocopies for them.

This proposed system will solve some of the problems with the existing system;

a) It will help Students have access to Books, lesson notes and materials related to their course without stress.

b) It will provide Students with Past questions, which will help them prepare properly for their exams.

c) It will aid Final year Students have access to Project and Seminar Formats.

System analysis for a digital library involves studying and understanding the requirements, functionalities, and components of the system to design an efficient and effective solution. Here's a comprehensive system analysis for the proposed system:

1. Requirements Gathering:

   a) Understand the needs and objectives of the digital library.

   b) Gather requirements from stakeholders, including users, librarians, and administrators.

2. User and Content Analysis:

   a) Identify the different types of users (students, researchers, general public, etc.)

   b) Consider user experience (UX) and design an intuitive and user-friendly interface.

   c) Identify the types of digital resources to be included in the library (e.g., books, journals, articles, videos, etc.).

   d) Analyze the metadata required for each resource (e.g., title, author, subject, keywords).

3. Technology and Infrastructure:

   a) Assess the required technology stack (e.g., web servers, database management systems, programming languages).

   b) Plan the infrastructure for hosting and maintaining the digital library.

   c) Design a database schema to store digital resources and associated metadata.

4. User Authentication and Authorization:

   a) Develop a secure user authentication system to protect user accounts.

   b) Implement role-based access control to manage user privileges.

5. User Account Management

   a) Provide users with the ability to create accounts, manage profiles, and set preferences.

6. Access Control and Copyright Management:

a) Manage access and provide free and open-access resources where applicable

7. Testing, Documentation and Maintenance

a) Plan for ongoing maintenance, bug fixes, and updates to keep the system running smoothly.

b) Create detailed documentation for the digital library system, including user guides and developer documentation.

3.4.1 COMPONENTS OF THE PROPOSED SYSTEM

A proposed digital library can bring numerous benefits, both to users and library administrators. Here are some of the key benefits:

1. Access to a Vast Collection of Resources: Digital libraries can provide access to a vast and diverse collection of digital resources, including books, articles, journals, videos, and multimedia content. This extensive collection allows users to find information on a wide range of topics conveniently.

2. 24/7 Availability and Accessibility: Digital libraries can be accessed from anywhere with an internet connection, making knowledge and information available to users regardless of their physical location. This accessibility is particularly beneficial for remote or underserved areas. Unlike traditional libraries with set operating hours, digital libraries are available 24/7. Users can access resources at their convenience, enabling flexible learning and research opportunities.

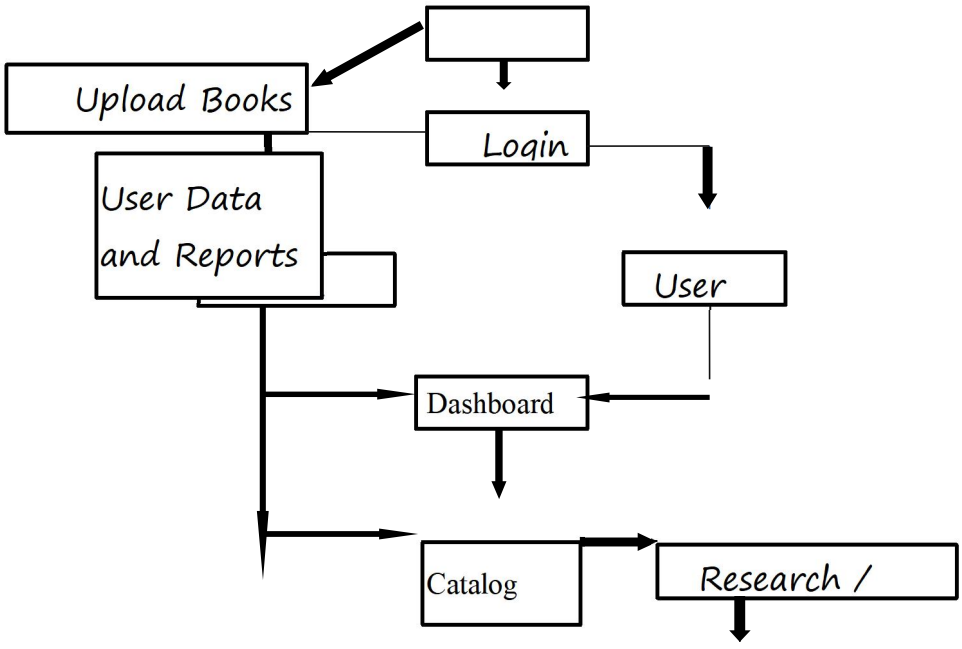
3 Cost-Effectiveness: Digital libraries can significantly reduce costs compared to maintaining physical libraries. They eliminate expenses related to physical infrastructure, maintenance, and the need for physical copies of resources.

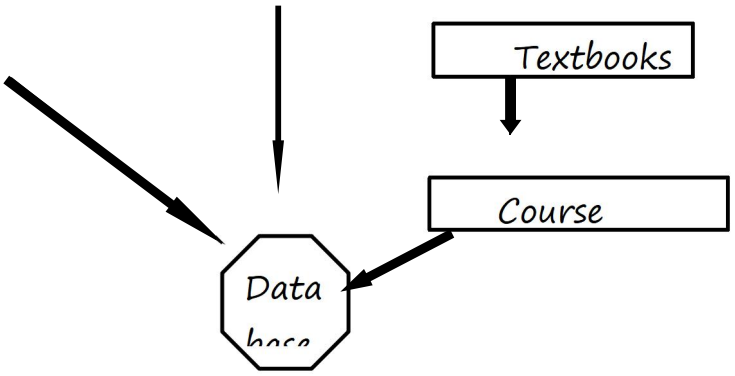
4. Preservation and Longevity: Digital libraries can ensure the preservation of valuable historical and cultural content by digitizing and archiving resources. This helps protect and make accessible rare and fragile materials.

5. Remote Learning Support: Digital libraries play a vital role in supporting remote learning, especially during times of crises or when physical access to traditional libraries is restricted.

6. Real-Time Updates: Digital libraries can quickly update content with the latest information, ensuring users have access to the most current knowledge and research.

3.4.2 PROPOSED SYSTEM ARCHITECTURE





3.5 SYSTEM DESIGN

System Design is the process of designing a system's components, including its architecture, modules, and interfaces, as well as the data that flows through it. For this project, we use System flowcharts to design the proposed system.

3.6 SYSTEM DESIGN TOOLS

System development requires the use of system design tools. Software designers employ a variety of design tools, such as:

- A data flow diagram (DFD): is a graphical depiction of the movement of data in an information system. It is frequently used as an initial stage to provide an overview of the system, which may then be expanded upon. The DFD may show the flow of stored data as well as incoming and outgoing data. It makes no mention of how data moves within a system
- Context Diagram:

  Context Diagram is a diagram that represents the actors outside a system that interact. With the system. It is useful in system design to represent external factor's interacting with the system

itself so that system requirement and constraints can be studied very easily. It is used to document the scope for a system.

- Use Case : In software and systems engineering, a use case is a list of actions or event steps, typically defining the interactions between a role (known in the Unified Modeling Language as an actor) and a system, to achieve a goal. The actor can be a human, an external system, or time.

- System Flowchart:

The system flow chart is a diagrammatic representation that shows how a system operates. Compared to a long text, the diagrammatic representation is simpler to understand. One of the main tools used by the system analyst to display an overview of the processes in an entire system is the system flow chart. It has more benefits than program flow charts that merely show data flow, displaying the order of the operation symbols.

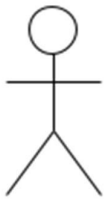
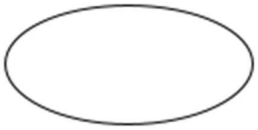
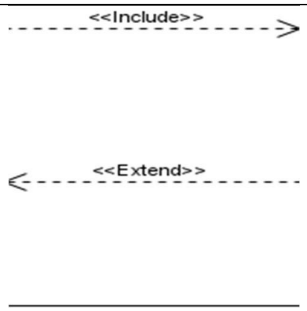
3.7 SYSTEM DESIGN TOOL: UML (Unified Modeling Language)

UML is a slandered language for specifying visualizing, constructing and a documenting the software system, as well as for business modelling. The UML is a very important part of developing object-oriented software and the software development process which is independent of particular programming language and developing process.

3.7.1 UML- USE CASE DIAGRAM ARCHITECTURE

Symbol A use case is a list of actions or event steps typically defining the interactions between a role (an actor) and a system, to achieve a goal. Simply put, it is a description of the systems behavior from

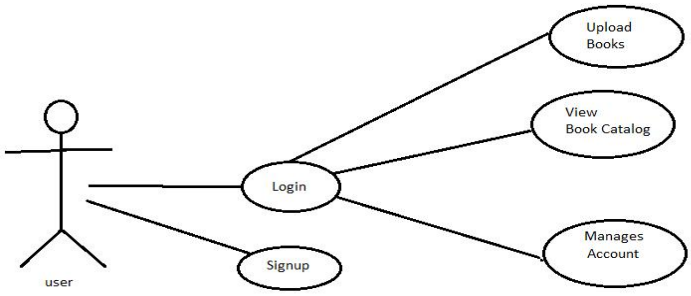
user's point of view with measurable result or value. Table 3.1 denotes use case notations for use case designs. Table 3.1: Use Case diagram notations and descriptions

Objects	Symbol	Description
Actor		They are the systems users. The actor could be a person, organization or external system. They perform a role in the system.
Use Case		Use case is a lot of steps, typically defining interactions between an actor and a system to achieve a goal.
System		A system is a rectangle spanning all the use cases in the system that defines the scope of your system. Anything within the box represents a functionality that is in scope and anything outside is not
Relationship		Illustrates the relationship between an actor and a use case with a simple line. It also illustrates the relationship between use cases (include & extend)

3.7.2 UML DESIGN – ACTIVITY DIAGRAM

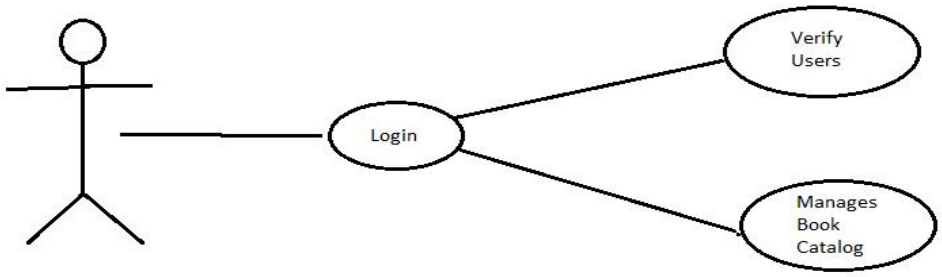
Activity diagram is used to show the flow from one operation to another. The operation is called an activity. An activity diagram is a UML diagram that focuses on execution and flow more than implementation. The flow between them can either be sequential, branched or concurrent. Table 1.0 shows the notations used in a uml activity diagram.The use case for the actors on this platform are depicted in the following diagrams below

Students: when a student is logged in as an user, he is able to access the dashboard. The sign-up page is for the registration. The page requires the user's name, email, username, number and password. When the sign-up form is done, the user is redirected to the login page to check his validation. After Login, the user goes to the homepage which displays the user's dashboard. The Dashboard give them the option to upload items, view the library catalog and manage their accounts. Figure3.9 is the use case diagram for the student.,



Use Case diagram for users

Admin: they are the staffs responsible for maintenance of the website. They handle the user data, get reports, and monitor the books coming into the catalog.



Use Case Diagram for the admin

3.8 DATABASE DESIGN

The database that will be used for the proposed system will be developed using MySQL. Tables 3.1 to 3.3 illustrates the databases of the system.

The user table structure: This table contains the details of all users, including the students and staff. It is the table that determines the page a user can access when he logs in as a particular type of user. Table 3.2 depicts the storage structure of accounts in the database.

admin

Table 3.2: Users Table

S/NO	FIELD NAME	DESCRIPTION	DATA TYPE
1	Id	Unique identification number	Int
2.	username	User username	Varchar
3	password	Unique character set	Varchar
4	firstname	First name of the user	Varchar
5	lastname	Last name of the user	Varchar
6	mobile.	User's Phone or Matric. Number	Int
7	Email	User's email	Varchar
8	Image	Link to remotely hosted image	Varchar

Admin Table Structure: This is the table that contains predetermined information about the admin. Table 3.3 describes the structure the admin data are stored in the database.

Table 3.3: Admin Table

S/NO	**FIELD NAME**	**DESCRIPTION**	**DATA TYPE**
1.	id	Unique identification number	Int
2.	username	Admin username	varchar
3	firstname	Admin first name	varchar
4	lastname	Admin last name	varchar

5	email	Admin email	varchar
6	password	Unique character set	varchar
7	mobile	Admin phone number	int

The Books Catalog structure: Table 3.4 describes the structure books, documents and reports are stored in the database.

Table 3.4: Book Catalog

S/NO	FIELD NAME	DESCRIPTION	DATA TYPE
1.	Id	Unique identification number	Int
2.	bookname	The Book or Document name	Varchar
3	bookdesc	Book Description	text
4	bookauthor	Author of the book	varchar
5	Booklang	Language used in written the book	varchar
6	Bookfile	Books or document in different format	blob

7	uploadername	The Uploader name	varchar
8	uploaderemail	The Uploader email	varchar

CHAPTER FOUR

IMPLEMENTATION AND DOCUMENTATION

System Implementation is the development, integration and testing of system components and delivery of that system into production. The chapter provides the user guide of the implementation of the system developed and its corresponding documentation.

4.1 SYSTEM REQUIREMENTS

All system needs certain components resources to function and execute effectively

basically two types of system requirement. They are:

- Hardware Requirement
- Software Requirements

4.1.1 SOFTWARE REQUIREMENTS

The software requirement necessary to implement and run the system include:

- MySQL: This is used to host the database.
- A functional Operating System e.g, Windows, Linux, etc.
- Web Browser e.g. Google Chrome, Mozilla Firefox: It's used to view the web page
- Visual Studio Code: This was the selected IDE used to create this system.
- XAMPP (PHP): Platform for running the back-end of the interface.

4.1.2 HARDWARE REQUIREMENT

The physical components of a computer, such as its CPU, RAM, monitor, mouse, keyboard, computer data storage, graphics card, sound card, speakers, and motherboard, are referred to as computer hardware.

The minimum hardware requirements for the system are:

- Input devices (mouse and keyboard)
- Available RAM of 1GB and above
- 2.0GHZ Intel Pentium IV processor and above
- A computer system

4.2 USER DOCUMENTATION – SYSTEM TESTING

System testing is a level of testing which validates the complete and fully integrated software product. The test carried out was an internal acceptance test which is based on alpha testing in which the system developer used the system as if it was being used in the intended work environment. The testing done involved:

- Registration of the users
- Sign-in of the users and admin
- Users and Staffs uploading books
- Users view of the catalog
- Admin verifying a new user
- Admin managing the book catalog
- Users searching for a book or documents

4.2.1 Implementation Languages

These are the programming languages used to achieve the goal of this project.

Front-End Languages

This consist of HTML,CSS and Javascript.

HTML: The HyperText Markup Language or HTML is the standard markup language for documents designed to be displayed in a web browser. It defines the meaning and structure of web content.

CSS: Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML .

JavaScript :It is a scripting language for creating dynamic web page content. As of 2023, 98.7% of websites use JavaScript on the client side for web page behavior,

PHP

PHP is a server scripting language, and a powerful tool for making dynamic and interactive Web pages. PHP is a general-purpose scripting language geared towards web development. It was originally created by Danish-Canadian programmer Rasmus Lerdorf in 1993 and released in 1995. The PHP reference implementation is now produced by the PHP Group.

4.2.2 Software Integrated Development Environment (IDE) and Tools

An integrated development environment (IDE) is a software suite that consolidates basic tools required to write and test software. The tools used are:

Visual Studio Code

Visual Studio Code, also commonly referred to as VS Code, is a source-code editor made by Microsoft with the Electron Framework, for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git.

XAMPP

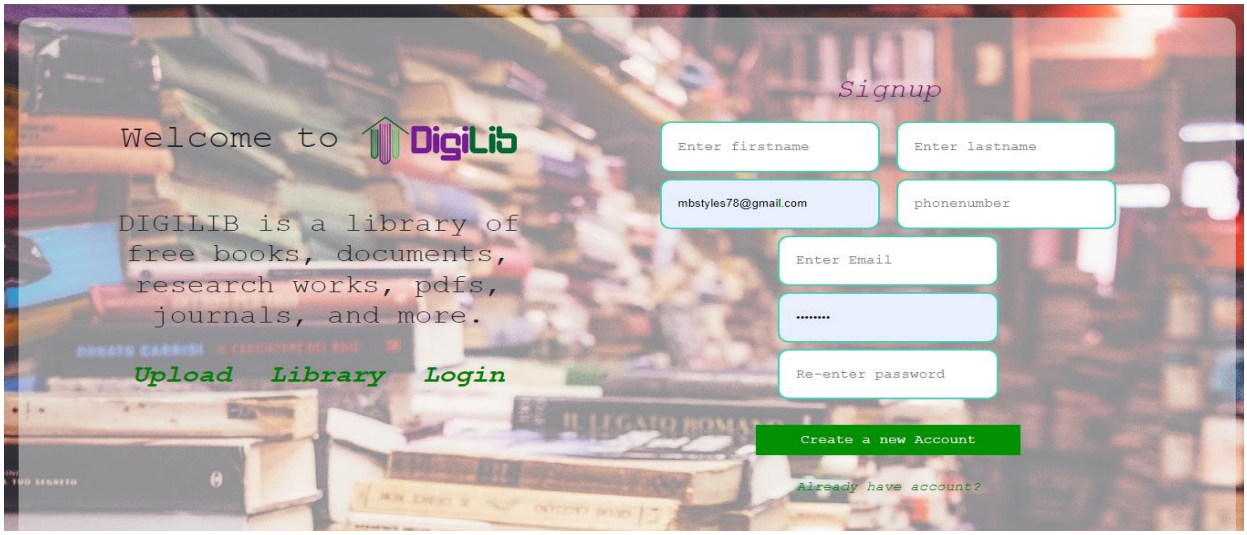
XAMPP is a free and open-source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages.

Google Chrome

Google Chrome is a cross platform web browser developed by Google. It is an open source application for accessing the world wide web and running web-based applications. It was first released in 2008 for Microsoft Windows and was later ported to Linux, macOS, iOS and Android.

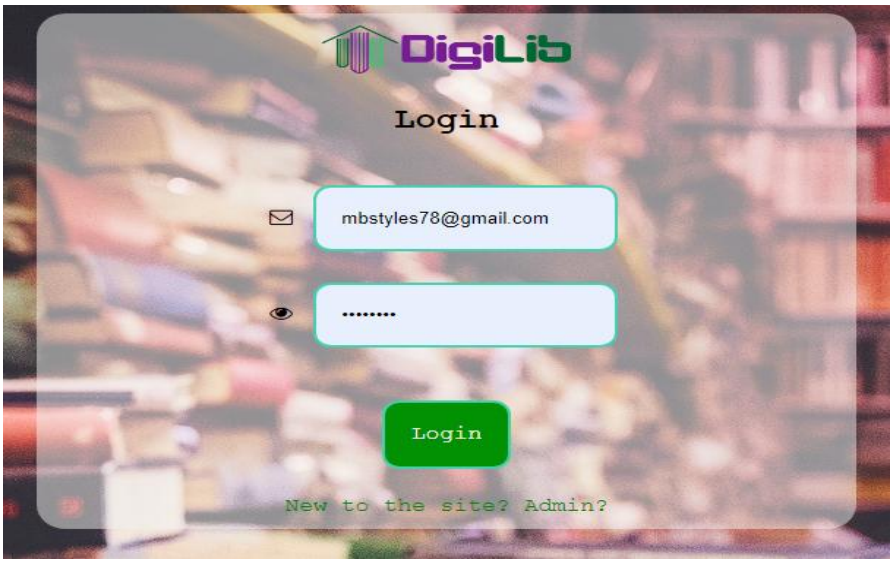
Apache

4.3 IMPLEMENTATION OF THE RUNNING SYSTEM



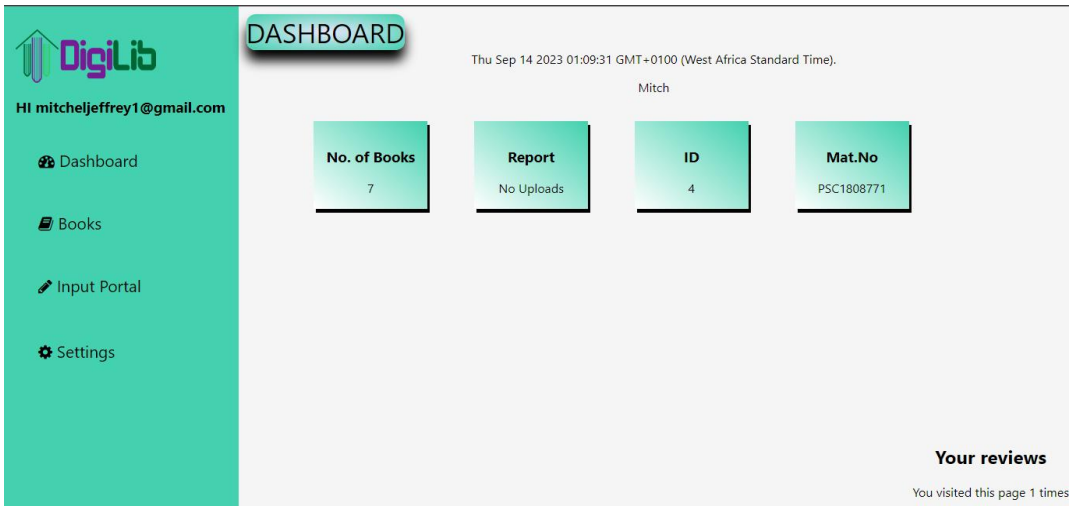
The Homepage

4.3.1 The Homepage and Signup page: this figure shows the screenshot of the digital library homepage. It contains all the various buttons for navigation through the different pages in the web application. It also provides the sign-up page for the users to register on the website.



The login page

4.3.2 The Login page: The Email field and the Password field are the two input fields that make up the Login form in the Login window. Figure 4.2 depicts this page, Additionally, a submit button is present for user inputs. This page points users to other pages based on their position in the application architecture. A person may log in as a user or an admin. The user will be taken to a page which is his or her dashboard.



The user Dashboard

4.3.3 The user page: This figure shows the screenshot of the dashboard of the user page. The User can do a variety of things in this page like viewing the catalog, upload ebooks, logout and other things available.

Admin page

4.3.4 Admin page: This figure shows a snapshot of the page that allows a admin fetch data of the users present and manage the ebooks.

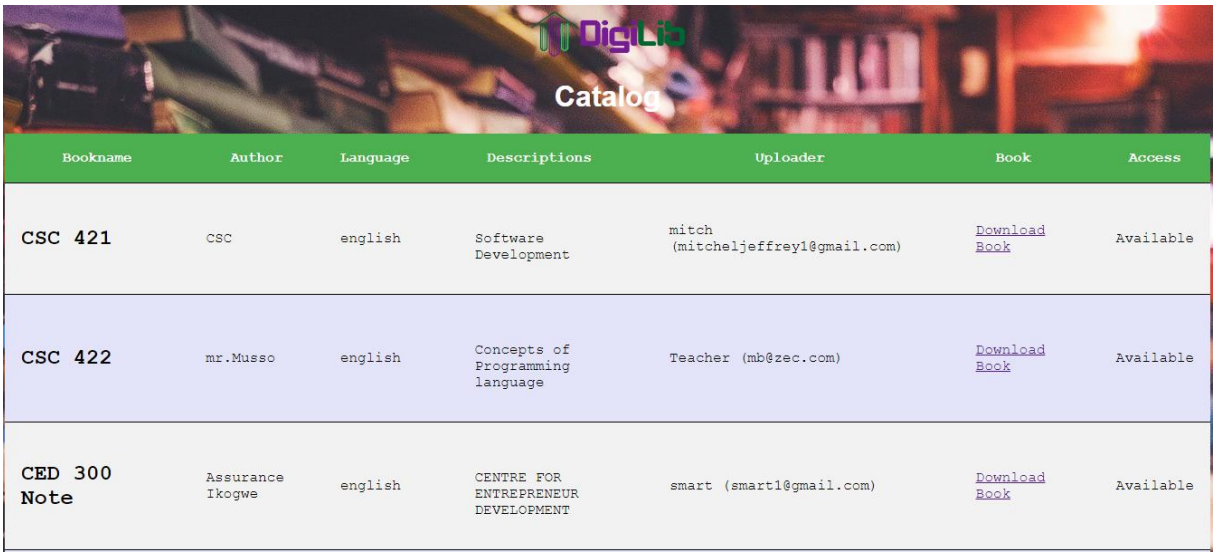


Figure 4.5 Catalog page

4.3.5 Book Catalog page: This figure shows a snapshot of the page that shows the list of books available in the library

CHAPTER 5

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 SUMMARY

This project work covered all the basic details and processes involved in designing and implementing a website for an online archive of digital items within the institution. It was designed to enable students acquire items not accessible in the traditional library and facilitate easy access to a vast range of digital resources, including books, journals, articles, audiovisual materials, and more.

The scope of this work will be on creating a digital library that contains books, recommended texts or materials, lesson notes, projects, seminars and past examination questions for students in the University of Benin.

Web Development was used to achieve this.

5.2 CONCLUSION

There will be continuing expansion of digital library activities. Digital libraries will build upon work being done in the information and data management area. Digital libraries provide an effective means to distribute learning resources to students and other users. They enable users to access content from anywhere with an internet connection, making knowledge available to a global audience. Planning a digital library requires thoughtful analysis of the organization and its users, and an acknowledgment of the cost and the need for infrastructure and ongoing maintenance.

5.3 RECOMMENDATION

Universities should embrace the new developed system as it boasts a vast collection of digital resources, including books, journals, articles, multimedia, and archival materials. Whether you're a student, researcher, or enthusiast, you'll find valuable content relevant to your interest.

Other traditional libraries in the country can implement the developed system as it is committed to ensuring that all people may access knowledge. Our system makes sure that everyone can take use of the wealth of information provided and also committed to regular updates, new features, and an ever-expanding collection to keep people library experience fresh and exciting.

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APPENDIX

SOURCE CODE

Signup page

```
<!DOCTYPE html>
<html lang="en">

<head>
 <meta charset="UTF-8">
 <meta http-equiv="X-UA-Compatible" content="IE=edge">
 <link rel="icon" href="../eLibrary/img/title_logo.png" type="image/x-icon">
 <meta name="viewport" content="width=device-width, initial-scale=1.0">
```

```
 <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css" rel="stylesheet"
integrity="sha384-
EVSTQN3/azprG1Anm3QDgpJLIm9Nao0Yz1ztcQTwFspd3yD65VohhpuuCOmLASjC"
crossorigin="anonymous">

 <script src="https://cdnjs.cloudflare.com/ajax/libs/jquery/2.2.1/jquery.min.js" integrity="sha512-
chZc2Mx8B1GzGSNMfJRH63jW7uYZXzX0a/UlWRrTvl4kxxYqUHNMtyTTA5IDQ7gTl4ATLoXlZt
hsialW3muS0A==" crossorigin="anonymous" referrerpolicy="no-referrer"></script>

 <link rel="stylesheet" href="../css/styles.css">

 <link rel="stylesheet" href = "\fontawesome-free-6.4.2-web\css\fonta.css">

 <title>DigLib/Signup</title>

</head>

<style>

    body{

      overflow: hidden;

   }


   .home{

    margin: 1rem;

    padding: 60px 90px 10px 0px;

   }


   .container-2{

    border-radius: 14px;


   }


   .home a{

    font-size: 30px;

    text-decoration: none;

    color: green;
```

```
    padding: 12px;
  }
</style>

<body>

<center>
 <!-- main container -->
 <div class="container-2">

  <div class="home">
    <h1>Welcome to <img src="\E-Library-master\images\DigiLib_colorful.png" width="170" height="60"></h1>

    <br><br>
  <h2>DIGILIB is a library of free books, documents, research works, pdfs, journals, and more.</h2>

  <br>
    <b> <i class="fa fa-arrow"><a href="upload.php">Upload </a>
    <i class="fa fa-book"><a href="\E-Library-master\displaydata.php">Library </a>
     <a href="index.php"><i class="fa fa-sign-in">Login </a>
    </b>

  </div>

 <div class="form pt-3 pb-5 pl-2 pe-4">
  <h2 class="py-2" style="text-align: center; color: purple;">Signup</h2>
  <!-- signup form container -->
```

```
  <form action="../backend/create.php" method="POST" enctype="multipart/form-data"
name="form">


   <!-- username and contact input -->

   <div class="first_row">

   <input type="text" id="firstname" name="firstname" placeholder="Enter firstname" required />

   <input type="text" id="lastname" name="lastname" placeholder="Enter lastname" required /> <br>

   <input type="text" id="username" name="username" placeholder="Enter username" required />

   <input type="text" id="mobile" class="outline-none" name="mobile" placeholder="phonenumber or
matnumber" onkeyup="validateContact()" style="outline:none" required />

   </div>

   <!-- email input -->

   <div class="second_row">

    <input type="email" id="email" name="email" class="" placeholder="Enter Email" required />

   </div>

   <!-- password input -->

   <div class="first_row">

    <input type="password" id="new_password" name="new_password" placeholder="Enter new
password" required /> <br>

    <input type="password" id="re_password" name="re_password" placeholder="Re-enter password"
onkeyup="checkPassword()" required />

   </div>


   <!-- submit button input -->


    <span class="text-danger" id="error_board"></span> <br />

    <input type="submit" name="create_btn" class="btn btn px-5 rounded-0" id="submit_btn"
value="Create a new Account"><br /><br />

    <a href="../index.php" id="redirect_link">Already have account?</a>

   </center>
```

```
    <br />


   </form>
  </div>
 </div>
</body>
<script>
 // is necessary field valid
 var isValid = false;

 //disabled the button until the all the form field is done
 $("#formData #submit_btn").prop("disabled", true);

 //validate contact number
 function validateContact() {
  let contact = $("#formData #contact").val()
  if (contact.length == 10) {
   isValid = true;
   $("#formData #error_board").text("");
   $("#formData #contact").css("border", "1px solid black");
   $("#formData #submit_btn").prop("disabled", false);
  } else {
   isValid = false;
   $("#formData #error_board").text("Contact number must contains 10 character !");
   $("#formData #contact").css("border", "1px solid red");
   $("#formData #submit_btn").prop("disabled", true);
  }
```

```
 console.log(isValid)
}

//validate re password
function checkPassword() {
 let oldpassword = $("#formData #new_password").val();
 let newpassword = $("#formData #re_password").val();
 if (oldpassword == newpassword) {
  isValid = true;
  $("#formData #error_board").text("");
  $("#formData #submit_btn").prop("disabled", false);
 } else {
  isValid = false;
  $("#formData #error_board").text("Password donot match");
  $("#formData #submit_btn").prop("disabled", true);
 }

 if (isValid) {
  $("#formData #submit_btn").prop("disabled", false);
 }
}
</script>

</html>


<?php
//DB Connection
```

```
 include 'C:\xampp\htdocs\E-Library-master\backend\connection.php';


include("connection.php");


 $username = $_POST['username'];
 $contact = $_POST['firstname'];
 $lcontact = $_POST['lastname'];
 $email = $_POST['email'];
 $mobile = $_POST['mobile'];
 $password = $_POST['password'];
 $rpassword = $_POST['password'];
$image = $_FILES["image"]["name"]."_".uniqid();
$temp_name = $_FILES["image"]["tmp_name"];
 if($rpassword!=$password){
    echo '<script>
            alert("Passwords do not match!");
            window.location = "../routes/create.php";
        </script>';
}
else{
    move_uploaded_file($tmp_name,"../uploads/$image");
    $insert = mysqli_query($connect, "insert into users (username, firstname, lastname, email, mobile,
password) values('$username', '$contact', '$lcontact', '$email',' $mobile', '$password') ");
    if($insert){
        echo '<script>
                alert("Registration successfull!");
                window.location = "../index.php";
            </script>';
```

```
    }
}
```

Login page

```
<?php
include 'C:\xampp\htdocs\E-Library-master\backend\connection.php';
?>

<!DOCTYPE html>
<html lang="en">

<head>
 <meta charset="UTF-8">
 <meta http-equiv="X-UA-Compatible" content="IE=edge">
 <link rel="icon" href="../eLibrary/img/title_logo.png" type="image/x-icon">
 <meta name="viewport" content="width=device-width, initial-scale=1.0">
 <link rel="stylesheet" href="./css/styles.css">
```

```
 <title>DigLib / Login </title>
 <link rel="icon" type="image/x-icon" href=" \E-Library-master\images\DigiLib_colorful.png">
</head>


<body>


   <center>
 <!-- main container -->
 <div class="container">
  <!-- form container -->
  <div class="form_container">
       <img src="\E-Library-master\images\DigiLib_colorful.png" width="170" height="40">
       <h2>Login</h2><br />


       <form action="./backend/login.php" method="POST">
          <div class="email_cont">
          <i class="fa fa-envelope-o"></i>
          <input type="email" name="email" class="form-control" placeholder="Enter email or phone
number" required>
          </div><br />


          <div class="email_cont">
          <i class="fa fa-eye"></i>
          <input type="password" name="password" class="form-control" placeholder="Enter password"
required>
          </div><br /><br />


          <input type="submit" name="btn" value="Login" id="login_btn" /><br /><br />
```

```
          <a href="\E-Library-master\routes\create.php">New to the site?</a>
          <a href="\E-Library-master\routes\admin_login.php"> Admin?</a>
        </form>
  </div>
 </div>

   </center>
 <!-- JS CDN -->
 <script src="https://use.fontawesome.com/8af7dff76b.js"></script>
</body>

</html>
```

```
<?php
 session_start();
 include 'C:\xampp\htdocs\E-Library-master\backend\connection.php';
    include("connection.php");

    $email = $_POST['email'];
    $password = $_POST['password'];


    $check = mysqli_query($connect, "select * from users where email='$email' and
password='$password' ");

    if(mysqli_num_rows($check)>0){
```

```
    $getGroups = mysqli_query($connect, "select firstname, email, username, mobile, id from users where 1 ");
    if(mysqli_num_rows($getGroups)>0){
        $groups = mysqli_fetch_all($getGroups, MYSQLI_ASSOC);
        $_SESSION['groups'] = $groups;
    }
    $data = mysqli_fetch_array($check);
    $_SESSION['id'] = $data['id'];
    $_SESSION['status'] = $data['status'];
    $_SESSION['data'] = $data;
    echo '<script>
            window.location = "../routes/dashboard.php";
        </script>';
  }
  else{
    echo '<script>
            alert("Invalid credentials!");
            window.location = "../";
        </script>';
  }

?>
```

User's Dashboard page

```
<?php
session_start();
if(!isset($_SESSION['id'])){
   header("location: ../routes/dashboard.php");
}
$data = $_SESSION['data'];
// have a database connection established

include('C:\xampp\htdocs\E-Library-master\routes\sidebar.php');

?>



<!DOCTYPE html>
<head>
   <link rel="stylesheet" type="text/css" href="\E-Library-master\bootstrap-5.2.0-beta1-dist\css\bootstrap.css">
   <title>User Dashboard</title>
   <link rel="stylesheet" type="text/css" href="\E-Library-master\css\styles.css">
   <link rel="icon" type="image/x-icon" href=" \E-Library-master\images\DigiLib_colorful.png">
</head>

<style>
body{
   overflow: hidden;
   font-family: system-ui, -apple-system, BlinkMacSystemFont, 'Segoe UI', 'Roboto', Oxygen, Ubuntu, Cantarell, 'Open Sans', 'Helvetica Neue', sans-serif
}
```

```
.main-section{
    position: absolute;
    right: 0rem;
    background: whitesmoke;
    width: 78%;
    min-height: 105vh;
    text-align: center;
    justify-content: center;
    top : 0;

}

#dash{
    position: absolute;
    left: 0;
    margin: 10px;
    font-size: 35px;
    box-shadow: 0 14px 15px;
    background: radial-gradient(lavender,#43D1AF);
    border-radius: 12px;
}

.d-section{
    padding-top: 4rem;
    padding-left: 12rem;
    position: relative;
    display: flex;
    text-align: center;
```

```
    justify-content: center;

}

.card-section{
    background-image: linear-gradient(to bottom left, #43D1AF, white) ;
    position: relative;
    width: 10%;
    margin: 15px 30px;
    padding: 15px;
    color: black;
    height: 200px;
    box-shadow: 3px 5px;
    text-align: center;

}

.rev{

    position: absolute;
    bottom: 3rem;
    right:0;

}
</style>

<center>
```

```
<div class="main-section">

    <div id="dash">DASHBOARD</div>
        <br><br>
        <p><span id="date-time" style=" color:black;"></span>.</p>
        <?php echo $data['firstname']?>
            <div class="rev">
                <h2> Your reviews</h2>
                    <?php
                    if(isset($_SESSION['visit'])){//start session
                        $_SESSION['visit'] += 1; //set session variable
                    } else{
                        $_SESSION['visit'] = 1;
                    }

                    echo "You visited this page ".$_SESSION['visit']. " times";

                    ?>
            </div>

    </div>
    <div class="d-section">
        <div class="card-section">
            <h3>No. of Books</h3>
                    <?php
            $sql = "SELECT COUNT(*) AS book_count FROM books"; // Change 'books' to your actual table name

        // Execute the query
```

```
$result = $connect->query($sql);

if ($result) {
    // Fetch the result
    $row = $result->fetch_assoc();
    $bookCount = $row['book_count'];

    // Display the number of books
    echo " " . $bookCount;
} else {
    echo "Error: " . $connect->error;
}

// Close the database connection
$connect->close();
?>

</div>

<div class="card-section" onlick>
    <h3>Report</h3>
    No Uploads
    <i class="fa fa-file"></i>
</div>

<div class="card-section">
    <h3>ID</h3>
    <i class="fa fa-user"></i>
```

```
            <?php echo $data['id']?>
        </div>

        <div class="card-section">
            <h3>Mat.No</h3>
            <i class="fa fa-pencil"></i>
            <?php echo $data['mobile'];


       ?>
        </div>



    </div>

    <br>



 </div>

    </center>

<script src="https://use.fontawesome.com/8af7dff76b.js"></script>
<script>
    var dat= new Date();
    document.getElementById("date-time").innerHTML = dat;
```

```
    </script>
</body>
</html>

<?php

// Close the database connection
mysqli_close($connect);
?>
```

Admin Dashboard page

```
<?php
// have a database connection established
$connect = mysqli_connect("localhost", "root", "", "newdb");
$servername="localhost";
$username="root";
$password="";
$dbname="newdb";

include('C:\xampp\htdocs\E-Library-master\routes\sidebarnav.php');

    session_start();
    if(isset($_SESSION['id'])){
```

```
        header("location: ../routes/admindashboard.php");
    }
    $check = mysqli_query($connect, "select * from users where username='$username' and password='$password' ");
    $data = mysqli_fetch_array($check);
    $_SESSION['id'] = $data['id'];
    $_SESSION['data'] = $data;

?>



<!DOCTYPE html>
<head>
    <title>ADMIN Dashboard</title>
    <link rel="stylesheet" type="text/css" href="\E-Library-master\css\styles.css">
    <link rel="icon" type="image/x-icon" href=" \E-Library-master\images\DigiLib_colorful.png">
</head>

<style>
body{
    overflow: hidden;
    font-family: system-ui, -apple-system, BlinkMacSystemFont, 'Segoe UI', Roboto, Oxygen, Ubuntu, Cantarell, 'Open Sans', 'Helvetica Neue', sans-serif
}

.main-section{
    position: absolute;
    right: 0rem;
    background: whitesmoke;
```

```
    width: 78%;
    min-height: 1000vh;
    text-align: center;
    justify-content: center;
    top : 0;

}

#dash{
    position: absolute;
    left: 0;
    margin: 10px;
    font-size: 35px;
    box-shadow: 0 0 15px;
    background: radial-gradient(lavender,#43D1AF);
    border-radius: 12px;
}

.d-section{
    padding-top: 2rem;
    position: relative;
    display: block;
    text-align: center;
    justify-content: center;
    width: 40%;
}

.card-section{
```

```
    background-image: linear-gradient(to bottom left, #43D1AF, white) ;
    width: 10%;
    margin: 15px;
    padding: 15px;
    color: black;
    height: 70px;
    box-shadow: 2px 4px;
    text-align: center;
}

table{
    border-collapse: collapse;
    box-shadow:0 0 13px;
}

td,th{
    padding:20px;
    border: 2px black solid;
}
.btn-danger{
    background: red;
}
</style>

<center>

   <div class="main-section">
```

```
<div id="dash">Admin DASHBOARD</div>
        <br><br>
        <p><span id="date-time" style=" color:black;"></span>.</p>
        <?php //echo $data['username']; ?>


        </div>
<div class="d-section">
    <table class="" width="100%">
        <thead>
            <tr>
                <th>name</th>
                <th>lastname</th>
                <th>username</th>
                <th>email</th>
                <th>mobile</th>



            </tr>
        </thead>
        <tbody>
            <?php
            $query = "SELECT * FROM users";
            $query_run = mysqli_query($connect, $query);

            if(mysqli_num_rows($query_run) > 0){
                foreach($query_run as $row){
                    //echo $row['name'];
                    ?>
```

```
            <tr>
                <td><?php echo $row['firstname']; ?></td>
                <td><?php echo $row['lastname']; ?></td>
                <td><?php echo $row['username']; ?></td>
                <td><?php echo $row['email']; ?></td>
                <td><?php echo $row['mobile']; ?></td>
                <!-- <td><a class="btn btn-danger my-3">Delete</a>      </td> -->
                <?php ?>
            </tr>



            <?php
        }
    }
    else{
    ?>
     <tr>
        <td>No record</td>
    </tr>
    <?php
  }
  ?>
  </tbody>
</table>

 <br><br><br>

<div class="d-section">
```

```
<table class="" width="70%">
    <thead>
        <tr>
            <th>name</th>
            <th>lastname</th>
            <th>username</th>
            <th>email</th>



        </tr>
    </thead>
    <tbody>
        <?php
        $query = "SELECT * FROM books";
        $query_run = mysqli_query($connect, $query);

        if(mysqli_num_rows($query_run) > 0){
            foreach($query_run as $row){
                //echo $row['name'];
                ?>
                 <tr>
                    <td><?php echo $row['bookname']; ?></td>
                    <td><?php echo $row['bookdesc']; ?></td>
                    <td><?php echo $row['bookauthor']; ?></td>
                    <td><?php echo $row['booklang']; ?></td>



                </tr>
```

```
                    <?php
                }
            }
            else{
            ?>
             <tr>
                <td>No record</td>
            </tr>
            <?php
        }
        ?>
        </tbody>
    </table>


</div>

</center>

<script src="https://use.fontawesome.com/8af7dff76b.js"></script>
<script>
    var dat= new Date();
    document.getElementById("date-time").innerHTML = dat;

    function DeleteConfirm() {
  confirm("Are you sure to delete the record");
 }
```

```
    </script>
</body>
</html>

<?php

// Close the database connection
mysqli_close($connect);
?>
```

Book catalog page

```
<?php
// Create a connection to the database
$servername="localhost";
$username="root";
$password="";
$dbname="newdb";

$conn = new mysqli($servername, $username, $password, $dbname);

// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
```

```
}

// Fetch all uploaded books from the database
$sql = "SELECT * FROM books";
$result = $conn->query($sql);
?>

<!DOCTYPE html>
<head>
    <title>Library</title>
    <link rel="stylesheet" type="text/css" href="css/display.css">
<link rel="stylesheet" type="text/css" href="css/styles.css">
<link rel="icon" type="image/x-icon" href=" \E-Library-master\images\DigiLib_colorful.png">
</head>
<body>
    <center>
    <img src="\E-Library-master\images\DigiLib_colorful.png" width="170" height="50">
    <h1 style="color:white;">Catalog</h1>
    <!-- <p><span id="date-time" style=" color:white;"></span>.</p> -->
    </center>
    <table width="0%" cellspacing="0" cellpadding="18px">
        <tr>
            <th>Bookname</th>
            <th>Author</th>
            <th>Language</th>
            <th></th>
            <th>Descriptions</th>
            <th></th>
```

```
            <th>Uploader</th>
            <th></th>
            <th>Book</th>
            <th></th>
            <th>Access</th>
        </tr>
    <?php
    // Check if there are any records
    if ($result->num_rows > 0) {
        // Loop through the records and display them
        while ($row = $result->fetch_assoc()) {
            echo "<tr>";
            echo ' <td><h2>' . $row["bookname"] . '</h2></td>';
            echo '<td><p><strong></strong> ' . $row["bookauthor"] . '</p></td>';
            echo '<td><p><strong></strong> ' . $row["booklang"] . '</p><td>';
            echo '<td><p><strong></strong><br>' . $row["bookdesc"] . '</p><td>';
            echo '<td><p><strong></strong> ' . $row["uploadername"] . ' (' . $row["uploaderemail"] .
')</p><td>';
            echo '<td><p><a href="/E-Library-master/uploads/">Download Book</a></p><td>';
            echo ' <td> Available   </td>';


            echo "</tr>";



            }
           }
```

```
    // Close the database connection
    $conn->close();
    ?>
    </table>

    <script>
        var dat= new Date();
        document.getElementById("date-time").innerHTML = dat;
    </script>
</body>
</html>
```

Upload Books page:

```
<?php
if ($_SERVER["REQUEST_METHOD"] === "POST") {
    // Ensure all required fields are filled
    $required_fields = array("bookname", "bookdesc", "bookauthor", "booklang", "uploadername",
"uploaderemail");
    foreach ($required_fields as $field) {
        if (empty($_POST[$field])) {
            die("Error: All fields are required.");
        }
    }

    // Upload the book file
    $target_dir = "uploads/";
    $bookfile = $target_dir . basename($_FILES["bookfile"]["name"]);
```

```
    if (move_uploaded_file($_FILES["bookfile"]["tmp_name"], $bookfile)) {
        // File uploaded successfully, insert data into the database
        $bookname = $_POST["bookname"];
        $bookdesc = $_POST["bookdesc"];
        $bookauthor = $_POST["bookauthor"];
        $booklang = $_POST["booklang"];
        $uploadername = $_POST["uploadername"];
        $uploaderemail = $_POST["uploaderemail"];



        // Create a connection to the database

$connect = mysqli_connect("localhost", "root", "", "newdb");
$servername="localhost";
$username="root";
$password="";
$dbname="newdb";
        $conn = new mysqli($servername, $username, $password, $dbname);

        // Check connection
        if ($conn->connect_error) {
            die("Connection failed: " . $conn->connect_error);
        }

        // Prepare and bind the SQL statement
        $stmt = $conn->prepare("INSERT INTO books (bookname, bookdesc, bookauthor, booklang,
bookfile, uploadername, uploaderemail) VALUES (?, ?, ?, ?, ?, ?, ?)");
```

```
        $stmt->bind_param("sssssss", $bookname, $bookdesc, $bookauthor, $booklang, $bookfile, $uploadername, $uploaderemail);

        // Execute the statement
        if ($stmt->execute()) {
            echo
            '<script>
            alert("Book uploaded successfully!");
        </script>';
        } else {
            echo "Error uploading book: " . $conn->error;
        }

        // Close the prepared statement and the database connection
        $stmt->close();
        $conn->close();
    } else {
        echo "Error uploading file.";
    }
}
?>

<!DOCTYPE html>
<head>
    <title>Upload Book</title>
    <link rel="stylesheet" href="\E-Library-master\css\styles.css">
    <link rel="icon" type="image/x-icon" href=" \E-Library-master\images\DigiLib_colorful.png">
<style>
    body{
```

```
        overflow: hidden;
    }
    input,textarea{
        width: 80%;
        border-radius: 12px;
        margin: 4px;
        border: 2px solid #43D1AF;
       }

</style>
<body>
    <center>
    <div class="container">
    <img src="\E-Library-master\images\DigiLib_colorful.png" width="170" height="40">
    <h2>Upload Book</h2>
    <form method="post" action="<?php echo $_SERVER['PHP_SELF']; ?>" enctype="multipart/form-data">
        <label for="bookname"></label>
        <input type="text" name="bookname" placeholder="Book Name:" required><br>

        <label for="bookdesc"></label>
        <textarea name="bookdesc" rows="4" columns="25" placeholder="Book Description:"  required></textarea><br>

        <label for="bookauthor"></label>
        <input type="text" name="bookauthor" placeholder="Author:"  required><br>

        <label for="booklang"></label>
        <input type="text" name="booklang" placeholder="Book Language:"  required><br>
```

```
        <label for="bookfile"></label>
        <input type="file" name="bookfile"  required><br>

        <label for="uploadername"></label>
        <input type="text" name="uploadername" placeholder="Uploader Name:"  required><br>

        <label for="uploaderemail"></label>
        <input type="email" name="uploaderemail" placeholder="Uploader Email:" required><br>

        <input type="submit" value="Upload Book">
    </form>
    </div>
        </center>
</body>
</html>
```

Style.css

```
body {
    background-image: url("../images/library.jpg");
    background-repeat: no-repeat;
    font-family: 'Courier New', Courier, monospace;

}

input{
```

```
    padding: 1.1rem;
    border-radius: 12px;
    margin: 4px;
    border: 2px solid #43D1AF;
 }


.container{
    background: rgba(243, 243, 243, 0.5);
    border-radius: 20px;
    width: 40%;
    text-align: center;
    justify-content: center;
    padding: 0.6rem;
    margin: 1rem;
}

.container-2{
    background-color:rgba(243, 243, 243, 0.5); ;
    padding: 3rem;
    margin: 1rem;
    display: flex;
}

.home{
    width: 50%;
}

nav a{
```

```
    display: inline-block;
    color: black;
    font-weight: bold;
    text-align: center;
    padding: 14px 16px;
    text-decoration: none;
}

form a{
     color: green;
    text-decoration: none;
}
ul {
    list-style-type: none;
    margin: 0;
    padding: 0;
    overflow: hidden;
    background-color: #43D1AF;
}

li {
    float: right;
}

input[type='submit']{
    background-color: rgb(2, 145, 2);
    font-family: 'Courier New', Courier, monospace;
    font-size: 16px;
    color: white;
```

```
}

input[type='submit']:hover{
    background: white;
    color: rgb(4, 66, 4);
}

input[type='email']:hover, input[type='password']:hover{
    background-color: white;
    border: 2px solid brown;
}
```