

AMRITSAR GROUP OF COLLEGES

Autonomous Status Conferred by UGC | NAAC – A Grade

SYNOPSIS

ON

“Digital Library Management System”

Submitted in the partial fulfillment of the requirement for the award of the degree of

Bachelor of Technology

In

COMPUTER SCIENCE & ENGINEERING

Batch (2020-2024)



Submitted to

Er. Ajay Sharma

Associate Professor

Department of CSE

Submitted by

Sumit Kumar Giri (2000213)

Vishal Kumar (2000233)

Vivek Singh (2132019)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

INDEX

S.NO.	CONTENT	PAGE NO.
1.	Introduction of the Project	1-2
2.	Feature of the Project	3
3.	Technology Used	4-5
4.	Modules of the Project	6-7
5.	Database Table	8-9
6.	Bibliography	10

Introduction

Digital Library

A Digital library is a collection of digital objects, such as books, magazines, audio recordings, video recordings and other documents that are accessible electronically.

Digital libraries can be accessed from any computer or device with an internet connection, meaning that there is no need to physically visit the library or store materials to access them.

Digital libraries are often used by public libraries, university libraries and private companies. Much of the software available is open source or free to use. Examples include the Digital Public Library of America, Open Library, the Internet Archive and Project Gutenberg.



It is important to note, however, that some libraries require users to have specific plugins or software installed to view certain content. The relevant information should be noted on the library's website. Besides these platforms, a variety of other providers offer digital asset management options, such as software vendors, cloud service providers and companies specializing in library automation. These services can range from customized digital collections to full-fledged enterprise-level software platforms. Briefly discuss the significance of information and knowledge in today's digital age. Highlight the challenges of managing and accessing vast amounts of digital content efficiently. Define what a Digital Library Management System is and its purpose.

A Digital Library Management System (DLMS) is a software application designed to efficiently manage and organize digital resources, such as electronic books, journals, articles, multimedia content, and other digital materials. It serves as a platform for users to access, search, retrieve, and interact with a wide range of digital resources in a user-friendly and organized manner. The main goal of a DLMS is to provide easy and convenient access to information, promoting efficient

information management and sharing. A Digital Library Management System (DLMS) is a software application designed to facilitate the organization, storage, retrieval, and management of digital resources in a digital library. It serves as a technological solution to the challenges faced by traditional libraries in the digital age, enabling efficient and user-friendly access to a wide range of digital materials such as books, journals, articles, multimedia, and other educational content.

The introduction of a Digital Library Management System marks a significant advancement in how libraries operate and serve their patrons. Unlike traditional libraries that rely on physical spaces and printed materials, a DLMS harnesses the power of technology to provide several key benefits:

- **Accessibility:** A DLMS allows users to access digital resources from anywhere with an internet connection. This accessibility breaks down geographical barriers and provides 24/7 availability.
- **Search and Retrieval:** DLMSs offer advanced search capabilities that make it easy for users to find specific resources using keywords, authors, titles, and other metadata. This speeds up the retrieval process compared to manually searching through shelves.
- **Categorization and Organization:** Digital resources can be efficiently categorized, tagged, and organized within a DLMS, making it easier for users to navigate and locate the materials they need.
- **Resource Diversity:** DLMSs can house a wide variety of digital materials, including text, images, audio, and video files. This diversity caters to different learning styles and preferences.
- **Space and Cost Efficiency:** Unlike physical libraries, DLMSs do not require extensive physical space for storage. This reduces overhead costs associated with maintaining a brick-and-mortar library.
- **Remote Learning and Collaboration:** DLMSs support remote learning and collaboration by allowing users to access resources and interact with each other virtually, fostering a global community of learners and researchers.
- **Preservation:** Digital resources can be preserved and archived more effectively within a DLMS, ensuring long-term availability and reducing the risk of damage or loss that physical materials might face.
- **Analytics and Usage Data:** DLMSs can generate valuable insights about resource usage patterns, helping librarians and administrators make informed decisions about resource acquisition and management.

Features of the Project

Library Management System is designed in such a way that it keeps the functioning of the library smooth and in order. It is user-friendly software. It helps in keeping track of the books, catalogues, magazines, etc. This system increases the efficiency of the librarian and better management of the library. It leads to an easy search of the desired book from the library.

Features of the Digital Library Management System are:

- Easy way to enter book data.
- Full catalogue, circulation, and acquisition system for library stock management.
- Web-based OPAC (Online Public Access Catalogue) system.
- Simple, clear search interface for all users.
- Multilingual and multi-user support.
- Export and import records.
- A modern integrated library management system.
- Print own barcodes

TOOLS USED

Frontend

□ Visual Studio code



Visual Studio code

Visual Studio Code is a code editor in layman's terms. Visual Studio Code is “a free-editor that helps the programmer write code, helps in debugging and corrects the code using the IntelliJ-sense method”. In normal terms, it facilitates users to write the code in an easy manner. Many people say that it is half of an IDE and an editor, but the decision is up to the coders. Any program/software that we see or use works on the code that runs in the background. Traditionally coding was used to do in the traditional editors or even in the basic editors like notepad! Visual Studio Code, commonly referred to as VS Code, is a powerful and versatile source code editor developed by Microsoft. It has quickly become one of the most popular choices among developers and programmers due to its rich feature set, extensibility, and cross-platform compatibility. Released in 2015, VS Code has gained a massive user base and continues to be widely adopted in the software development community.

VS Code is designed to provide a seamless and efficient coding experience for a wide range of programming languages and technologies. It offers an intuitive and user-friendly interface, making it accessible to both beginners and experienced developers alike. The editor's lightweight and fast performance ensure that it remains responsive, even when dealing with large codebases. One of the standout features of VS Code is its extensive extension marketplace, where users can find a plethora of add-ons to enhance their development workflow. These extensions cover various areas, including language support, debugging, version control, themes, and project management. This extensibility makes VS Code adaptable to almost any coding task, making it a go-to choice for a diverse community of developers.

Backend

□ MySQL



MySQL is an open-source relational database management system (RDBMS) widely used for managing and storing data. It is one of the most popular databases used in web applications and is known for its performance, scalability, and ease of use. MySQL uses the Structured Query Language (SQL) to interact with data, allowing users to create, modify, and retrieve data from the database. MySQL is an open-source relational database management system that works on many platforms. It provides multi-user access to support many storage engines and is backed by Oracle. So, you can buy a commercial license version from Oracle to get premium support services.

- **XAMPP**



XAMPP is an abbreviation where X stands for Cross-Platform, A stands for Apache, M stands for MySQL, and the Ps stand for PHP and Perl, respectively. It is an open-source package of web solutions that includes Apache distribution for many servers and command-line executables along with modules such as Apache server, MariaDB, PHP, and Perl. XAMPP helps a local host or server to test its website and clients via computers and laptops before releasing it to the main server. It is a platform that furnishes a suitable environment to test and verify the working of projects based on Apache, Perl, MySQL database, and PHP through the system of the host itself. Among these technologies, Perl is a programming language used for web development, PHP is a backend scripting language, and MariaDB is the most vividly used database developed by MySQL. XAMPP is used to symbolize the classification of solutions for different technologies. It provides a base for testing of projects based on different technologies through a personal server. XAMPP is an abbreviated form of each alphabet representing each of its major components.

System Modules

A module is a logically separable part of a program. It is a program unit that is discrete and identifiable with respect to compiling and loading. Partitioning a system in two modules is useful only if the modules are solvable and modifiable. Separately a system is considered modular if it consists of discrete components such that each component supports a well-defined abstraction, and if a change to one component has a minimal impact on other component.

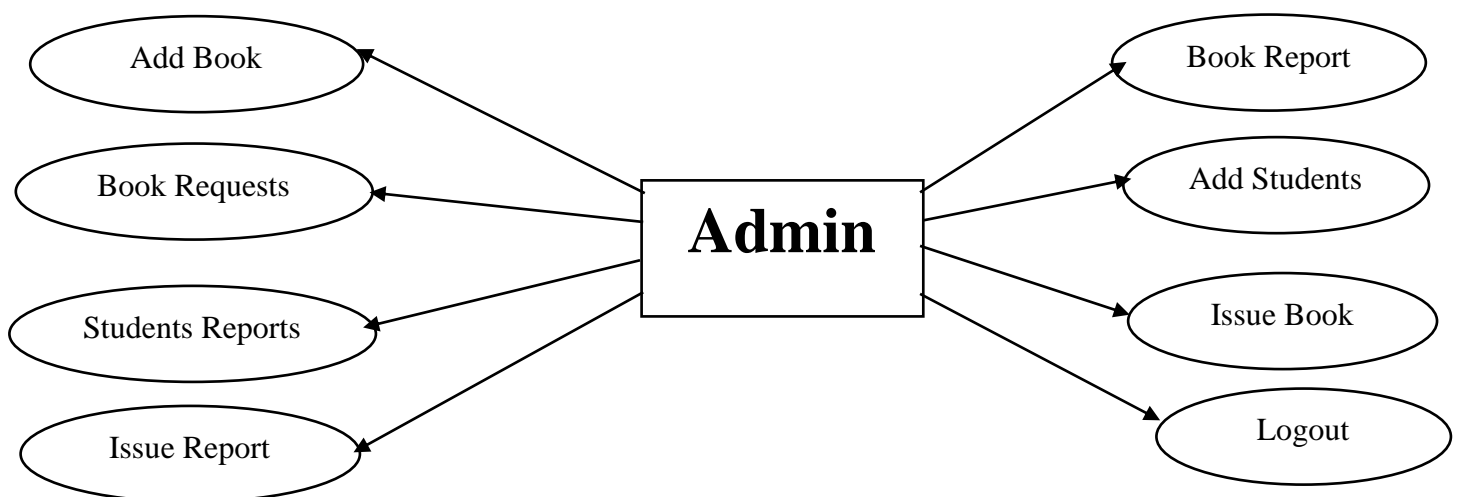
Brief description of each of the 2 modules is given below.

- Administrator Module.
- Student's Module

Administrator Module.

In this module, all pages which are related to the Administrator means related to security and maintenance of the portal and department are placed here.

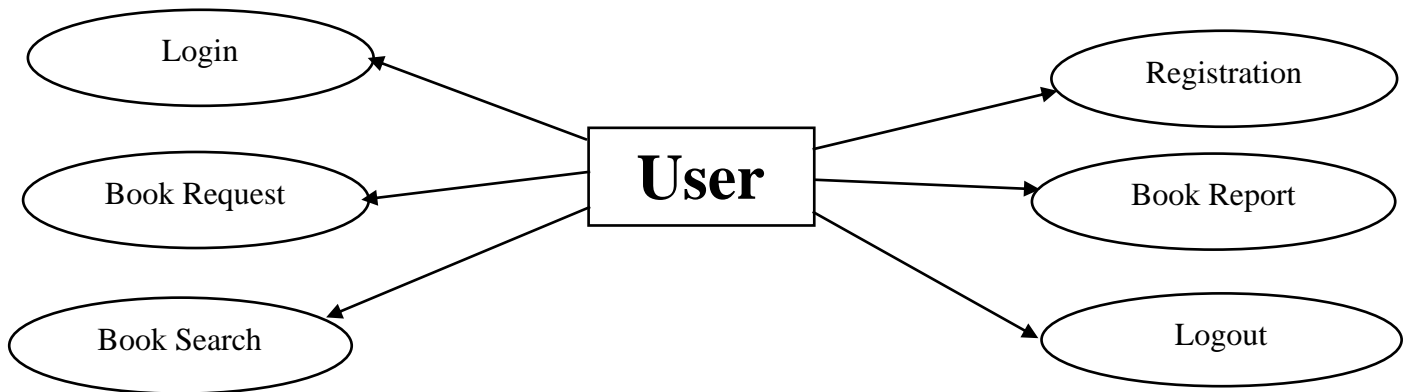
- Creating Students Account.
- Modifying, Updating and deleting Students Accounts.
- Uploading and Unloading the Books name.
- Viewing & Updating Books Status.



Student Module:

In this module, all pages which are related to Librarian are placed here. Viewing their Information and Account

- Registration
- Requesting for Book.
- Book Report.
- Search for a Book.



Database Table

Admin Login Table:

Field	Datatypes
id	int
email	varchar
pass	varchar

Add Books Table

Field	Datatypes
Book Name	varchar
Details	varchar
Author	varchar
Publication	varchar
Branch	varchar
Price	int
Quantity	int
Book Photo	varchar

Issue Books Table

Field	Datatypes
Userid	Int
Issuename	Varchar
Issuebook	Varchar
issuetype	Varchar
Issuedays	Varchar
Issuereturn	Varchar
fine	Varchar

Issue Books Table

Field	Datatypes
Userid	Int
Bookid	int
Username	Varchar
Bookname	Varchar
Issuedays	Varchar

User Login Table

Field	Datatypes
id	Int
name	int
email	Varchar
pass	Varchar

BIBLIOGRAPHY

- <https://www.elibrarysoftware.com/digital-library-management-software.html>
- [https://www.academia.edu/37726542/Library_Management_System_Mini_Project_Report
On_LIBRARY_MANAGEMENT_SYSTEM](https://www.academia.edu/37726542/Library_Management_System_Mini_Project_Report_On_LIBRARY_MANAGEMENT_SYSTEM)
- <https://projectsgeek.com/2017/03/digital-library-system-project.html>