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# *Chapter – 1*

# *Introduction*

The library management system has been developed to override the problems prevailing in the practicing manual system .This software is supported to eliminate and, in some cases, reduce the hardships faced by the existing system. Moreover, this system is designed for the particular need of the institution to carry out operations in a smooth and effective manner.

The website is reduced as much as possible to avoid errors by entering the data. No formal knowledge is needed for the user to use this website. Thus, by all this it proves it is user friendly.

First as described above library management system can lead to error free secure reliable and fast management system it can assist the user to concentrate on their other activities rather than to concentrate on the record keeping. Thus, it will help institution in better utilization of resources.

Every Institution ,weather big or small has challenges to overcome and managing the information of books and students .Every library management system has different requirements therefore we design exclusive library management system that are adapted to requirements.

Managing a library comes with unique challenges, and librarians are always looking for ways to be more efficient and improve their processes. Library management software makes it easy to manage library databases and records, and automate activities such as cataloging, lending, fundraising, managing book donations, and more.

Another key benefit of library management tools is that they make life easier for library users. Most of the tools we're discussing here have a front-facing user dashboard where library users can set up their own accounts, discover new books, read online, or borrow materials.

The products listed below include some of the most popular library management software tools that all types of libraries can use. While you're considering which library management software will work best for your situation, keep these three important factors in mind:

**Suitability**. Your needs will determine the best software for you. For instance, the needs of a large public library are quite different from those of a private corporate library. Even a tool that gets high marks from most users may not provide the specific features you need to run your library. Similarly, a tool may be overloaded with features that are unnecessary for your use case.

Start with a list of the most crucial features you need from your ideal software and narrow your search from there.

**Ease of use.** You don't want to spend weeks or months trying to understand how your management software works. The right tool should be mostly intuitive and offer easy-to-follow guides or online support.

**Flexibility.** Remember, every library is different. Choose a tool that will support the smooth and efficient running of your library, but make sure you can customize its features to meet your specific needs.

<p align="center">*Chapter – 2*</p>

<p align="center">*Literature Review*</p>

The library Catalog is an online database of materials held by Library or Group of Libraries , which have largely replaced the analog card catalogs that previously used in libraries.

The first large scale online catalogs were developed at Ohio State University in 1975 and the Dallas Public Library in 1978.

Using a dedicated terminal or telnet client, users could search a handful of pre-coordinate indexes and browse resulting display in much the same way they had previously navigated the card catalog.

## 2.1 Dynix  (software)

The Dynix Automated Library System was a popular integrated library system from the mid-1980 to the late-1990s.

First developed in 1983 and installed same year at public library of Kershaw Country, South Caroline.

Based around relational database, Dynix was originally written in Pick/BASIC and run on PICK OS.

At its peak in late 1990s, Dynix had over 5,000 libraries using its system, amounting to an 80% market share.

## 2.2 Digital Library of India

Initially hosted by Indian Institute of Science, CDAC, Noida, IIIT Hyderabad during 2000s working in partnership with Million Book Project, provides free access to many books in English and Indian languages.

## 2.3 National Digital Library of India

It is a virtual repository of learning resources which is not only just a repository with browse facility but also provides a host of services containing textbooks, articles, videos, audio books, lectures, etc. It is project under Ministry of Education, Government of India, through its National Mission on Education through Information and Communication Technology (NMEICT) .

The Library was launched in pilot form in May 2016.

The Library was dedicated to the nation on June 19, 2018, by union human resource minister Prakash Javadekar.

## 2.4 There are some other software tools for Library management  they are :-

### 2.4.1 Alexandria

Rated 4.7 out of 5 stars on Capterra, Alexandria is an award-winning library management software solution that adapts to meet the needs of K–12, university, public, and private libraries. Alexandria is completely cloud-based and follows machine-readable cataloging (MARC) best practices.

Libraries around the world have used Alexandria for more than 30 years. It offers the following features:

**Cataloging**: Update bibliographic records and databases quickly.
**link** : Manage lending, check-ins, and checkouts.
**Administration:** Keep track of staff and users.
**Search:** Find any material or resource quickly and easily.
**Reporting**: Produce custom reports when you need them.
**Support:** Access 24-7 live technical support.

### 2.4.2 Khoha

Koha is a feature-rich, open-source library management system. It's been around since 1999 and is ideal for all kinds of libraries. The software is robust enough to power large public libraries and simple enough for small private ones to use.

Koha is great for managing multi-branch libraries. It offers offline circulation functionality for those times when there's no internet access. The Koha Acquisitions module also keeps track of purchases, suppliers, and budgets.

### 2.4.3 Mandarin

Mandarin is a web-based library management system. Like other tools on this list, Mandarin supports cataloging, inventory management, circulation, and reporting.

You can customize the software to suit your needs by making use of Mandarin's optional modules and services. Unicode support in Mandarin allows cataloging and searching in any

language. Annual subscriptions start at $750, and new systems may incur an additional setup cost that averages $250.

## 2.4.4 Jotform

If you're looking for a simple, user-friendly library management solution, Jotform is a great choice. It offers useful library templates that make it easy to keep track of inventory.

Jotform's Library Checkout Sheet Template
Jotform's Library Checkout Sheet Template
Jotform's Book Inventory Template
Jotform's Book Inventory Template

You can track lending with Jotform's library checkout sheet, book inventory with the book inventory template, and manage staff data. You can also use Jotform to keep track of fundraising activities, book purchases, and donations.  With Jotform's drag-and-drop functionality, you can easily customize any spreadsheet to meet your needs by adding items such as new fields and color-coded tags.

## 2.4.5 SirsiDynix Symphony

SirsiDynix Symphony is a powerful library management system that's great for all types of libraries, including public, academic, K–12, special collections, and consortia.  It also gives you hosting options, so you can decide whether you want a self-hosted, cloud-hosted, or locally deployed system.

SirsiDynix Symphony

SirsiDynix Symphony

Symphony offers API access, which means you can connect it to other web services you use, such as your learning management systems and enterprise planning systems. This makes the software truly flexible and customizable. Symphony's core modules include

Acquisitions

Offline access

Reserves

Serial control

Requests

Outreach (a module that gives you the ability to extend your library's services to those who can't come to a library or access materials online)

Library management software makes life easier for librarians and users. With the right tool, you can better manage your database and inventory, and keep track of lending/circulation activities. An efficient and organized library is a user's delight, making it easier for more people to access and use those valuable resources.

# *Chapter – 3*

## *Methodology*

For development of Library management, we use HTML,CSS,BOOTSTRAP for front-end and PHP,MYSQL and Maria DB for backend purpose.

Front end and back end are terms used by programmers and computer professionals to describe the layers that make up hardware, a computer program or a website which are delineated based on how accessible they are to a user. In this context, the user refers to an entity that could be human or digital.

The **Back-end** refers to parts of a computer application or a program's code that allow it to operate and that cannot be accessed by a user. Most data and operating syntax are stored and accessed in the back end of a computer system. Typically, the code is comprised of one or more programming languages. The back end is also called the data access layer of software or hardware and includes any functionality that needs to be accessed and navigated to by digital means.

The layer above the back end is the front end and it includes all software or hardware that is part of a user interface. Human or digital users interact directly with various aspects of the front end of a program, including user-entered data, buttons, programs, websites and other features. Most of these features are designed by user experience (UX) professionals to be accessible, pleasant and easy to use.

A back-end application or program supports front-end user services, and interfaces with any required resources. The back-end application may interact directly with the front end or it may be called from an intermediate program that mediates front-end and back-end activities.

Purpose of front-end and back-end System architectures are broken down into front end and back-end components for a variety of purposes. The most common is in software and web development to break down projects in terms of required skills. The front-end aspect of a project is usually handled by professionals such as web designers while the back end is handled by engineers and developers.

Front-end and back-end can also be used to describe situations where the customer has access to one view and employees have access to another. Front end components are customer facing while rights to the back end are exclusively for authenticated users.

Examples of front end and back-end Concepts and components that focus on the front end of a system include:

Design and markup languages like HTML, CSS and JavaScript.

Search engine optimization (SEO).

Usability and accessibility testing.

Graphic design and image editing tools.

Web performance and browser compatibility.

Inversely, those that focus on the back end of a system include:

Programming and scripting languages like PHP, Python and C#.

Automated testing frameworks.

Network scalability and availability.

Database management and data transformation.

Cybersecurity and data backup practices.

## 3.1 HTML

HTML stands for Hyper Text Markup Language

HTML is the standard markup language for creating Web pages

HTML describes the structure of a Web page

HTML consists of a series of elements

HTML elements tell the browser how to display the content

HTML elements label pieces of content such as "this is a heading", "this is a paragraph", "this is a link", etc.

## 3.2 Html form

An HTML form is a section of a document which contains controls such as text fields, password fields, check boxes, radio buttons, submit button, menus etc.

An HTML form facilitates the user to enter data that is to be sent to the server for processing such as name, email address, password, phone number, etc. .

### 3.2.1 Why use HTML Form?

HTML forms are required if you want to collect some data from of the site visitor.

For example: If a user wants to purchase some items on internet, he/she must fill the form such as shipping address and credit/debit card details so that item can be sent to the given address.

In this project we use html form for collecting information from the user and store it into database

### 3.3 CSS

CSS stands for Cascading Style Sheets

CSS describes how HTML elements are to be displayed on screen, paper, or in other media

CSS saves a lot of work. It can control the layout of multiple web pages all at once

External stylesheets are stored in CSS files

In this project we use CSS

### 3.4 BOOTSTRAP

It is a free and open-source tool collection for creating responsive websites and web applications. It is the most popular HTML, CSS and JavaScript framework for developing responsive, mobile-first websites.

It is faster and easier web-development which creates platform independent web pages for responsive web-pages.

### 3.5 PHP

PHP started out as a small open-source project that evolved as more and more people found out how useful it was. Rasmus Lerdorf unleashed the first version of PHP way back in 1994.

PHP is a recursive acronym for "PHP: Hypertext Preprocessor".

PHP is a server-side scripting language that is embedded in HTML. It is used to manage dynamic content, databases, session tracking, even build entire e-commerce sites.

It is integrated with a number of popular databases, including MySQL, PostgreSQL, Oracle, Sybase, Informix, and Microsoft SQL Server.

PHP is pleasingly zippy in its execution, especially when compiled as an Apache module on the Unix side. The MySQL server, once started, executes even very complex queries with huge result sets in record-setting time.

PHP supports a large number of major protocols such as POP3, IMAP, and LDAP. PHP4 added support for Java and distributed object architectures (COM and CORBA), making n-tier development a possibility for the first time.

In this project we use PHP language which use to connects the HTML Web-page to database server in which it is used to store all the details that user enters in the web-page .

## 3.6 phpMyAdmin

It is free software tool written in php, intended to handle the administration of MySQL over the web. phpMyAdmin supports a wide range of operations of MySQL and MariaDB. Frequently used operations (managing databases, tables, columns, relations, indexes, users, permissions, etc.) can be performed via the user interface, while you still have the ability to directly execute any SQL statements.

## 3.7 Xampp server

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. Since most actual web server deployments use the same components as XAMPP, it makes transitioning from a local test server to a live server possible.

XAMPP is one of the widely used cross-platform web servers, which helps developers to create and test their programs on a local webserver. It was developed by the Apache Friends, and its native source code can be revised or modified by the audience. It consists of Apache HTTP Server, MariaDB, and interpreter for the different programming languages like PHP and Perl. It is available in 11 languages and supported by different platforms such as the IA-32 package of Windows & x64 package of macOS and Linux.

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.

## 3.8 Steps For Creating Library Management

First, we create web-page for the front end in which user enters his/her information in that web page and designed with CSS and bootstrap. Then in phpMyAdmin of XAMPP Server we create database of name **"libmanage"** inside we create different tables which stores data for different purpose. These tables and columns are :-

### 1. teacherform

| Email | FirstName | LastName | ID | Password | District | PhoneNo. | Address |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

### 2. creation

| FirstName | LastName | RollNo | Genre | Title | Content |
|---|---|---|---|---|---|
| | | | | | |

### 3. Issuebook

| FirstName | LastName | RollNo | BookNumber | BookName | DueDate | LibraryID |
|---|---|---|---|---|---|---|
| | | | | | | |

### 4. sign_in

| Roll_no | Password | Entry_time |
|---|---|---|
| | | |

### 5. Bookdb

| ID | Title | Author | Edition | Published | Language |
|---|---|---|---|---|---|
| | | | | | |

### 6. collegeform

| Email | CollegeName | CollegeRegist | Password | College_dist | Contact_no | Add |
|---|---|---|---|---|---|---|
| | | | | | | |

### 7. studentform

| Email | FirstName | LastName | Roll_no | password | disrict | phonenumber | addres |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

Then after we write a code in php to connect webpage to server in which it takes data from user and save it into mysql database.

# *Chapter – 4*

## *Result*

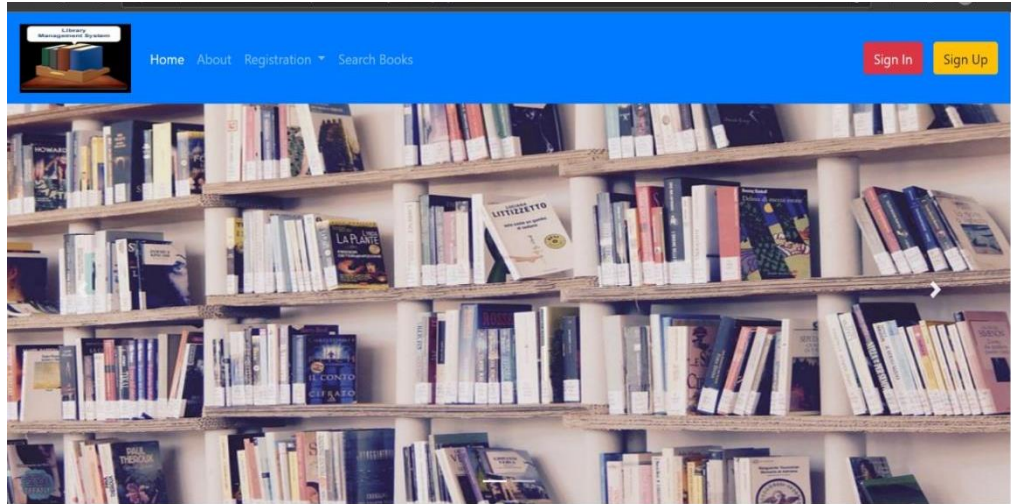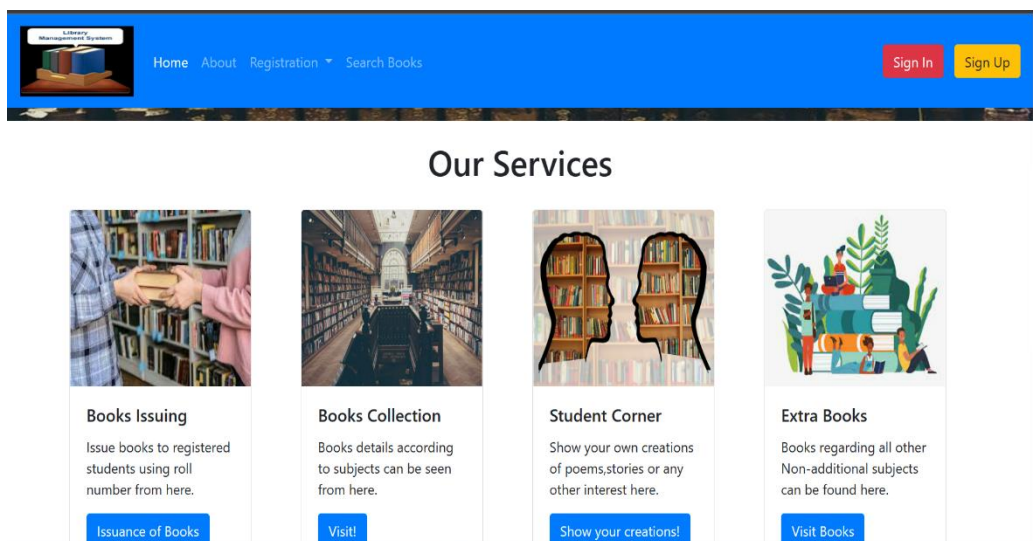After completion of our project this is what look like :-



Fig 4.1 Home page



Fig 4.2 Home page

In fig 4.1 and 4.2 this is home page from which navigation have different options like Sign in and Sign up and Registration for different section like Student , College and Teachers Registration and Search Book in which we can find books in Database .

Many other options like Book Issuing in which user can issue book, Book Collection and Extra Books section in which user can download other book from different websites , Student Corner is a section in which student can upload there own creativity based on different topics.

Fig 4.3 Student registration form

In Fig 4.3 This is Student Registration Form in which student registered themselves for library
.



Fig 4.4 search book section

In Fig 4.4 This is Search Book section in which we can search books based on book title or
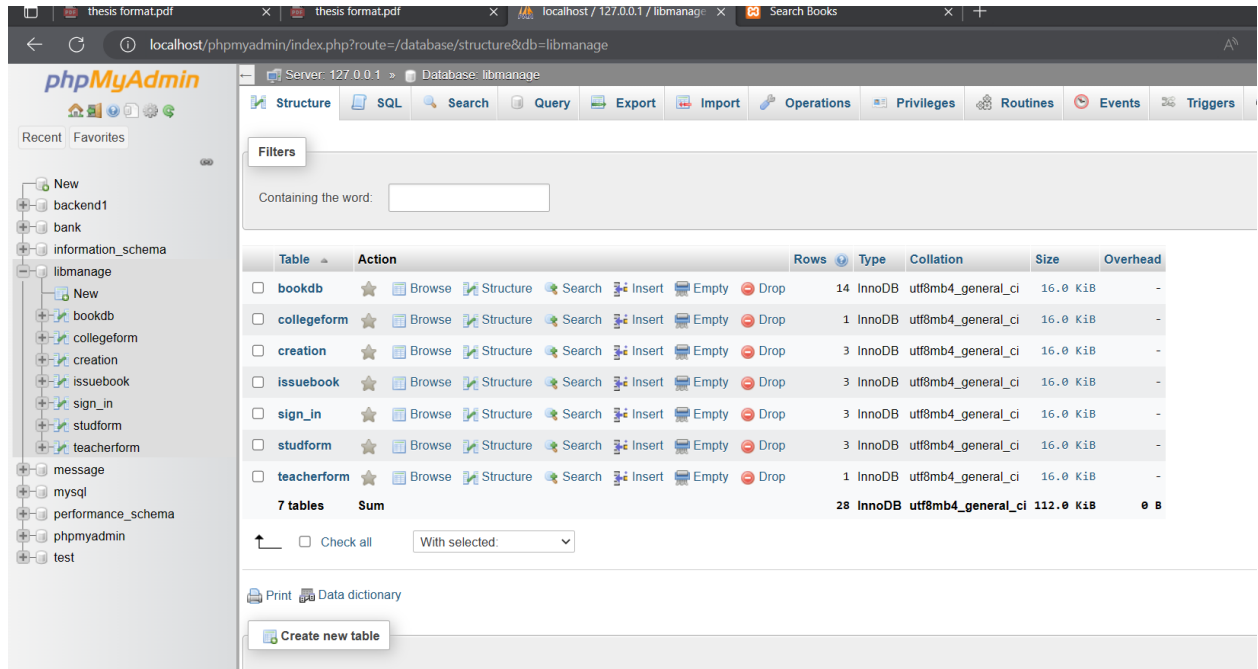author's name and give result based on the searched items.

Fig 4.5  Database for back-end in PHP admin

In Fig 4.5 This is phpMyAdmin page in which we can create, manipulate our database in it also gives detail about tables inside of database for example in the given figure inside of **libmanage** database there are total 7 tables which is used to store data of webpage of library management
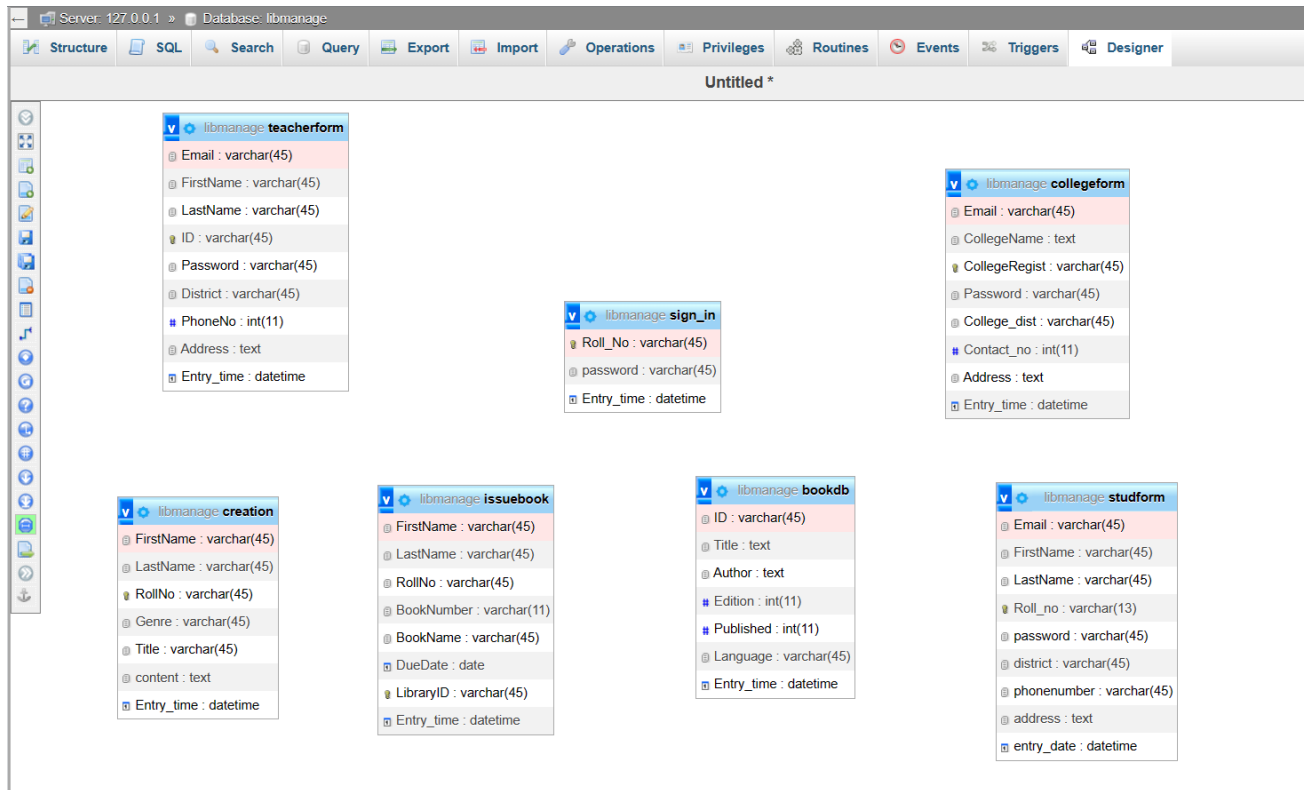
Fig 4.6  Tables of  Library Management Database

In Fig 4.6 This shows the different tables of database graphically in which it gave details about domain of  each column of tables.

# *Chapter – 5*

# *Conclusion*

1. The Library Management System allows the user to store the book details, the person's details and can download books from other website.
2. This web page allows storing the details of all the data related to Library.
3. The implementation of the system will reduce data entry time and provide readily calculated reports
4. A well-designed Library Management can help to ensure that tasks and activities are properly prioritized and scheduled, which can improve overall organization and productivity. This web page can help to ensure that all data are properly stored forr records.

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