Jaypee University of Information Technology

PROJECT-REPORT

Course Code: 18B17CI474
Course Name: WEB TECH LAB

Submitted by:

Name: Vaibhav Gupta

Submitted to:

Name: Dr. Sunil Datt Sharma

ACKNOWLEDGEMENT

I would like to express my sincere gratitude towards all the people who have supported me during this project. Without their valuable contributions, this project would not have been possible. In addition to this, I take this occasion to thank God, almighty for blessing us with his grace and taking our endeavor to a successful culmination. I extend our sincere and heartfelt thanks to our esteemed guide, **DR. SUNIL DATT SHARMA**, for providing us with the right guidance and advice at crucial junctures and for showing me the right way. Furthermore, I would like to express my gratitude towards my family and friends for their unwavering support and encouragement. Their constant motivation and support have helped me to stay focused and determined throughout the project. Finally, I would like to thank all the people who have contributed to this project in any way. Your contributions have been invaluable and greatly appreciated.

Thank you all for your support and guidance throughout this project.

TABLE OF CONTENTS

ABSTRACT:

The Library Management System is a system which maintains the information about the books present in the library, their authors, the members of the library to whom books are issued, library staff and all. This is very difficult to organize manually. Maintenance of all this information manually is a very complex task. Owing to the advancement of technology, organization of an Online Library becomes much simpler. The Online Library Management has been designed to computerize and automate the operations performed over the information about the members, book issues and returns and all other operations. This computerization of the library helps in many instances with its maintenance. It reduces the workload of management as most of the manual work done is reduced.

CHAPTER 1

INTRODUCTION

This chapter gives an overview of the aim, objectives, background and operation environment of the system.

1.1 PROJECT AIMS AND OBJECTIVES

The project aims and objectives that will be achieved after completion of this project are discussed in this subchapter. The aims and objectives are as follows:

- A search column to search availability of books.
- Facility to issue books online.
- Facility to add books.
- Facility to renew books.
    - An Admin login portal where admin can add books, delete book, add author, accept/delete issue request, renew request etc.
    - A user portal where a person can search for any book, request for book issue etc.

1.2 BACKGROUND OF PROJECT

Library Management System is an application which refers to library systems which are generally small or medium in size. It is used by the librarian to manage the library using a computerized system where he/she can perform various actions depending on the role.

Books and student maintenance modules are also included in this system which would keep track of the students using the library and a detailed description of the books a library contains. With this computerized system there will be no loss of book record or member record, which generally happens when a non-computerized system is used.

All these modules can help librarians to manage the library with more convenience and in a more efficient way as compared to library systems which are not computerized.

PROJECT REQUIREMENTS:

PROCESSOR	INTEL CORE PROCESSOR OR BETTER PERFORMANCE
OPERATING SYSTEM	WINDOWS VISTA, WINDOWS7, UBUNTU
MEMORY	4GB RAM OR MORE
HARD DISK SPACE	MINIMUM 3 GB FOR DATABASE USAGE FOR FUTURE
DATABASE	MY SQL

CHAPTER 2

SYSTEM ANALYSIS

In this chapter, we will discuss and analyze the developing process of Library Management System including software requirement specification (SRS) and comparison between existing and proposed system. The functional and non functional requirements are included in SRS part to provide complete description and overview of system requirement before the developing process is carried out. Besides that, existing vs proposed provides a view of how the proposed system will be more efficient than the existing one.

2.1 SOFTWARE REQUIREMENT SPECIFICATION

2.1.1 GENERAL DESCRIPTION

PRODUCT DESCRIPTION:

Library Management System is a computerized system which helps user(librarian) to manage the library daily activity in electronic format. It reduces the risk of paper work such as file lost, file damaged and time consuming.

It can help the user to manage the transaction or record more effectively and time-saving.

PROBLEM STATEMENT:

The problem occurred before having computerized system includes:

- **File lost:**

  When a computerized system is not implemented file is always lost because of human environment. Sometimes due to some human error there may be a loss of records.

- **File damaged:**

  When a computerized system is not there, file is always lost due to some accident like spilling of water by some member on file accidentally. Besides, some natural disasters like floods or fires may also damage the files.

- **Difficult to search record:**

  When there is no computerized system there is always difficulty in searching for records if the records are large in number.

- **Space consuming:**

  After the number of records becomes large the space for physical storage of file and records also increases if no computerized system is implemented.

- **Cost consuming:**

  As there is no computerized system adding each record paper will be needed, which will increase the cost for the management of library.

2.1.2 SYSTEM OBJECTIVES

- **Improvement in control and performance**

  The system is developed to cope with the current issues and problems of the library. The system can add user, validate user and is also bug free.

- **Save cost:**

  After the computerized system is implemented less human force will be required to maintain the library thus reducing the overall cost.

- **Save time:**

  A librarian can search record by using few clicks of mouse and few search keywords thus saving his valuable time.

2.1.3 SYSTEM REQUIREMENTS

2.1.3.1 NON-FUNCTIONAL REQUIREMENTS

- **Product Requirements**

EFFICIENCY

REQUIREMENT

When a library management system will be implemented librarian and user will easily access the library as searching and book transaction will be very faster.

RELIABILITY REQUIREMENT

The system should accurately perform member registration, member validation, report generation, book transaction and search.

USABILITY REQUIREMENT

The system is designed for a user-friendly environment so that student and staff of library can perform the various tasks easily and in an effective way.

ORGANIZATIONAL REQUIREMENT

IMPLEMENTATION REQUIREMNTS

In implementing the whole system, it uses html in front end with PHP as server-side scripting language which will be used for database connectivity and the backend i.e. the database part is developed using MySQL.

DELIVERY REQUIREMENTS

The whole system is expected to be delivered in six months of time with a weekly evaluation by the project guide.

2.1.3.2 FUNCTIONAL REQUIREMENTS

1. NORMAL USER

1.1 USER LOGIN

Description of feature:

This feature is used by the user to login into the system. They are required to enter the user ID and password before they are allowed to enter the system. The user ID and password will be verified and if invalid ID is there, user is not allowed to enter the system.

Functional requirements

- User ID is provided when they register
- The system must only allow user with valid id and password to enter the system
- The system performs an authorization process which decides what user level can access to.
- The user must be able to log out after they finished using the system.

1.2 REGISTER NEW USER

Description of feature

This feature can be performed by all users to register new user to create account.

Functional requirements

- System must be able to verify information
- System must be able to delete information if information is wrong

1.3 REGISTER NEW BOOK

Description of feature

This feature allows to add new books to the library.

Functional requirements

- System must be able to verify information
- System must be able to enter the number of copies into the table.
- System must be able to not allow two books having same book ID.

1.4 SEARCH BOOK

DESCRIPTION OF FEATURE

This feature is found in the book maintenance part. We can search for a book based on book ID, book name, publication or by author name.

Functional requirements

- System must be able to search the database based on select search type.
- System must be able to filter book based on keyword entered.
- System must be able to show the filtered book in table view.

2.1.4 SOFTWARE AND HARDWARE REQUIREMENTS

This section describes the software and hardware requirements of the system.

2.1.4.1 SOFTWARE REQUIREMENTS

- **Operating system-** Windows 10 is used as the operating system as it is stable and supports more features and is more user friendly.
- **Database MYSQL-** MYSQL is used as database as it easy to maintain and retrieve records by simple queries which are in English language which are easy to understand and easy to write.
- **Development tools and Programming language-** HTML is used to write the whole code and develop webpages with CSS for styling work and PHP for sever side scripting.

2.1.4.2 HARDWARE REQUIREMENTS

- Intel core i5 2nd generation is used as a processor because it is fast than other processors an provide reliable and stable and we can run our pc for longtime. By using this processor we can keep on developing our project without any worries.
- Ram 1 gb is used as it will provide fast reading and writing capabilities and will in turn support in processing.

Existing System:

- Early days Libraries are managed manually. It required lot of time to record or to retrieve the details. The employees who have to record the details must perform their job very carefully. Even a small mistake would create a lot of problems. Security of information is very less. Report generations of all the information is very tough task.
- Maintenance of Library catalogue and arrangement of the books to the catalogue is very complex task. In addition to its maintenance of member details, issue dates and return dates etc. manually is a complex task.
- All the operations must be performed in perfect manner for the maintenance of the library with out any degradation which may finally result in the failure of the entire system.

Proposed System:

To solve the inconveniences as mentioned in the existing system, an **Online Library** is proposed. The proposed system contains the following features:

- The students will register themselves Online
- Individually each member will have his account through which he can access the information he needs.
- Book details like authors, number of copies totally maintained by library, present available number of books, reference books, non-reference books etc. all this information can be made handy.
- Regarding the members designation, number of books was issued.
- Issue dates and returns of each member is maintained separately if there is any delay in returning the book.
- Administrator can add, update the books.
- Time consuming is low, gives accurate results, reliability can be improved with the help of security.

2.3 SOFTWARE TOOLS USED

The whole Project is divided in two parts the front end and the back end.

2.3.1 Front end

The front end is designed using of HTML and CSS.

- **HTML- Hyper Text Markup Language** is the main markup language for creating web pages and other information that can be displayed in a web browser. HTML is written in the form of HTML elements consisting of *tags* enclosed in angle brackets (like <html>), within the web page content. HTML tags most commonly come in pairs like <h1> and </h1>, although some tags represent *empty elements* and so are unpaired, for example <img>. The first tag in a pair is the *start tag*, and the second tag is the *end tag* (they are also called *opening tags* and *closing tags*). In between these tags web designers can add text, further tags, comments and other types of text-based content. The purpose of a web browser is to read HTML documents and compose them into visible or audible web pages. The browser does not display the HTML tags, but uses the tags to interpret the content of the page.HTML elements form the building blocks of all websites.

HTML allows images and objects to be embedded and can be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. It can embed scripts written in languages such as JavaScript which affect the behavior of HTML web pages.

- **CSS- Cascading Style Sheets(CSS)** is a style sheet language used fordescribing the look and formatting of a document written in a markup language. While most often used to style web pages and interfaces written in HTML and XHTML, the language can be applied to any kind of XML document, including plain XML, SVG and XUL. CSS is a cornerstone specification of the web and almost all web pages use CSS style sheets to describe their presentation.CSS is designed primarily to enable the separation of document content from document presentation, including elements such as the layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple pages to share formatting, and reduce complexity and repetition in the structural content (such as by allowing for table less web design). CSS can also allow the same markup page to be presented in different styles for different rendering methods, such as on-screen, in print, by voice (when read out by a speech-based browser or screen reader) and on Braille-based, tactile devices. It can also be used to allow the web page to display differently depending on the screen size or device on which it is being viewed. While the author of a document typically links that document to a CSS file, readers can use a different style sheet, perhaps one on their own computer, to override the one the author has specified. However if the author or the reader did not link the document to a specific style sheet the default style of the browser will be applied. CSS specifies a priority scheme to determine which style rules apply if more than one rule matches against a particular element. In this so-called *cascade*, priorities or *weights* are calculated and assigned to rules, so that the results are predictable.

- **PHP- PHP** is a server-side scripting language designed for webdevelopment but also used as a general-purpose programming language. PHP is now installed on more than 244 million websites and 2.1 million web servers. Originally created by Rasmus Lerdorf in 1995, the reference implementation of PHP is now produced by The PHP Group. While PHP originally stood for *Personal Home Page*, it now stands for *PHP: HypertextPreprocessor*, a recursive backronym. PHP code is interpreted by a webserver with a PHP processor module, which generates the resulting web page: PHP commands can be embedded directly into an HTML source document rather than calling an external file to process data.

It has also evolved to include a command-line interface capability and can be used in standalone graphical applications. PHP is free software released under the PHP License. PHP can be deployed on most web servers and also as a standalone shell on almost every operating system and platform, free of charge.

- **MYSQL- MySQL("My S-Q-L", officially, but also called "My Sequel")** is (as of July 2013) the world's second most widely used open-source relational database management system (RDBMS). It is named after co-founder Michael Widenius daughter, My. The SQL phrase stands for Structured Query Language. The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements. MySQL was owned and sponsored by a single for-profit firm, the Swedish company MySQL AB, now owned by Oracle Corporation. MySQL is a popular choice of database for use in web applications, and is a central component of the widely used LAMP open source web application software stack (and other 'AMP' stacks). LAMP is an acronym for "Linux, Apache, MySQL, Perl/PHP/Python." Free-software-open source projects that require a full-featured database management system often use MySQL. For commercial use, several paid editions are available, and offer additional functionality. Applications which use MySQL databases include: TYPO3, MODx, Joomla, WordPress, phpBB, MyBB, Drupal and other software. MySQL is also used in many high-profile, large-scale websites, including Wikipedia, Google (though not for searches), Facebook, Twitter, Flickr, and YouTube.

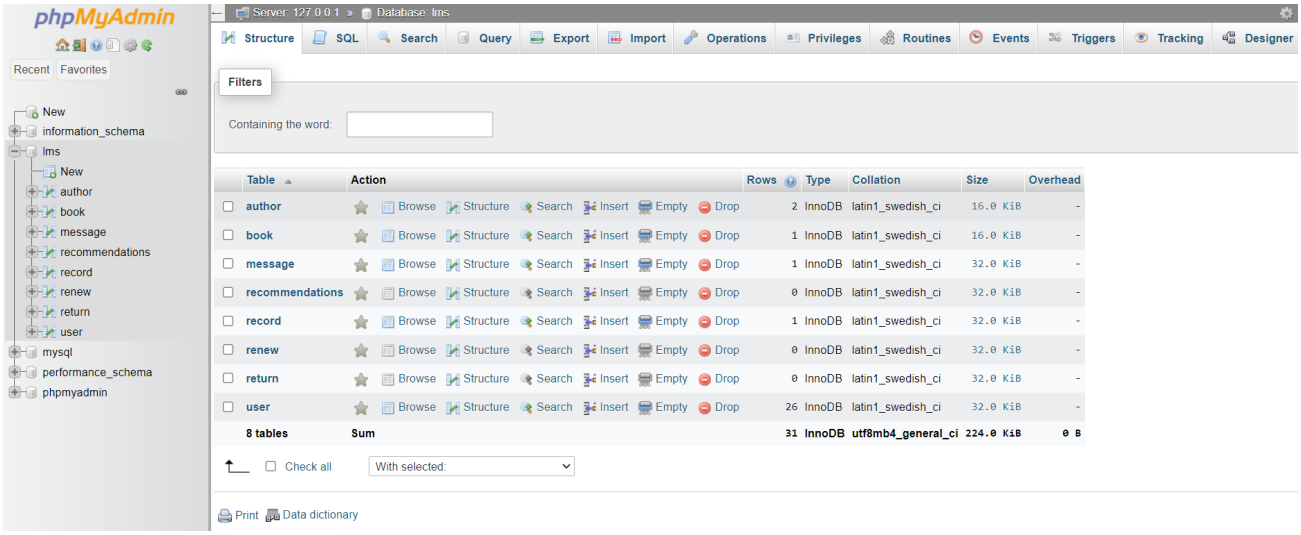
CHAPTER 3

SYSTEM DESIGN

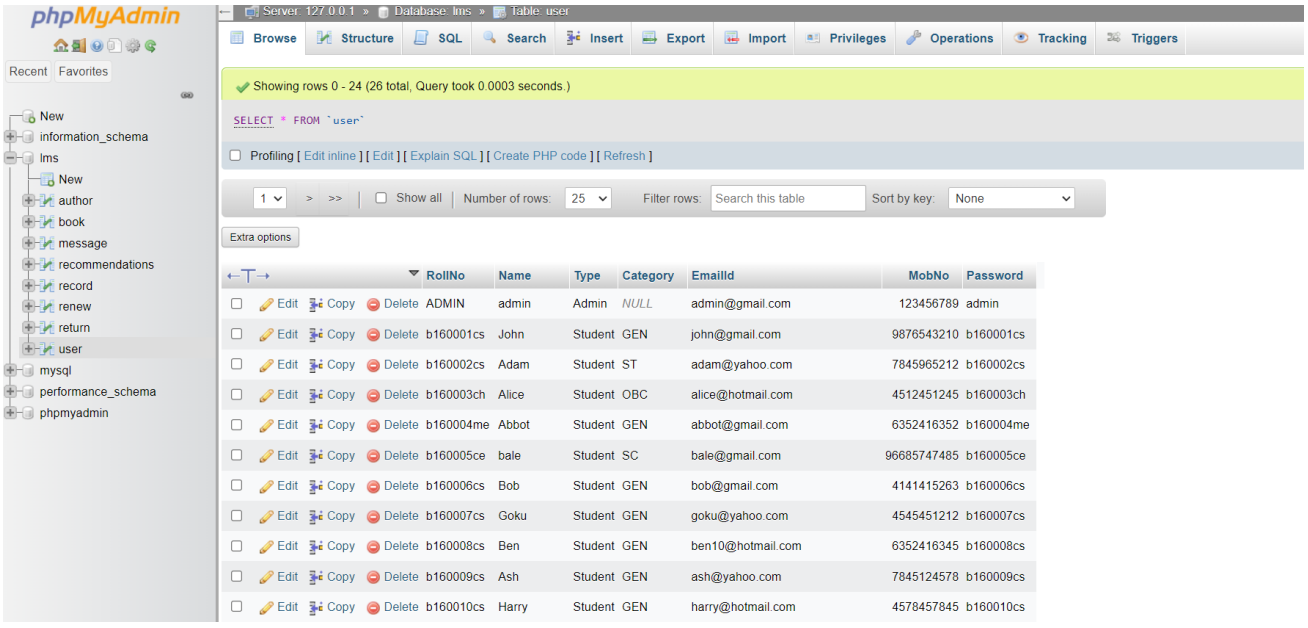
3.1 TABLE DESIGN

VARIOUS TABLES TO MAINTAIN INFORMATION

Library Table from Database



Admin Table from Database



Books Table from Database Books Table from Database

3.2 CODE

MAIN PAGE CODE:

```php
<?php
require('dbconn.php');
?>


<!DOCTYPE html>
<html>

<!-- Head -->
<head>

    <title>Library Management System </title>

    <!-- Meta-Tags -->
        <meta name="viewport" content="width=device-width, initial-scale=1">
        <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
        <meta name="keywords" content="Library Member Login Form Widget Responsive, Login Form Web Template, Flat Pricing Tables, Flat Drop-Downs, Sign-Up Web Templates,
        <script type="application/x-javascript"> addEventListener("load", function() { setTimeout(hideURLbar, 0); }, false); function hideURLbar(){ window.scrollTo(0,1);
    <!-- //Meta-Tags -->

    <!-- Style --> <link rel="stylesheet" href="css/style.css" type="text/css" media="all">

    <!-- Fonts -->
        <link href="//fonts.googleapis.com/css?family=Roboto:100,300,400,500,700,900" rel="stylesheet">
    <!-- //Fonts -->

</head>
<!-- //Head -->

<!-- Body -->
<body>

    <h1>LIBRARY MANAGEMENT SYSTEM</h1>

    <div class="container">

        <div class="login">
            <h2>Sign In</h2>
```

```
<div class="container">

    <div class="login">
        <h2>Sign In</h2>
        <form action="index.php" method="post">
            <input type="text" Name="RollNo" placeholder="RollNo" required="">
            <input type="password" Name="Password" placeholder="Password" required="">


        <div class="send-button">
            <!--<form>-->
                <input type="submit" name="signin"; value="Sign In">
            </form>
        </div>

        <div class="clear"></div>
    </div>

    <div class="register">
        <h2>Sign Up</h2>
        <form action="index.php" method="post">
            <input type="text" Name="Name" placeholder="Name" required>
            <input type="text" Name="Email" placeholder="Email" required>
            <input type="password" Name="Password" placeholder="Password" required>
            <input type="text" Name="PhoneNumber" placeholder="Phone Number" required>
            <input type="text" Name="RollNo" placeholder="Roll Number" required="">

            <select name="Category" id="Category">
                <option value="GEN">General</option>
                <option value="OBC">OBC</option>
                <option value="SC">SC</option>
                <option value="ST">ST</option>
            </select>
            <br>
```

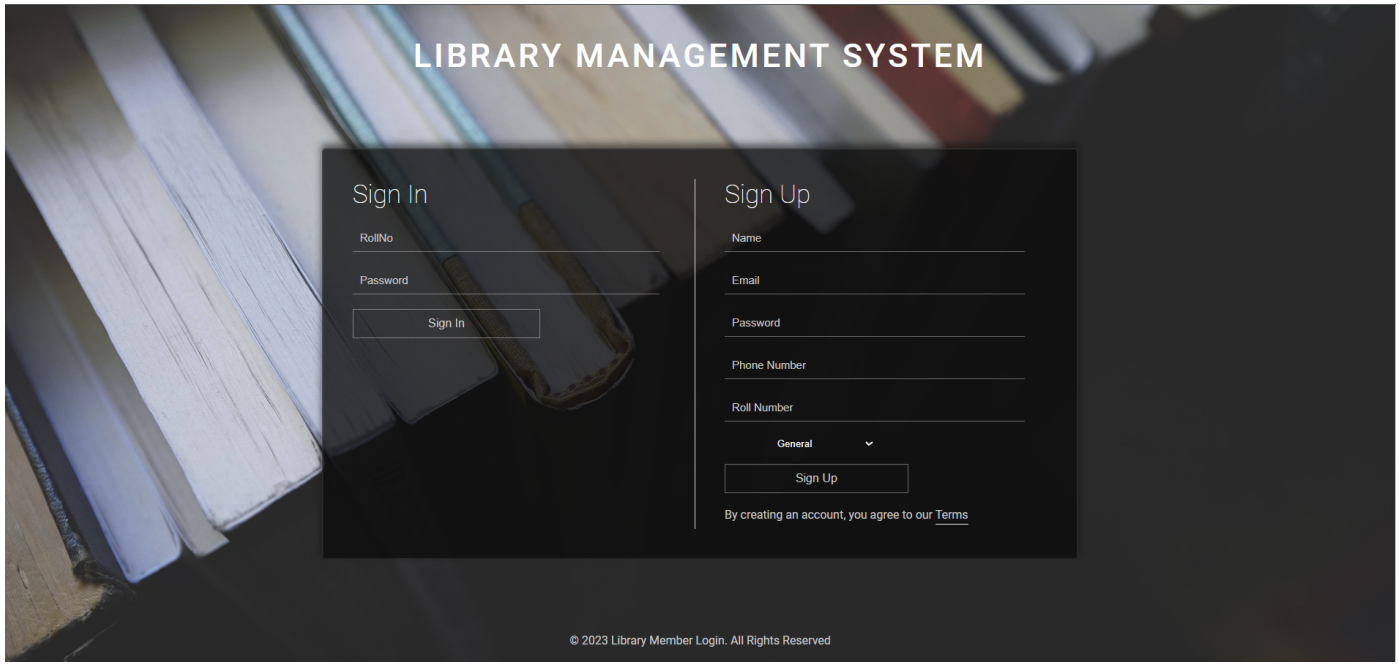
```
            <br>
            <div class="send-button">
                <input type="submit" name="signup" value="Sign Up">
                </form>
            </div>
            <p>By creating an account, you agree to our <a class="underline" href="terms.html">Terms</a></p>
            <div class="clear"></div>
        </div>

        <div class="clear"></div>

    </div>

    <div class="footer w3layouts agileits">
        <p> &copy; 2023 Vaibhav Gupta. All Rights Reserved </a></p>

    </div>

<?php
if(isset($_POST['signin']))
{$u=$_POST['RollNo'];
 $p=$_POST['Password'];
 $c=$_POST['Category'];

 $sql="select * from LMS.user where RollNo='$u'";

 $result = $conn->query($sql);
$row = $result->fetch_assoc();
$x=$row['Password'];
$y=$row['Type'];
if(strcasecmp($x,$p)==0 && !empty($u) && !empty($p))
  {//echo "Login Successful";
   $_SESSION['RollNo']=$u;
```

CHAPTER 4

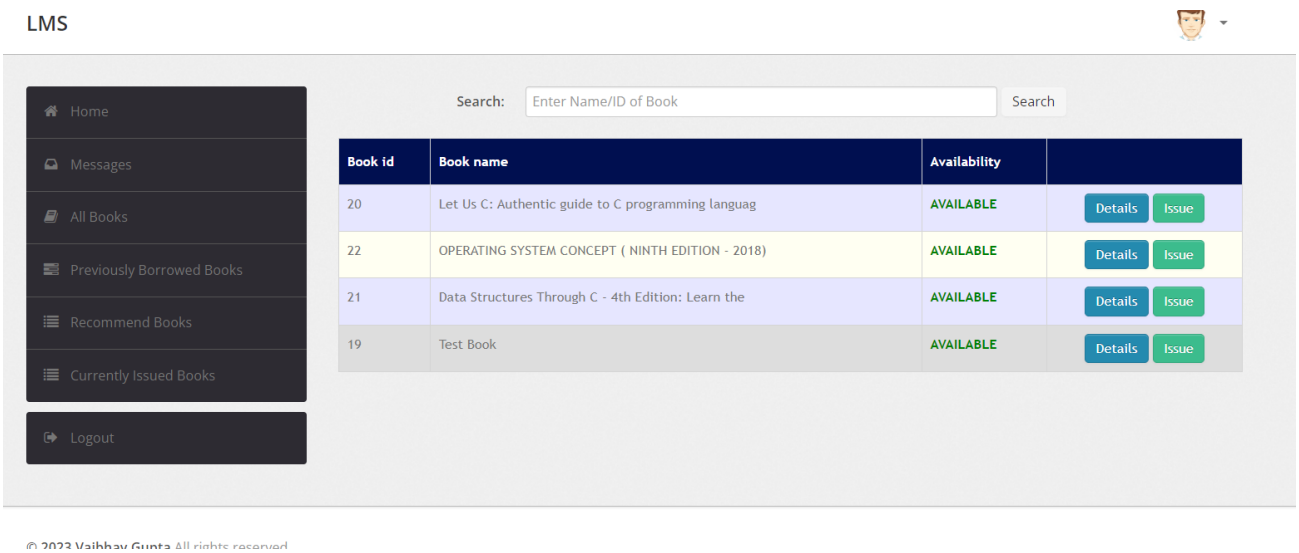
SYSTEM

IMPLEMENTATION

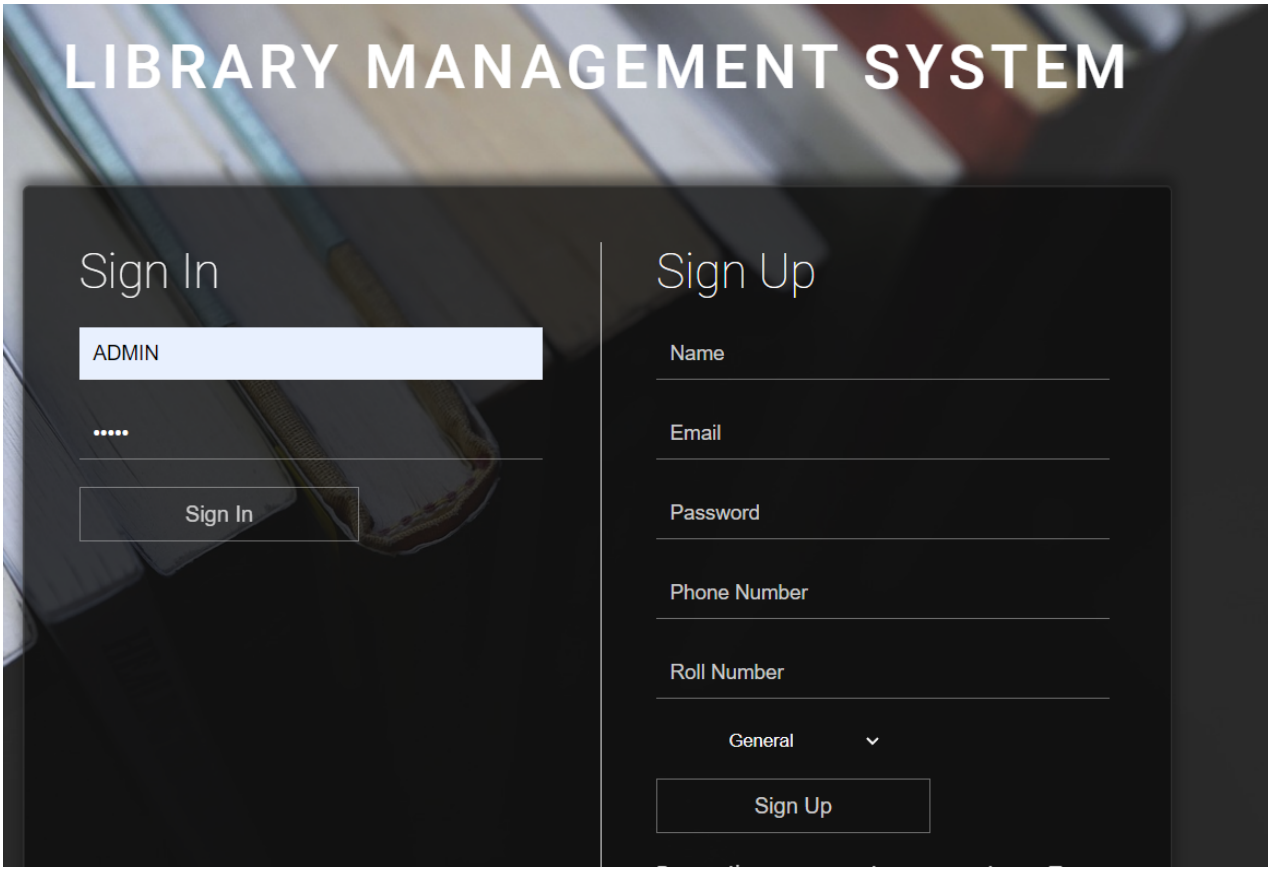
4.1 Screenshot for homepage



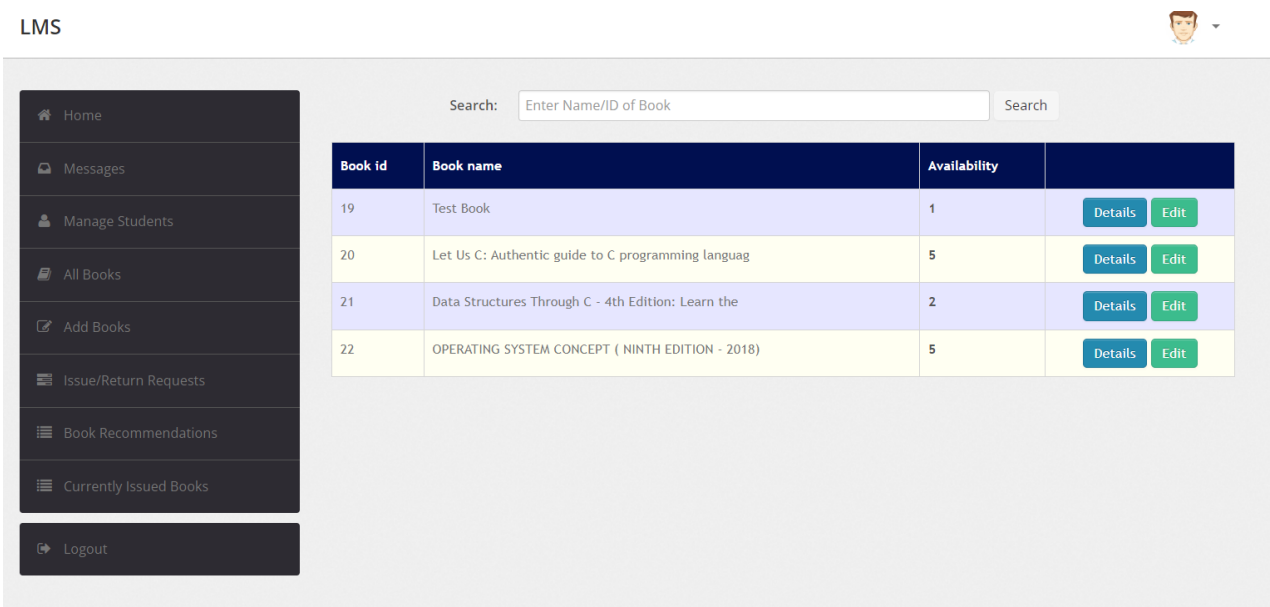
4.2 Screenshot of books from user.



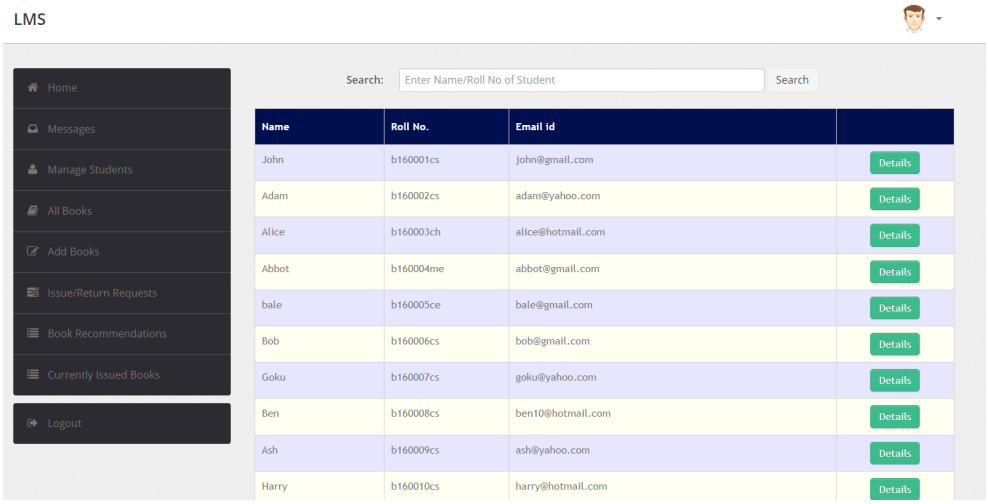
4.3 Screenshot of login for admin



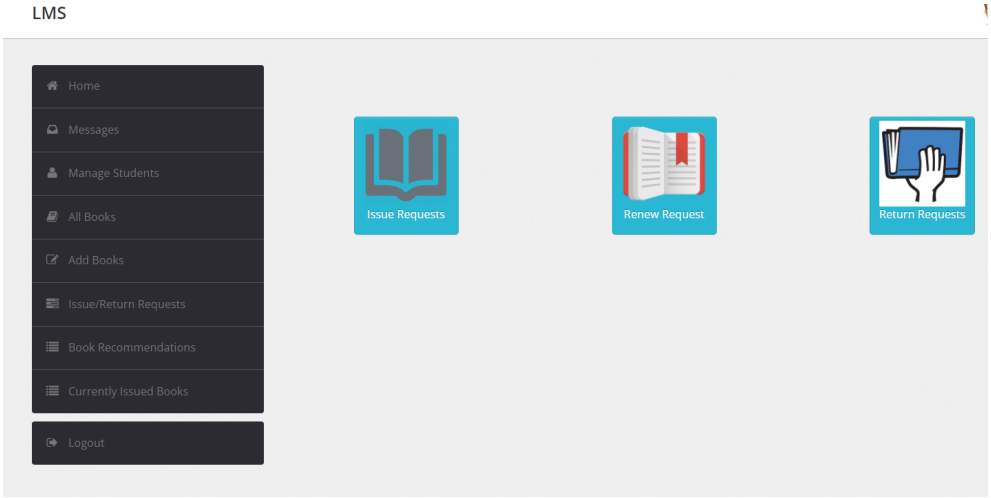
4.4 Screenshot of book from admin



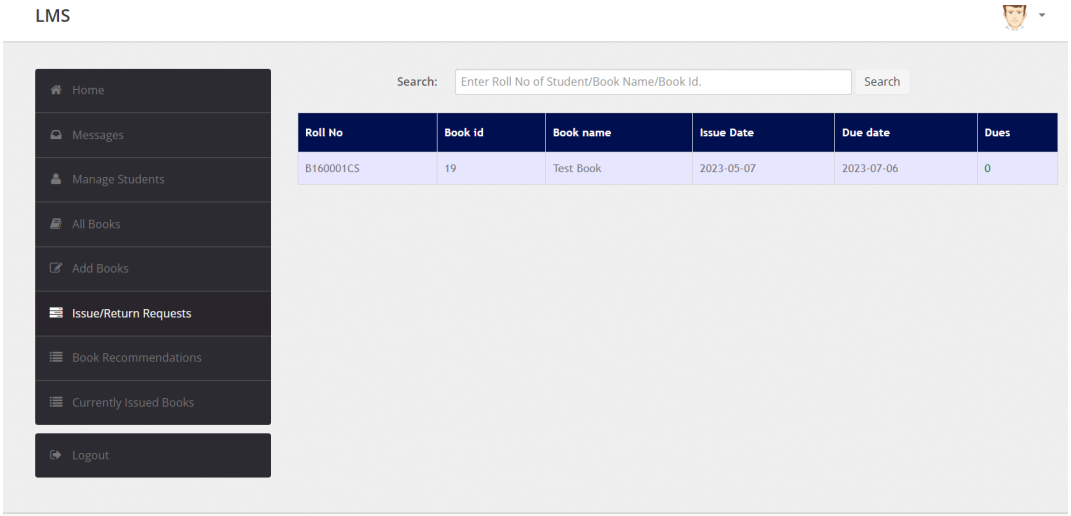
5.0 Screenshot of manage students from admin



5.1 Screenshot of Issue/Return Requests from admin



5.2 Screenshot of Issue/Return Requests from admin



CHAPTER 5

SYSTEM TESTING

The aim of the system testing process was to determine all defects in our project .The program was subjected to a set of test inputs and various observations were made and based on these observations it will be decided whether the program behaves as expected or not. Our Project went through two levels of testing

1. Unit testing
2. Integration testing

1. UNIT TESTING

Unit testing is undertaken when a module has been created and successfully reviewed. In order to test a single module we need to provide a complete environment ie besides the module we would require

- The procedures belonging to other modules that the module under test calls
- Non local data structures that module accesses
- A procedure to call the functions of the module under test with appropriate parameters

Unit testing was done on each and every module that is described under module description of chapter 4

1. **Test For the admin module**

   - **Testing admin login form-** This form is used for log in of administrator of the system.In this we enter the username and password if both are correct administration page will open other wise if any of data is wrong it will get redirected back to the login page and again ask for username and password

   - **Book Addition-** Admin can enter details of book and can add the details to the main book table also he can view the books requests.

2. **Test for Student login module**

   - **Test for Student login Form-** This form is used for log in of Student. In this we enter the Roll Number and password if all these are correct student login page will open other wise if any of data is wrong it will get redirected back to the login page and again ask for Roll number and password.

- **Test for account creation-** This form is used for new account creation when student does not fill the form completely it asks again to fill the whole form when he fill the form fully it gets redirected to page which show waiting for conformation message as his data will be only added by administrator after verification.

2. INTEGRATION TESTING

In this type of testing we test various integration of the project module by providing the input. The primary objective is to test the module interfaces in order to ensure that no errors are occurring when one module invokes the other module.

CHAPTER 6

CONCLUSION & FUTURE SCOPE

This website provides a computerized version of library management system which will benefit the students as well as the staff of the library.
It makes entire process online where student can search books, staff can generate reports and do book transactions. It also has a facility for student login where student can login and can see status of books issued as well request for book or give some suggestions.

There is a future scope of this facility that many more features such as online lectures video tutorials can be added by teachers as well as online assignments submission facility, a feature of group chat where students can discuss various issues of engineering can be added to this project, a feature of sending an email on a book issue request, a feature of adding fine for the students who have not returned or renewed the book issues thus making it more interactive more user friendly and project which fulfills each users need in the best way possible.