1. INTRODUCTION

1.1 Purpose

a) The Software is for the automation of Library Management System.

b) It maintains two levels of users

    (1) Administrator Level (Librarian)

    (2) User Level (Member)

c) The Software includes:

1. Maintaining member record.
2. Maintaining Book record.
3. Book issue/return management.

d) Provide complete control to Librarian.

e) Member balance management(Updation/Deduction).

f) Provide Reminders to Member as well as Librarian.

1.2 Scope

The proposed software product is the **Library Management System (LMS).** The system aims at making the task of library easy. The software keeps track of all the information about the books in the library, details of the issues, students, librarian, delay and much more. The project is totally built at an administrative end and thus only the admin is guaranteed the access. The scope of the project is to build an application program to reduce the manual work for managing the Library's book issue system. The system contains a database where all the information will be stored safely.

1.3 Definition, Acronyms & Abbreviations

- **HTML (HyperText Markup Language):** A markup language to create web pages and applications.
- **CSS(Cascading Stylesheet):** Enhance presentation of document written in HTML.
- **PHP(HyperText Preprocessor):** Server-side scripting language.
- **PhpMyAdmin:** Application for MySQL Database Management.
- **Login ID** - A member identification ID to enter the system.
- **Password** – An encrypted string(user specific) that enables member to gain access into the system.

1.5 Technology Used

- HTML
- CSS
- PHP
- PHPMYADMIN
- BOOTSTRAP
- SQL

2. OVERALL DESCRIPTION

2.1 Project Perspective

The library management system project is related to the storage of information regarding the library management. Library is the place with the huge collection of books. It is place from where people issue books for their reading and reference purposes. But the maintenance of keeping the records i.e issuing and borrowing is difficult in case of hard copies. To make this task easier, the online library management system is made. It helps in maintaining the information regarding the issuing and borrowing of books by people easily and efficiently.

The old system was suffering from a series of drawbacks. Since whole system was required to be maintained manually in writing, the process of keeping, maintaining and retrieving the information was very tedious and lengthy. It was problematic to update the records once entered. There would be unnecessary consumption of time while entering and retrieving information.

Thus keeping the working of the manual system as the basis of our project. We have developed an automated version of the manual system, named as "**Library Management System**".

2.2 Project Features

The system functions can be described as follows:

Login:

When a member visit the portal,

- if he/she is registered, Login ID and Password is used to access the system.
- if he/she is not registered, user need to fill the SignUp form to request for registration from librarian.

When librarian visit the portal, he/she needs to enter ID and password assigned to get the control of software.

Log Out: Members/Librarian can logout anytime from their respective system when not in use to maintain the integrity and security of system.

Issue/Return: The system provide control to librarian

- To accept book request from member (if a copy is available).
- Deduct required cost from member balance.
- Monitors due date of members.
- Update balance of member and book copies.

Librarian controls :

- Issue/Return
- Add new book
- Grant access to new members to the system.

2.3 Operating Environment

Developer Side

Operating System	: Windows 10
Programming Language	: HTML, CSS, PHP.

Client Side

Operating System	: Windows 7 or above
Web Browser	: IE7 or equivalent, Chrome

Server Side

Operating System	: Windows 7 or above

2.4 Advantages

- The main aim of our project is to provide a paperless library system with an increased efficiency upto 90%.
- The system also provides excellent security of data at every level of user-system interaction.
- It provides robust and reliable storage and facilities.
- The database is updated automatically whenever a transaction is made.
- All details regarding members and books are fully computerized.

3. DESIGN

3.1 DATA FLOW DIAGRAM

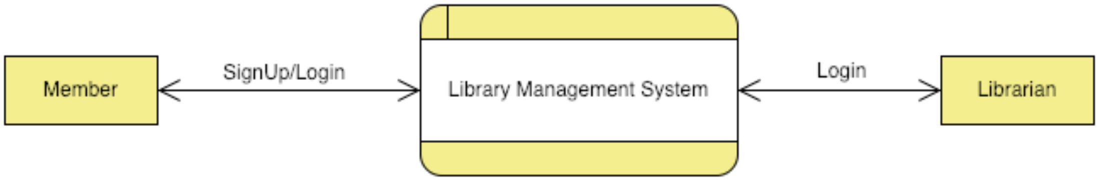


Fig. 3.1.1 Level 0 DFD for Library management System

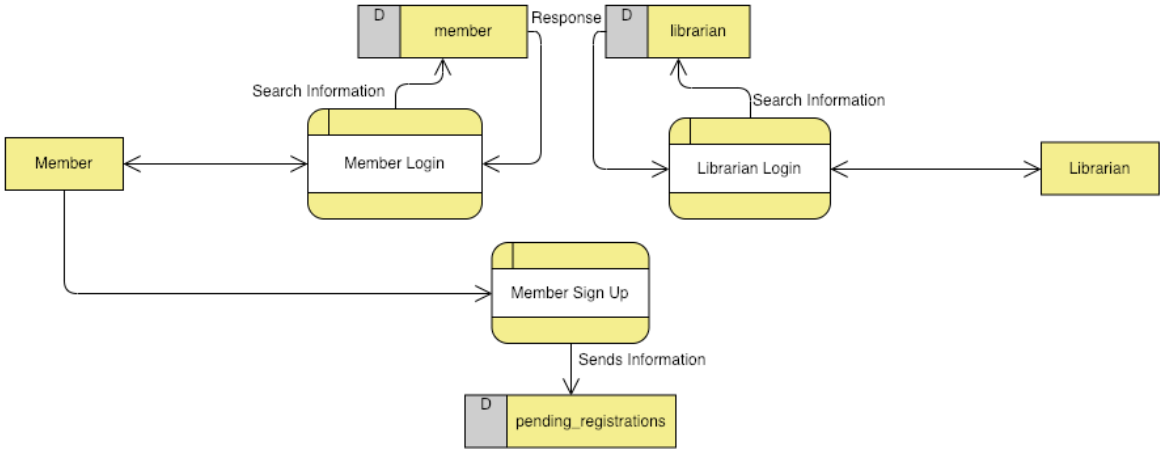


Fig.3.1.2 Level 1 DFD for Library Management System

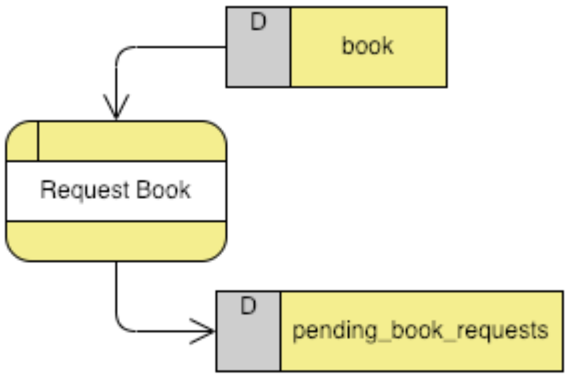


Fig. 3.1.3 Level 2 DFD for Library Management System (Member Login Process)

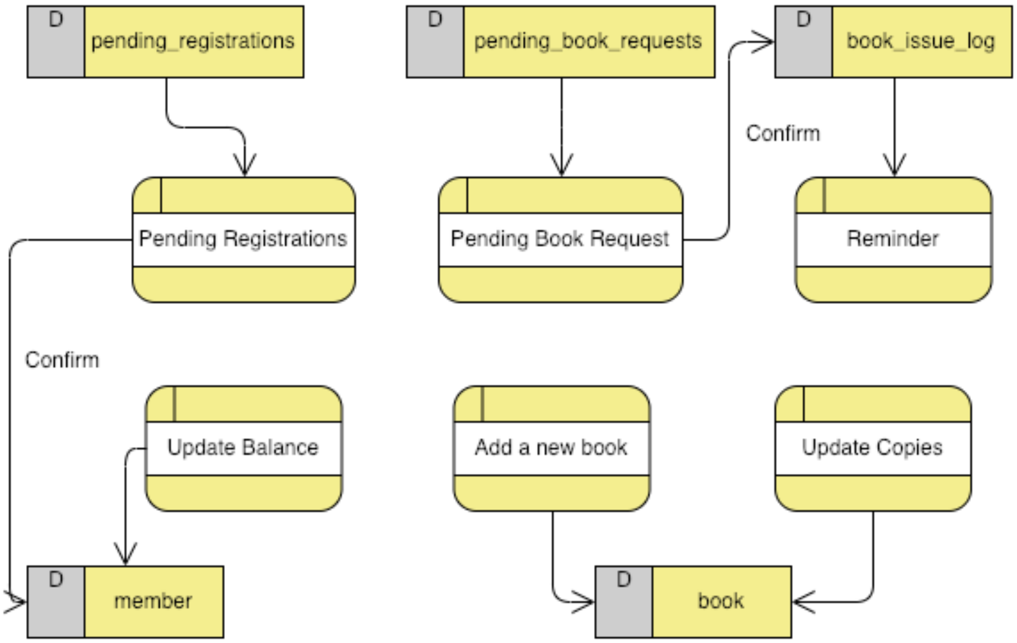


Fig. 3.1.3 Level 2 DFD for Library Management System (Librarian Login Process)

3.2 Entity Relationship Diagram

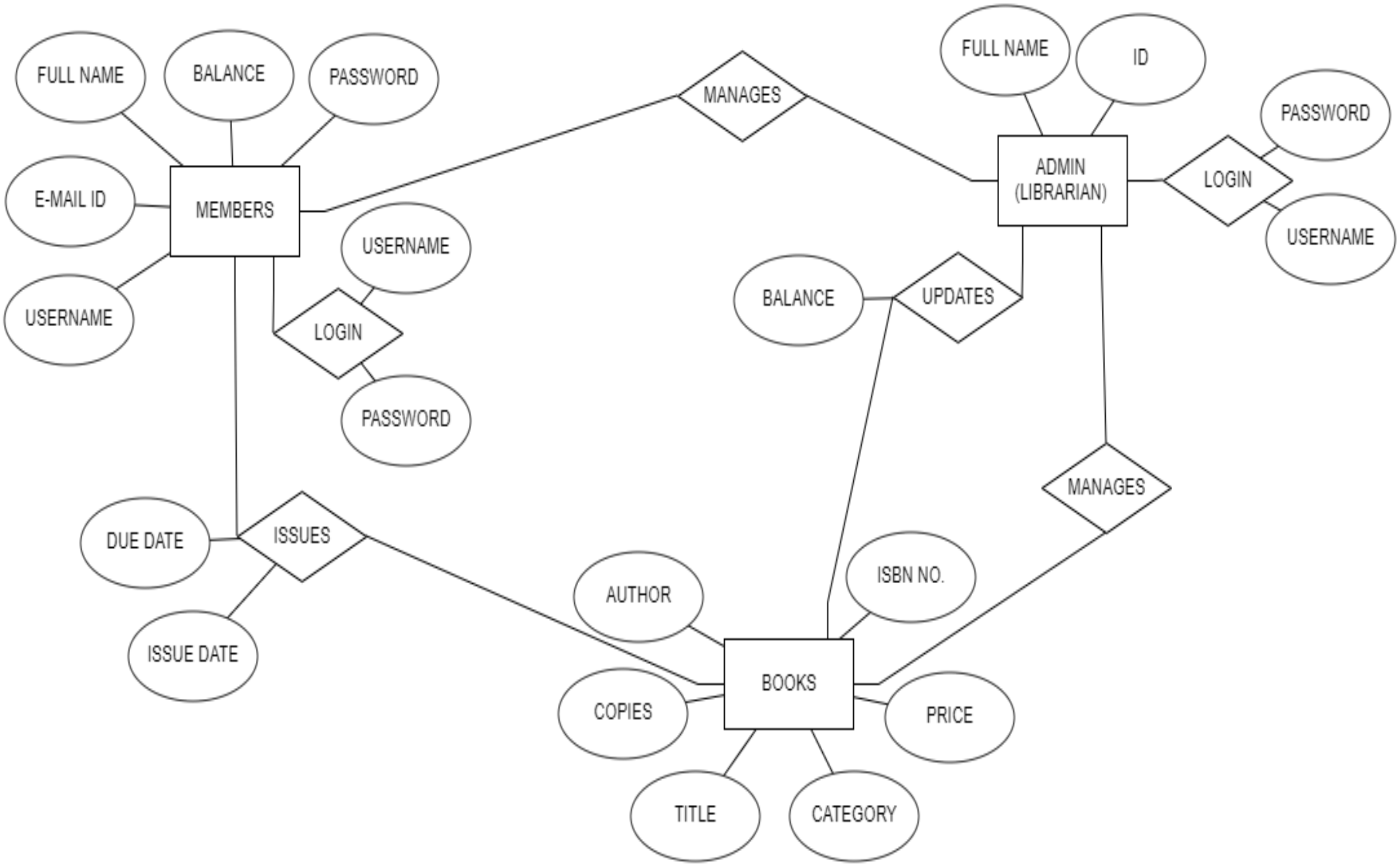
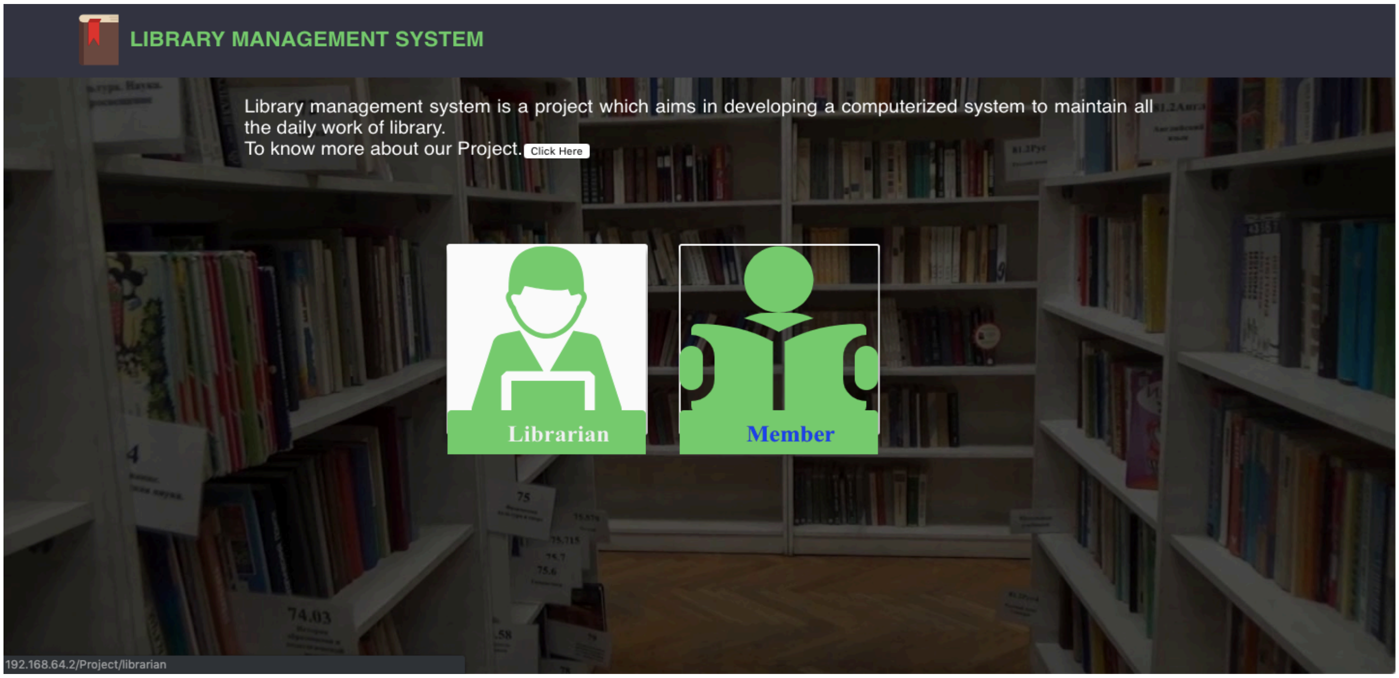


Fig.3.2.1 Entity Relationship Diagram

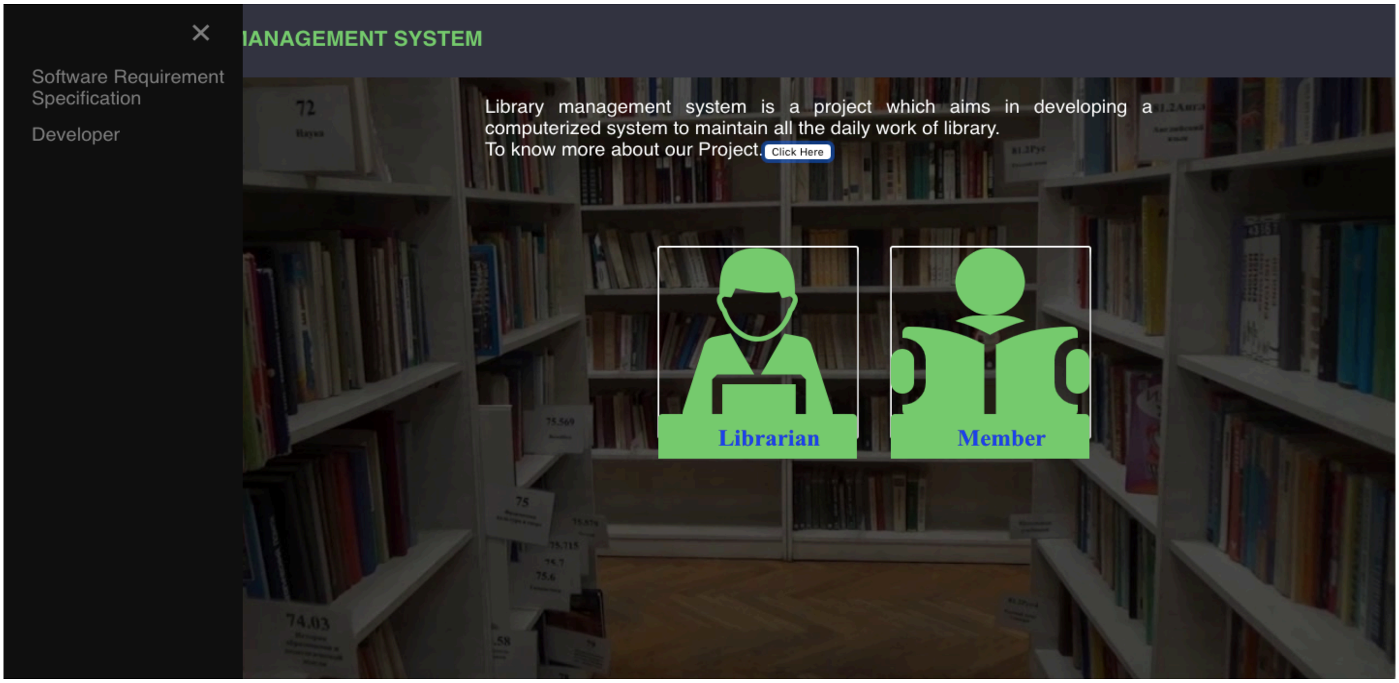
5. SCREENSHOTS



LIBRARY MANAGEMENT SYSTEM

Library management system is a project which aims in developing a computerized system to maintain all the daily work of library.
To know more about our Project.

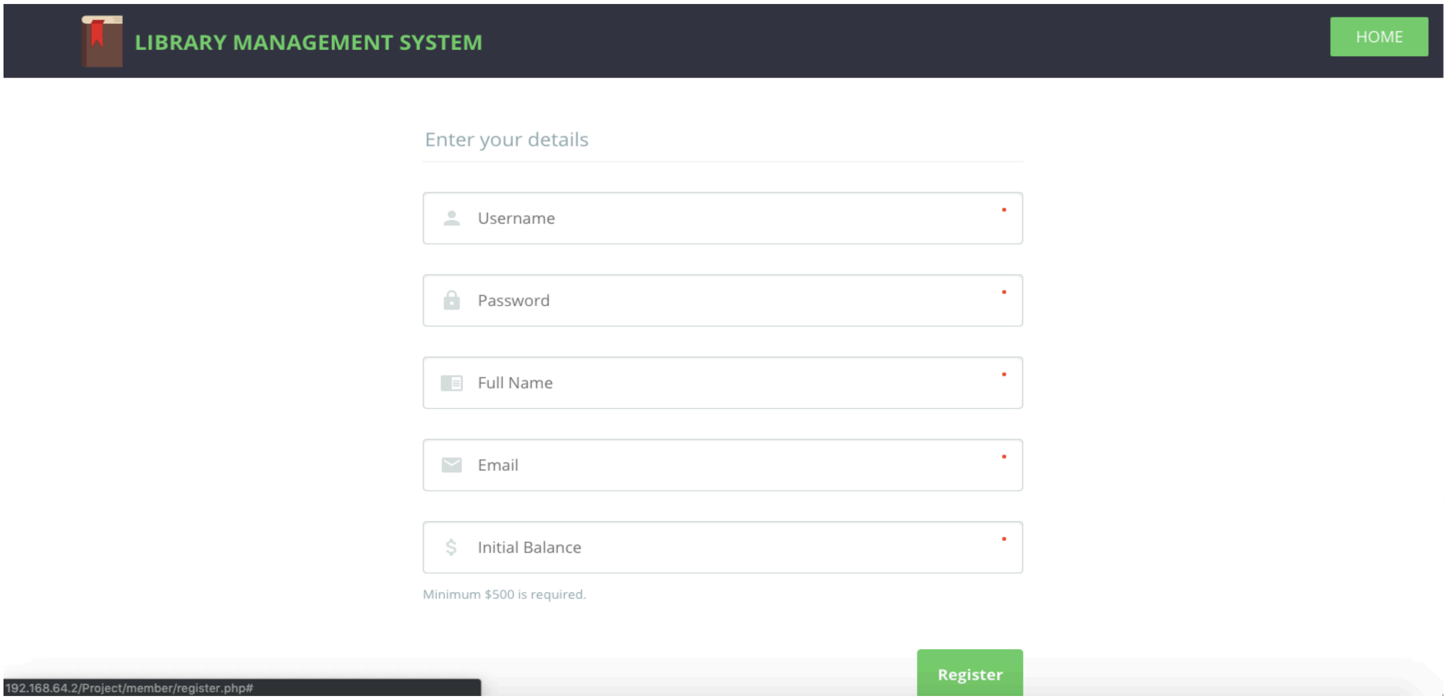
Fig 5.1.1 Home page



IANAGEMENT SYSTEM

Library management system is a project which aims in developing a computerized system to maintain all the daily work of library.
To know more about our Project.

Fig 5.1.2 Home page



Minimum $500 is required.

192.168.64.2/Project/member/register.php#

Fig 5.2 Member Registration

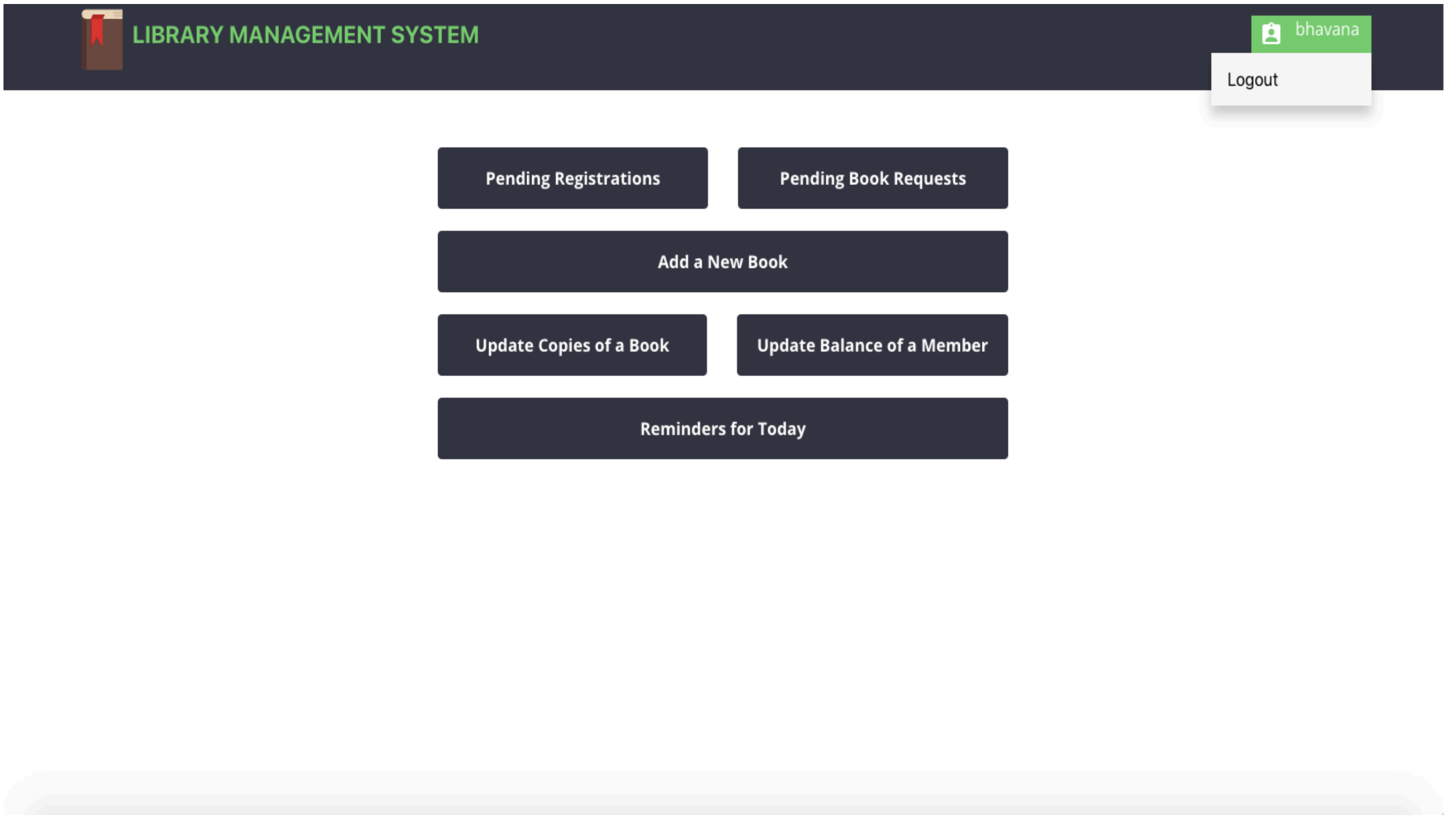
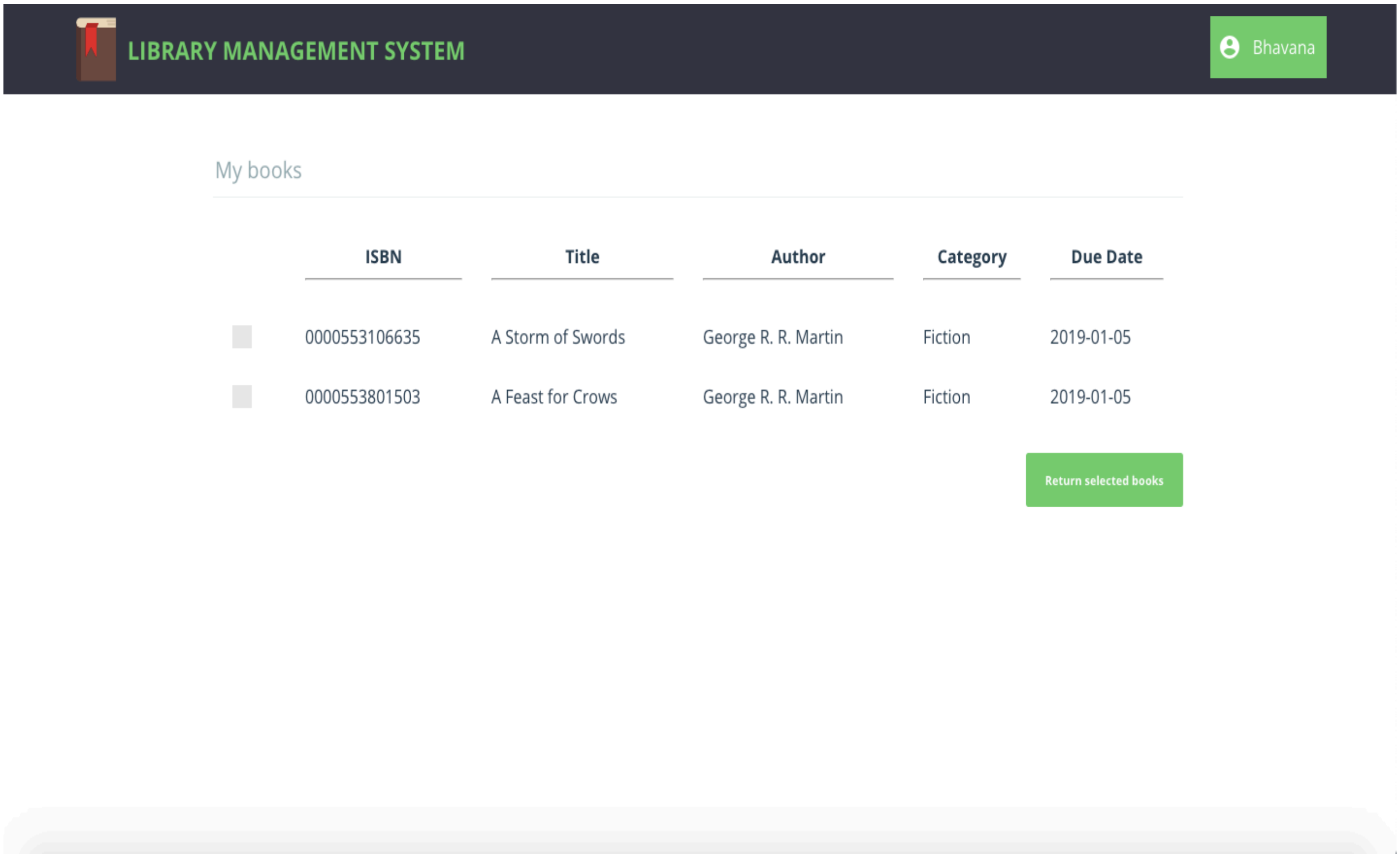


Fig 5.3 Librarian Portal



	ISBN	Title	Author	Category	Due Date
☐	0000553106635	A Storm of Swords	George R. R. Martin	Fiction	2019-01-05
☐	0000553801503	A Feast for Crows	George R. R. Martin	Fiction	2019-01-05

Fig 5.4 Book issued by a member

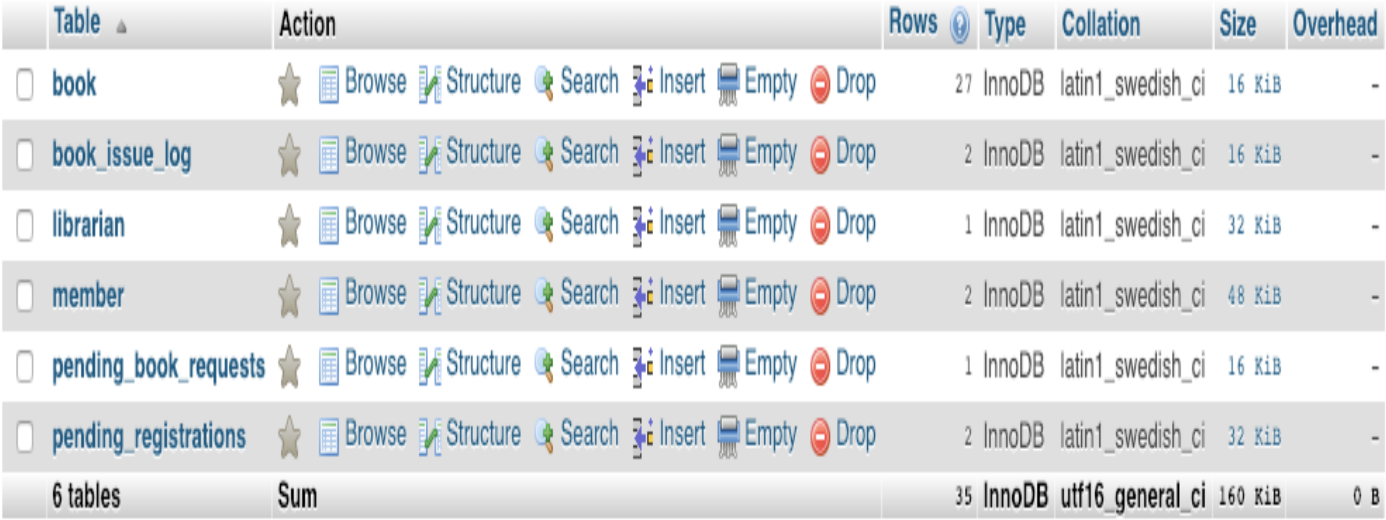


	Table ▲	Action	Rows	Type	Collation	Size	Overhead
☐	book	☆ Browse Structure Search Insert Empty Drop	27	InnoDB	latin1_swedish_ci	16 KiB	-
☐	book_issue_log	☆ Browse Structure Search Insert Empty Drop	2	InnoDB	latin1_swedish_ci	16 KiB	-
☐	librarian	☆ Browse Structure Search Insert Empty Drop	1	InnoDB	latin1_swedish_ci	32 KiB	-
☐	member	☆ Browse Structure Search Insert Empty Drop	2	InnoDB	latin1_swedish_ci	48 KiB	-
☐	pending_book_requests	☆ Browse Structure Search Insert Empty Drop	1	InnoDB	latin1_swedish_ci	16 KiB	-
☐	pending_registrations	☆ Browse Structure Search Insert Empty Drop	2	InnoDB	latin1_swedish_ci	32 KiB	-
	6 tables	Sum	35	InnoDB	utf16_general_ci	160 KiB	0 B

Fig 5.5 Database

6. TESTING

6.1 System Testing

System testing involves testing the system to validate that it meets that it meets user specifications and objectives that are as follows :

1. To analyze the test result
2. To test the system against user requirement.

The components to be tested are :

- To test the system to validate that it only accepts valid data.
- Check whether the system is giving the required output or not.

6.2 Alpha Testing

Alpha testing is conducted by the software development team at the developer's side. The alpha testing proceeds until the system developer and the customer agreed that the provided system is an acceptable implementation of the system requirements.

6.3 Beta Testing

Beta testing is performed by a group of friendly customers in the presence of the software development team. During Beta testing a system is delivered among a number of potential users who agree to use it. The customers then report problems to the developers. This provides the product for real use and detects errors which may not have been anticipated by the system developers.

6.4 Acceptance Testing

Acceptance testing is performed by the customers themselves. If the software is successful in acceptance testing, the product is installed at the customer site.

6.5 Black Box Testing

This method enables the software engineer to device sets of input techniques that fully exercise all functional requirements for a program. Black box testing tests the input, the output and the external data , it checks whether the input data is correct and whether we are getting the desired output.

6.6 White Box Testing

White box testing is the testing of a software solution’s internal coding and infrastructure. It focuses primarily on strengthening security, the flow of inputs and Outputs through the application , and improving design and usability. White box testing involves the testing of the software code for the following:

- Internal security holes
- The flow of specific inputs through the code
- Expected output
- Testing of each statement, object and function on an individual basis

The testing can be done at system , integration and unit levels of software development. One of the basic goals of white box testing is to verify a working flow for an application . It involves testing a series of predefined inputs against expected or desired outputs so that when a specific input does result in the expected output, you have encountered a bug.

7. BENEFITS OF PROJECT

- The system will help to reduce the cost of labor i.e. automation of several work in library.
- Reduction in human errors.
- This will avoid long queues at the counter due to the speed of execution and number of optimum screens to accommodate the maximum throughput.
- The system will be available 24/7.
- Increase work execution speed.
- Robust database back-end.
- Easy and fast retrieval of information.
- User friendly and interactive.

8. FUTURE SCOPE

There are also few features which can be integrated with this system to make it more flexible. Below list shows the future points to be consider.

 Any educational institute can make use of it for providing information about the books issued by students and faculties etc

 Can be used by local bookstores on implementation of buy/sell module in the software.

. Could be used to create a worldwide common library system with number contributors and member from all around the world.

 Can add search_shelf module in member module to ease out search for users in library.

 Online e-books can be provided to the members who are unable to physically access the library.

9. CONCLUSION

The whole systems activities are divided into two major parts i.e Member and Librarian. Each one has their own role to perform and system respond accordingly.

The system comprise of following features.

1. Management of Members(registration, book issue request, updation/deduction of balance)

2.Management of Books(adding new books, updating copies of book)

3. Issue and Return of Books from members.

4. Reminders for member as well as librarian.

10. REFERENCES

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- https://www.scribd.com
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- https://www.quora.com/
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