



## FACULTY OF INFORMATION TECHNOLOGY

### FINAL PROJECT SUBMISSION FORM

Student Details ( Student should fill the content)			
Name	H.P. Malith Kalinga Heenatigala.		
Intake Number	09		
Student ID	IT2020153		
Course details			
Course Code	IT22023		
Course Title	Information Architecture and Web Development (IAWD)		
Assignment Details			
Nature of the Assessment	Design and Development of a Dynamic Website (Individual)		
Topic of the Case Study/Question	GIVEN		
Learning Outcomes covered	YES		
Due date / Time	Documentation and Demonstration – Deadline will be informed later		
Declaration			
I certify that the attached material is my original work. No other person's work or ideas have been used without acknowledgement. Except where I have clearly stated that I have used some of this material elsewhere, I have not presented it for examination / assessment in any other course or unit at this or any other institution			
Signature	Malith	Date	11/26/2022
Result (Assessor use only)			
Marks by Lecturer/Assessor		Name & Signature of the Lecturer/Assessor	



## **IT22023 – Information Architecture and Web Development**

### **LEARNING OUTCOME**

1. Develop a dynamic website that organizes information effectively.
2. Implement a website and integrate it with other IT applications.

### **Tasks:**

#### **Part I – Design and Development**

**The student may identify a client or based on your assumption develop a dynamic website.**

##### **1) Front-End of the Website**

- ✦ Design & develop the website using HTML, CSS, and PHP (*At least 5 pages*).
- ✦ Include at least three (3) online forms (consisting of text fields, text area fields, Drop down menus, checkboxes, Radio buttons, buttons and etc.) appropriately.
- ✦ Online form(s) should be validated using JavaScript.
- ✦ Retrieve information should be displayed on one or two pages appropriately.
- ✦ Some pages can be accessible only to the registered users, therefore design a Login Page.
- ✦ Navigation should be properly worked.

##### **2) Back-End of the Website**

- ✦ Design the backend using MySQL and connect using PHP
- ✦ Database should consist of at least four (4) tables and populated with test data

#### **Part II – Documentation**

- 1) Define the purpose of the website (i.e., why will people come to your site?)**
- 2) Identify the potential audience and determine the needs of each audience group.**
- 3) Alternative Solution**
  - 3.1 Selected solution description/justification

Web-based	Client-Server	Standalone

#### 4) Decisions taken during the design process

4.1 Layouts/UIs

4.2 Hierarchy Design Pattern

4.3 Reasons to use MySQL as the database development tool

#### 5) Implementation Environment

Software	Hardware	Development Tool

#### 6) ERD/Relational Schema

#### 7) References

#### Evaluation Criteria

- Coding and Database [60 marks]
- Code Modification and Demonstration [20 marks]
- Documentation [20 marks]

#### Important Information for Students

- The softcopy of the documentation should be uploaded to the correct location in the OneDrive.
- File name of the documentation should be named as your index number.
- Demonstration:
  - 10 minutes demonstration of the website using test data
  - 10 minutes for code modification

# **IT22023 - Information Architecture and Web Development: Final Project**

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2022

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# 1 Chapter 01

## 1.1 Define the purpose of the website (i.e., why will people come to your site?).

Now a days, developing websites is a very common and easy thing. It is not only for static websites but also for dynamic websites because there some easy ways to develop them like using web development tools and web application frameworks including content management systems such as WordPress, Joomla, Drupal, etc. But the case is that rather than just developing, it should have a proper purpose like why people come to that site, can people find what they are looking from that particular website. Otherwise the website will be just a space that users are not even visiting. So for that having unique purpose is very important.

- To give better user experience (local library management system with web-based).

People are using mainly the libraries for reading books, in order to do that, they have to borrow the books or read the books in the library. However, they have to go physically to the library but, with the development of the technology they can do that from their houses or wherever places. To give the better UX (User Experience), can make it with more user friendliness such having better navigational system.

Even though it is possible, some of users love to read books physically. So instead of completely removing local one, can keep both of them. Then it will be more liable.

- To increase number of users of the library with what they are expecting.

On the other hand side, library also can increase no of members globally when they use web application as a solution.

When using a website as library management system, have to manage 3types users such as local users who are not join to our library, members who are the registered library users and the librarian (or library side users) who can manage the operations of the library and also different purposes can be identified with **the reason that the people are using our web site.**

Among them,

- users can fulfill their tasks with less amount of time
- easy to find the things on the website with less effort
- keep connection with library side
- giving better user-experience with the user-friendliness
- 24-hour service
- To reduce the cost
- To make more profit
- To get more opportunities.



## 1.2 Identify the potential audience and determine the needs of each audience group.

### 1. Local Users (External)

Local users are the users who are not registered which means those who have some limited access than its members.

#### Needs of local users:

- Ability to visit the website (it also can be limited than registered users)
- Ability to register.
- Ability to contact library like the situation when they faced some difficulties during registration.
- Ability to see the facilities that they can get when they are being registered (**an assumption**).
- Ability to get some information like reading pages, get some information about external events.
- Ability to rate and feedback, get the notifications and see the advertisements (**an assumption**).

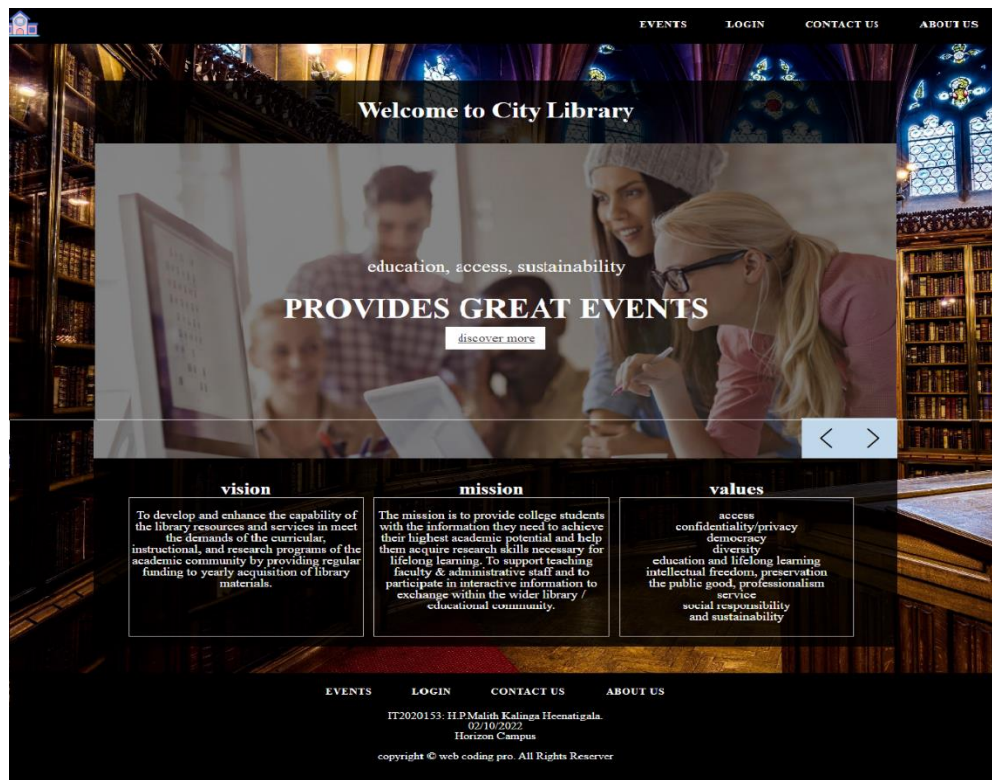


Figure 1: Home page

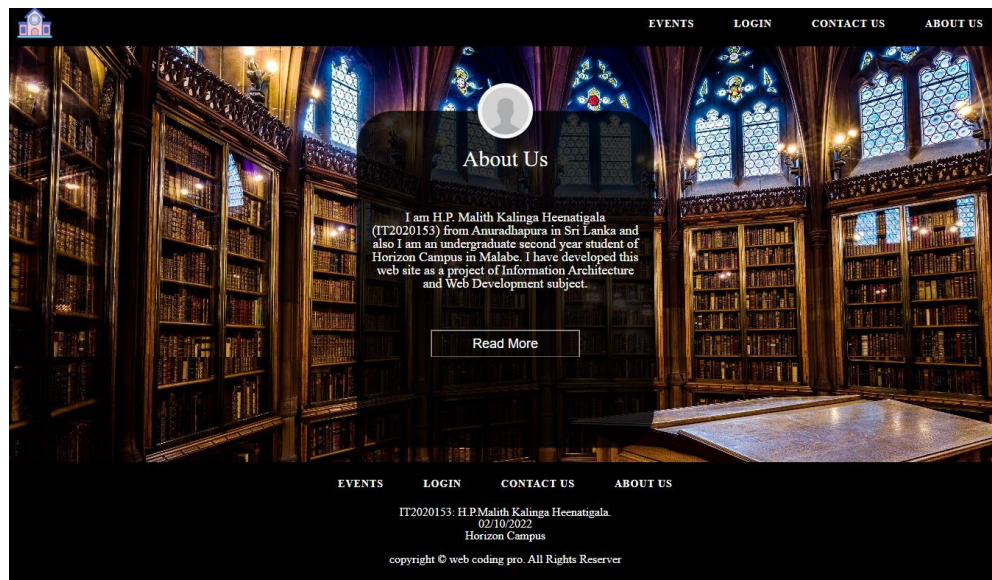


Figure 4: About Us page

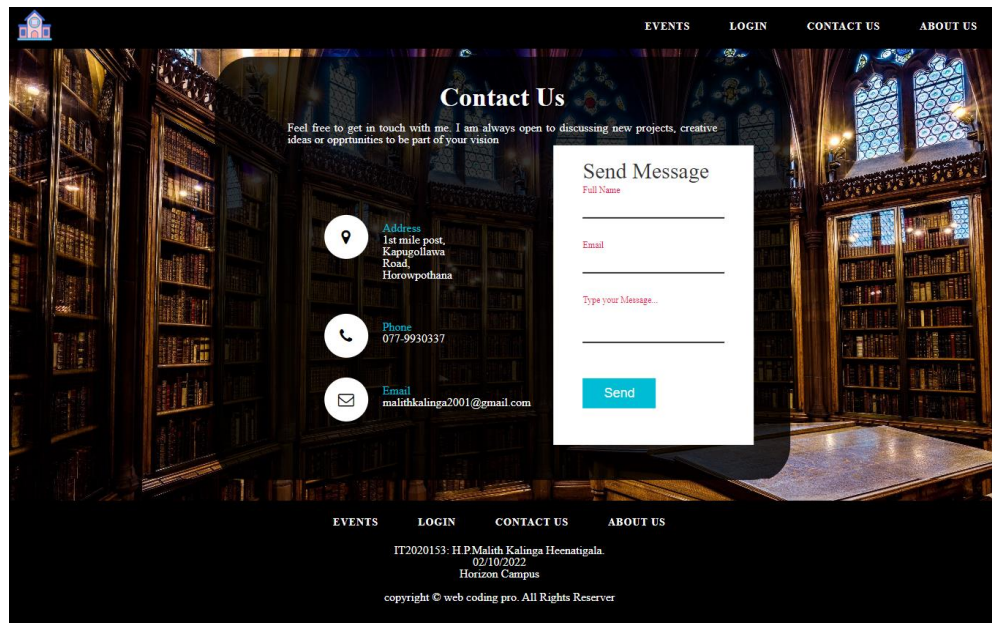


Figure 3: Contact Us page

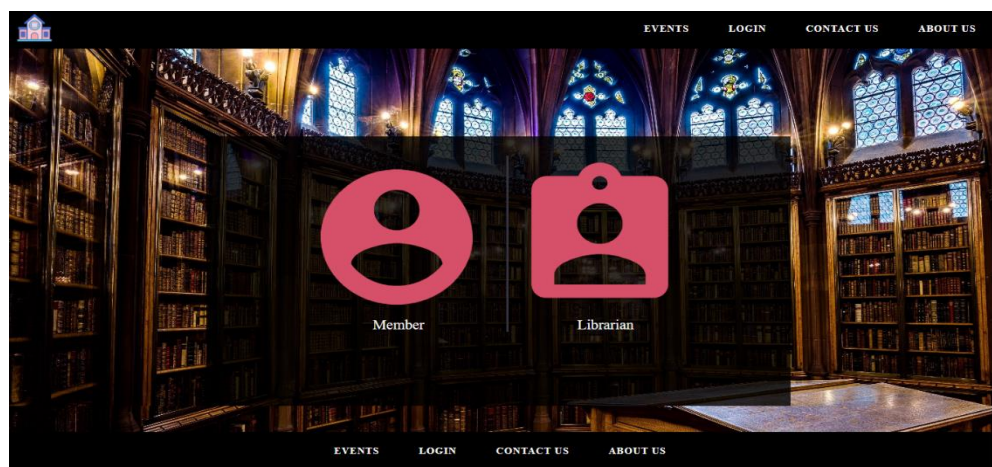


Figure 2: Login page



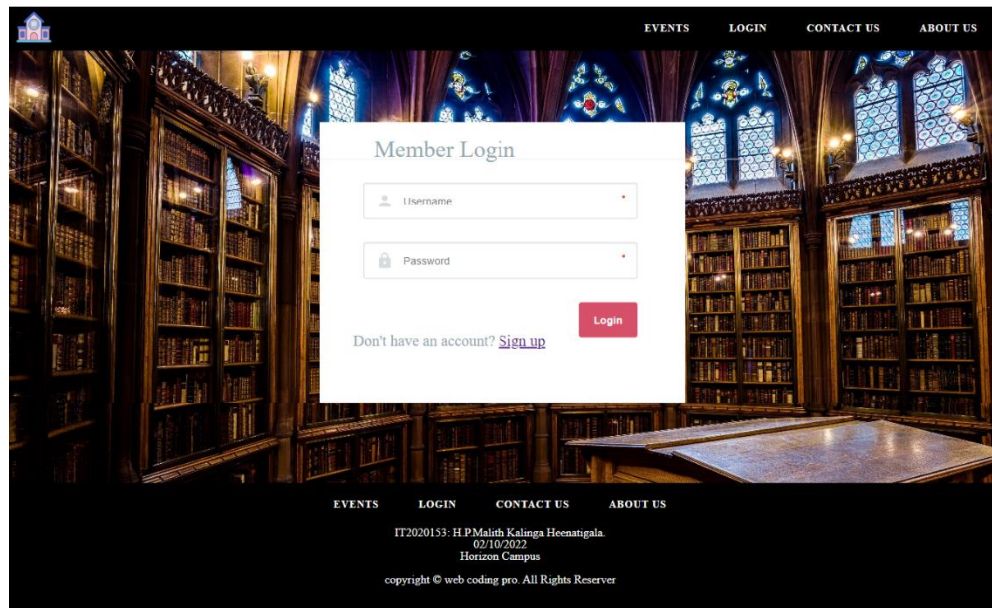


Figure 7: Member login

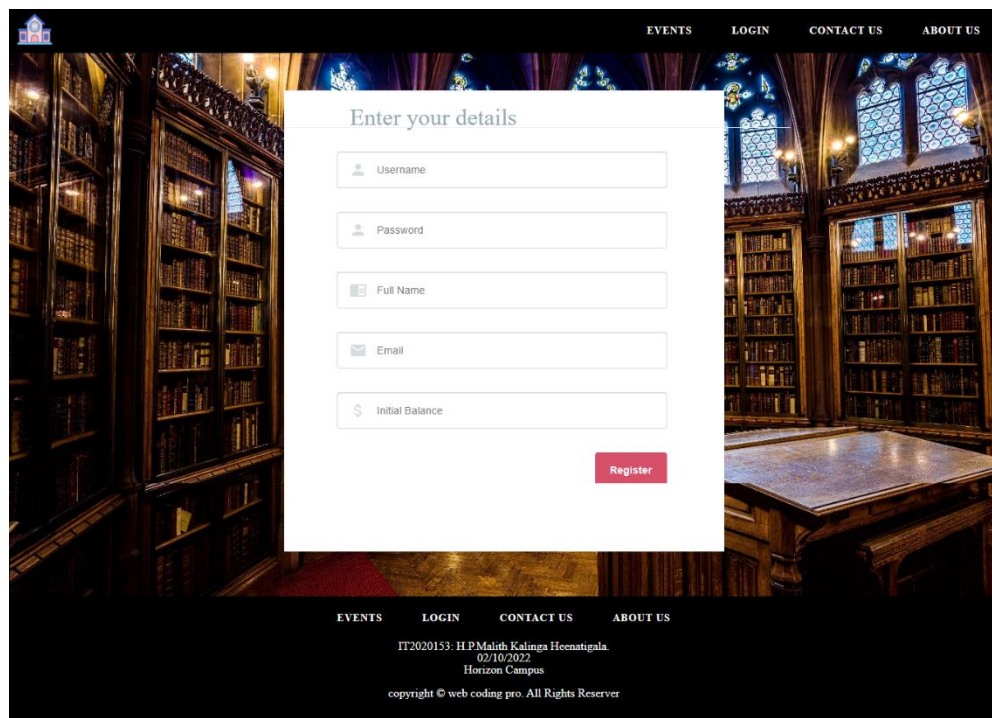


Figure 6: Member registration



Figure 5: Librarian login

## 2. Members (Internal)

Members are the users who are registered and it should be verified by the librarian.

### Needs of member users:

- Ability to reach what a local member can see.
- Ability to see the booklist with the categories.
- Ability to borrow books and read them.
- Ability to return the books.
- Ability to join events (may be internal and may be external) (**an assumption**).
- Ability to contact the library.
- Ability to make payments and see their details (**an assumption**).
- Ability to get some instructions how to use this if you are a very new member (**an assumption**).
- Ability to get messages (may be as replies).

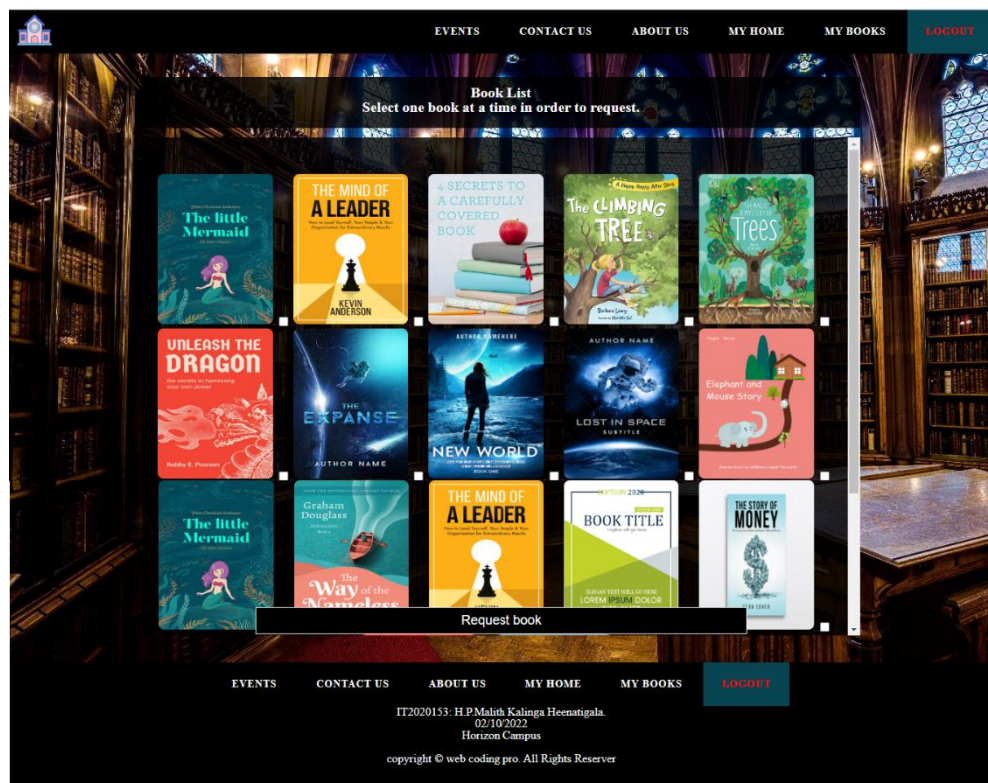


Figure 8: Member book list



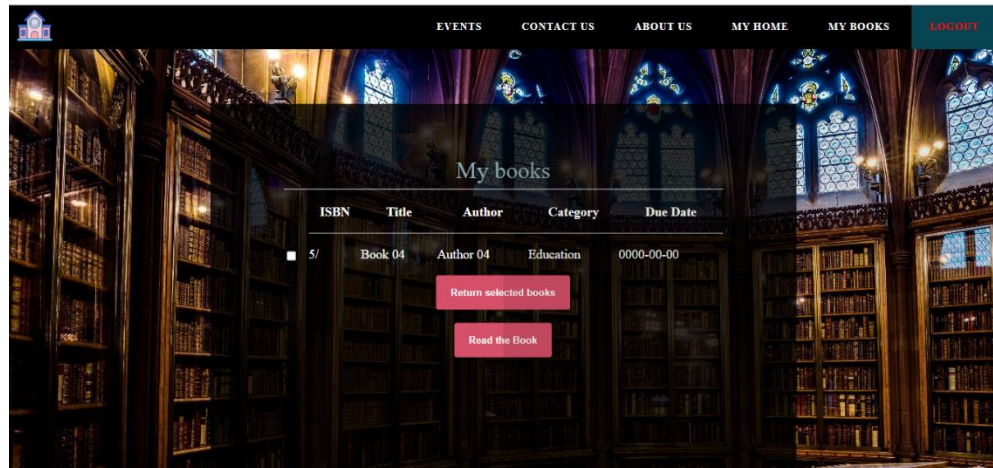


Figure 10: Member mybooks- return&read

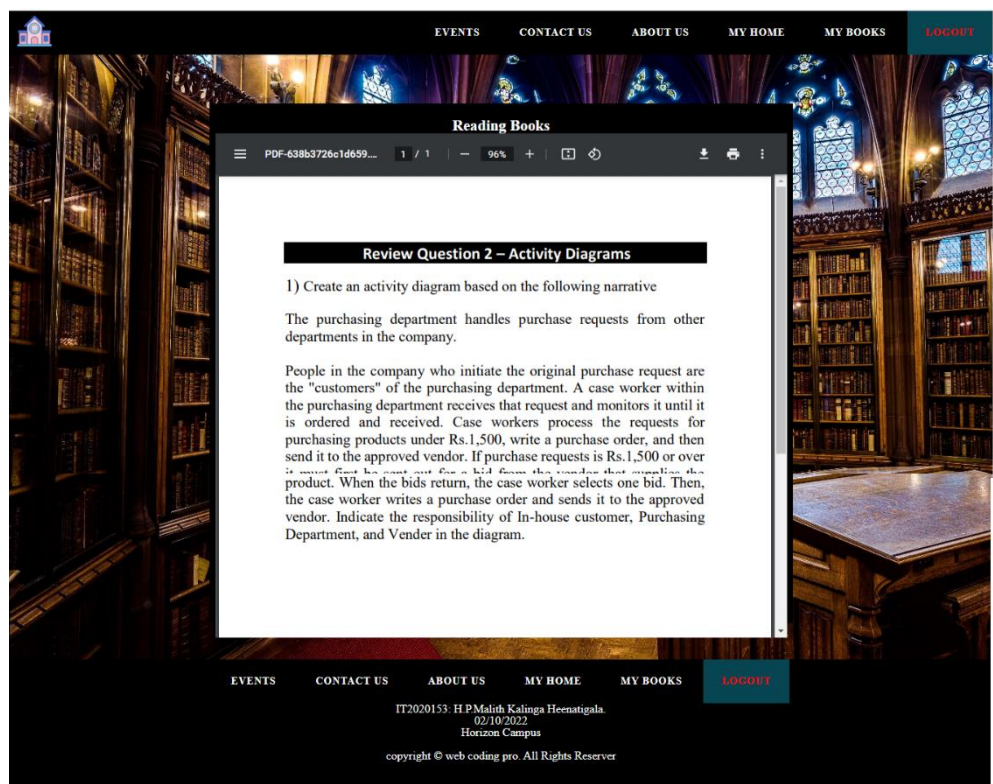


Figure 9: Member read pdf

### 3. Library Side Users (Internal)

#### 3.1. Librarian

##### Needs of librarian user:

- Ability to verify users who requested to be a member.
- Ability to verify book who requested to borrow.
- Ability to register books.
- Ability to update books and member details.
- Ability to handle events like publishing and handle Ads and notifications (**an assumption**).
- Ability to keep connection with the member like replying for messages.
- Ability to see the growth of the website (**an assumption**).
- Ability to change librarian passwords and the username for security purpose (**an assumption**).
- Ability to see the list of registered users and books with categories (**an assumption**).

#### 3.2. Other Staff (**an assumption**)

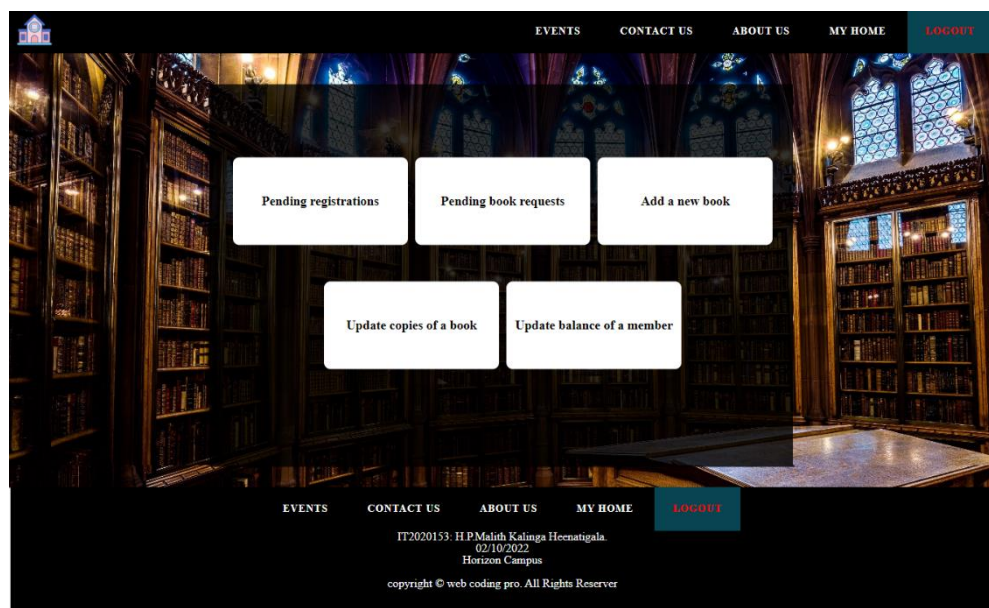


Figure 11: Librarian home page

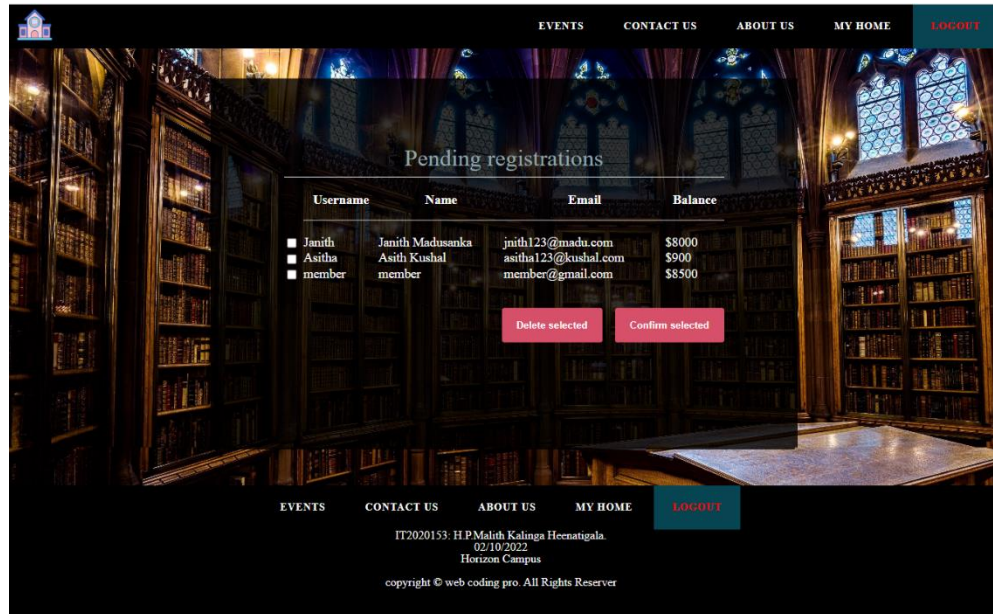


Figure 12: Pending registration page

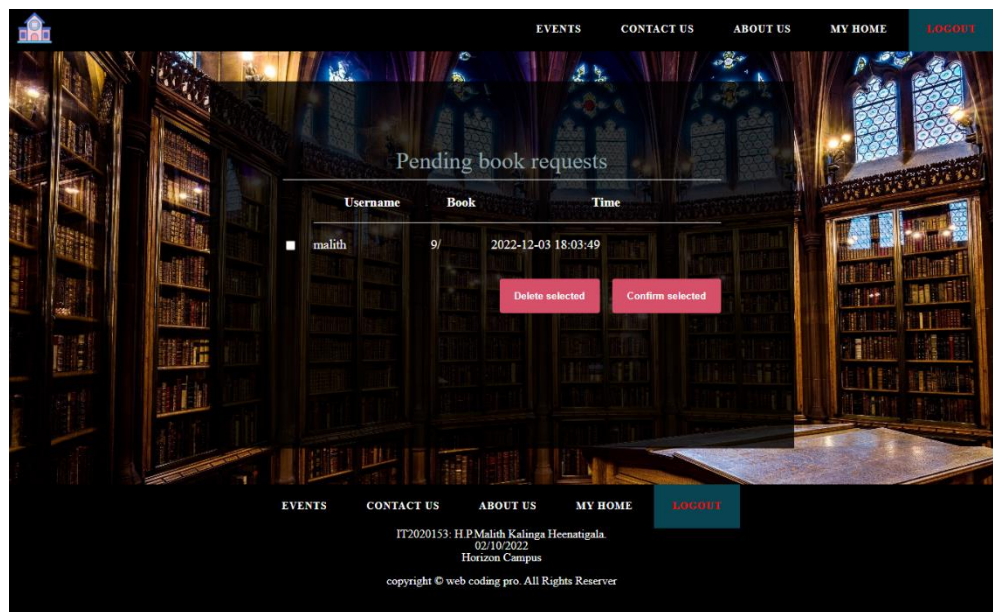
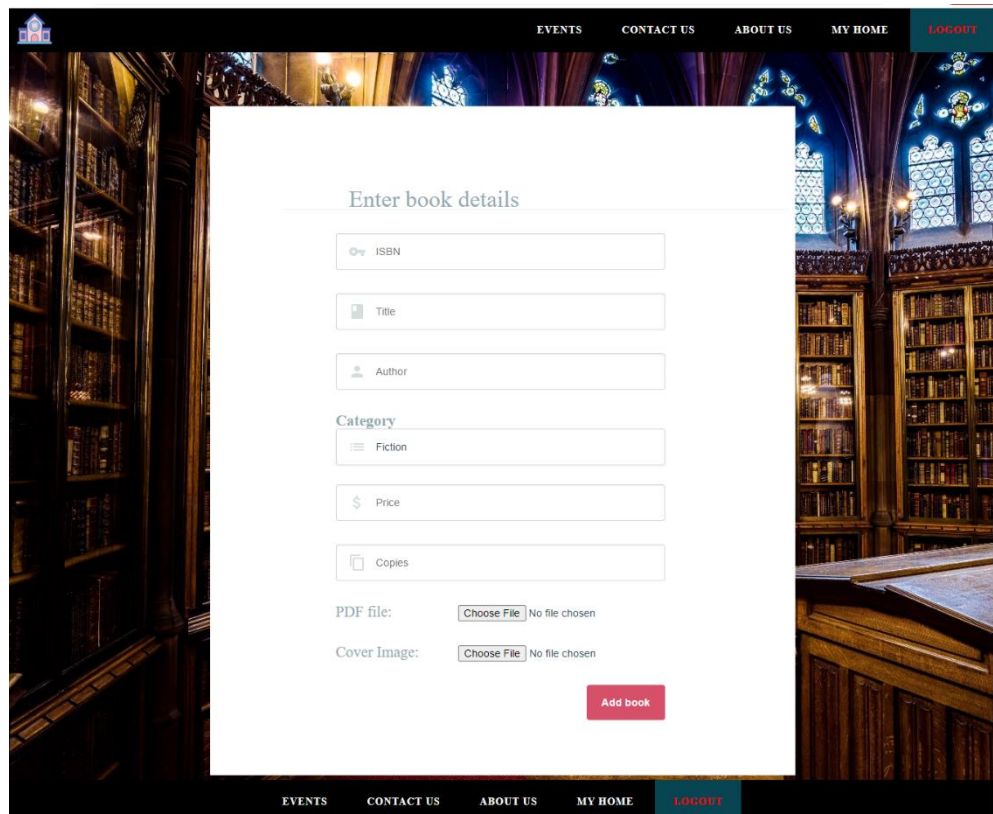


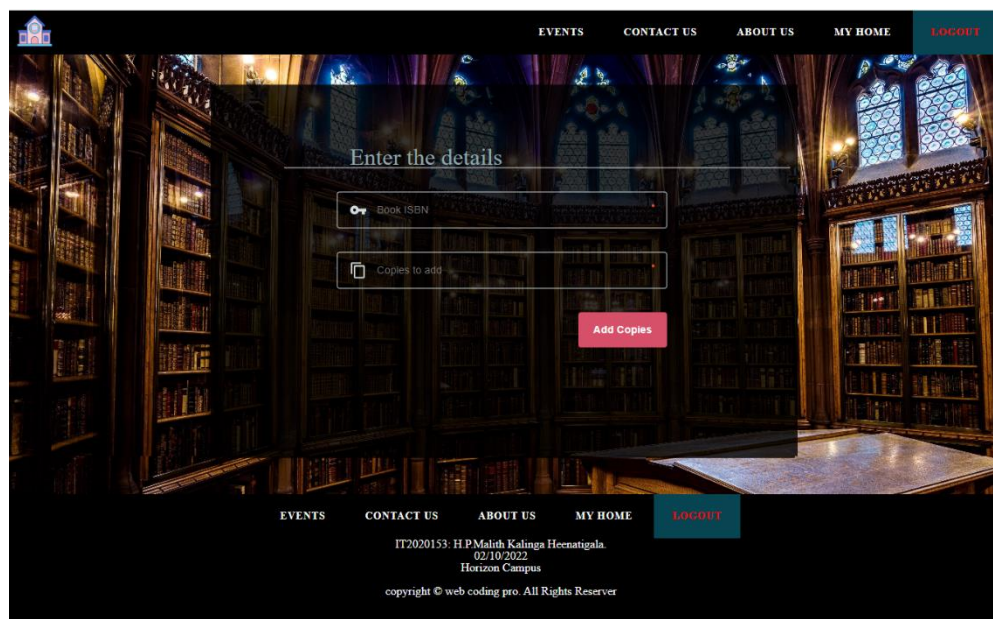
Figure 13: Pending book requests page





The screenshot shows a web application for book registration. The background is a high-quality image of a library interior with tall wooden bookshelves filled with books. A white modal form is centered on the screen. The form has a title 'Enter book details' and several input fields: ISBN, Title, Author, Category (with a dropdown menu showing 'Fiction'), Price, and Copies. Below these fields are two file upload sections: 'PDF file:' and 'Cover Image:', each with a 'Choose File' button and the text 'No file chosen'. At the bottom right of the form is a red 'Add book' button. The website's navigation bar is at the top, featuring links for 'EVENTS', 'CONTACT US', 'ABOUT US', 'MY HOME', and 'LOGOUT'.

Figure 15: Book Registration page



The screenshot shows a web application for updating book copies. The background is the same library interior image. A white modal form is centered, titled 'Enter the details'. It contains two input fields: 'Book ISBN' and 'Copies to add'. A red 'Add Copies' button is positioned to the right of the 'Copies to add' field. The website's navigation bar is at the top with links for 'EVENTS', 'CONTACT US', 'ABOUT US', 'MY HOME', and 'LOGOUT'. At the bottom of the page, there is a footer containing the text: 'IT2020153: H.P.Malith Kalanga Heenatigala. 02/10/2022 Horizon Campus copyright © web coding pro. All Rights Reserver'.

Figure 14: Update copies of books page



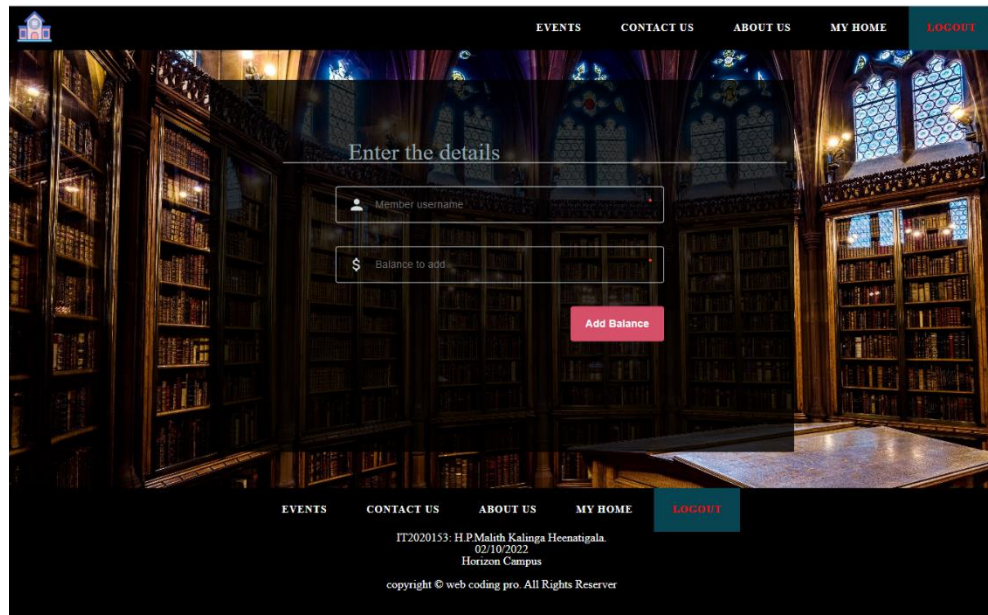


Figure 16: Update member's balance page

## 1.3 Alternative Solution

### 1.3.1 Selected solution description/justification

Table 1: Alternative Solutions

Web-based	Client-Server	Standalone
<ul style="list-style-type: none"> <li><b>Web based Library Management System on Cloud</b></li> </ul> <p>From a single point of access, a web-based library management software in the cloud manages all library functions in an organized manner. It assists in keeping track of all the library's materials, including books, catalogs, periodicals, e-books, CDs, newspapers, etc.</p> <p>e.g.:- web application for library management system.</p>	<ul style="list-style-type: none"> <li><b>Library Management System Software.</b></li> </ul> <p><u>RF LIB-Man - Integrated Library Management Software.</u></p> <p>LIB-MAN is a fully computerized internal operating system for libraries of any size or kind that is highly integrated, user-friendly, and interoperable.</p> <p>The client-server version of Lib-Man is embedded with free Devanagari Fonts. It supports all of the most recent technologies, including secure payment gateways, mobile apps, etc.</p>	<ul style="list-style-type: none"> <li><b>Standalone Library Management System Software.</b></li> </ul> <p>Standalone library management systems are more popular among organizations that have huge libraries. It can properly manage all the library operations with modules and may have easy customization and addition of new features.</p> <p>e.g.:-Library Management as Standalone LMS System-iSLIM. [1]</p>

## 1.4 Decisions taken during the design process

### 1.4.1 Layouts/UIs

- User Interfaces should be user-friendly with fulfilling 12-design principles such as consistency, familiarity, etc. And also usability principles.
- The layout should be simple which means easy to understand.
- Using matching colors that should not be much laminated which means easy to look.
- Having great balancing of items on the screen.
- Should have better adjustment of the design interface when it gets small screen like smart phone size.
- Proving better UX.
- Error tolerant.

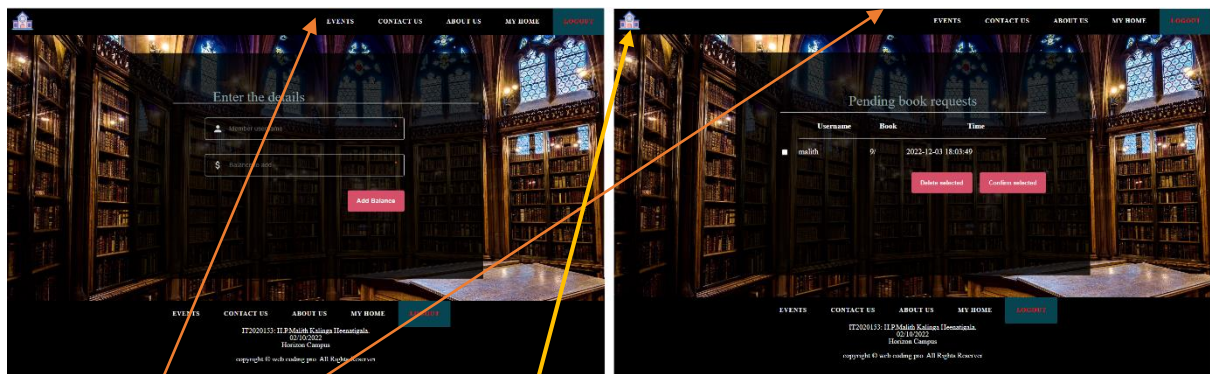
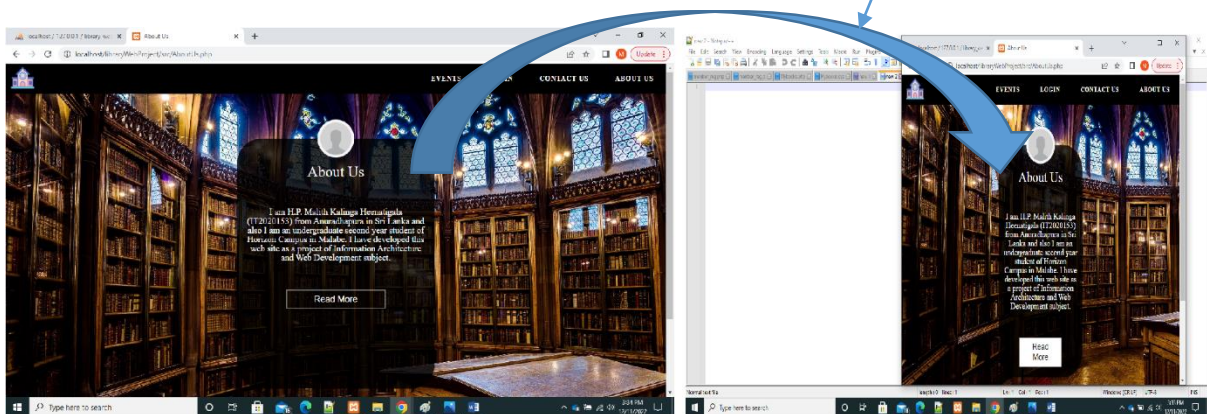
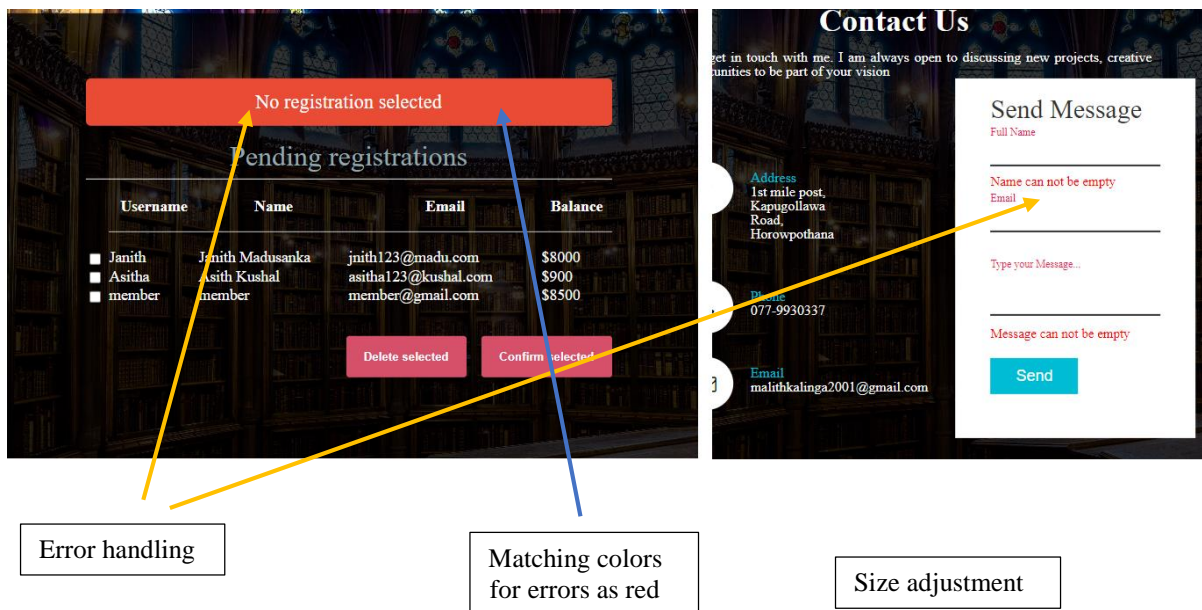


Figure 17: followed decisions 01

**Consistency:**  
navigation bar is there in the same position of those two pages

**Familiarity:**  
Typically logo of a web page is there on top of the page.

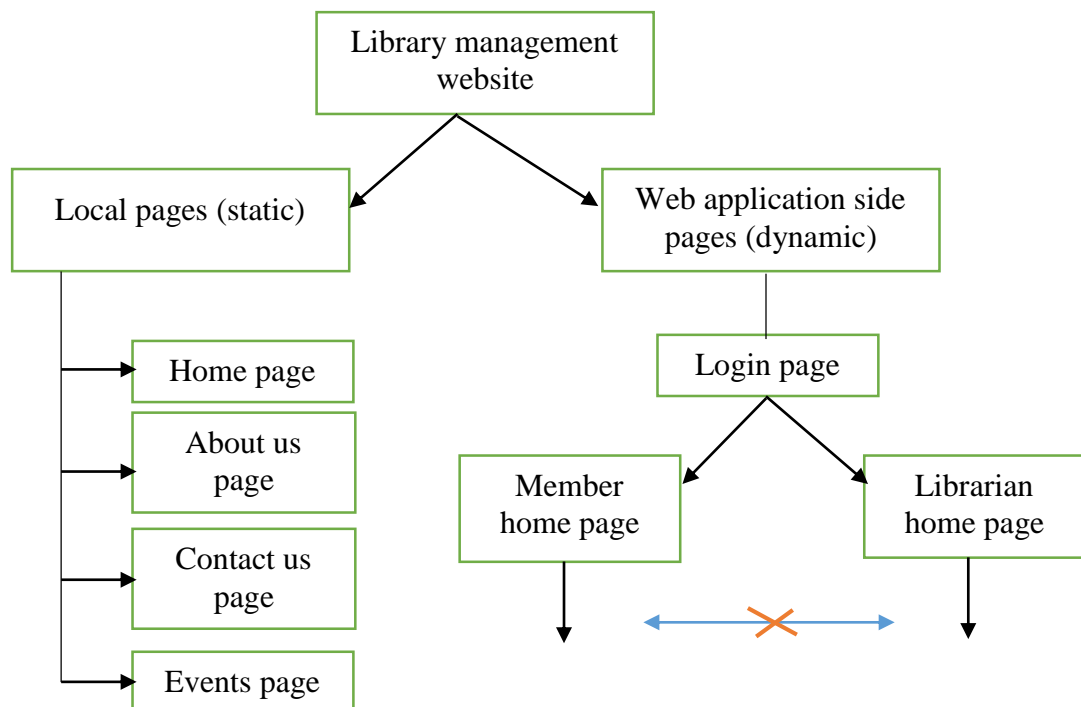
Figure 18: followed decisions 02



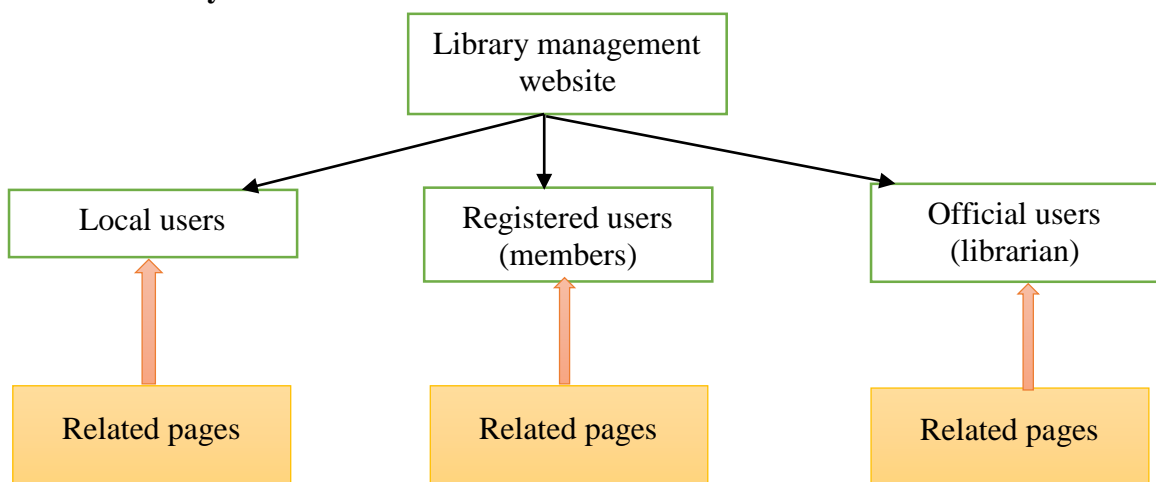
## 1.4.2 Hierarchy Design Pattern

- Uses a hierarchy design pattern: **Strict hierarchy pattern**
- Developing better navigational system.
  - Navigation type: Global or site-wide => sticky menus
- Having a plan with pages that the way of it should be.

### 1.4.2.1 Hierarchy of pages (Strict hierarchy pattern)



### 1.4.2.2 Hierarchy of users



### 1.4.3 Reasons to use MySQL as the database development tool

- The First reason is that is more familiar not only for me but most of them.
- Flexibility and scalability.
- High quality.
- Superior Availability.
- Development of a comprehensive application.
- Easy management.

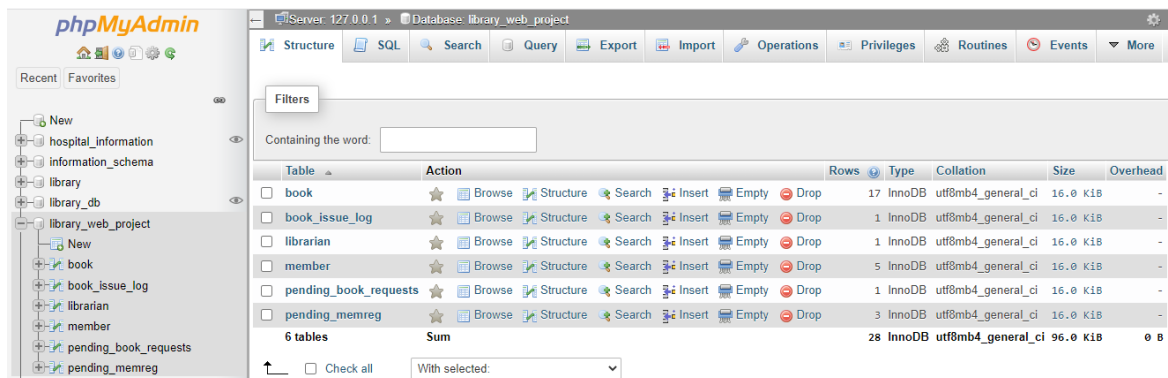


Figure 20: MySQL database

## 1.5 Implementation Environment

Table 2: Implementation Environment

Hardware	Software	Development Tools
Can use whatever computer to use it as it is a web based system.	Can use whatever browser to get the website.	<ul style="list-style-type: none"><li>• Notepad++ =&gt; to type the codes.</li><li>• XAMPP=&gt; to use MySQL.</li></ul>



## 1.6 ERD/Relational Schema

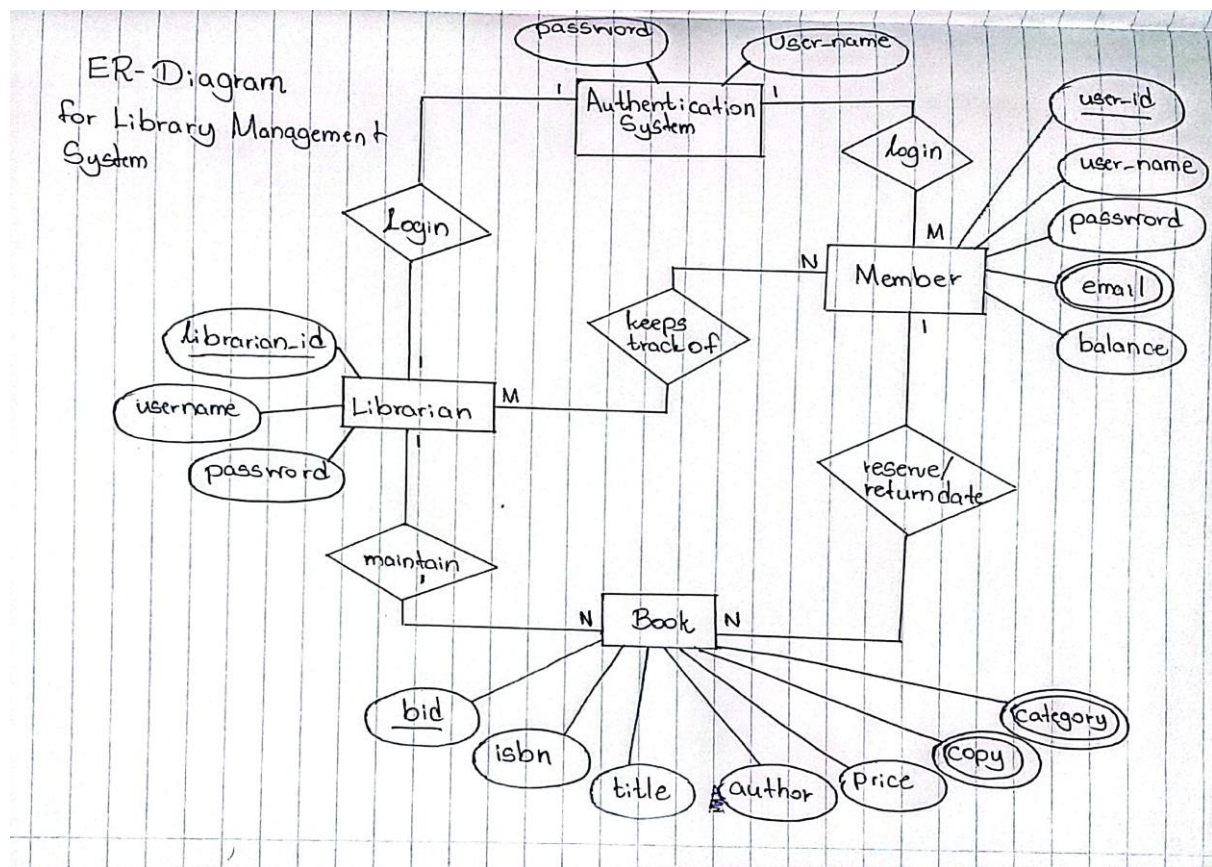


Figure 21: ER-Diagram

## 1.7 Assumptions

- This website has developed for a small library with basic functions.
- Adding forget password operation.
- Searching.
- Showing book list according to its categories.
- Indicating users' location where they are.
- Development of payment method.
- Development of initial guidance system for very new members.

## 2 Chapter 02

### 2.1 References

- [1] "whats-better-library-management-in-erp-software-vs-standalone-lms," [Online]. Available: <https://slimkm.com/blog/whats-better-library-management-in-erp-software-vs-standalone-lms/>. [Accessed 12 11 2022].

### 2.2 Project related references

- Lecture notes of Information Architecture and Web Development - Dr. Samanthi Wickramasinghe (Action Dean/Faculty of IT)
- Basic development help: <https://www.w3schools.com/>
- Basic development help: <https://www.youtube.com/watch?v=sbxMXcnntOQ&list=PLB57s6OrG8LhC4QKAg3wbdGRxMOCi9zSM>
- Validation help: <https://www.youtube.com/watch?v=CYlNJpltjMM>