ONLINE LIBRARY MANAGEMENT SYSTEM

A PROJECT REPORT
For
Software Engineering Lab(KCA-352)

Submitted By

Anshika Varshney
(2200290140034)
Divyam Rastogi
(2200290140057)

Submitted in partial fulfilment of the
Requirements for the Degree of

MASTER OF COMPUTER APPLICATION

Submitted to

Dr .Amit Kumar

(Assistant Professor)

DEPARTMENT OF COMPUTER APPLICATIONS
KIET Group of Institutions, Ghaziabad
Uttar Pradesh-201206
(FEBRUARY 2024)

CERTIFICATE

Certified that **Anshika Varshney 2200290140034, Divyam Rastogi 2200290140057** has/ have carried out the project work having "**Online Library Management System**" for **Master of Computer Application** from Dr. A.P.J. Abdul Kalam Technical University (AKTU) (formerly UPTU), Lucknow under my supervision. The project report embodies original work, and studies are carried out by the student himself/herself and the contents of the project report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.

Date:

Anshika Varshney (2200290140034)

Divyam Rastogi (2200290140057)

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

Date:

Dr .Amit Kumar	**Dr. Arun Tripathi**
Assistant Professor	**Head**
Department of Computer Applications	**Department of Computer Applications**
KIET Group of Institutions, Ghaziabad	**KIET Group of Institutions, Ghaziabad**

ONLINE LIBRARY MANAGEMENT SYSTEM

ANSHIKA VARSHNEY
DIYAM RASTOGI

ABSTRACT

Online Library Management System is a system which maintains the information about the books present in the library, their authors, the members of 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 simple. The Online Library Management has been designed to computerize and automate the operations performed over the information about thememberss, book issues and returns and all other operations. This computerization of helps in many instances of its maintenances. It reduces the workload of management as most of the manual work done is reduced.

ACKNOWLEDGEMENTS

Success in life is never attained single handedly. My deepest gratitude goes to my thesis supervisor, **Dr. Amit Kumar** for his guidance, help and encouragement throughout my research work. Their enlightening ideas, comments, and suggestions.

Words are not enough to express my gratitude to Dr. Ajay Kumar Shrivastava, Professor and Head, Department of Computer Applications, for his insightful comments and administrative help at various occasions.

Fortunately, I have many understanding friends, who have helped me a lot on many critical conditions.

Finally, my sincere thanks go to my family members and all those who have directly and indirectly provided me moral support and other kind of help. Without their support, completion of this work would not have been possible in time. They keep my life filled with enjoyment and happiness.

ANSHIKA VARSHNEY

DIYAM RASTOGI

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

1. INTRODUCTION

Gone are the days when the librarian had to have his library log updated manually with help of his assistants. The tedious process of updating the log, manually, after every transaction is dying out in most of the libraries. This is with the advent of computerization in this field too.

Then came spreadsheets which used to run for pages. Even then it was the duty of the librarian/administrator to enter all details manually in the spreadsheet. She/he had to keep track of all items in the library and update the corresponding records. The person borrowing the book had to get his verification card and get it updated every time he borrows/returns an item from/to library. Even this work of verifying the person and updating the card falls on the librarian or his assistant. Every now and then the librarian has to keep track of all the books and other items by checking the stocks (i.e. stocking).

1.1 **SOLUTION**

This solution is developed using web technology which improves the accuracy of the information by leaps and bounds. This solution helps the administrator accomplish his tasks at ease. This solution is an online library management system which lets user's sign-up to the library initially and then sign-in every time they want to find some item in the library.

The user can also maintain and edit his profile details. It also lets administrators manage the library from their desktop. They can monitor any item,

its stock and other related information. A user can sign-in and search for items, borrow or reserve items if they are present in the library.

If not, user can request the librarian/administrator to get the book by furnishing all the details. As soon as a user reserves a book the library database gets updated automatically. This improves accuracy and leaves no user fooled about the status of availability of an item. All details of the user are stored in the database which eases pressure on the administrator about defaulters. Defaulters can be blocked/removed from the library, by the administrator. The user need not visit the library every time to find an item; instead, he/she can search items from his/her own PC/laptop. Reports can also be generated for individual items or for number of defaulters and the number of transactions for an item or by a user. They can also be generated in graphical form.

An advantage of this solution is that a web browser which supports .net framework is enough to view the user interface. This interface can be seen in any such system and hence makes it portable too.

The system incorporates advanced search functionalities, allowing users to efficiently locate specific items based on various criteria such as author, title, genre, or keywords. The search results are presented in a clear and organized manner, enhancing the user's ability to find relevant materials quickly. The robust reporting capabilities of the system empower administrators with valuable insights into library operations. Through detailed reports and visual representations, administrators can analyze trends, identify popular items, and make informed decisions about resource allocation and collection development. This data-driven approach enhances the efficiency of library management and contributes to the overall improvement of services.

Moreover, the scalability of the system allows for seamless integration of additional features and modules in the future. This adaptability ensures that the library management system can evolve alongside changing technological and user requirements, maintaining its relevance and effectiveness over time.

1.2 BENEFITS

Major benefits of Online Library Management System:

- ✓ **Accurate information around the clock:** Information about the library database is accurate at any given point of time since its all automatic and updated after every transaction.
- ✓ **Ease of Access:** Users can find items, reserve book, change profile details, etc., from their homes as the library's transactions are online.
- ✓ **Maintenance is easy:** Managing the database is easy and so is its maintenance. It does not require much of care and goes on until it isn't affected due to heavy trafficking.
- ✓ **Sorting of data:** Data is stored in different databases and sorted into different tables to differentiate content and it can easily convert into reports for presentations.
- ✓ **Reduce Administrative Burden:** Automation of routine tasks, such as updating the database after transactions and generating reports, significantly reduces the administrative workload. This allows library staff to focus on more strategic aspects of library management, such as enhancing services, expanding collections, and engaging with the library community.

In summary, the Online Library Management System, powered by .NET technology, not only revolutionizes traditional library operations but also delivers tangible benefits. From providing real-time accuracy and user empowerment to streamlined maintenance and cost-efficiency, this system ensures a modern and efficient approach to library management. It stands as a testament to technological innovation, promising an enhanced user experience and a future-ready platform for evolving library needs.

1.3 PROJECT SCOPE

This application can be easily implemented under various situations. We can add new features as and when we require. Reusability is possible as and when require in this application. There is flexibility in all the modules.

1.3.1 Software Scope

- ✓ **Extensibility:** This software is extendable in ways that its original developers may not expect. The following principles enhances extensibility like hide data structure, avoid traversing multiple links or methods, avoid case statements on object type and distinguish public and private operations.

- ✓ **Reusability:** Reusability is possible as and when require in this application. We can update it next version. Reusable software reduces design, coding and testing cost by amortizing effort over several designs. Reducing the amount of code also simplifies understanding, which increases the likelihood that the code is correct. We follow up both types of reusability: Sharing of newly written code within a project and reuse of previously written code on new projects.
- ✓ **Understandability:** A method is understandable if someone other than the creator of the method can understand the code (as well as the creator after a time lapse). We use the method, which small and coherent helps to accomplish this.
- ✓ **Cost-effectiveness:** Its cost is under the budget and make within given time period. It is desirable to aim for a system with a minimum cost subject to the condition that it must satisfy the entire requirement. Scope of this document is to put down the requirements, clearly identifying the information needed by the user, the source of the information and outputs expected from the system

CHAPTER 2

FEASIBILITY STUDY

2. INTRODUCTION

In the rapidly evolving landscape of information management, the introduction of an Online Library Management System utilizing cutting-edge .NET technology represents a strategic endeavor to enhance the efficiency and accessibility of our library services. This feasibility study aims to assess the viability and potential success of implementing such a system within our organization.

As technology becomes increasingly integrated into daily operations, the need for a robust and user-friendly library management solution is evident. The proposed Online Library Management System promises to revolutionize our current practices, providing accurate and real-time information, empowering users, and optimizing administrative workflows. Before embarking on this transformative journey, it is imperative to conduct a comprehensive feasibility study to evaluate the technical, operational, economic, and scheduling aspects of the project.

Operational feasibility will be explored to determine how the proposed system aligns with our organizational processes and workflows. An in-depth analysis of the impact on day-to-day library operations, the ease of system maintenance, and user adaptability will be crucial factors in determining the system's operational viability.

Economic feasibility will evaluate the financial investment required for the implementation of the Online Library Management System. A detailed cost-benefit analysis will be conducted, encompassing initial setup costs, ongoing maintenance expenses, and potential savings achieved through improved efficiency.

Lastly, scheduling feasibility will address the realistic timeline for project implementation, considering potential challenges and ensuring that the introduction of the system aligns with organizational goals and timelines.

This feasibility study aims to provide decision-makers with a comprehensive understanding of the potential benefits, challenges, and overall viability of the proposed Online Library Management System. It will serve as a crucial foundation for making informed decisions that align with our commitment to delivering high-quality library services in the digital age.

2.1. Types of feasibility

2.1.1 Technical Feasibility:

- **Compatibility:** Assess whether the proposed system is compatible with the existing technology infrastructure. Ensure that the .NET technology integrates seamlessly with current hardware, software, and networking components.
- **Scalability:** Evaluate the system's capacity to handle an increasing number of users, transactions, and library resources over time.
- **Security**: Examine the security features of the system, including data encryption, user authentication, and protection against potential cyber threats.

In conclusion, the technical feasibility assessment for the proposed Online Library Management System underscores its potential to be a robust and adaptive solution for our organization. The examination of compatibility assures that the web technology seamlessly integrates with our existing hardware, software, and networking components, promising a smooth transition without disruptions to our ongoing operations. This compatibility is foundational for the success of the project.

For the Client Computer:

- CPU – Intel Core 2 Duo E7300
- RAM – 2 GB
- Hard disk – 120 GB
- Operating System – Windows XP with
- Service Pack 3 (CHT)

For The Server:

- CPU – Opteron / Xeon Server CPU (Opteron 2356/Xeon5300)
- RAM – 4 GB
- Hard disk – 30GB(for RAID 5)
- Operating System – Windows Server 2003 Standard
- LAN – at least 100Mbps

2.1.2 Operational Feasibility:

Operational feasibility, on the other hand, focuses on how the project impacts day-to-day operations. This analysis involves assessing the acceptability of the proposed changes among end-users, including internal staff and external stakeholders. Understanding the potential disruptions and adapting training requirements to facilitate a smooth transition is central to determining operational feasibility. Ensuring that the project aligns with organizational objectives and enhances overall efficiency is pivotal. The system will be easy to use as user interface is GUI based. The system is easy to use so no any special skills will be required to use the system. New user will find it easy to use. So, the project will be operationally feasible.

To assess the acceptability of the proposed changes, it is essential to conduct thorough consultations and gather feedback from potential users. Internal staff members, who are integral to the daily functioning of the library, need to be receptive to alterations in workflows and procedures introduced by the new system. External stakeholders, including library patrons, should find the system user-friendly and beneficial to their overall experience. By ensuring that the perspectives of these stakeholders are considered, the operational feasibility study provides valuable insights into the likelihood of successful system adoption.

Understanding potential disruptions is another critical component of operational feasibility. The implementation of a new system may introduce temporary challenges or changes to established workflows. Identifying and mitigating potential disruptions in advance through effective change management strategies is imperative for a smooth

transition. This includes adapting training requirements to equip staff and users with the necessary skills to navigate and utilize the new system effectively.

Operational feasibility extends to ensuring that the proposed project aligns seamlessly with organizational objectives. The system should enhance overall efficiency, contribute positively to service delivery, and align with the broader goals of the library. By incorporating these considerations into the assessment, decision-makers can confidently determine whether the proposed Online Library Management System is operationally feasible and will contribute to the overall success of our library operations.

2.1.2 Economic Feasibility:

Economic feasibility involves a comprehensive cost-benefit analysis, examining both the initial and ongoing costs associated with the project against the anticipated benefits. This study is critical in determining whether the investment in the proposed project is economically justifiable. Factors such as return on investment (ROI) and the long-term financial implications play a significant role in shaping the economic feasibility perspective.

The assessment of ongoing costs involves estimating maintenance expenses, updates, and any other recurring expenditures associated with the project's continued operation. This ensures that the organization is well-prepared for the financial commitments beyond the initial implementation phase. Return on investment (ROI) is a pivotal metric within economic feasibility, providing a quantifiable measure of the financial returns relative to the costs incurred. It aids decision-makers in evaluating whether the project aligns with the organization's financial objectives and offers a favorable balance between benefits and expenditures. The analysis of long-term financial implications considers how the project's economic viability extends over an extended period, factoring in potential changes in technology, market conditions, and organizational goals.

In essence, economic feasibility serves as a cornerstone in the decision-making process, guiding organizations to make sound financial decisions regarding the proposed project. By thoroughly assessing both immediate and long-term financial considerations, decision-makers can confidently determine whether the investment is not only

economically justifiable but also aligns with the strategic financial objectives of the organization.

DRAWBACKS OF PRESENT SYSTEM

Some of the problems being faced in manual system are as follows:

1. Fast report generation is not possible.

2. Tracing a book is difficult.

3. Information about issue/return of the books are not properly maintained.

4. No central database can be created as information is not available in database.

PROPOSED SYSTEM

There will be three major components:

1. Stock maintenance.

2. Transaction entry.

3. Reports.

4. Centralized Database.

5. Access from anywhere.

Proposed system provides with following solutions:

- It provides "better and efficient" service to members.
- It is the online system that can be operated from anywhere.
- User can inquiry about the book without going to Library.
- Reduce the workload of employee.
- Faster retrieval of information about the desired book.
- Provide facility for proper monitoring reduce paper work and provide data security.
- All details will be available on a click.

CHAPTER 3

DATABASE DESIGN

3. INTRODUCTION

Database design plays a pivotal role in shaping the foundation of the proposed Online Library Management System, serving as the bedrock upon which the system's efficiency, reliability, and scalability will be built. The design of the database is crucial in ensuring seamless data management, accurate information retrieval, and streamlined interactions within the library ecosystem. As we embark on the journey to develop an advanced and user-centric library management system using .NET technology, the intricacies of database design become paramount.

The Online Library Management System, as a comprehensive solution, demands a well-thought-out and structured database that can efficiently store, retrieve, and manage vast amounts of information related to library resources, user profiles, transactions, and administrative records. The design must not only accommodate the current needs of the library but also be flexible enough to evolve with future expansions, technological advancements, and changing user requirements.

In this context, the introduction to database design encompasses an exploration of key considerations such as data modeling, normalization, relationships between different data entities, and optimization for efficient querying and reporting. The goal is to create a database architecture that not only reflects the intricacies of the library's operations but also enhances the overall user experience by providing accurate and real-time information.

As we delve into the realm of database design for the Online Library Management System, our focus will be on creating a robust and scalable structure that aligns with the goals of the library, minimizes redundancy, ensures data integrity, and fosters an environment where information is a valuable asset rather than a challenge to manage. The subsequent phases of database design will delve into specific aspects, addressing the intricacies of the system's requirements and charting a course towards a database infrastructure that forms the backbone of a modern, efficient, and user-friendly library management system.

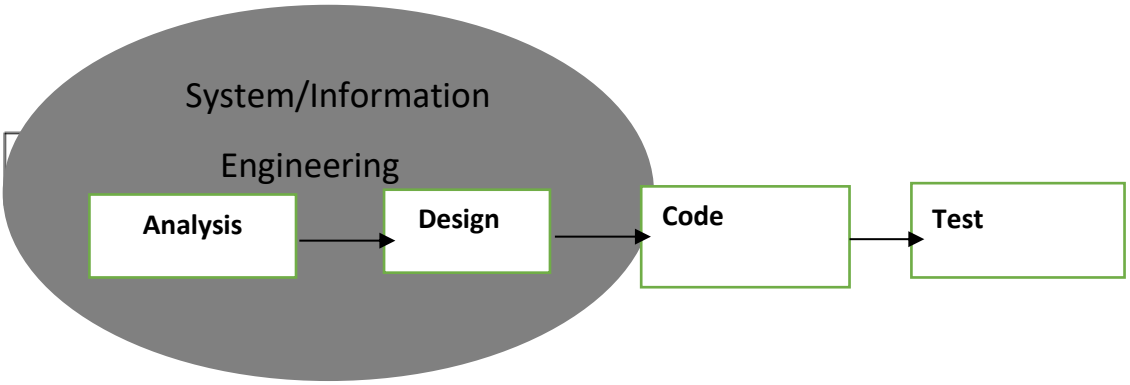

Fig 3.1 Linear Sequential Modal

3.1 System Architecture

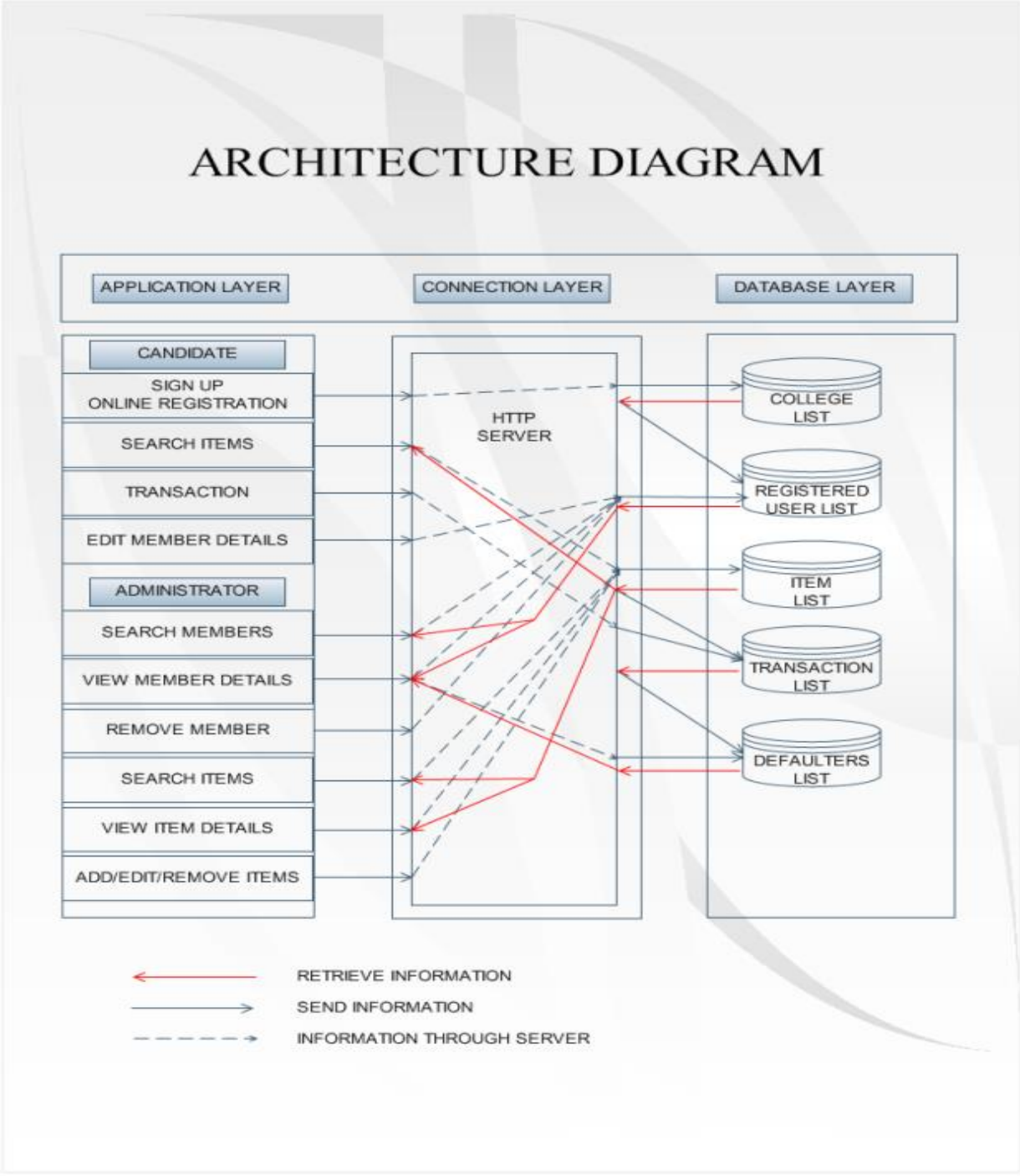

Figure 3.2 System Architecture

3.2 Use Case Diagram

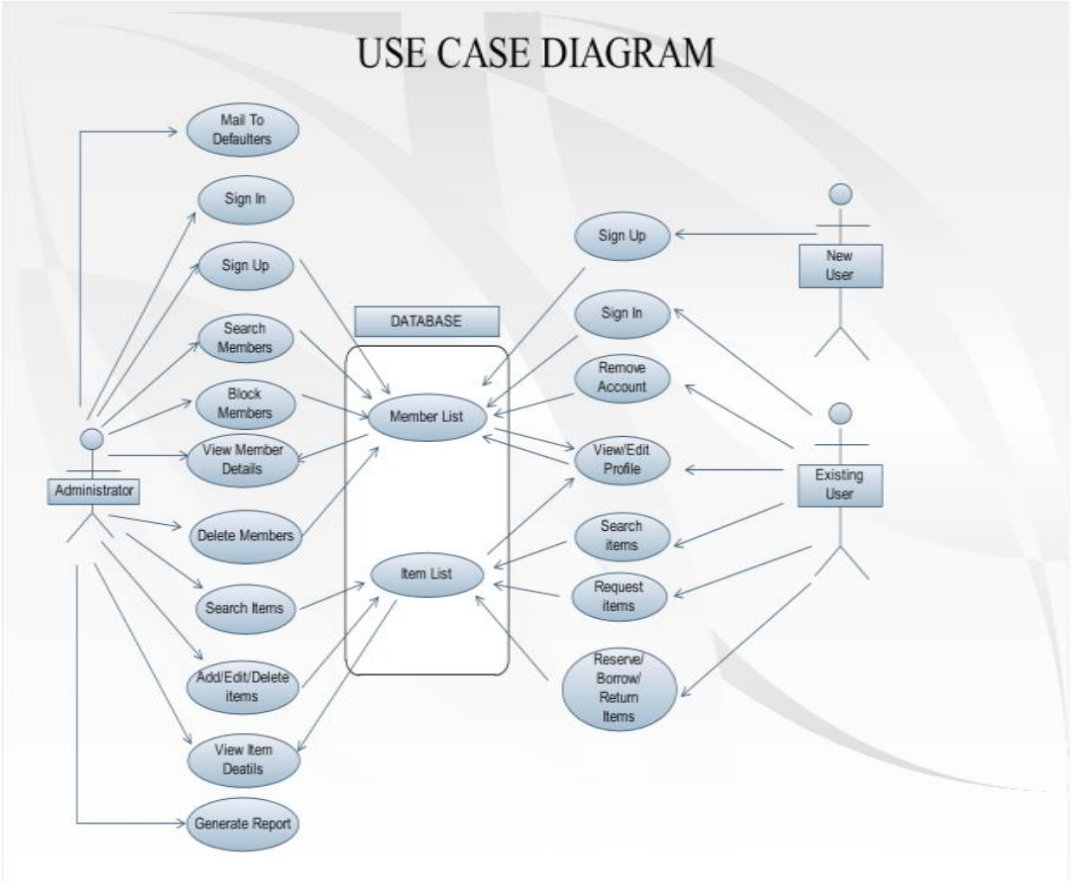

Figure 3.3 Use case Diagram

3.3 Work Breakdown Struct

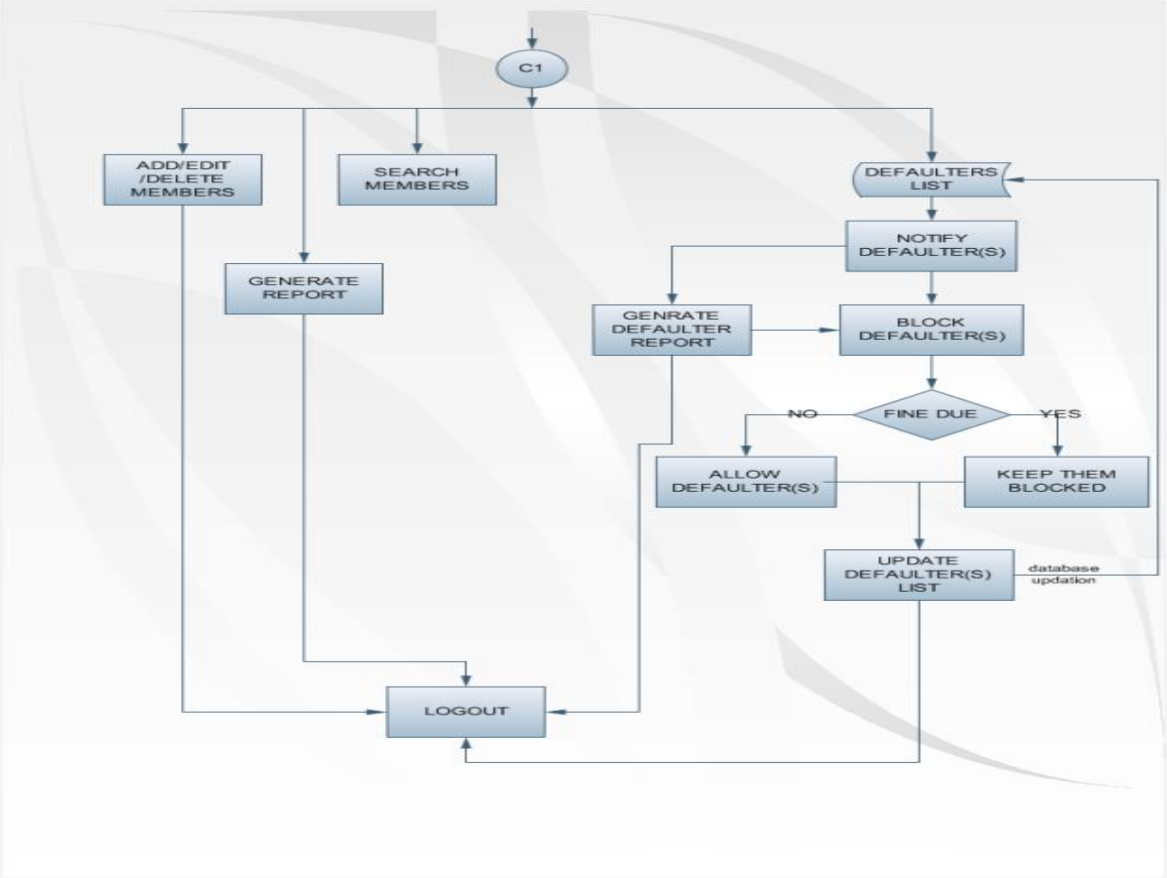

Figure 3.4 Work Breakdown Structure

3.4 Flowchart

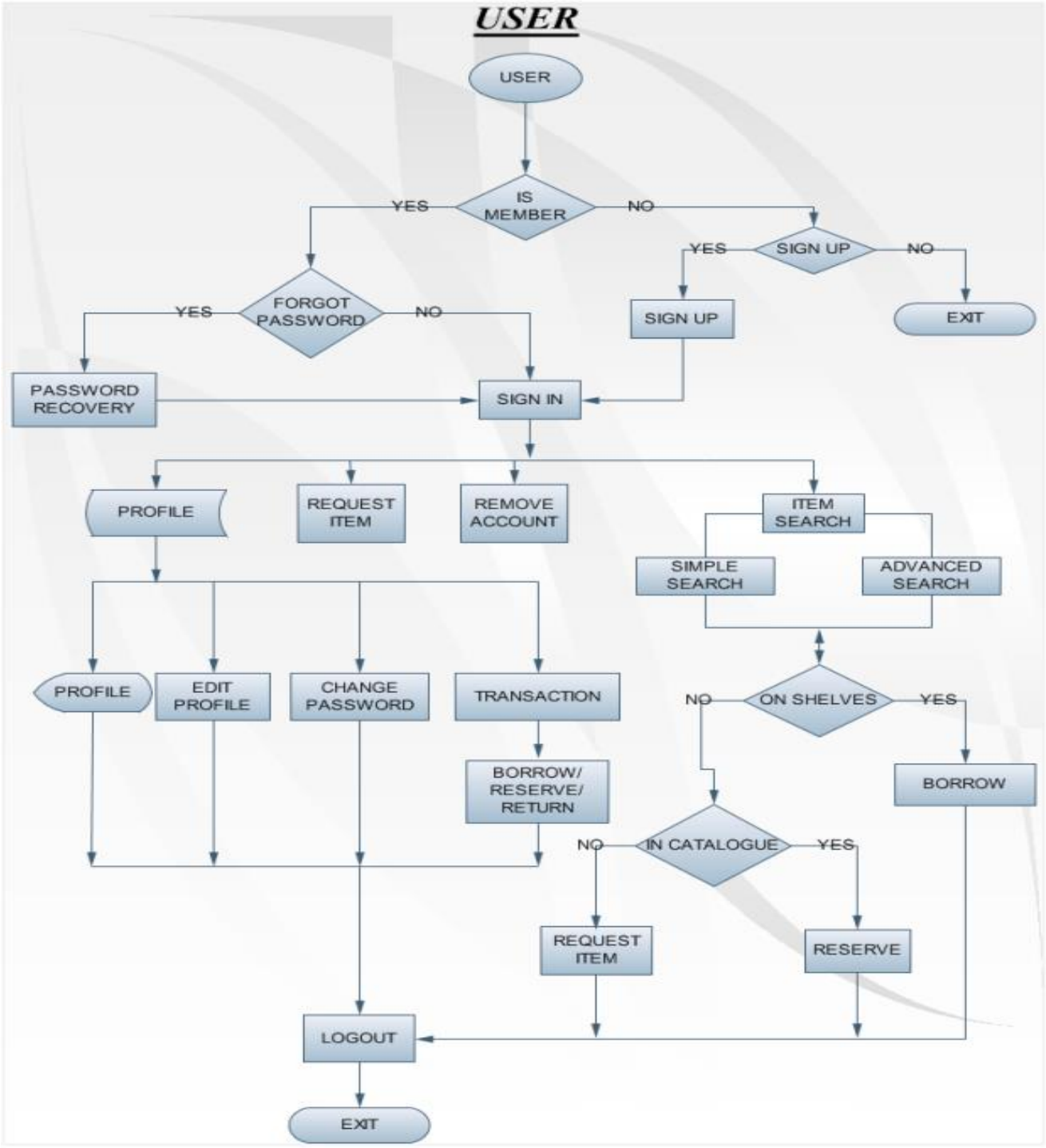

Figure 3.5 System Overall Design

3.5 Data Table:

Table: Members

S.no.	Column Name	Data Type	Length	Description
1	Id_no	Text	50	Unique identification of the members
2	Name	Text	70	Name of members
3	Address	Text	100	Location of Members
4	Date of Issue	Date/Time		Date of Registration
5	Date of Expiry	Date/Time		Registration expiry date
6	Status	Text	50	Permanent/Temporary

Table: Add Book

S.no.	Column Name	Date-Type	Description
1	Book_name	Text	Title of the book
2	Book_code	Text	Book identification number
3	Author	Text	Author of books
4	Date of arrival	Date/time	Date on which book was received
5	Price	Text	Cost of books
6	Rack_no	Text	Almirah no
7	No_of_books	Text	Quantity of books
8	Subject_code	Text	Unique identification no of particular subject

Table: issues

s.no.	Column Type	Date Type	Description
1	Id_no	Text	User identification number
2	Book_name	Text	Title of books
3	Issue_date	Date/time	Date on which book is issued
4	Due_date	Date/time	Due date on which book is to be returned

3.6 Data Flow Diagram

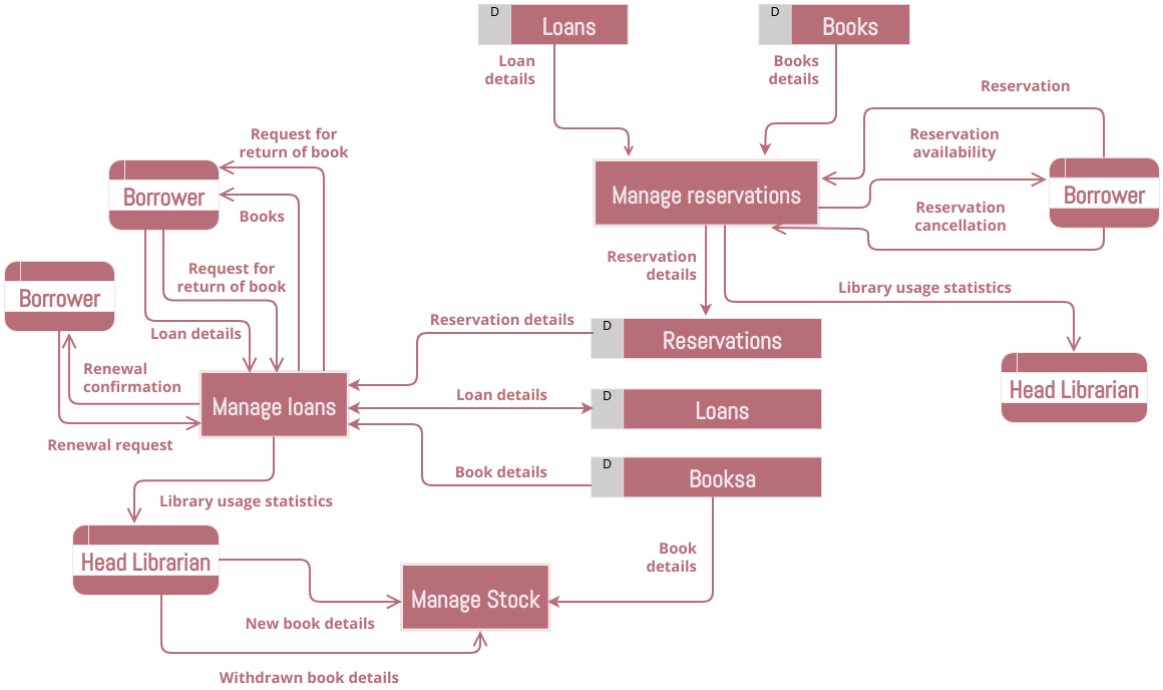

Figure 3.6 Data Flow Diagram

3.7 ER Diagram

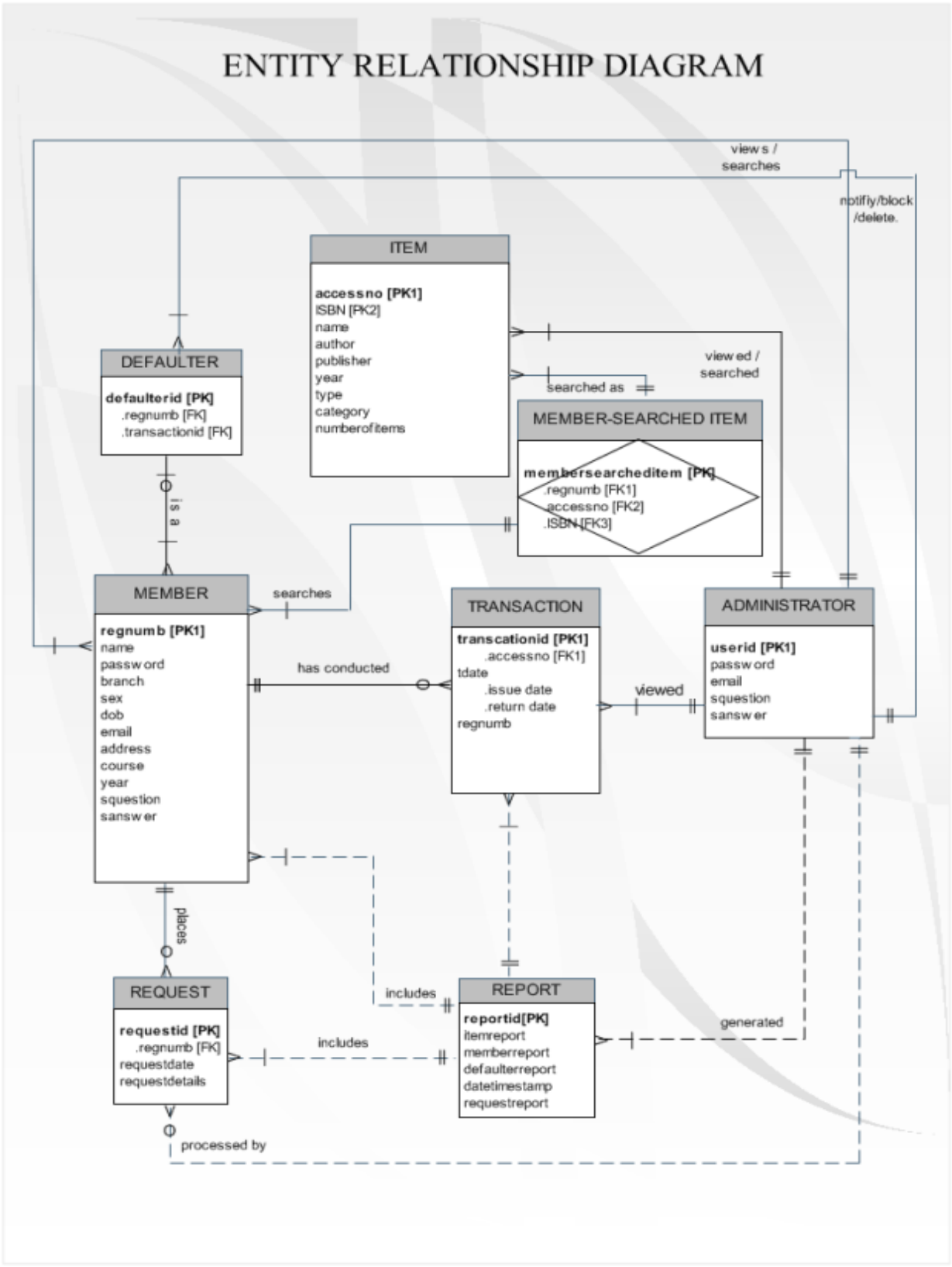

Figure 3.7 ER Diagram

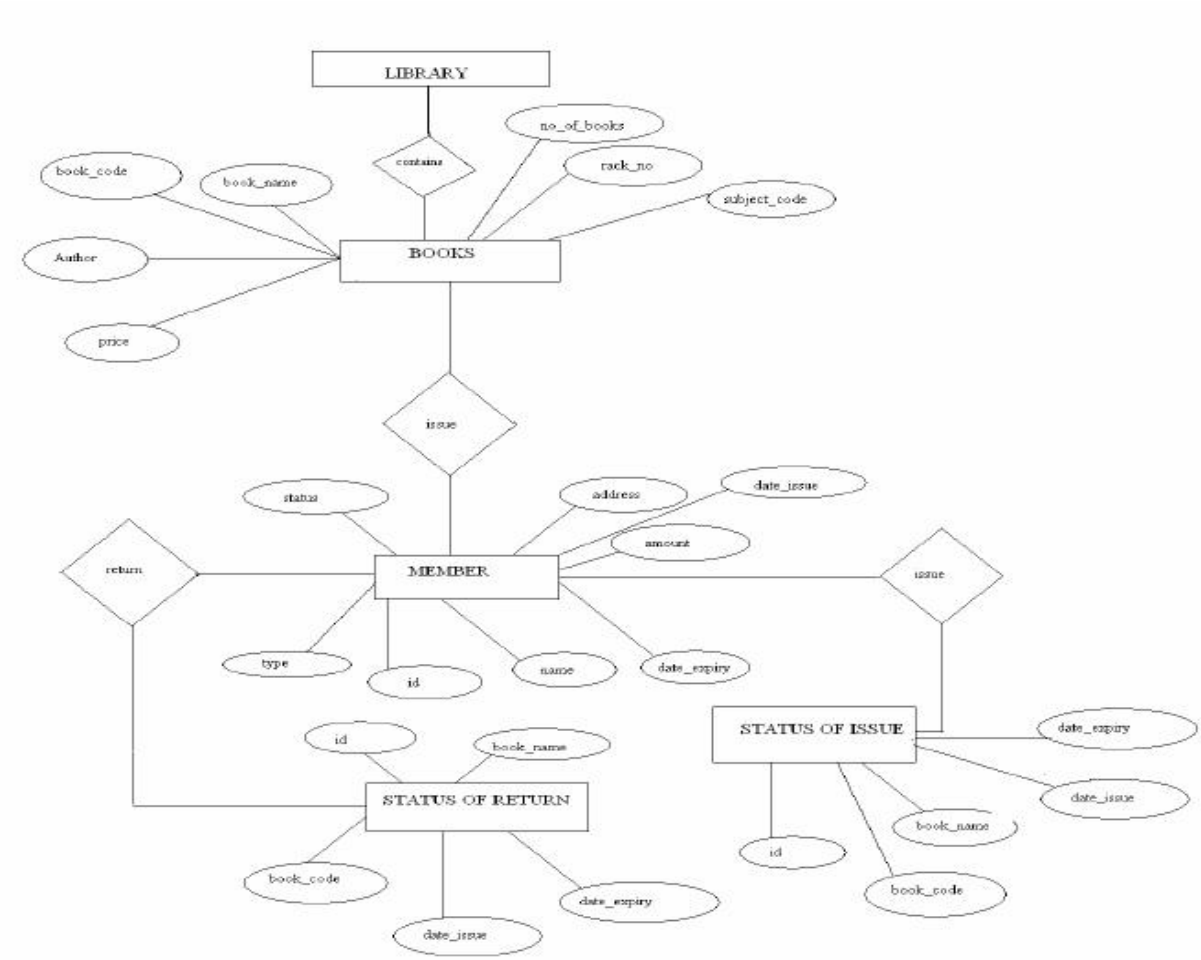

Figure 3.8 ER Diagram for Book Issue or Return

CHAPTER 4

FORM DESIGN

The following screenshots show the various process involved in this library management solution. They include creation of account, sign-in process, transaction details, and delete account.

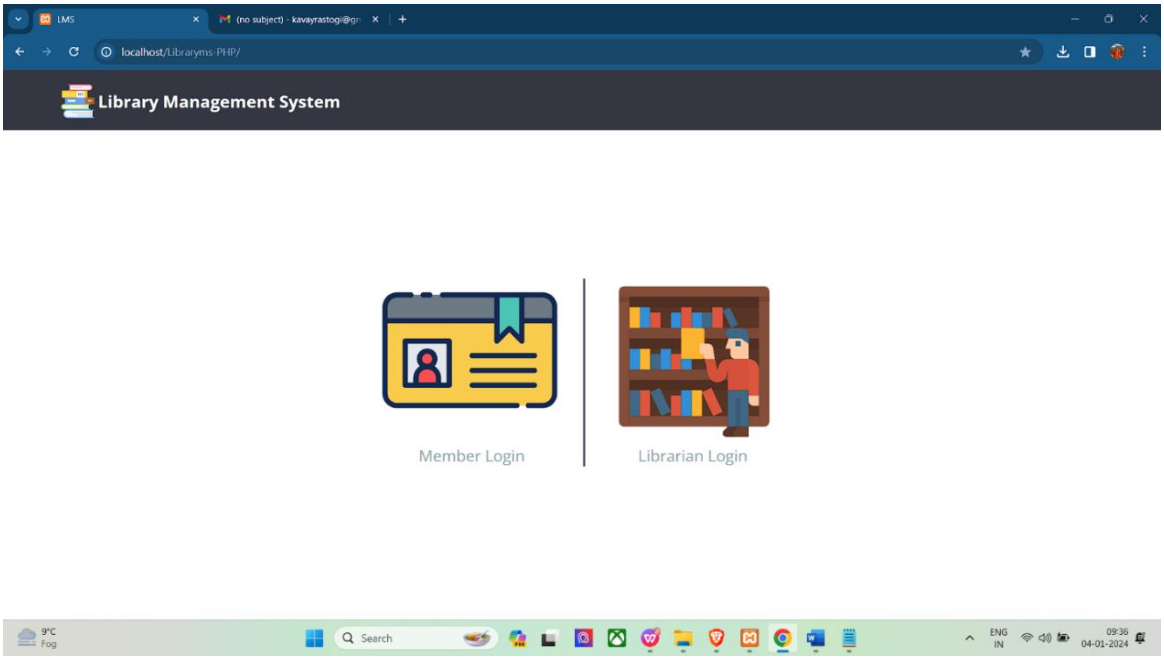

Fig 4.1 Dashboard Page

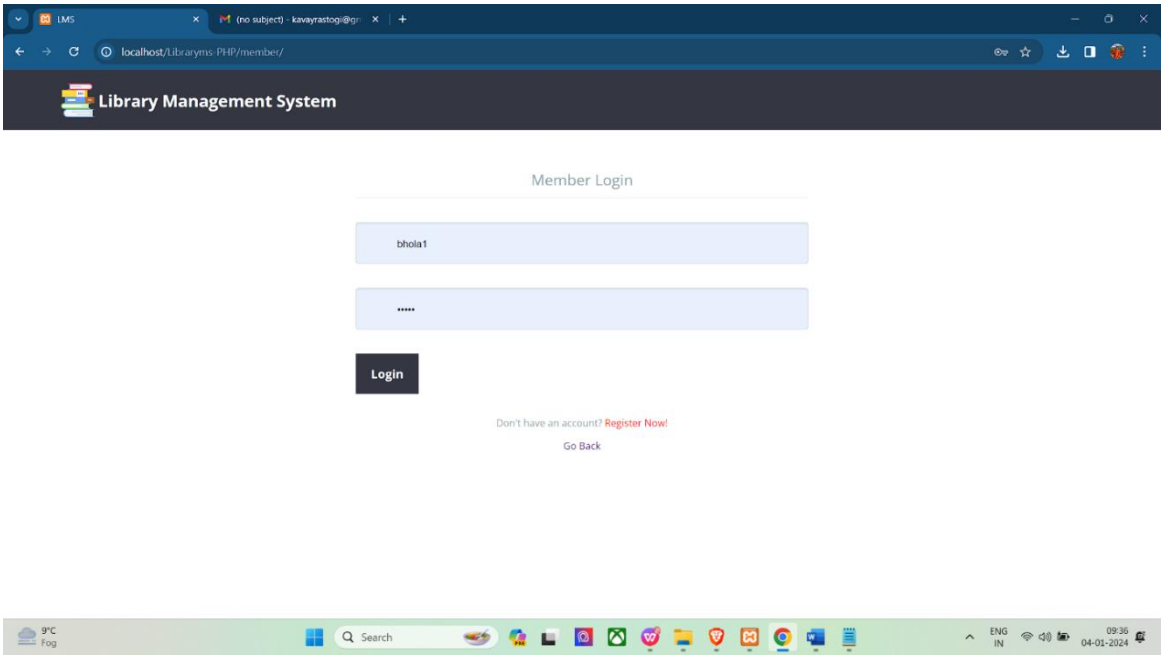

Fig 4.2 Member Login

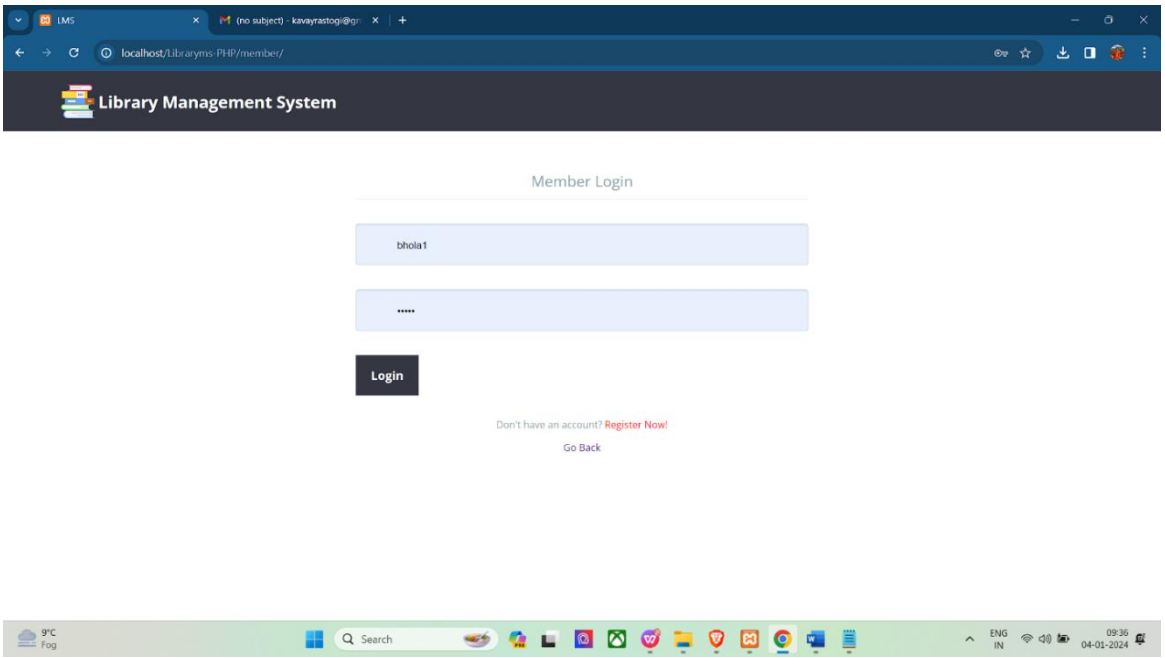

Fig 4.3 Librarian Login

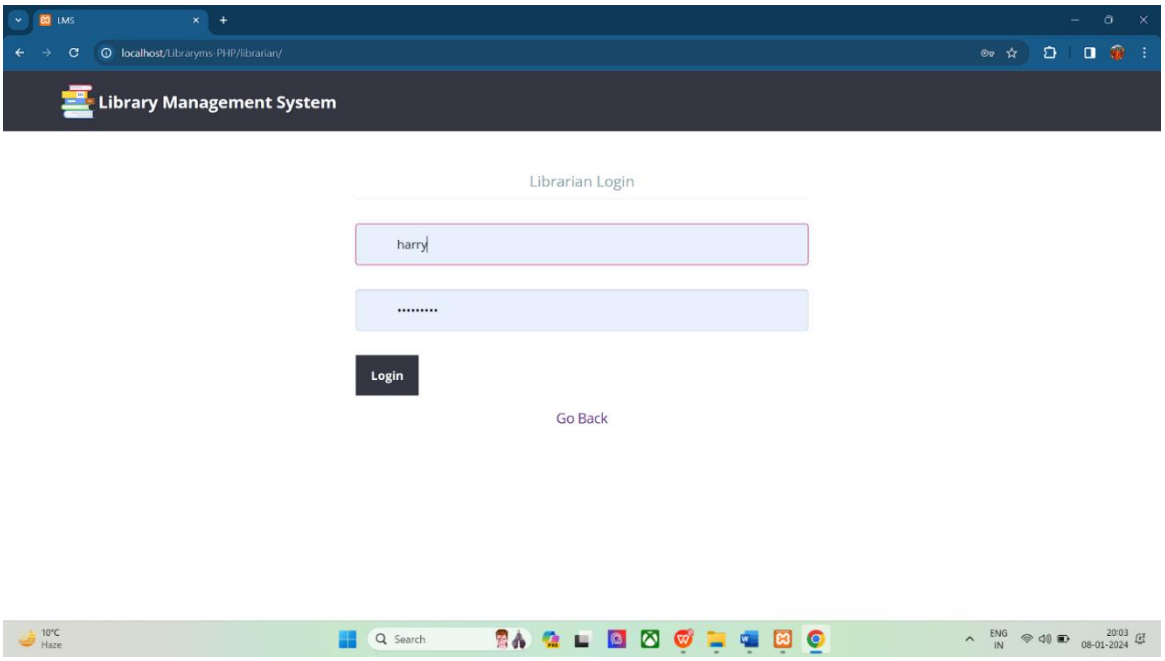

Fig 4.4 Under Librarian Login

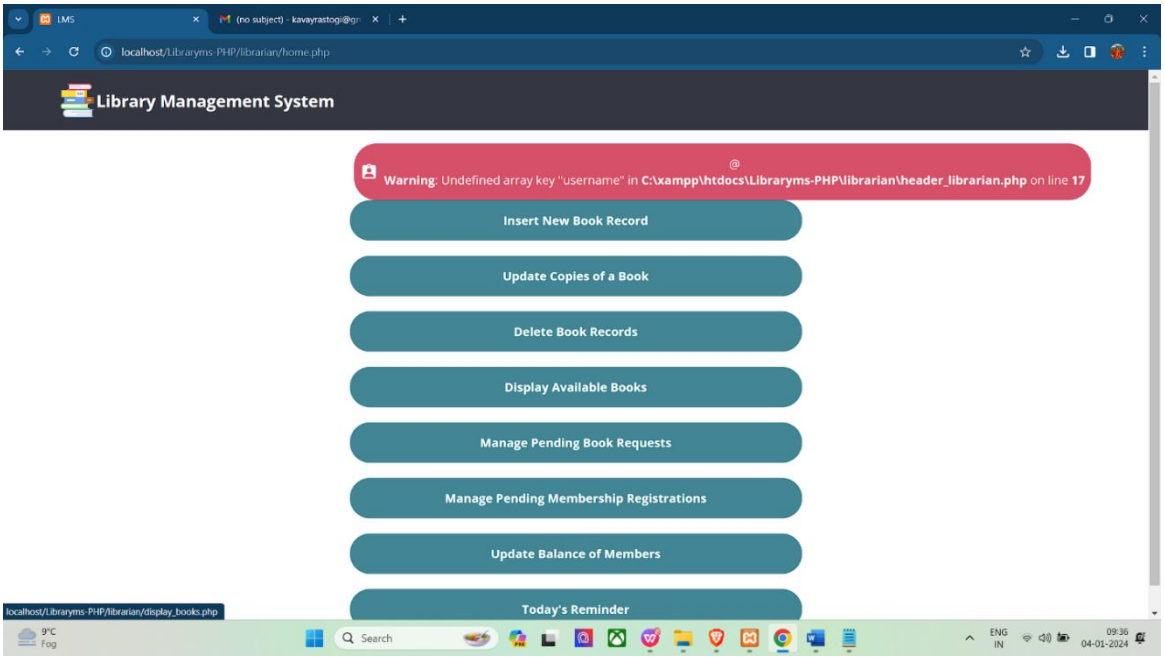

Fig 4.5 Member Login

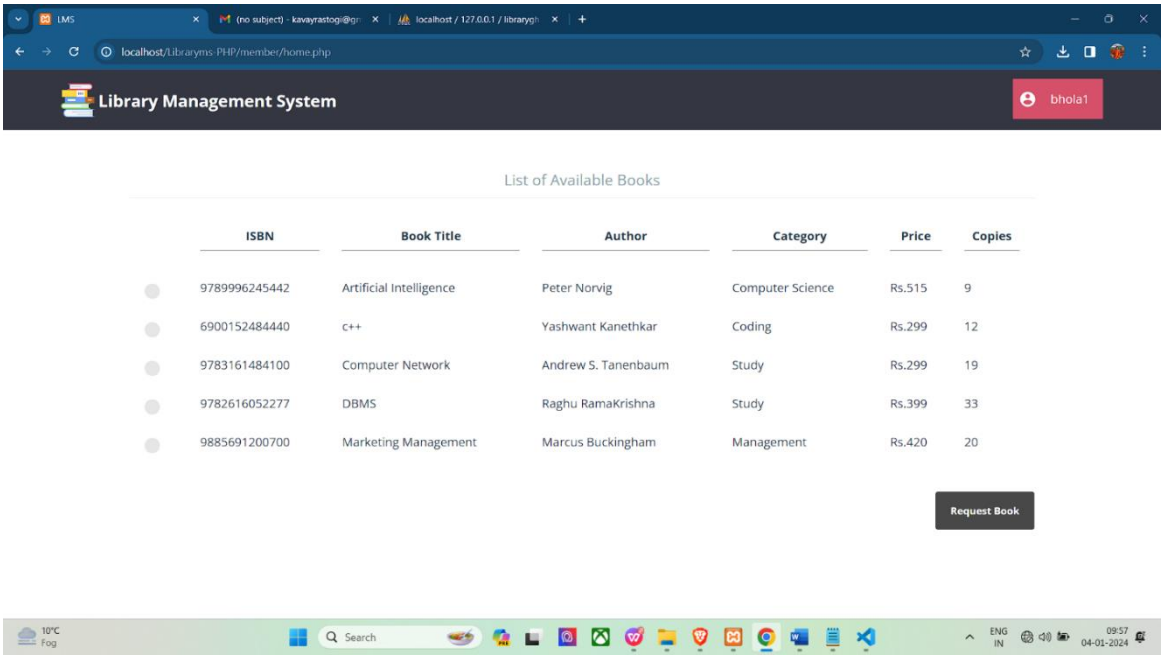

Fig 4.6 INSERT NEW BOOK

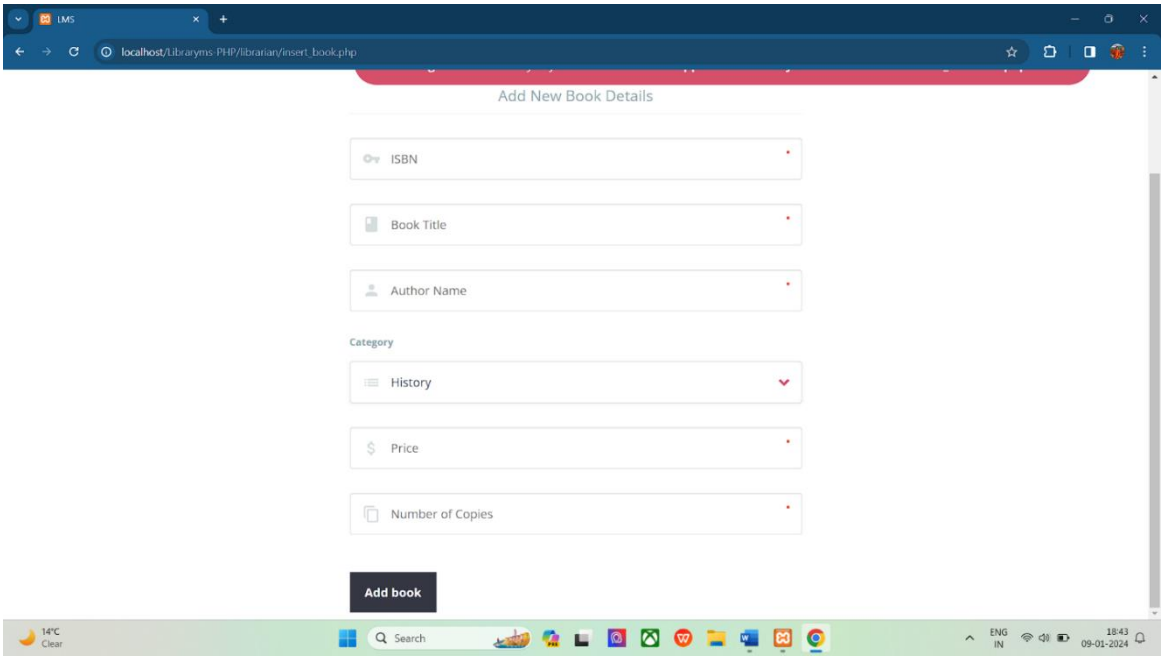

Fig 4.7 Update Copies of Books

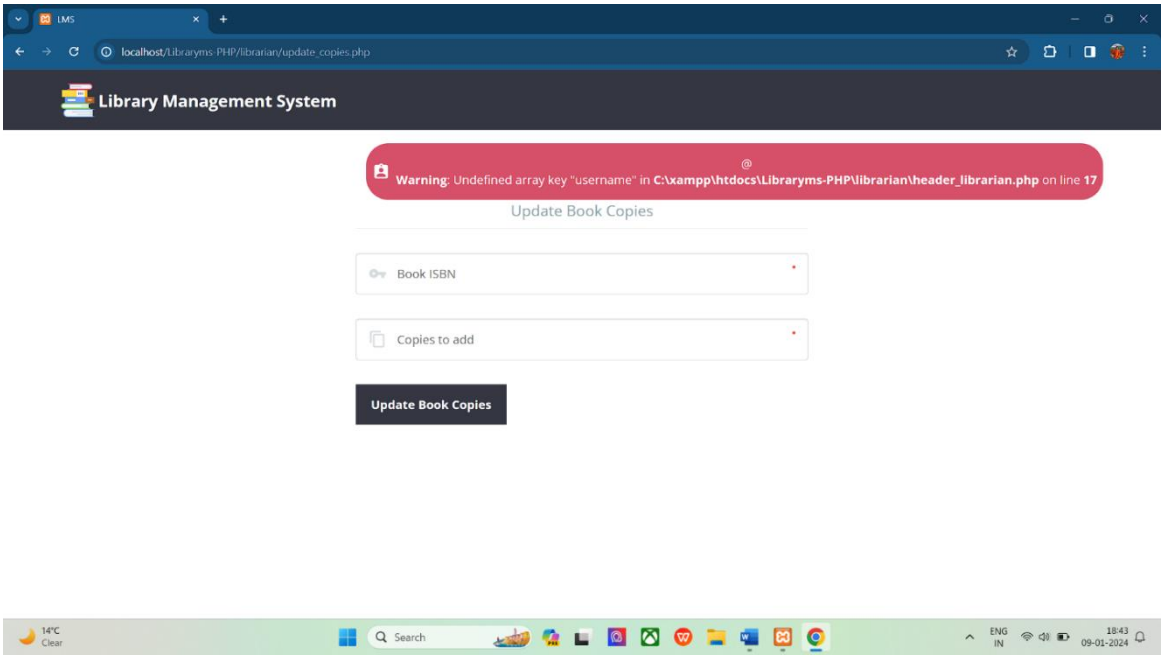

Fig 4.8 Delete Book Record

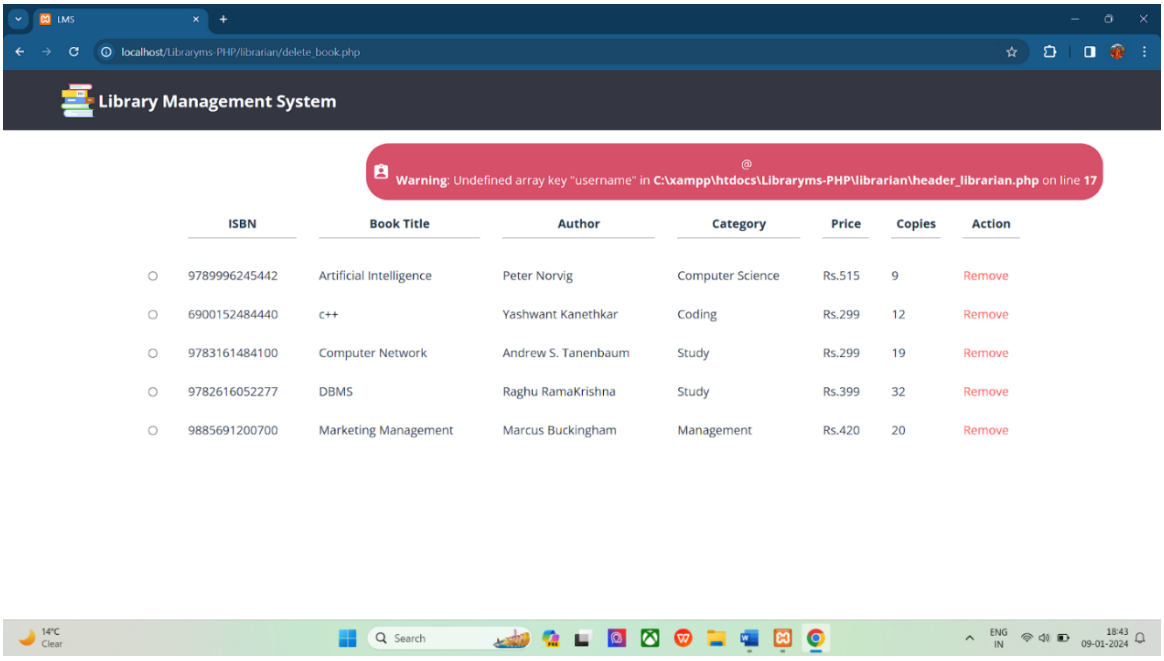

Fig 4.9 Pending Member Registration

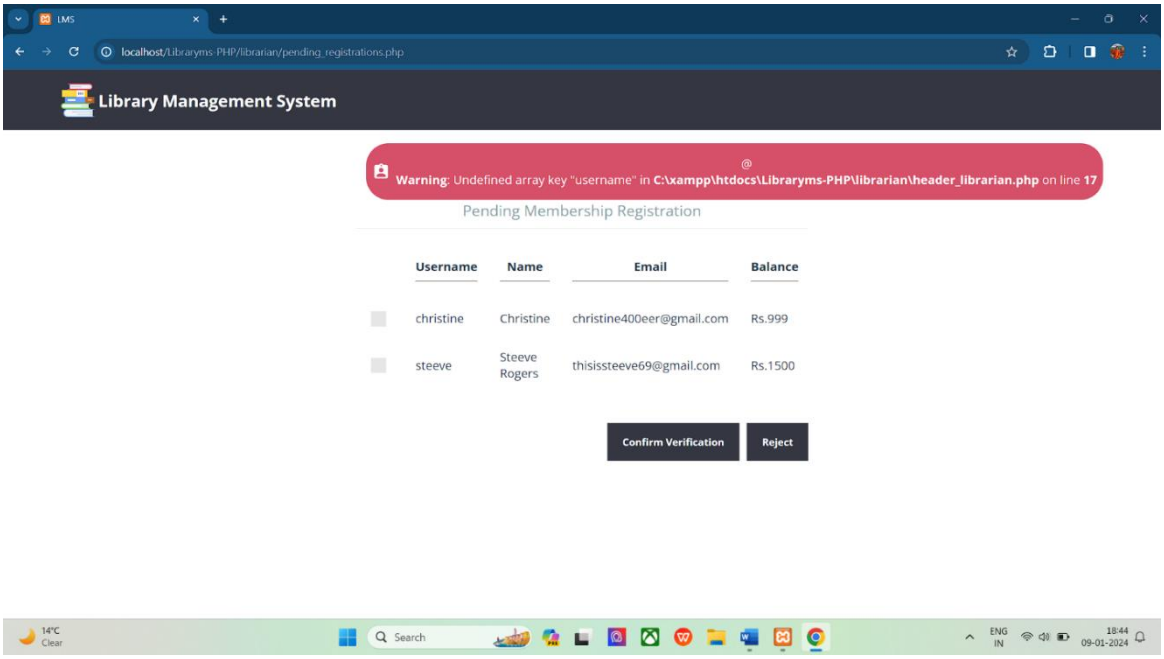

Fig 4.10 Withdraw Confirmation

CHAPTER 5

CODING

MAIN PAGE

```
<html>

<head>

<link rel="stylesheet" type="text/css"
href="http://fonts.googleapis.com/css?family=Open+Sans:400,300,700">

<link rel="stylesheet" type="text/css" href="css/header_style.css" />

</head>

<body>

<header>

<a href="./">

<div id="cd-logo">

<img src="img/ic_logo2.svg" alt="Logo" width="45" height="45" />

<p>Library Management System</p>

</div>

</a>

</header>

</body>

</html>
```

```
<html>
<head>
<title>LMS</title>
<link rel="stylesheet" type="text/css" href="css/index_style.css" />
</head>
<body>
<div id="allTheThings">
<div id="member">
<a href="member">
<img src="img/ic_membership.svg" width="250px" height="auto"/><br />
 Member Login
</a>
</div>
<div id="verticalLine">
<div id="librarian">
<a id="librarian-link" href="librarian">
<img src="img/ic_librarian2.svg" width="250px" height="220" /><br />
   Librarian Login
</a>
</div>
</div>
</div>
```

```
</body>

</html>
```

MEMBER LOGIN

```
<html>

<head>

<link rel="stylesheet" type="text/css"
href="http://fonts.googleapis.com/css?family=Open+Sans:400,300,700">

<link rel="stylesheet" type="text/css" href="css/header_style.css" />

</head>

<body>

<header>

<a href="./">

<div id="cd-logo">

<img src="img/ic_logo2.svg" alt="Logo" width="45" height="45" />

<p>Library Management System</p>

</div>

</a>

</header>

</body>

</html>

<html>

<head>

<title>LMS</title>
```

```
<link rel="stylesheet" type="text/css" href="../css/global_styles.css">

<link rel="stylesheet" type="text/css" href="../css/form_styles.css">

<link rel="stylesheet" type="text/css" href="css/index_style.css">

</head>

<body>

<form class="cd-form" method="POST" action="#">

<center><legend>Member Login</legend></center>

<div class="error-message" id="error-message">

<p id="error"></p>

</div>

 <input type="submit" value="Login" name="m_login" />

 <br /><br /><br /><br />

 <p align="center">Don't have an account? <a href="register.php" style="text-
 decoration:none; color:red;">Register Now!</a>

 <p align="center"><a href="../index.php" style="text-decoration:none;">Go Back</a>

 </form>

 </body>

 </html>
```

LIBRARIAN LOGIN

```
<html>

<head>

<link rel="stylesheet" type="text/css"
href="http://fonts.googleapis.com/css?family=Open+Sans:400,300,700">
```

```
<link rel="stylesheet" type="text/css" href="css/header_style.css" />
</head>
<body>
<header>
<a href="./">
<div id="cd-logo">
<img src="img/ic_logo2.svg" alt="Logo" width="45" height="45" />
<p>Library Management System</p>
</div>
</a>
</header>
</body>
</html>
<html>
<head>
<title>LMS</title>
<link rel="stylesheet" type="text/css" href="../css/global_styles.css">
<link rel="stylesheet" type="text/css" href="../css/form_styles.css">
<link rel="stylesheet" type="text/css" href="css/index_style.css">
</head>
<body>
<form class="cd-form" method="POST" action="#">
```

<legend>Librarian Login</legend>

<input class="l-user" type="text" name="l_user" placeholder="Username" required />

<input class="l-pass" type="password" name="l_pass" placeholder="Password" required />

<input type="submit" value="Login" name="l_login"/>

</form>

Go Back

<html>

<head>

<link rel="stylesheet" type="text/css" href="http://fonts.googleapis.com/css?family=Open+Sans:400,300,700">

<link rel="stylesheet" type="text/css" href="css/header_style.css" />

</head>

<body>

<header>

```
<a href="./">
<div id="cd-logo">
<img src="img/ic_logo2.svg" alt="Logo" width="45" height="45" />
<p>Library Management System</p>
</div>
</a>
</header>
</body>
</html>
<html>
<head>
<title>LMS</title>
<link rel="stylesheet" type="text/css" href="../css/global_styles.css">
<link rel="stylesheet" type="text/css" href="../css/form_styles.css">
<link rel="stylesheet" href="css/register_style.css">
</head>
<body>
<form class="cd-form" method="POST" action="#">
<center><legend>Member Registration</legend><p>Please fillup the form below:</p></center>
<div class="error-message" id="error-message">
<p id="error"></p>
```

```
</div>

<div class="icon">

<input class="m-name" type="text" name="m_name" placeholder="Full Name" required
/>

</div>

<div class="icon">

<input class="m-email" type="email" name="m_email" id="m_email"
placeholder="Email" required />

</div>

<div class="icon">

<input class="m-user" type="text" name="m_user" id="m_user"
placeholder="Username" required />

</div>

<div class="icon">

<input class="m-pass" type="password" name="m_pass" placeholder="Password"
required />

</div>

<div class="icon">

<input class="m-balance" type="number" name="m_balance" id="m_balance"
placeholder="Initial Balance" required />

</div>

<br />

<input type="submit" name="m_register" value="Submit" />
```

```
</form>

</body>

</html>
```

Internal Coding Parts

```
<html>

<head>

<link rel="stylesheet" type="text/css"
href="http://fonts.googleapis.com/css?family=Open+Sans:400,300,700">

<link rel="stylesheet" type="text/css" href="css/header_librarian_style.css" />

</head>

<body>

<header>

<div id="cd-logo">

<a href="../">

<img src="img/ic_logo2.svg" alt="Logo" width="45" height="45" />

<p>Library Management System</p>

</a>

</div>

<div class="dropdown">

<button class="dropbtn">

<p id="librarian-name"> @<br />
```

Warning: Undefined array key "username" in C:\xampp\htdocs\Libraryms-PHP\librarian\header_librarian.php on line 17

</p>

</button>

Logout

</header>

</body>

</html>

<html>

<head>

<title>LMS</title>

<link rel="stylesheet" type="text/css" href="../css/global_styles.css" />

<link rel="stylesheet" type="text/css" href="../css/form_styles.css" />

<link rel="stylesheet" href="css/insert_book_style.css">

</head>

<body>

<form class="cd-form" method="POST" action="#">

<legend>Add New Book Details</legend>

```
<p id="error"></p>

</div>

<div class="icon">

<input class="b-isbn" id="b_isbn" type="number" name="b_isbn" placeholder="ISBN" required />

</div>

<div class="icon">

<input class="b-title" type="text" name="b_title" placeholder="Book Title" required />

</div>

<div class="icon">

<input class="b-author" type="text" name="b_author" placeholder="Author Name" required />

</div>

<div>

<h4>Category</h4>

<p class="cd-select icon">

<select class="b-category" name="b_category">

<option>History</option>

<option>Comics</option>

<option>Fiction</option>

<option>Non-Fiction</option>

<option>Biography</option>
```

<option>Medical</option>

<option>Fantasy</option>

<option>Education</option>

<option>Sports</option>

<option>Technology</option>

<option>Literature</option>

</select>

</p>

<input class="b-price" type="number" name="b_price" placeholder="Price" required />

<input class="b-copies" type="number" name="b_copies" placeholder="Number of Copies" required />

<input class="b-isbn" type="submit" name="b_add" value="Add book" />

</form>

<body>

</html>

<html>

<head>

<link rel="stylesheet" type="text/css" href="http://fonts.googleapis.com/css?family=Open+Sans:400,300,700">

<link rel="stylesheet" type="text/css" href="css/header_librarian_style.css" />

</head>

<body>

<header>

Library Management System

<button class="dropbtn">

 @

Warning: Undefined array key "username" in C:\xampp\htdocs\Libraryms-PHP\librarian\header_librarian.php on line 17

</button>

```
<a href="../logout.php">Logout</a>

</div>

</div>

</header>

</body>

</html>

<html>

<head>

<title>LMS</title>

<link rel="stylesheet" type="text/css" href="../css/global_styles.css" />

<link rel="stylesheet" type="text/css" href="../css/form_styles.css" />

<link rel="stylesheet" href="css/update_copies_style.css">

</head>

<body>

<form class="cd-form" method="POST" action="#">

<center><legend>Update Book Copies</legend></center>

<div class="error-message" id="error-message">

<p id="error"></p>

</div>

<div class="icon">

<input class="b-isbn" type='text' name='b_isbn' id="b_isbn" placeholder="Book ISBN"
required />
```

```
</div>

<div class="icon">

<input class="b-copies" type="number" name="b_copies" placeholder="Copies to add" required />

</div>

<input type="submit" name="b_add" value="Update Book Copies" />

</form>

</body>

</html>

<html>

<head>

<link rel="stylesheet" type="text/css" href="http://fonts.googleapis.com/css?family=Open+Sans:400,300,700">

<link rel="stylesheet" type="text/css" href="css/header_librarian_style.css" />

</head>

<body>

<header>

<div id="cd-logo">

<a href="../">

<img src="img/ic_logo2.svg" alt="Logo" width="45" height="45" />

<p>Library Management System</p>

</a>
```

```
</div>

<div class="dropdown">

<button class="dropbtn">

<p id="librarian-name"> @<br />

<b>Warning</b>: Undefined array key "username" in <b>C:\xampp\htdocs\Libraryms-PHP\librarian\header_librarian.php</b> on line <b>17</b><br />

</p>

</button>

<div class="dropdown-content">

<a href="../logout.php">Logout</a>

</div>

</div>

</header>

</body>

</html>

<html>

<head>

<title>LMS</title>

<link rel="stylesheet" type="text/css" href="../member/css/home_style.css" />

<link rel="stylesheet" type="text/css" href="../css/global_styles.css">

<link rel="stylesheet" type="text/css" href="../css/home_style.css">
```

<link rel="stylesheet" type="text/css"
href="../member/css/custom_radio_button_style.css">

</head>

<body>

<form class='cd-form'>

<table width='100%' cellpadding=10 cellspacing=10><tr>

<th></th>

<th>ISBN<hr></th>

<th>Book Title<hr></th>

<th>Author<hr></th>

<th>Category<hr></th>

<th>Price<hr></th>

<th>Copies<hr></th>

<th>Action<hr></th>

</tr><tr>

<td>

<label class='control control--radio'>

<input type='radio' name='rd_book' value=9789996245442 />

</td><td>9789996245442</td><td>Artificial Intelligence</td><td>Peter
Norvig</td><td>Computer Science</td><td>Rs.515</td><td>9</td><td><div

class='text-center'> Remove </td></tr><tr>

<td>

<label class='control control--radio'>

<input type='radio' name='rd_book' value=6900152484440 />

</td><td>6900152484440</td><td>c++</td><td>Yashwant Kanethkar</td><td>Coding</td><td>Rs.299</td><td>12</td><td> Remove </td></tr><tr>

<td>

<label class='control control--radio'>

<input type='radio' name='rd_book' value=9783161484100 />

</td><td>9783161484100</td><td>Computer Network</td><td>Andrew S. Tanenbaum</td><td>Study</td><td>Rs.299</td><td>19</td><td> Remove </td></tr><tr>

<td>

<label class='control control--radio'>

<input type='radio' name='rd_book' value=9782616052277 />

</td><td>9782616052277</td><td>DBMS</td><td>Raghu RamaKrishna</td><td>Study</td><td>Rs.399</td><td>32</td><td><div class='text-

center'> Remove </td></tr><tr>

<td>

<label class='control control--radio'>

<input type='radio' name='rd_book' value=9885691200700 />

</td><td>9885691200700</td><td>Marketing Management </td><td>Marcus Buckingham</td><td>Management</td><td>Rs.420</td><td>20</td><td> Remove </td></tr></table></form>

</body>

</html>

<html>

<head>

<link rel="stylesheet" type="text/css" href="http://fonts.googleapis.com/css?family=Open+Sans:400,300,700">

<link rel="stylesheet" type="text/css" href="css/header_librarian_style.css" />

</head>

<body>

<header>

Library Management System

<button class="dropbtn">

 @

Warning: Undefined array key "username" in C:\xampp\htdocs\Libraryms-PHP\librarian\header_librarian.php on line 17

</button>

Logout

</header>

</body>

</html>

<html>

<head>

<title>LMS</title>

<link rel="stylesheet" type="text/css" href="../css/global_styles.css" />

<link rel="stylesheet" type="text/css" href="../css/form_styles.css" />

```
<link rel="stylesheet" href="css/update_balance_style.css">

</head>

<body>

<form class="cd-form" method="POST" action="#">

<center><legend>Update Member's Total Balance</legend></center>

<div class="error-message" id="error-message">

<p id="error"></p>

</div>

<div class="icon">

<input class="m-user" type='text' name='m_user' id="m_user" placeholder="Member username" required />

</div>

<div class="icon">

<input class="m-balance" type="number" name="m_balance" placeholder="Balance to add" required />

</div>

<input type="submit" name="m_add" value="Update Balance" />

</form>

</body>

</html>



<html>
```

<head>

<link rel="stylesheet" type="text/css" href="http://fonts.googleapis.com/css?family=Open+Sans:400,300,700">

<link rel="stylesheet" type="text/css" href="css/header_librarian_style.css" />

</head>

<body>

<header>

Library Management System

<button class="dropbtn">

 @

Warning: Undefined array key "username" in C:\xampp\htdocs\Libraryms-PHP\librarian\header_librarian.php on line 17

</button>

Logout

```
</div>

</div>

</header>

</body>

</html>

<html>

<head>

<title>LMS</title>

<link rel="stylesheet" type="text/css" href="../css/global_styles.css">

<link rel="stylesheet" type="text/css" href="../css/custom_checkbox_style.css">

<link rel="stylesheet" type="text/css" href="css/pending_registrations_style.css">

</head>

<body>

<form class='cd-form' method='POST' action='#'><center><legend>Pending Membership Registration</legend></center><div class='error-message' id='error-message'>

<p id='error'></p>

</div><table width='100%' cellpadding=10 cellspacing=10>

<tr>

<th></th>

<th>Username<hr></th>

<th>Name<hr></th>
```

<th>Email<hr></th>

<th>Balance<hr></th>

</tr><tr><td>

<label class='control control--checkbox'>

<input type='checkbox' name='cb_0' value='christine' />

</label>

</td><td>christine</td><td>Christine</td><td>christine400eer@gmail.com</td><td>Rs.999</td></tr><tr><td>

<label class='control control--checkbox'>

<input type='checkbox' name='cb_1' value='steeve' />

</label>

</td><td>steeve</td><td>Steeve Rogers</td><td>thisissteeve69@gmail.com</td><td>Rs.1500</td></tr></table>

 <input type='submit' value='Confirm Verification' name='l_confirm' />   <input type='submit' value='Reject' name='l_delete' /> </form> </body>

</html>

CHAPTER 6

TESTING

After completing every part of the software there is the need for software testing to prove that the module are functioning properly or not and it fulfills all requirement of the user. For this, the programmer use various type of software testing techniques and strategies. Software can be tested in one of two ways -:

- **Black - Box Testing -:** Knowing the specified function that a product has been designed to perform, tests can be conducted that demonstrate each function is fully operational while at the same time searching for errors in each function.

- **White – Box Testing -:** Knowing the internal working of product, tests can be conducted to ensure that "all gears mesh", that is internal operations are performed according to specification and internal component have been adequately exercised.

VALIDATION CHECK

The main data, which is requested, is all the details about maintain Issue-Return Books, Add New Members, and Collection of Fines, Dynamic Search etc. Then we have to feed all these details to find out the user's need.

Details that are required are -:

1. While the member profile table maintains entry, it checks the Category Name, Organization, Email, Name, State, City, etc. for inserting only string data and in Member ID, Barcode, Phone, Mobile, etc. for inserting only number data.

2. While maintaining Purchase-Order and Purchase-Order Received, in P.O.Number, Quantity, Price Per Unit, Total Price, Invoice Number, Quantity Ordered, Quan. Received, Sales Tax, Discount and Invoice Amt., we can't insert string data.
3. In amount field can't accept other than currency data and we can't use decimal point more than one time.
4. In all the forms where I include data grids, we have to enter data first in text fields but after that we have to move into datagrids with "TAB" key, otherwise the data will not be saved or deleted.
5. Any entry can be edited by members if they have rights.

After the data have been collected it is checked whether it is correct or not. And after completion of entire project it has been checked, whether it is properly worked or not.

BIBLIOGRAPHY

The Online Library Management System (OLMS) stands as a beacon of innovation in the realm of library services, conceived and developed by a dedicated team of software engineers and librarians with a vision to transform traditional library operations into a seamless digital experience. From its inception in [Year], OLMS underwent meticulous development phases, resulting in a robust platform that prioritizes efficiency, accessibility, and a delightful user experience. Boasting a user-friendly interface, OLMS empowers both library staff and patrons to navigate the system effortlessly. One of its standout features is the sophisticated digital catalog management system, which allows librarians to organize and maintain an extensive collection of books, journals, and multimedia resources with ease. Furthermore, OLMS offers patrons the convenience of remote access to the library catalog, enabling them to search, reserve, and borrow materials from any location with internet connectivity. Automating mundane tasks, such as check-in and check-out processes, OLMS enhances operational efficiency for librarians while ensuring accurate tracking of borrowed items. In essence, OLMS is not just a software system; it is a transformative force driving the evolution of libraries into the digital age, fostering a more accessible and dynamic literary landscape.

REFERENCE

1. W3Schools. (2022). HTML Forms. Retrieved from https://www.w3schools.com/html/html_forms.asp
2. Bootstrap Documentation. (2022). Retrieved from https://getbootstrap.com/docs/4.5/getting-started/introduction/
3. JavaScript MDN Web Docs. (2022). Introduction to the DOM. Retrieved from https://developer.mozilla.org/en-US/docs/Web/API/Document_Object_Model/Introduction
4. jQuery Documentation. (2022). Retrieved from https://jquery.com/
5. Font Awesome Documentation. (2022). Retrieved from https://fontawesome.com/v5.15/how-to-use/on-the-web/setup/getting-started
6. GitHub. (2022). Version Control with Git. Retrieved from https://git-scm.com/book/en/v2
7. Bootstrap CDN. (2022). Retrieved from https://www.bootstrapcdn.com/
8. Font Awesome CDN. (2022). Retrieved from https://cdnjs.com/libraries/font-awesome