SDJ INTERNATIONAL COLLEGE

BACHELOR OF COMPUTER APPLICATIONS (BCA)

Project Report

BCA Sem VI
AY 2023-24

LIBRARY MANAGEMENT

By

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Project Guide By :
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Acknowledgement

The success and outcome of this project required a lot of guidance and assistance from many people, and we are extremely fortunate to have gotten this all along with the completion of our project work. Whatever we have done is only due to such guidance and assistance.

We would not forget to thank I/C Principal Dr. Aditi Bhatt, IQAC coordinator and trust representative Dr. Vaibhav Desai, Head of BCA Department Dr. Vimal Vaiwala and Project guide **Dr. Brijal M. Panwala** and all other assistant professors, who took a keen interest in our project work and guided us all along till the completion of our project work by providing all the necessary information for developing a good system.

We are extremely grateful to him/her for providing such nice support and guidance, though he/she had a busy schedule managing the college dealings.

We are thankful and fortunate enough to have gotten support and guidance from all the teaching staff in the Bachelor of Computer Application Department, which helped us successfully complete our project work. Also, we would like to extend our sincere regards to all the non-teaching staff of the Bachelor of Computer Application Department for their timely support.

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I N D E X

1 . INTRODUCTION

1.1 PROJECT DESCRIPTION

- A library management project involves creating a system to efficiently manage library resources, including books, journals, periodicals, and other materials, as well as member information and borrowing transactions. Here's a summary of what such a project typically includes

1. **Database Management :** Designing and implementing a database to store information about books, members, transactions, etc. This involves creating tables for books, members, transactions, and any other relevant entities, and establishing relationships between them.

2. **User interface :** Developing a user-friendly interface for librarians and members to interact with the system. This could include features such as searching for books, checking availability, placing holds, and managing accounts.

3. **Authentication and authorization :** Implementing security measures to ensure that only authorized users (librarians and members) can access certain functions and data within the system. This typically involves user authentication (e.g., login with username and password) and role-based access control.

4. **Book management :** Functionality for adding new books to the system, updating existing book records (e.g., adding descriptions, changing status), and removing books from circulation (e.g., marking as lost or withdrawn).

5. **Member management :** Managing member accounts, including registration, updating personal information, and tracking borrowing history. This may also include features such as managing fines and notifications for overdue items.

6. **Transaction management:** Handling borrowing and returning of books, including checking availability, managing due dates, and generating receipts or reminders for overdue items.

7. **Reporting and analytics :** Providing tools for generating reports and analyzing library usage data. This could include statistics on book circulation, popular titles, overdue items, etc.

8. **Integration and scalability :** Ensuring that the system can integrate with other library systems or external services (e.g., online catalogs, digital lending platforms) and that it can scale to accommodate growing numbers of books and members.

- Overall, a library management project aims to streamline the operations of a library, improve accessibility and convenience for users, and provide administrators with tools for efficient management and analysis of library resources.

1.2 PROJECT PROFILE

Fields	Descriptions
Project title	Library management
Definition	Library management involves the organization and coordination of library resources and services to meet the needs of users effectively. It includes tasks like acquiring books, managing the collection, assisting users, and maintaining the library's operations.
Developed for	S. D. J. International college, vesu, surat
Project guide	Dr. Brijal M. Panwala
Front end	Html , css , javascript , php
Back end	Php – mysql xampp
Programming language	php & mysql
Operating system	Microsoft windows 10
Submitted by	1. KAKADIYA DEEP PRAVINBHAI 2. MANGUKIYA MANAN LAKHAMANBHAI 3. PADSHALA JEEL SHAILESHBHAI 4. ZALAVADIYA UTSAV RAMESHBHAI

2. ENVIROMENT DESCRIPTION

2.1 HARDWARE & SOFTWARE REQUIREMENT

At Development Time …

❖ **Server Side :**

- **Hardware Requirements :**
  - Intel(r) core(tm) i5-4310u cpu @ 2.00ghz 2.60 ghz
  - 8.00 gb ram
- **Software Requirements :**
  - Windows 10 pro
  - Mysql
  - Xampp
  - Bootstrap , css , javascript.

❖ **Client Side :**

- **Hardware Requirements :**
  - Intel(r) core(tm) i5-4310u cpu @ 2.00ghz 2.60 ghz
  - 8.00 gb ram
- **Software Requirements :**
  - Windows 10 pro
  - Mozilla firefox, google chrome.

2.2 TECHNOLOGIES USED

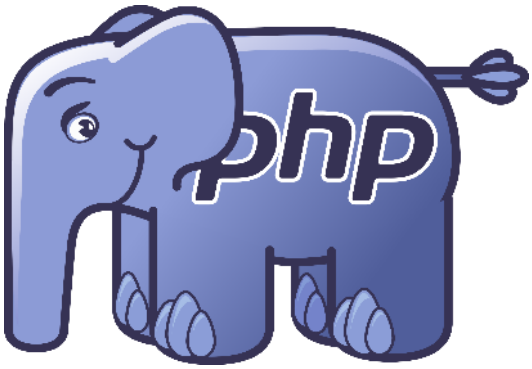
- This project will be developed in php as front end and mysql as back end. The project works on devices running on windows, mac and linux platform.
- Front end and back end are generalized terms that refer to the initial and the end stages to handle a system.
- The front end is responsible for collecting input in various forms from the users and processing it to conform to a specification the back-end use.
- The front end is an interface between the user and the back end.
- The main reason of forming a combination of these two ends is, to providing different functionality of both getting and providing data or information to the users with the help of this medium.
- The main reason of taking a front end is subjecting all processing part to be performed by this front-end that interact with user enabling to use different facilities of the system. Taking back-end is to keep all the data at the base-back for retrieval processing and resulting.

- **Main Programming Language :**
    - Programming language : php

- **Different Programming Environment :**
    - Front end : html , css , javascript , php
    - Back end : php - mysql

- **Other Tools :**
    - Xampp server , chrome

❖ **Front – End : Php**



- Php (recursive acronym for php : hypertext preprocessor) is a widely-used open source general-purpose scripting language that is especially suited for web development and can be embedded into html. What distinguishes php from something like client-side javascript is that the code is executed on the server, generating html which is then sent to the client. The client would receive the results of running that script.
- Html files with php, and then there's really no way that users can tell what you have up your sleeve. The best things in using php are that it is extremely simple for a newcomer, but offers many advanced features for a professional programmer.

1. **Back – End : Mysql**

- Mysql runs on virtually all platforms, including linux, unix, and windows. Although it can be used in a wide range of applications, mysql is most often associated with web-based applications and
- Online publishing and is an important component of an open source enterprise stack called lamp.
- Lamp is a web development platform that uses linux as the operating system, apache as the web server, mysql as the relational
- Database management system and php as the objectoriented scripting language. mysql is an essential part of almost every open source php application.

2. Back – End : Xampp

- Xampp stands for cross-platform (x), apache (a), mysql (m), php
- (p) and perl (p). It is a simple, lightweight apache distribution that makes itextremely easy for developers to create a local web server for testing
  Purposes.
- Included in a simple extractable file. Xampp is also cross-platform,which means it works equally well on linux, mac and windows. Since most actual web server deployments use same components as xampp, it makes transitioning from a local test server to a live server is extremely easy as well.

3. Front – End : Css

- Cascading style sheets (css) is a style sheet language used for describing thepresentation of a document written in a markup language.
- Although most often used to set the visual style of web pages and userinterfaces written in html and xhtml, the language can be applied to any xml document.
- Including plain xml, svg and xul, and is applicable to rendering in speech, or on other media. Along with html and javascript, css is a cornerstone technology used by most websites to create visually engaging webpages, user interfaces for web applications, and user interfaces for many mobile applications.

4. Front – End : Javascript

- Javascript is a high-level, dynamic, untyped, and interpreted programminglanguage.
- It has been standardized in the ecmascript languagespecification.
- Alongside html and css, javascript is one of the three core technologies of world wide web content production. The majority of websites employ it, andall modern web browsers support it without the need for plug-ins.

3. SYSTEM ANALYSIS & PLANNING

3.1 EXISTING SYSTEM & ITS DRAWBACK

- Existing library management systems typically involve manual processes for tasks such as book borrowing, returning, cataloging, and managing fines. Some common drawbacks of these systems include:

1. **Manual Data Entry:** Many library management systems still rely on manual data entry for book information, patron details, and transaction records. This can lead to errors, inconsistencies, and inefficiencies in managing the library's resources.

2. **Limited Accessibility:** Traditional library systems may only be accessible from within the library premises, limiting the ability of patrons to search for books or manage their accounts remotely.

3. **Limited Search Capabilities:** Searching for books within the library's collection may be limited to basic criteria such as title, author, or ISBN. More advanced search capabilities, such as keyword searching or filtering by genre, may be lacking.

4. **Overdue Management:** Managing overdue books and fines often requires manual intervention, leading to delays in notifying patrons and collecting fines. This can result in lost revenue for the library and inconvenience for patrons.

5. **Lack of Integration:** Some library management systems may not integrate well with other library services or external databases, making it difficult to provide a seamless experience for patrons or share resources with other libraries.

6. **Limited Reporting:** Generating reports on library usage, circulation statistics, or collection management may be cumbersome and time-consuming with traditional systems, limiting the ability of library staff to make informed decisions.

7. **Security Concerns:** Traditional systems may have limited security measures in place, making them vulnerable to data breaches or unauthorized access to patron information.

3.2 FEASIBILITY STUDY

1. **Technical Feasibility :**

- Technical feasibility determines whether the work for the project can be done with the existing equipment, software technology, and available personnel. Technical feasibility is concerned with specifying equipment and software that will stratify the user requirement. This project is feasible on technical remarks also, as the proposed application is more beneficiary in terms of having a soundproof application with new technical components installed on the application.
- The proposed application can run on any machine supporting browser and internet services and works on the best software and hardware that had been used while designing the application. So, it would be feasible in all technical in terms of feasibility.

2. **Economic Feasibility :**

- Economic feasibility determines whether there are sufficient benefits in creating to make the cost acceptable, or if the cost of the application is too high, as this signifies cost- benefits analysis and savings.
- On the behalf of the cost-benefit analysis, the proposed application is feasible and economical regarding its pre-assumed cost for making an application.
- Economic feasibility has great importance as it can outweigh other feasibilities because costs affect an organization's decisions
- The concept of economic feasibility deals with the fact that an application that can be developed and will be used on the installation must be profitable for organization.
- The cost to conduct a full application investigation the cost of hardware and software, and the benefits in the form of reduced expenditure are all discussed during the economic feasibility.

- ❖ During the economic feasibility test, i maintained the balance between the operational and economical feasibilities, as the two were conflicting.
- ❖ For example, the solution that produces the best operational impact for the end uses may also, be the most expensive and therefore the least economically feasible.

- ❖ I classified the costs of the family expanse manager application according to the phase in which they occur. As i know that the application development costs are usually one-time costs that will not occur after the project has been completed. For calculating the development costs, i evaluated certain costs categories-wise.
  - Personnel costs
  - Computer usage
  - Training
  - Supply and equipment costs
  - Cost of any new computer equipment and software

3. Operation Feasibility :

- ❖ Operation feasibility is a measure of how people feel about the application. Operational feasibility criteria measure the urgency of the problem or the acceptability of the solution. Operational feasibility is dependent upon determining human resources for the project.
- ❖ It refers to projecting whether the application will operate and be used once it is installed. If the ultimate users are comfortable with the present application and they see no problem with its continuance, then resistance to its operation will be zero.
- ❖ A particular application may be technical and but may fail to produce the forecasted benefits because the company is not able to get it to work.
- ❖ For the application, it is not necessary that the user must be a computer expert but any computer operator given a little bit of knowledge and training can easily operate.

4. Management Feasibility :

- Management feasibility does not come in basic feasibility of the application, but it arises in the aspect of management views.
- Here all levels of management revise all related basic feasibility and know the requirements of the all after that all manager give their decision for all those feasibilities to be used or not.

5. Time Feasibility :

- Time feasibility describes the time cost for converting the present application to a new application.
- As an aspect of time feasibility, my application took three months to complete.
- This application is developed in the time period of 80 to 90 days so i can say that this application is time feasible.

6. Legal Feasibility :

- Investigates if the proposed system conflicts with legal requirements like data protection acts or social media laws.
- As such, in our project, we do not collect user confidential information for any purpose. But we store user's financial detail as a user data which is end to end encrypted so it is safe. This data created and stored by user.
- We providing user privacy and our system does not conflict with any legal requirements of cyber laws.

3.3 REQUIREMENT GATHERING & ANALYSIS

- Requirement gathering and analysis for a library management system involves understanding the needs of various stakeholders, including librarians, library staff, and patrons. Here's a structured approach to requirement gathering and analysis for a library management system:

1. **Identify stakeholders:** Identify All Stakeholders Involved In The Library Management Process, Including Librarians, Library Staff, Administrators, And Patrons.
2. **Conduct interviews and surveys:** Interview stakeholders to understand their needs, pain points, and desired features. Surveys can also be distributed to gather feedback from a larger audience.
3. **Identify functional requirements:** Define the functional requirements of the system, including features such as book cataloging, patron registration, borrowing and returning books, fine management, reservation system, search functionality, reporting, and administration tools.
4. **Document requirements:** Document all gathered requirements in a clear and concise manner using tools like requirement traceability matrices, use cases, user stories, and flowcharts. Ensure that requirements are well-defined, unambiguous, and measurable.
5. **Review and validate requirements:** Review the documented requirements with stakeholders to ensure that they accurately reflect their needs and expectations. Validate requirements for feasibility, consistency, and alignment with the library's goals.
6. **Iterative process:** Requirement gathering and analysis should be an iterative process, with regular feedback loops and adjustments based on evolving stakeholder needs and project constraints.

7. **Prototyping:** Develop prototypes or mockups to visualize the proposed system and gather additional feedback from stakeholders. Prototyping helps in validating design decisions and refining requirements.

❖ **Requirement Gathering :**

- Requirements gathering is a fundamental part of any software development project. These are things like “user wants to do a thing. How is this achieved ?
- In effect, requirements gathering is the process of generating a list of requirements (functional, system, technical, etc.) From all the stakeholders (customers, users, vendors, it staff) that will be used as the basis for the formal definition of what the project is.
- Requirements gathering is done through meetings, discussions, feedback, and brainstorming with clients, staff, users, and experts.
- It provides direction to system analysts and designers to design a system that is efficient. We gathered requirements by discussing daily financial records management problems with family, friends, project guides and financial professionals.

❖ **Requirement Analysis :**

- To develop any application, it is most important to identify the user requirement in a very specific manner. Also, to function properly. All interfaces of prosed application with the surrounding application must be identified. The current application stratified all user requirements.
- Therefore, it is very important to analyze the existing application and to document the software requirements specification for the proposed application, which in turn provides the base for the development of the proposed application.

4. PROPOSED SYSTEM

4.1 SCOPE

- The scope of library management encompasses a wide range of activities and responsibilities related to the effective functioning and administration of libraries. It includes but is not limited to the following aspects.

1. Collection development: this involves selecting, acquiring, and managing library materials such as books, journals, electronic resources, multimedia, and other materials to meet the information needs of library users.

2. Cataloging and classification: library management includes organizing and cataloging library materials using standardized systems such as dewey decimal classification (ddc) or library of congress classification (lcc) to facilitate efficient retrieval.

3. Acquisition and budgeting: library managers are responsible for budget planning, allocation, and expenditure related to the acquisition of new materials, subscriptions to electronic resources, and other library services.

4. User services: this involves providing assistance to library users, including reference services, user education, circulation services, interlibrary loan, and document delivery.

5. Library technology: library management encompasses the implementation and management of library automation systems, digital libraries, integrated library systems (ils), online public access catalogs (opac), and other technological solutions to enhance library services.

6. Facilities management: this includes managing the physical space of the library, ensuring a conducive environment for study and research, space planning, and maintenance of library infrastructure.

7. Staff management: library managers are responsible for recruiting, training, supervising, and evaluating library staff to ensure efficient operation and delivery of services.

4.2 PROJECT MODULES & FUNCTIONALITIES CONSTRAINTS

❖ **ADMIN SIDE :**

- ADD BOOK
- MANAGE BOOK
- ADD AUTHOR
- MANAGE AUTHOR
- ADD PUBLISHER
- MANAGE PUBLISHER
- SEND MESSAGE
- UPDATE PROFILE
- CHANGE PASSWORD
- DASHBOARD
- REGISTER STUDENT

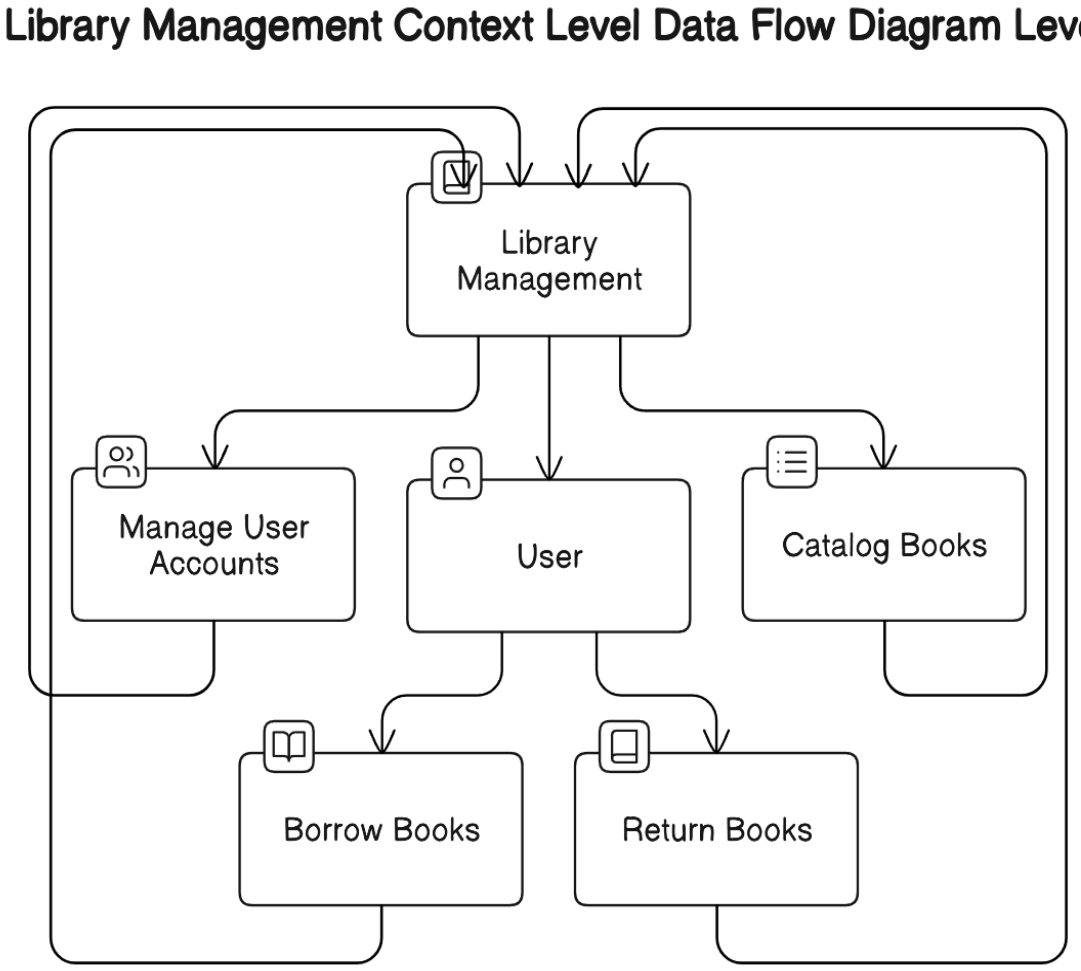
❖ **USER / STUDENT SIDE :**

- DASHBOARD
- ALL BOOK
- ISSUED BOOK
- MESSAGE
- HELP
- UPDATE PROFILE
- CHANGE PASSWORD
- SEND HELP

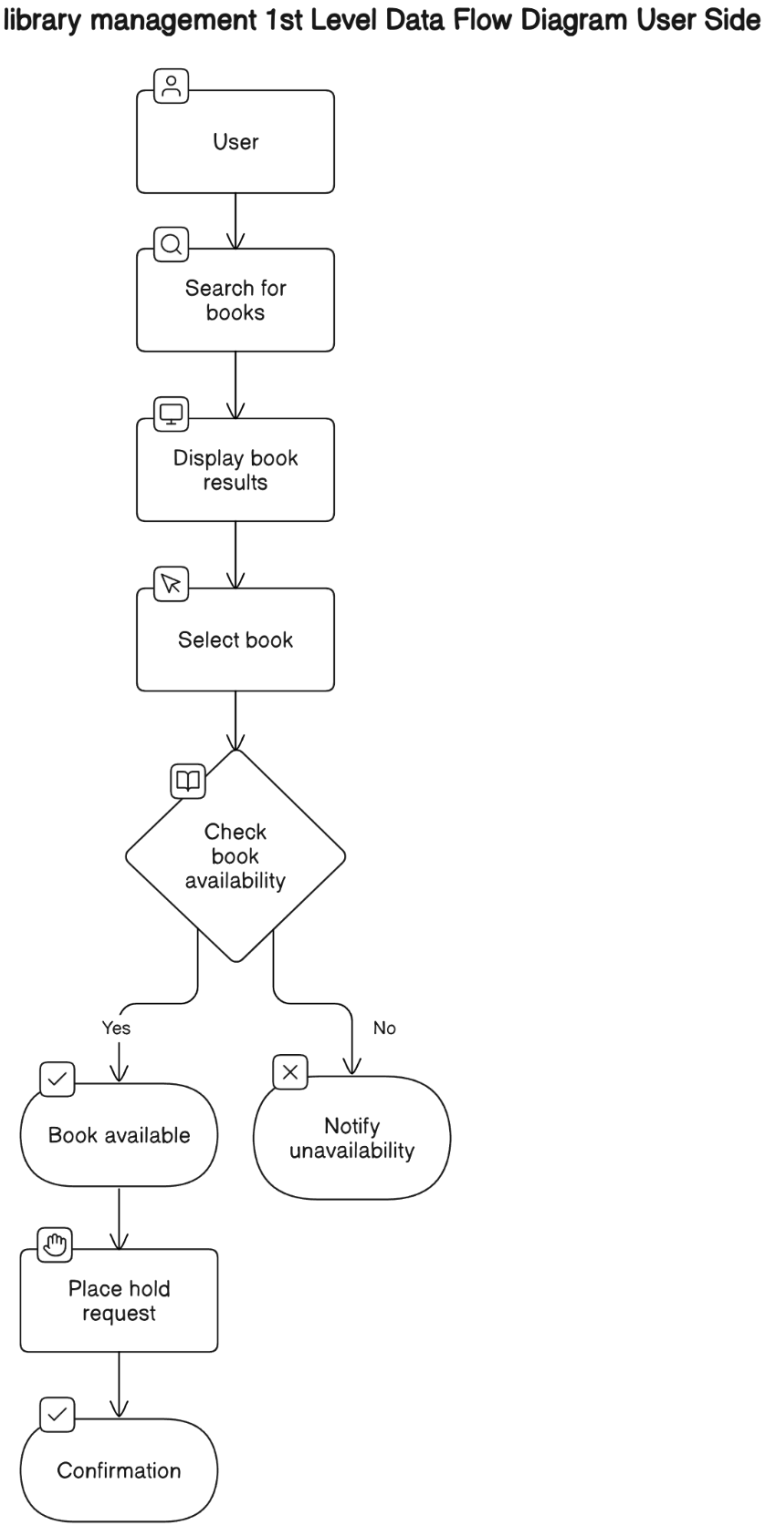
5. DETAIL PLANNING

5.1 DATA FLOW DIAGRAM / UML

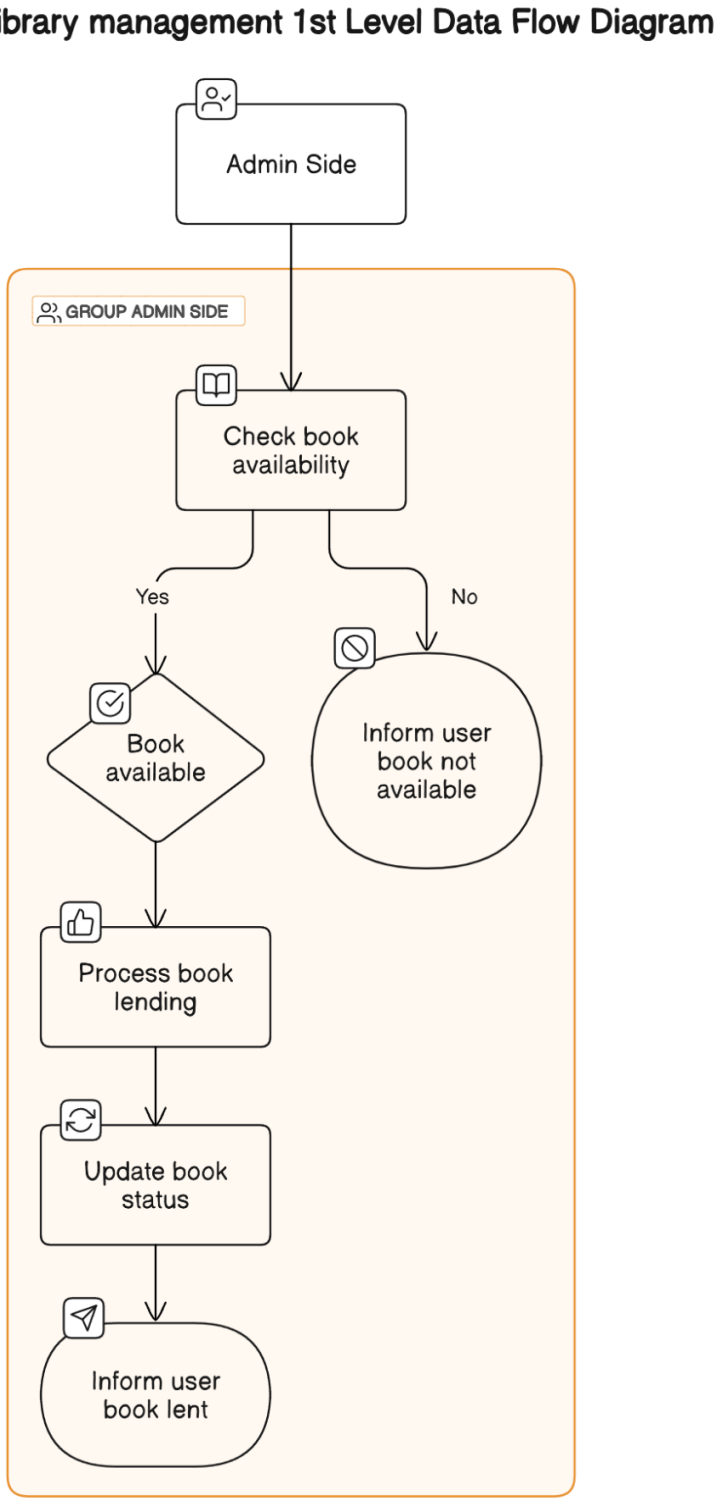
- **DATA FLOW DIAGRAM (LEVEL – 0)**



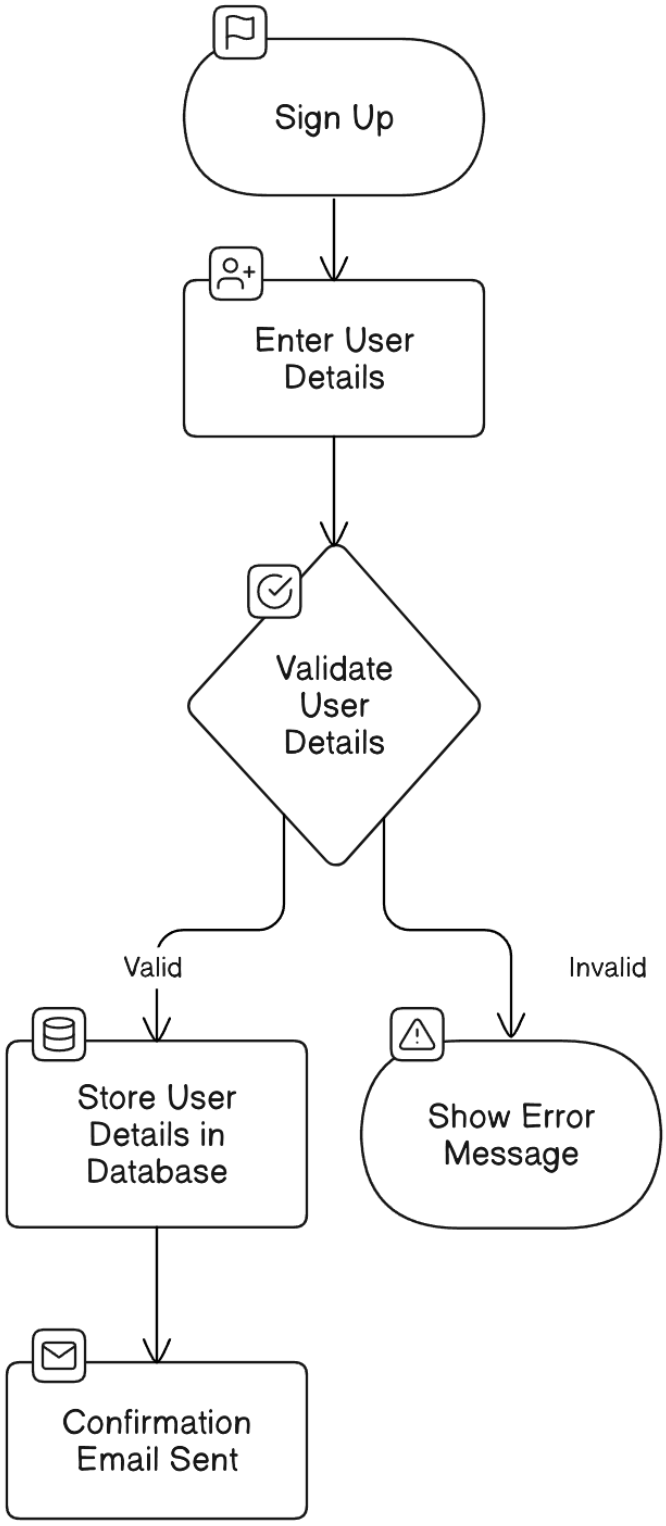
- **DATA FLOW DIAGRAM (LEVEL – 1) : USER SIDE**



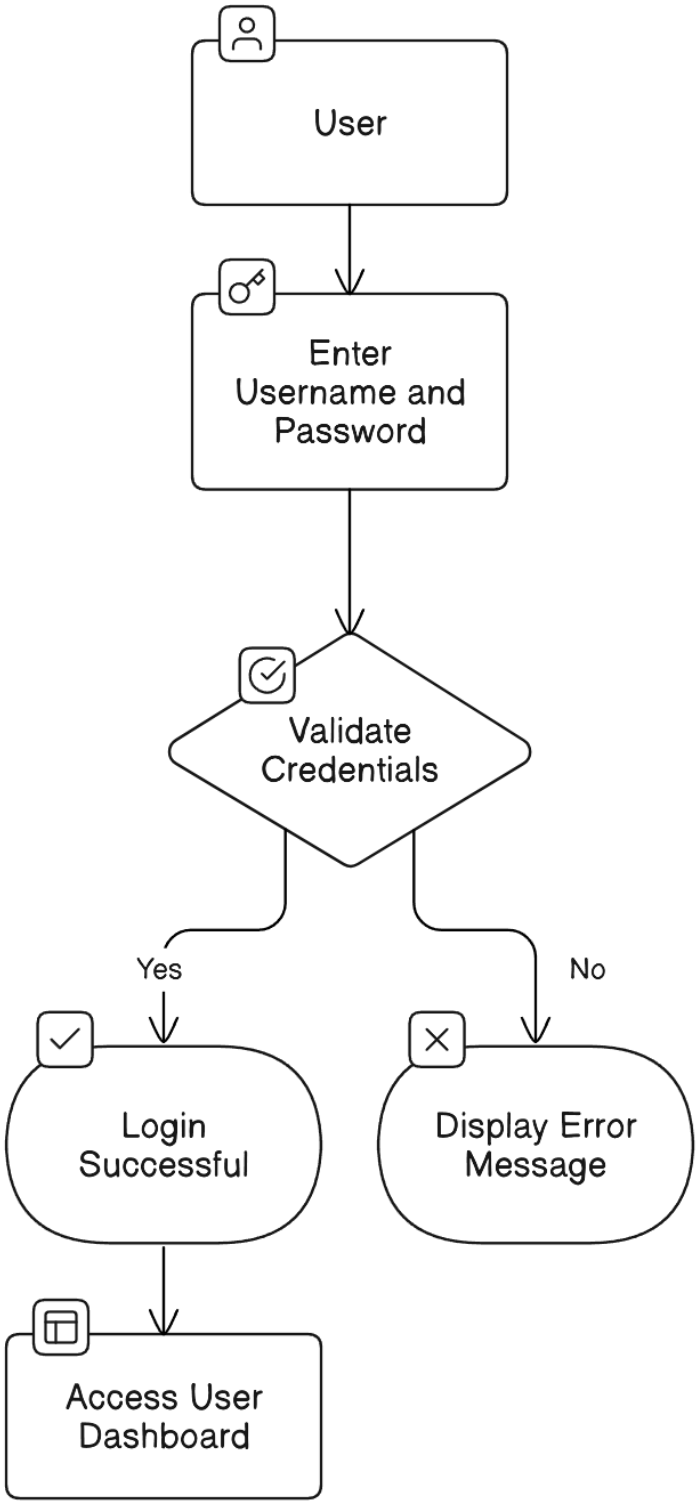
- **DATA FLOW DIAGRAM (LEVEL – 1) : ADMIN SIDE**



- **DATA FLOW DIAGRAM (LEVEL – 2) : USER SIDE**
  - **SIGN UP :**

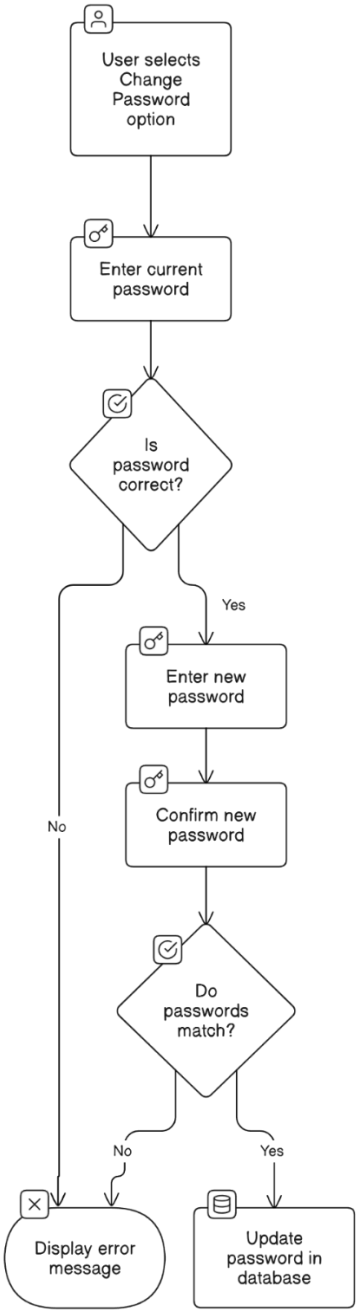


- **SIGN IN :**

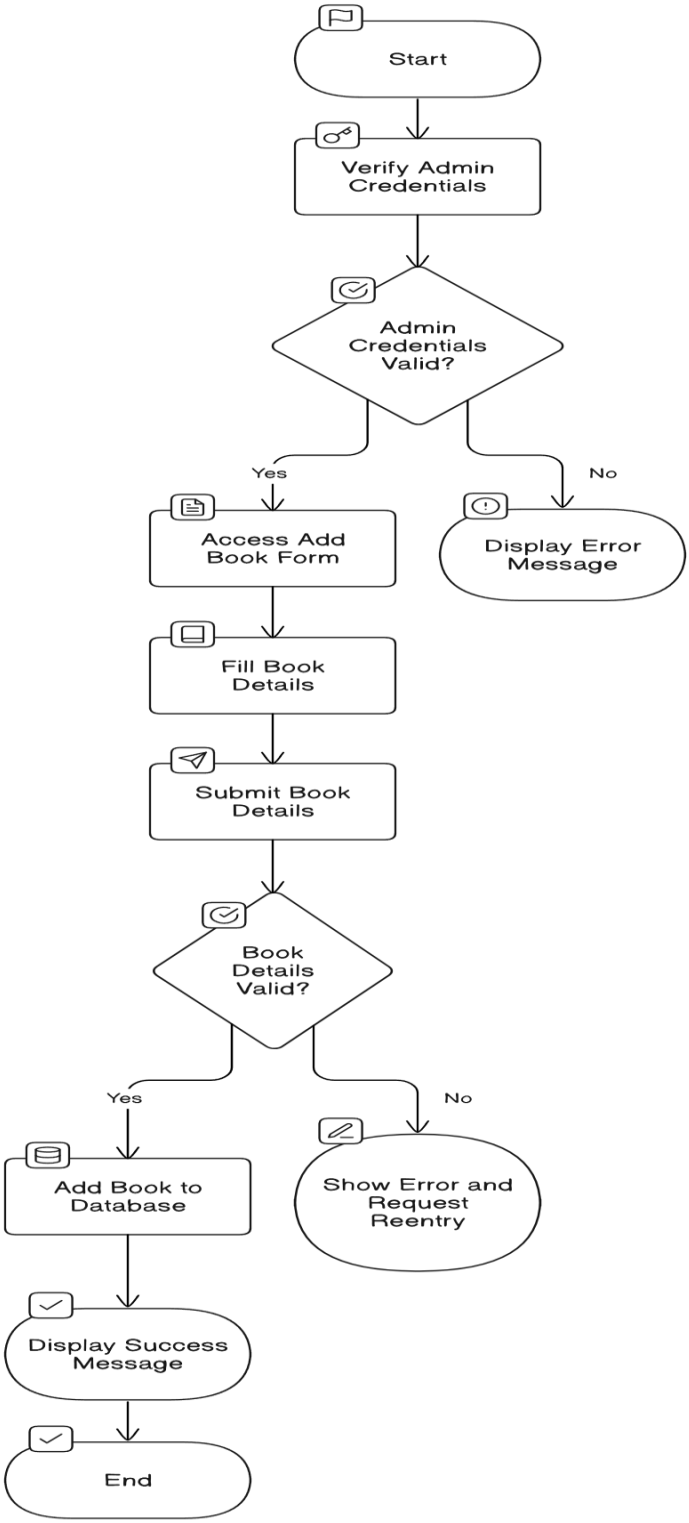

User
Enter Username and Password
Validate Credentials
Yes
No
Login Successful
Display Error Message
Access User Dashboard

5.2 PROCESS SPECIFICATION / ACTIVITY FLOW DIAGRAM

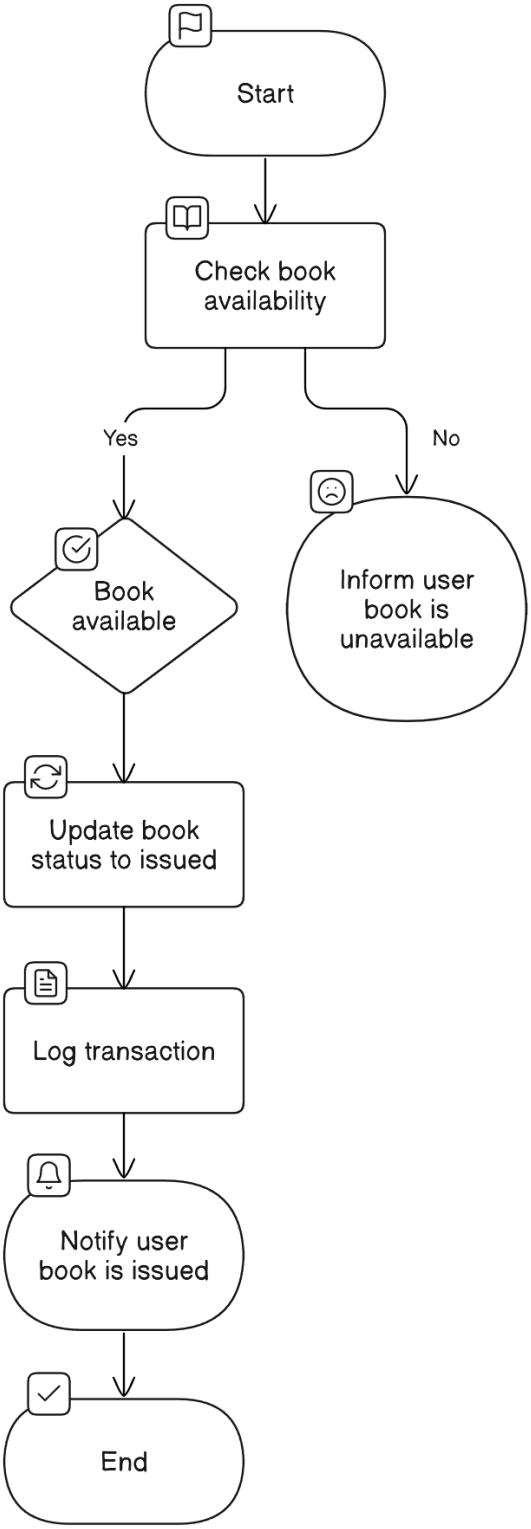
- **CHANGE PASSWORD :**



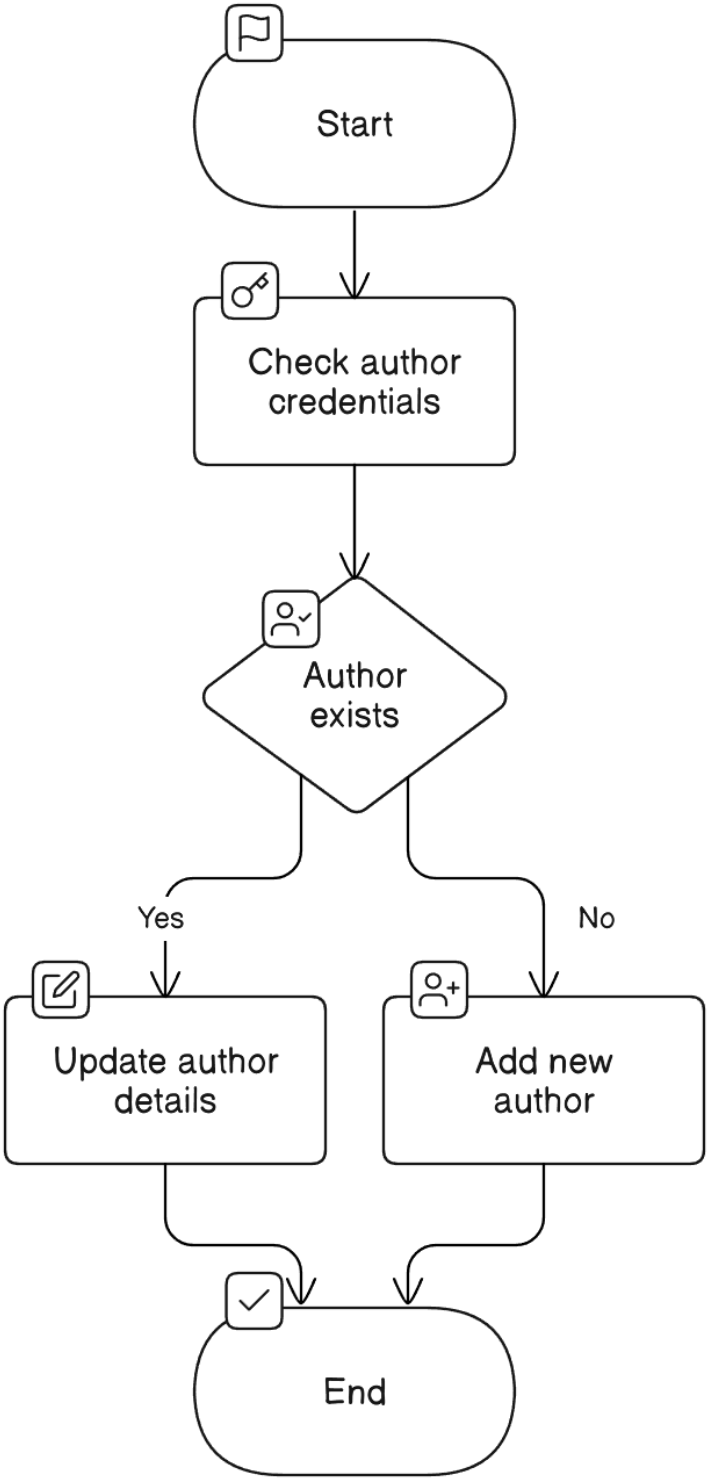
- **ADD BOOK :**


Start
Verify Admin Credentials
Admin Credentials Valid?
Yes
No
Access Add Book Form
Display Error Message
Fill Book Details
Submit Book Details
Book Details Valid?
Yes
No
Add Book to Database
Show Error and Request Reentry
Display Success Message
End

- **ISSUE NEW BOOK :**



- **MANAGE AUTHOR :**



5.3 DATA DICTIONARY

- **TABLE : tblstudents**

Field name	Field type	Description
Id <<pk>>	Int(11)	To store document id
Studentid	Varchar(100)	To store student id
Fullname	Varchar(120)	To store fullname of the student
Emailid	Varchar(120)	To store e-mail id of the student
Otp	Int(11)	To store otp
Mobilenumber	Char(11)	To store mobile number
Password	Varchar(120)	To store password
Status	Int(1)	To store status
Regdate	Timestamp	To store regdate
Updationdate	Timestamp	To store updationdate

- **TABLE : tblauthors**

FIELD NAME	FIELD TYPE	DESCRIPTION
id <<PK>>	int(11)	To Store Document ID
AuthorName	varchar(100)	To Store Author name
creationDate	timestamp	To Store creation date
UpdationDate	timestamp	To Store updationDate

- **TABLE : admin**

FIELD NAME	FIELD TYPE	DESCRIPTION
id <<PK>>	int(11)	To Store Document ID
FullName	varchar(100)	To Store Admin Id
AdminEmail	Varchar(120)	To Store email of the admin
UserName	Varchar(120)	To Store username of the admin
Password	Varchar(120)	To Store password
updationDate	timestamp	To Store updationDate

- **TABLE : tblcategory**

FIELD NAME	FIELD TYPE	DESCRIPTION
id <<PK>>	int(11)	To Store Document ID
CategoryName	varchar(100)	To Store category name
Status	Varchar(1)	To Store status
CreationDate	timestamp	To Store creationDate
UpdationDate	timestamp	To Store updationDate

- **TABLE : tblbooks**

FIELD NAME	FIELD TYPE	DESCRIPTION
Id <<PK>>	int(11)	To Store Document ID
BookName	varchar(100)	To Store Book name
CatId	int(11)	To Store cat id
AuthorId	int(11)	To Store author id
PubId	int(11)	To Store pub id
ISBNNumber	Varchar(25)	To Store ISBN number
BookPrice	decimal(10,2)	To Store book price
bookImage	varchar(250)	To Store book image
isIssued	int(1)	To Store isIssued
RegDate	timestamp	To Store Reg Date
UpdationDate	Timestamp	To Store updationDate

- **TABLE : tblhelp**

FIELD NAME	FIELD TYPE	DESCRIPTION
id <<PK>>	int(11)	To Store Document ID
studentname	varchar(100)	To Store student name
mobilenumber	Varchar(100)	To Store mobile number
emailaddress	varchar(100)	To Store email id
question	varchar(100)	To Store question

- **TABLE : tblissuedbook**

FIELD NAME	FIELD TYPE	DESCRIPTION
id <<PK>>	int(11)	To Store Document ID
BookId	int(11)	To Store book id
StudentID	varchar(150)	To Store student id
IssuesDate	date	To Store Issues date
FineDate	date	To Store fine date
ReturnDate	timestamp	To Store return date
RetrunStatus	Int(1)	To Store Return status
fine	Int(11)	To Store fine

- **TABLE : tblmessage**

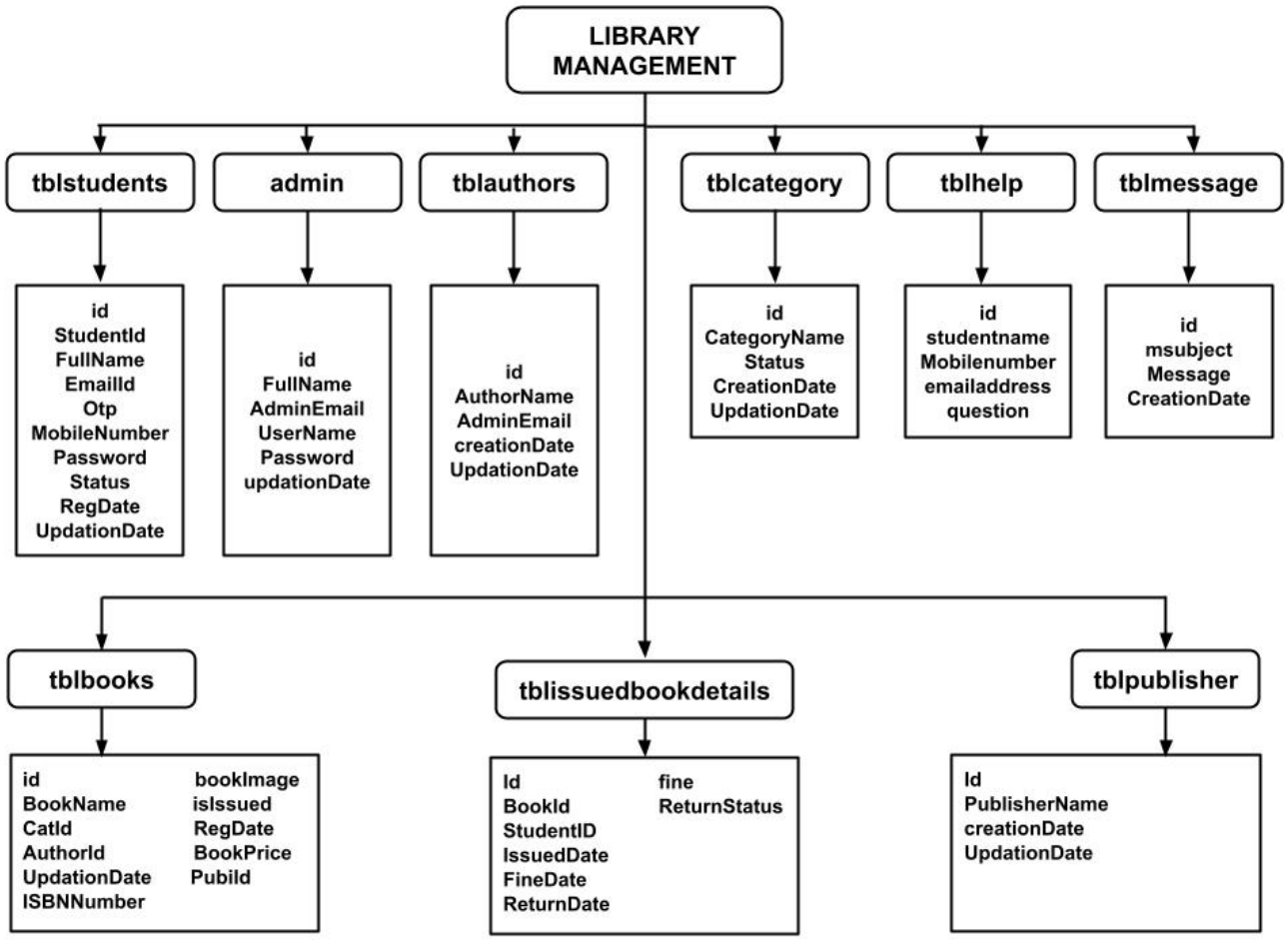
FIELD NAME	FIELD TYPE	DESCRIPTION
id <<PK>>	int(11)	To Store Document ID
msubject	varchar(200)	To Store name
message	Varchar(200)	To Store message
CreationDate	timestamp	To Store creationDate

- **TABLE : tblpublisher**

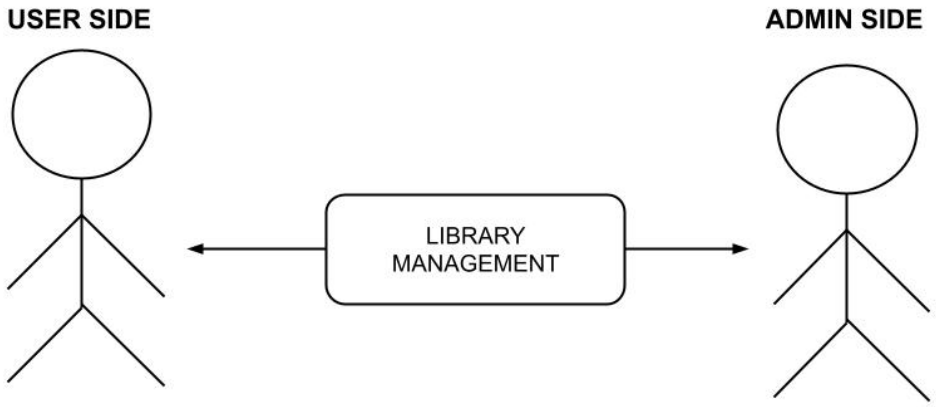
FIELD NAME	FIELD TYPE	DESCRIPTION
id <<PK>>	int(11)	To Store Document ID
PublisherName	varchar(200)	To Store name
UpdationDate	timestamp (200)	To Store UpdationDate
CreationDate	timestamp	To Store creationDate

5.4 ENTITY-RELATIONSHIP DIAGRAM / CLASS DIAGRAM

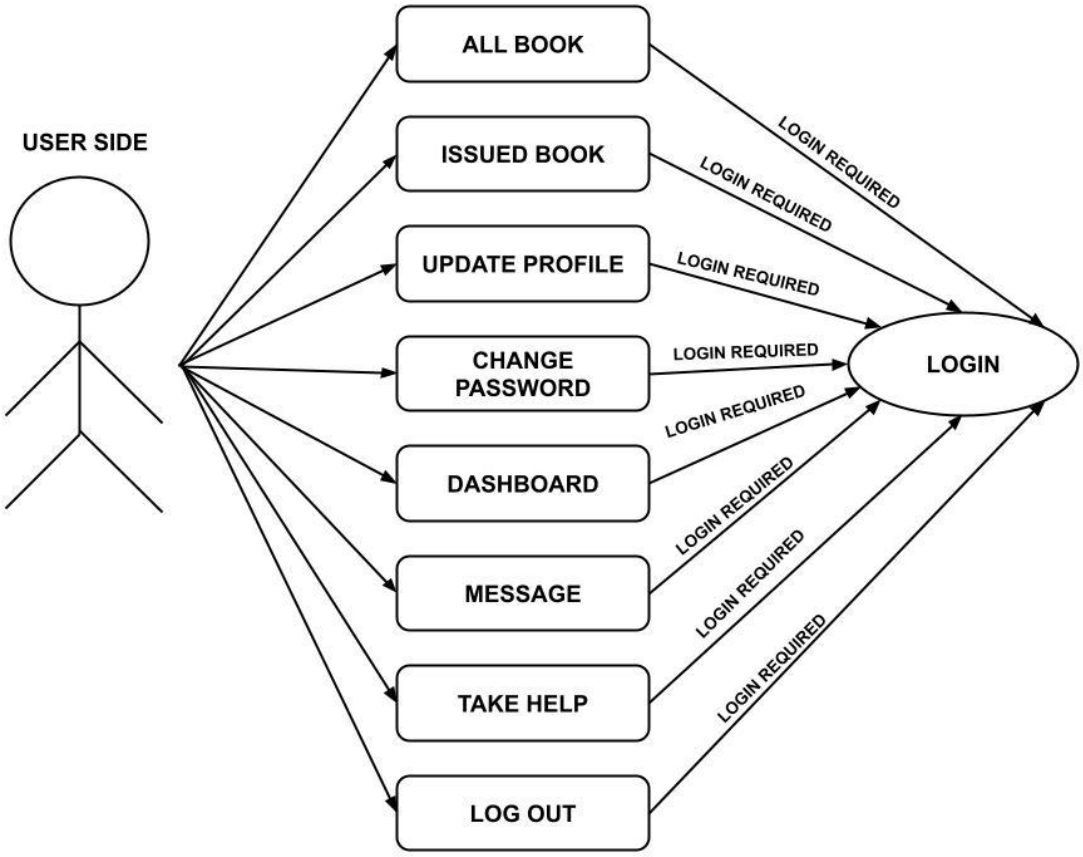
- **ER DIAGRAM (DATABASE DESIGN)**



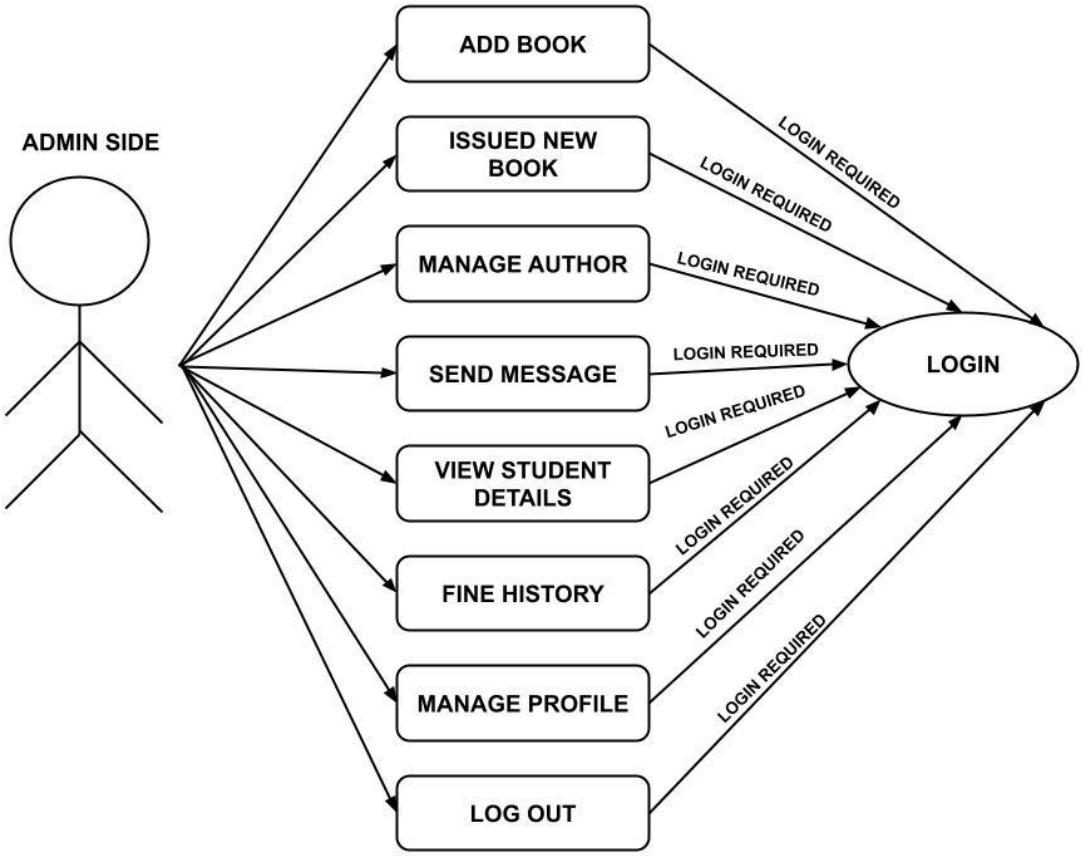
- **USE CASE DIAGRAM**



- **USE CASE DIAGRAM : USER SIDE**



- **USE CASE DIAGRAM : ADMIN SIDE**



6. SYSTEM DESIGN

6.1 DATABASE DESIGN

- **TABLE : tblstudents**

FIELD NAME	FIELD TYPE	CONSTAINT
Id	int(11)	PRIMARY KEY
StudentId	varchar(100)	NOT NULL
FullName	Varchar(120)	NOT NULL
EmailId	Varchar(120)	NOT NULL
otp	int(11)	NONE
MobileNumber	char(11)	NOT NULL
Password	varchar(120)	NOT NULL
Status	int(1)	NOT NULL
RegDate	timestamp	CURRENT_TIMESTAMP
UpdationDate	Timestamp	NOT NULL

- **TABLE : tblpublisher**

FIELD NAME	FIELD TYPE	CONSTAINT
id	int(11)	PRIMARY KEY
PublisherName	Varchar(200)	NULL
CreationDate	timestamp	CURRENT_TIMESTAMP
UpdationDate	timestamp	CURRENT_TIMESTAMP

- **TABLE : tblissuedbookdetails**

FIELD NAME	FIELD TYPE	CONSTAINT
id	int(11)	PRIMARY KEY
BookId	int(11)	NULL
StudentID	varchar(150)	NULL
IssuesDate	date	CURRENT_TIMESTAMP
FineDate	date	CURRENT_TIMESTAMP
ReturnDate	timestamp	NULL
RetrunStatus	Int(1)	NULL
Fine	Int(11)	NULL

- **TABLE : tblmessage**

FIELD NAME	FIELD TYPE	CONSTAINT
id	int(11)	PRIMARY KEY
msubject	Varchar(200)	NONE
message	Varchar(200)	NONE
CreationDate	timestamp	CURRENT_TIMESTAMP

- **TABLE : tblhelp**

FIELD NAME	FIELD TYPE	CONSTAINT
id	int(11)	PRIMARY KEY
studentname	varchar(100)	NONE
mobilenumber	Varchar(100)	NONE
emailaddress	varchar(100)	NONE
question	varchar(100)	NONE

- **TABLE : tblbooks**

FIELD NAME	FIELD TYPE	CONSTAINT
Id	int(11)	PRIMARY KEY
BookName	varchar(100)	NOT NULL
CatId	int(11)	NOT NULL
AuthorId	int(11)	NOT NULL
PubId	int(11)	NOT NULL
ISBNNumber	Varchar(25)	NOT NULL
BookPrice	decimal(10,2)	NOT NULL
bookImage	varchar(250)	NONE
isIssued	int(1)	NOT NULL
RegDate	timestamp	CURRENT_TIMESTAMP
UpdationDate	Timestamp	CURRENT_TIMESTAMP

- **TABLE : tblcategory**

FIELD NAME	FIELD TYPE	CONSTAINT
id	int(11)	PRIMARY KEY
CategoryName	varchar(100)	NOT NULL
Status	Varchar(1)	NOT NULL
CreationDate	timestamp	CURRENT_TIMESTAMP
UpdationDate	timestamp	CURRENT_TIMESTAMP

- **TABLE : admin**

FIELD NAME	FIELD TYPE	CONSTAINT
id	int(11)	PRIMARY KEY
FullName	varchar(100)	NOT NULL
AdminEmail	Varchar(120)	NOT NULL
UserName	Varchar(120)	NOT NULL
Password	Varchar(120)	NONE
updationDate	timestamp	CURRENT_TIMESTAMP

- **TABLE : tblauthors**

FIELD NAME	FIELD TYPE	CONSTAINT
id	int(11)	PRIMARY KEY
AuthorName	varchar(100)	NOT NULL
creationDate	timestamp	CURRENT_TIMESTAMP
UpdationDate	timestamp	NOT NULL

6.2 DIRECTORY STRUCTURE

➢ ADMIN PANEL :

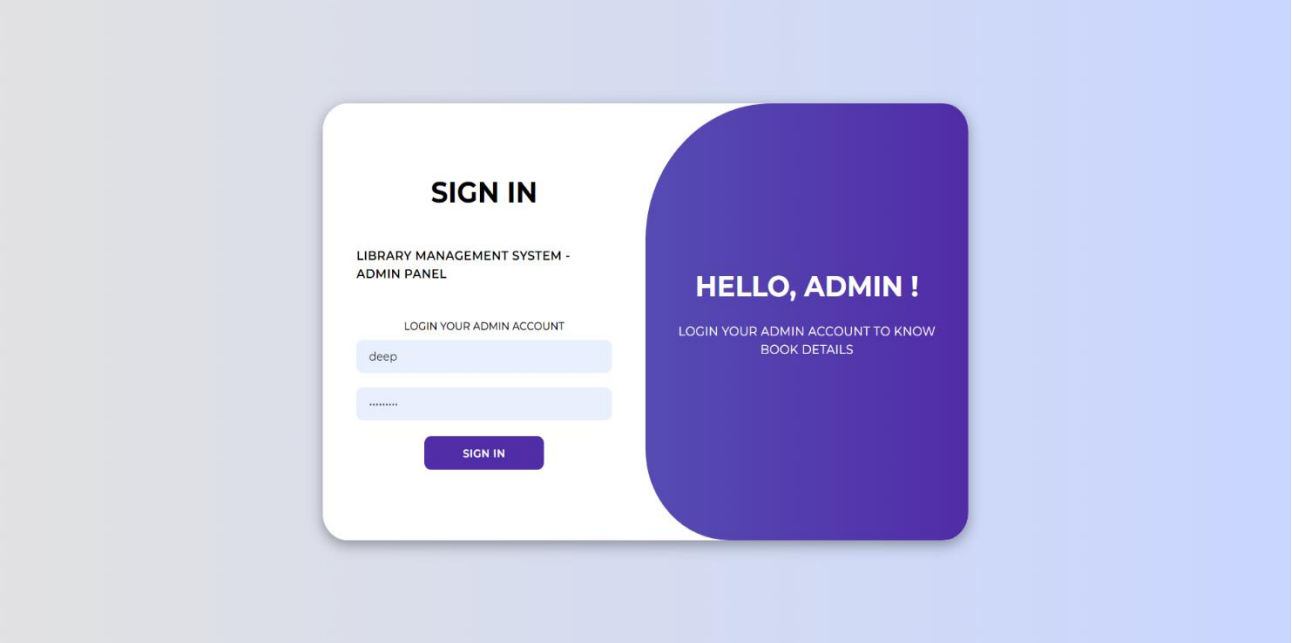
- dashboard.php
- add-book.php
- manage-books.php
- add-author.php
- manage-authors.php
- add-category.php
- manage-categories.php
- add-publisher.php
- manage-publisher.php
- issue-book.php
- manage-issued-books.php
- add-message.php
- manage-messages.php
- reg-students.php
- manage-help.php
- fine-history.php
- my-profile.php
- change-password.php
- logout.php

➢ STUDENT / USER PANEL :

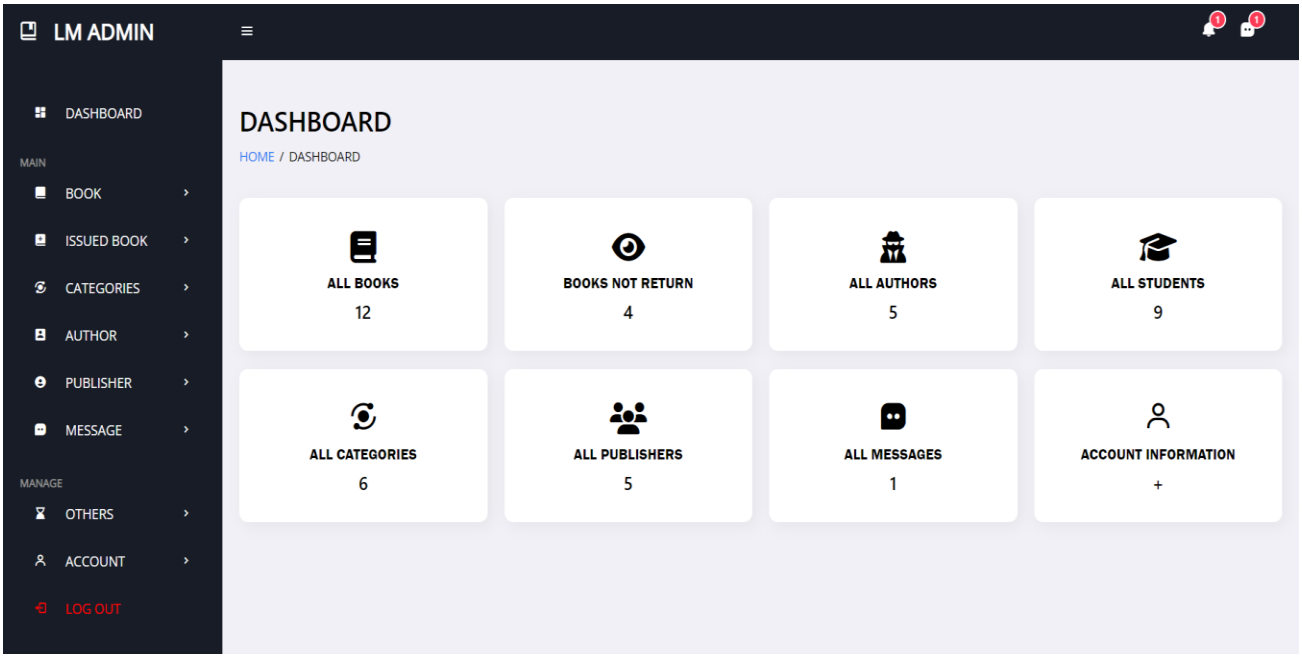
- dashboard.php
- listed-books.php
- issued-books.php
- my-profile.php
- change-password.php
- messages.php
- help.php
- logout.php

6.3 INPUT DESIGN

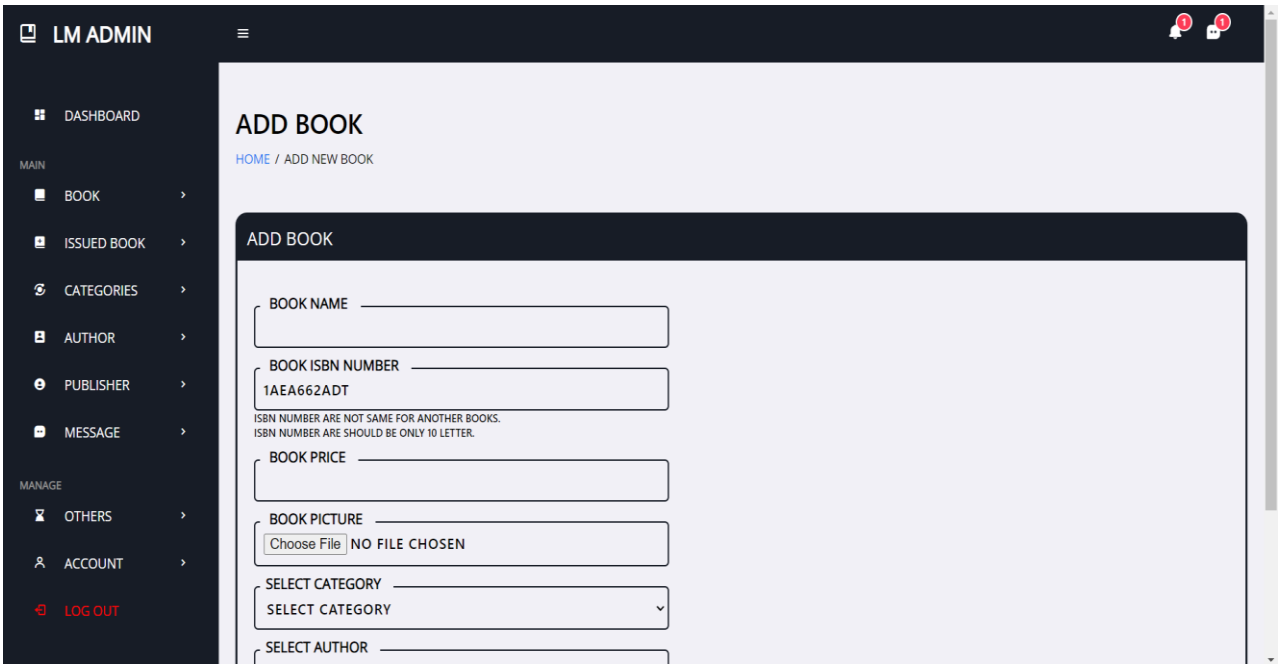
1. ADMIN LOGIN



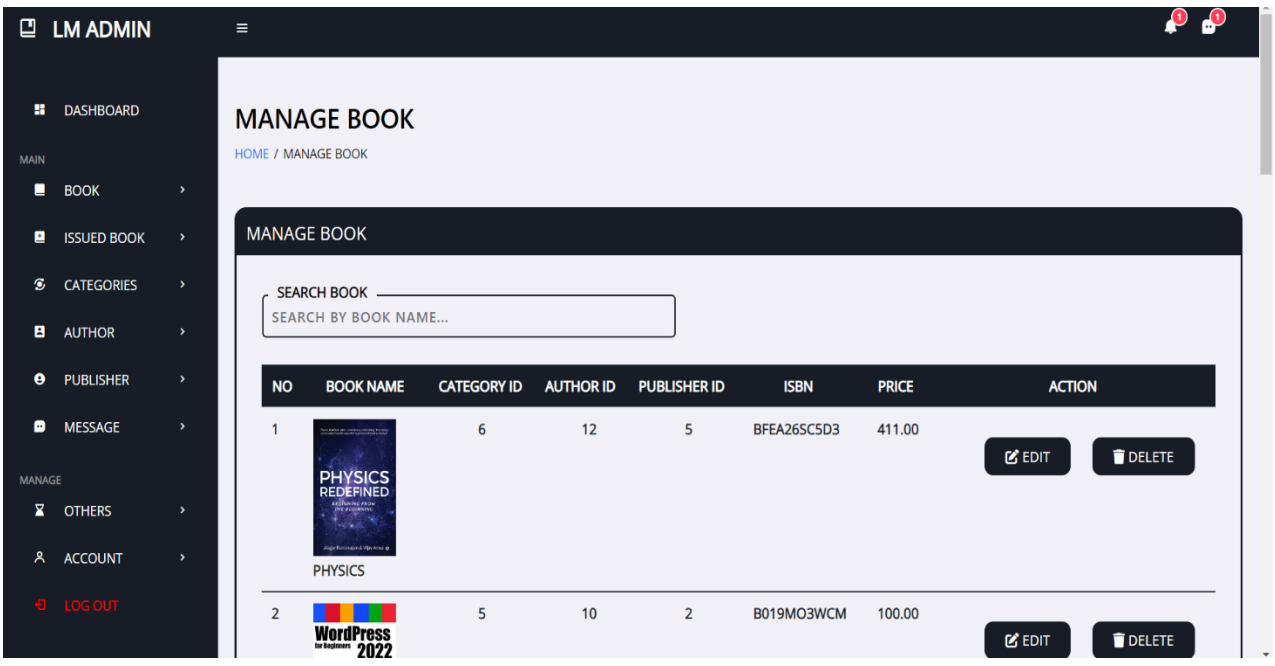
2. DASHBOARD



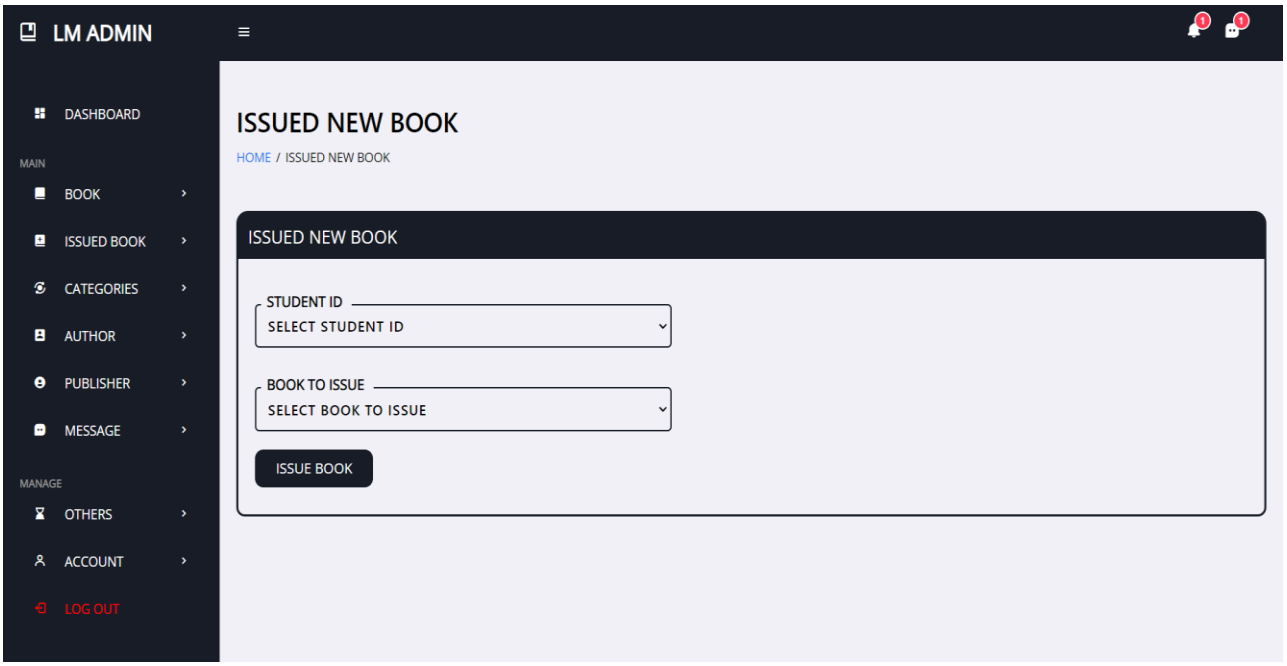
3. ADD BOOK



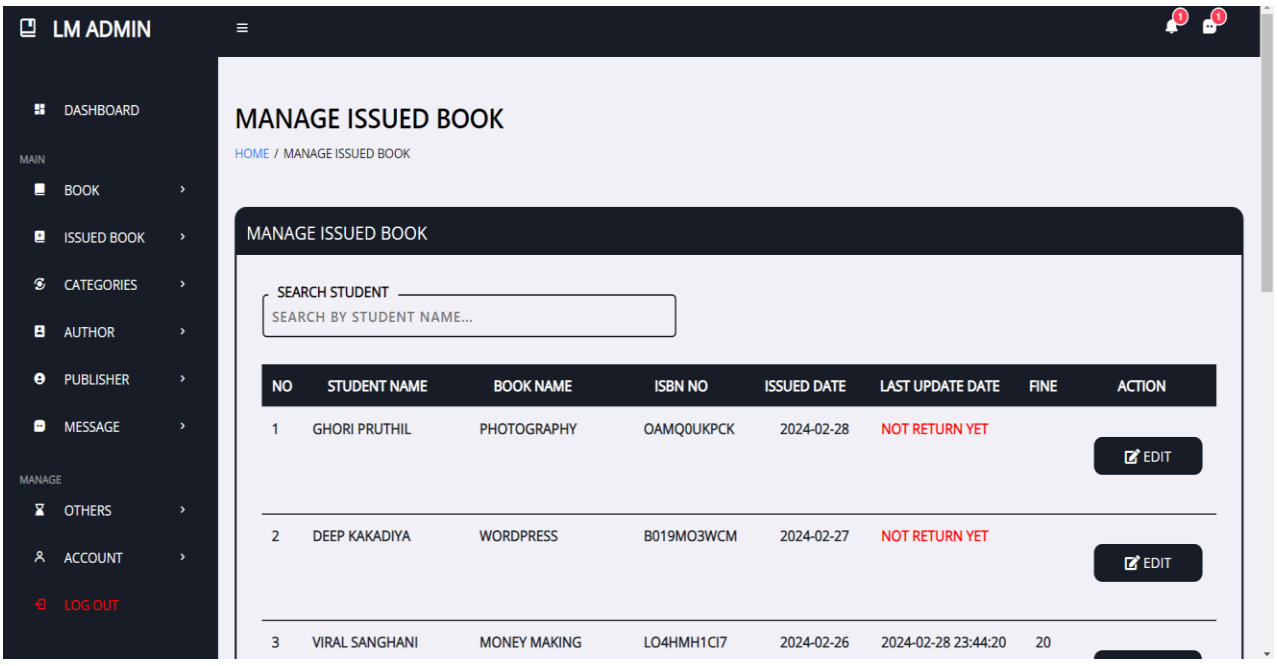
4. MANAGE BOOK



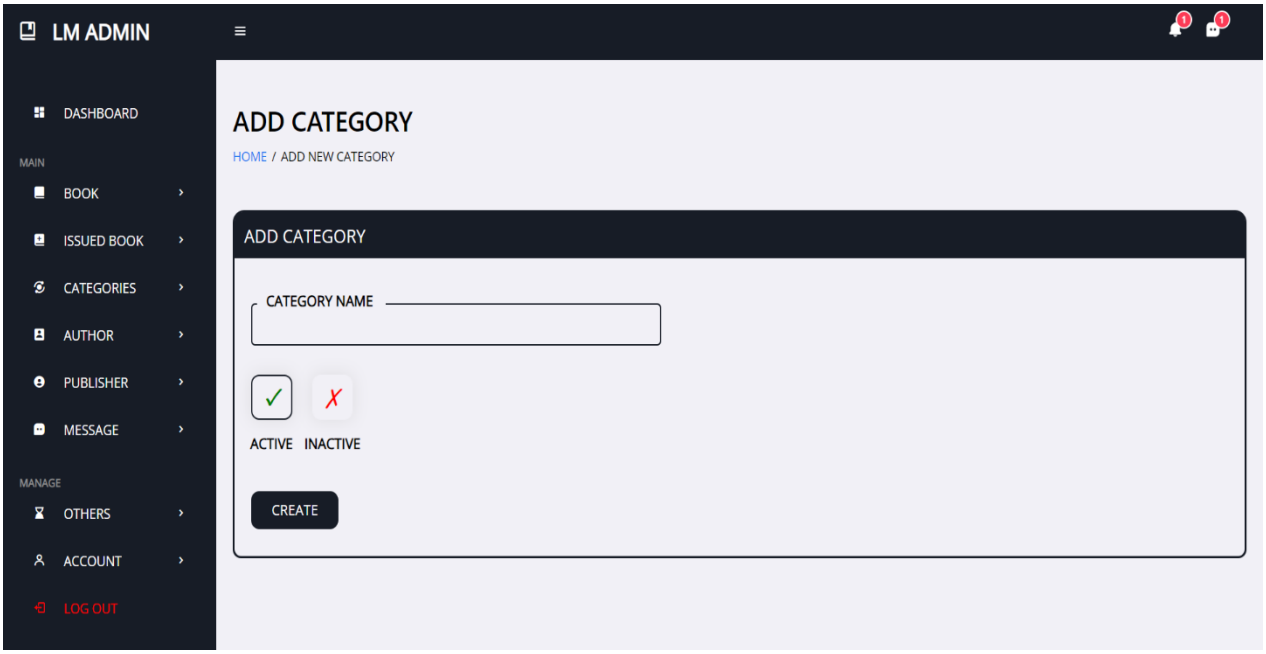
5. ISSUED NEW BOOK



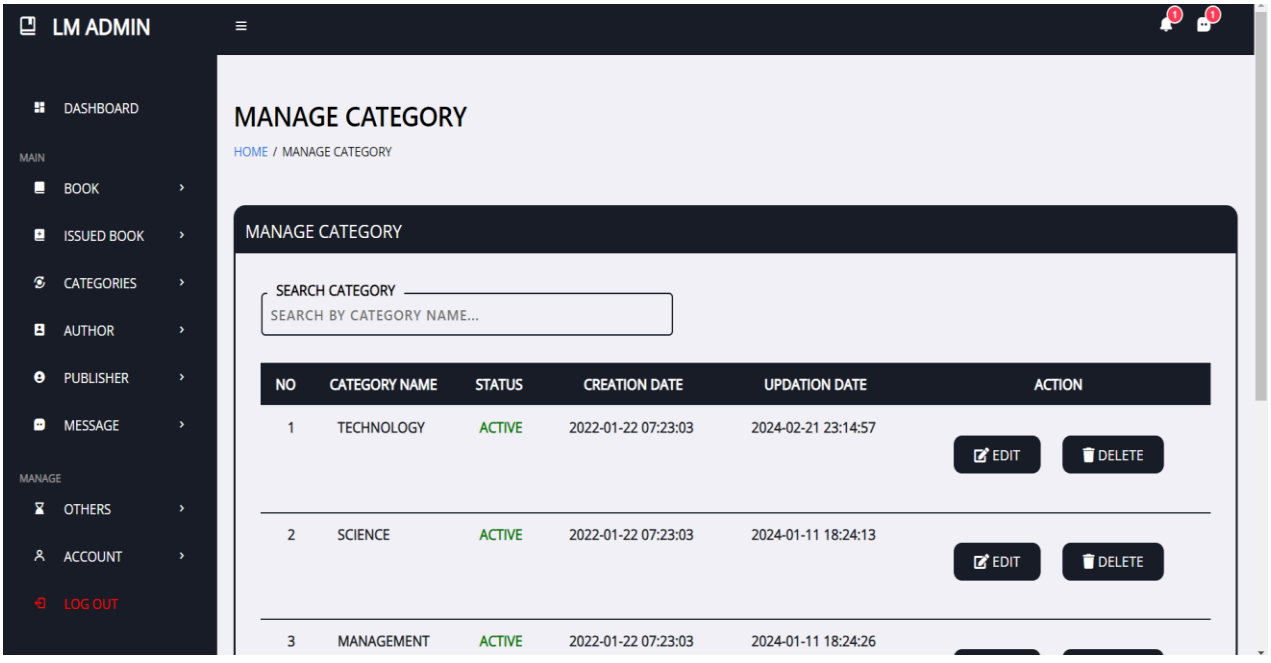
6. MANAGE ISSUED BOOK



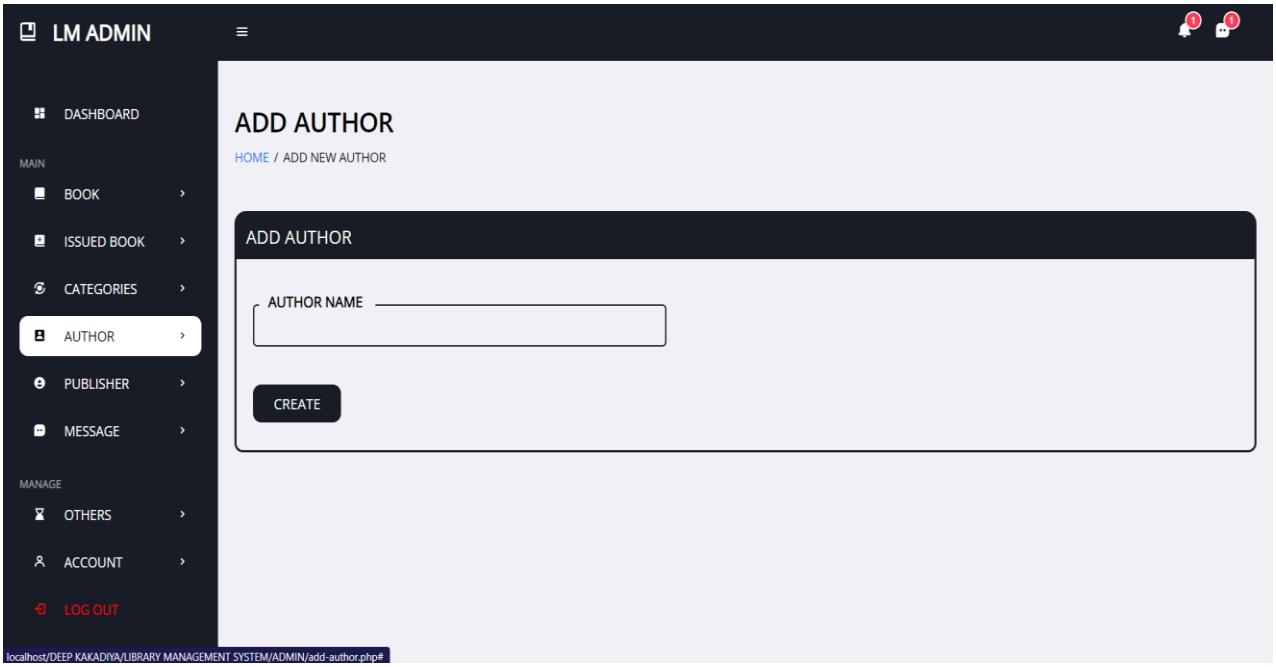
7. ADD CATEGORY



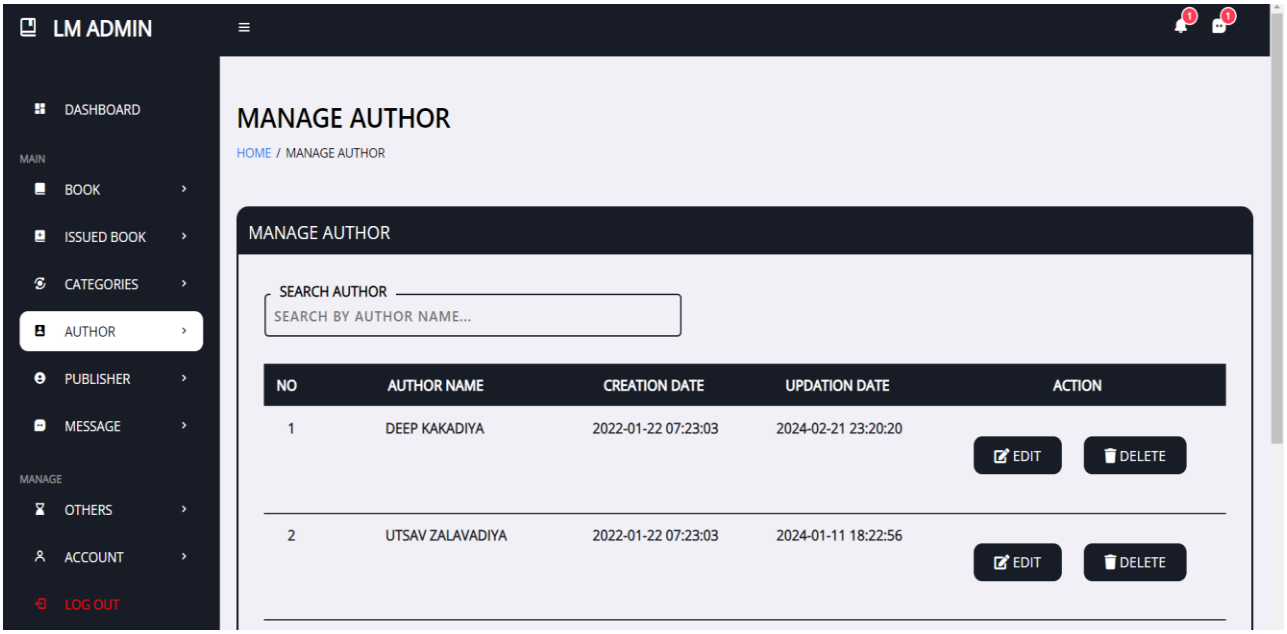
8. MANAGE CATEGORY



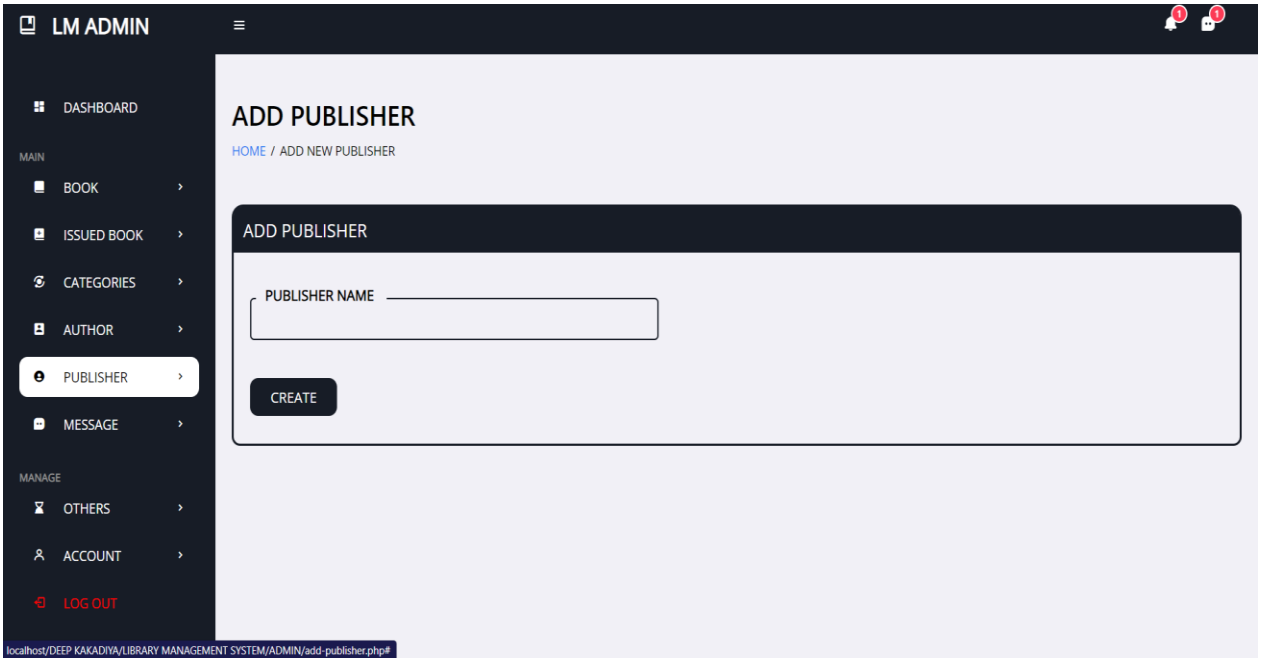
9. ADD AUTHOR



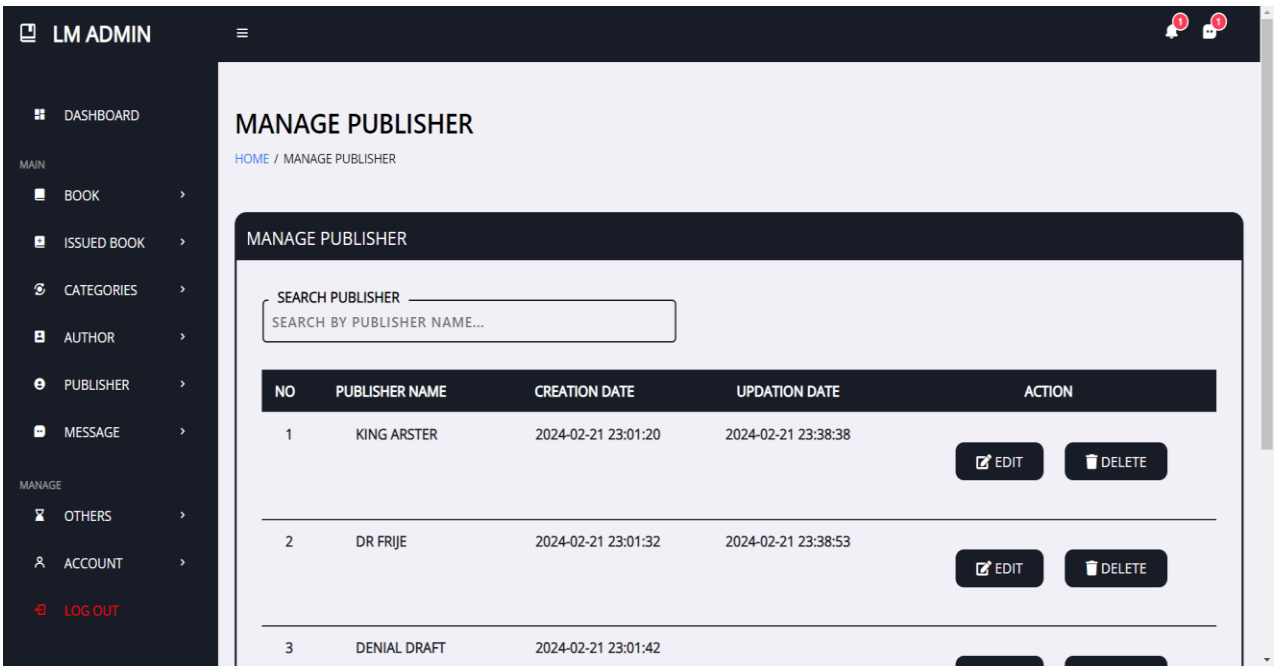
10. MANAGE AUTHOR



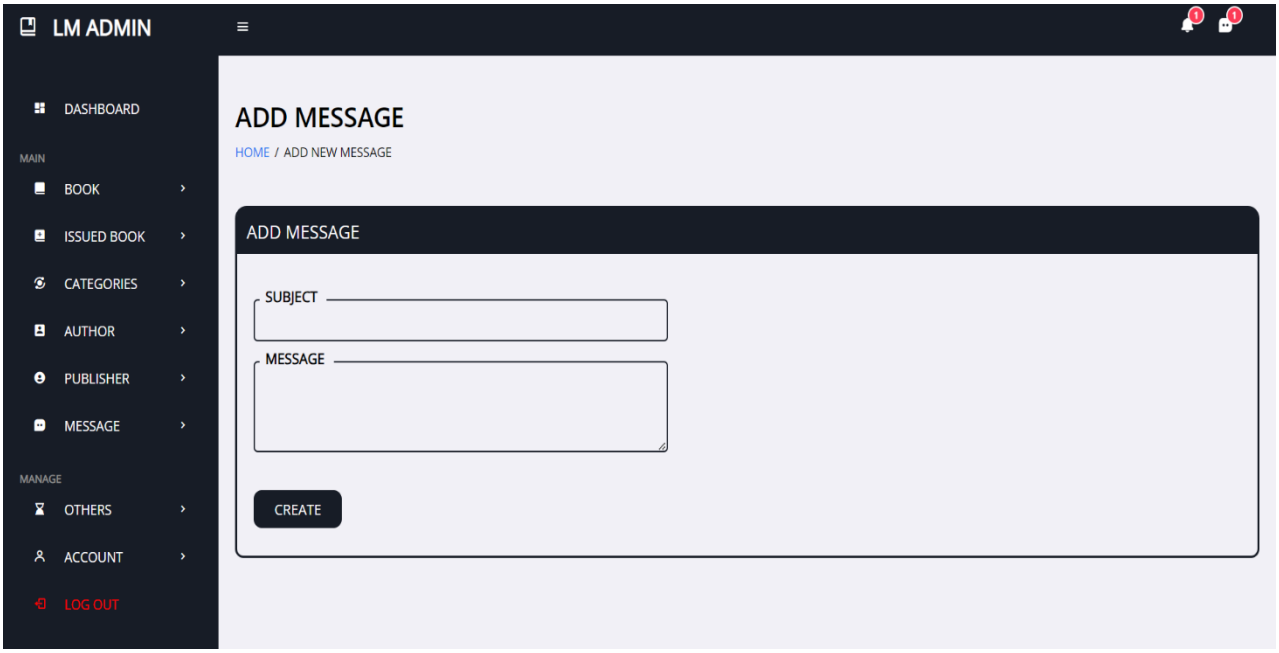
11. ADD PUBLISHER



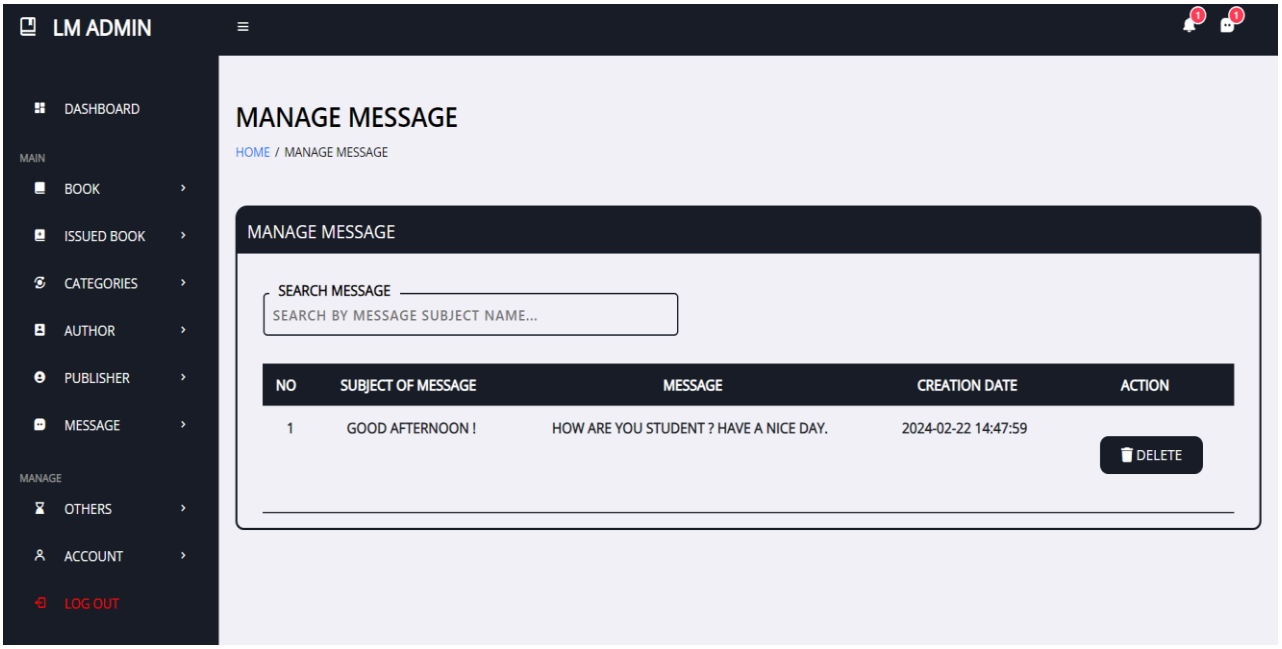
12. MANAGE PUBLISHER



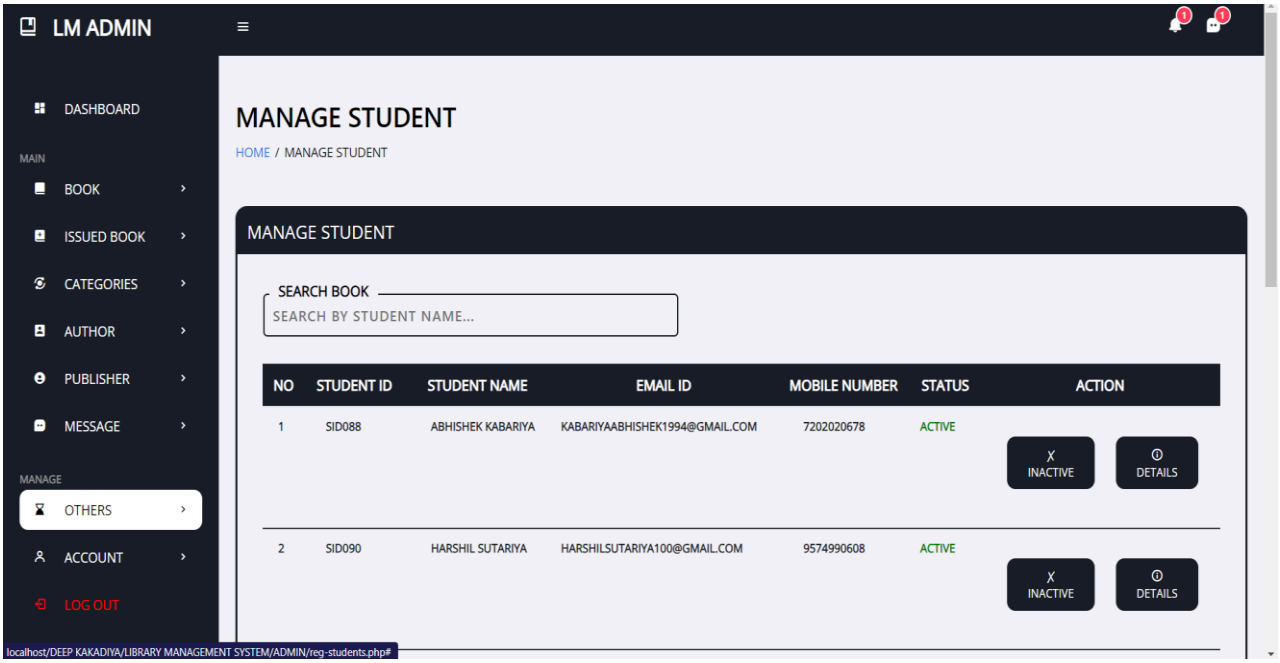
13. SEND MESSAGE



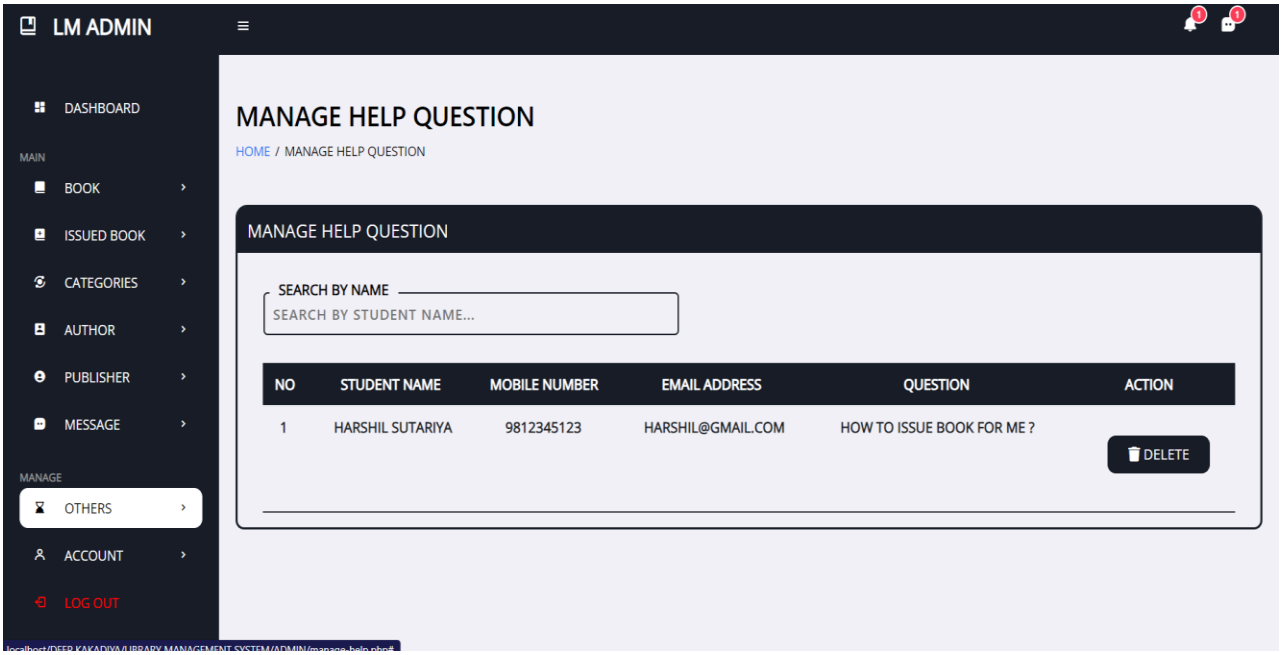
14. MANAGE MESSAGE



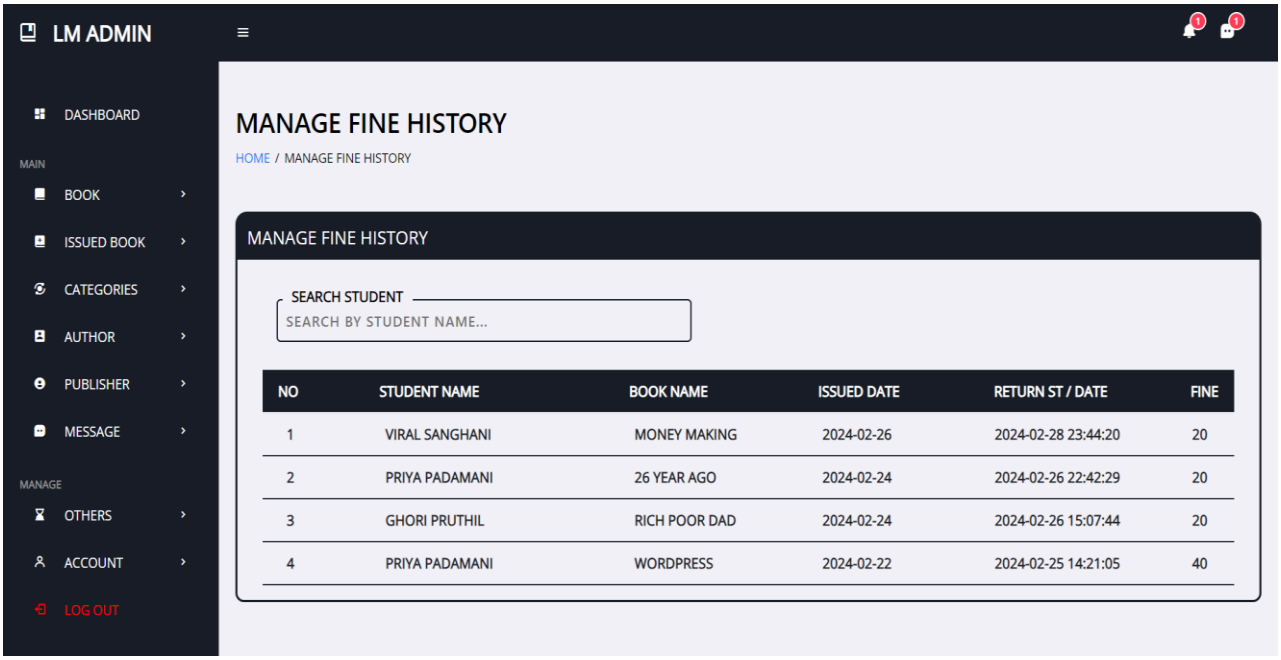
15. REGISTER STUDENTS



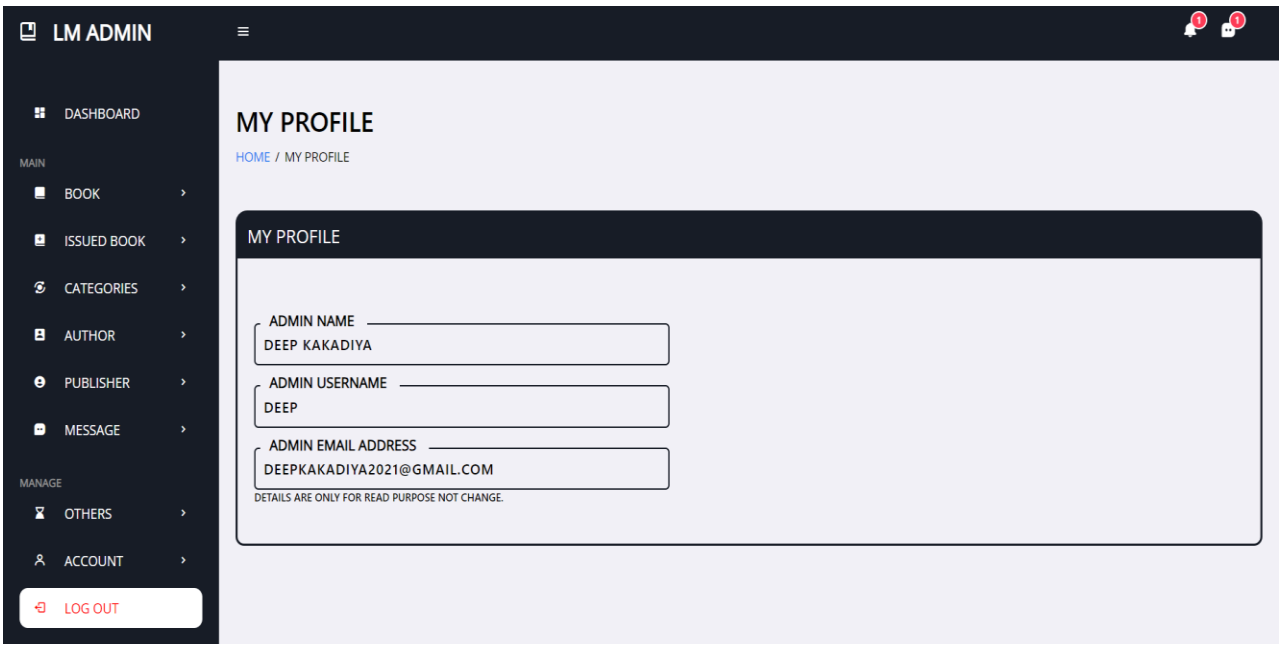
16. MANAGE HELP QUESTION



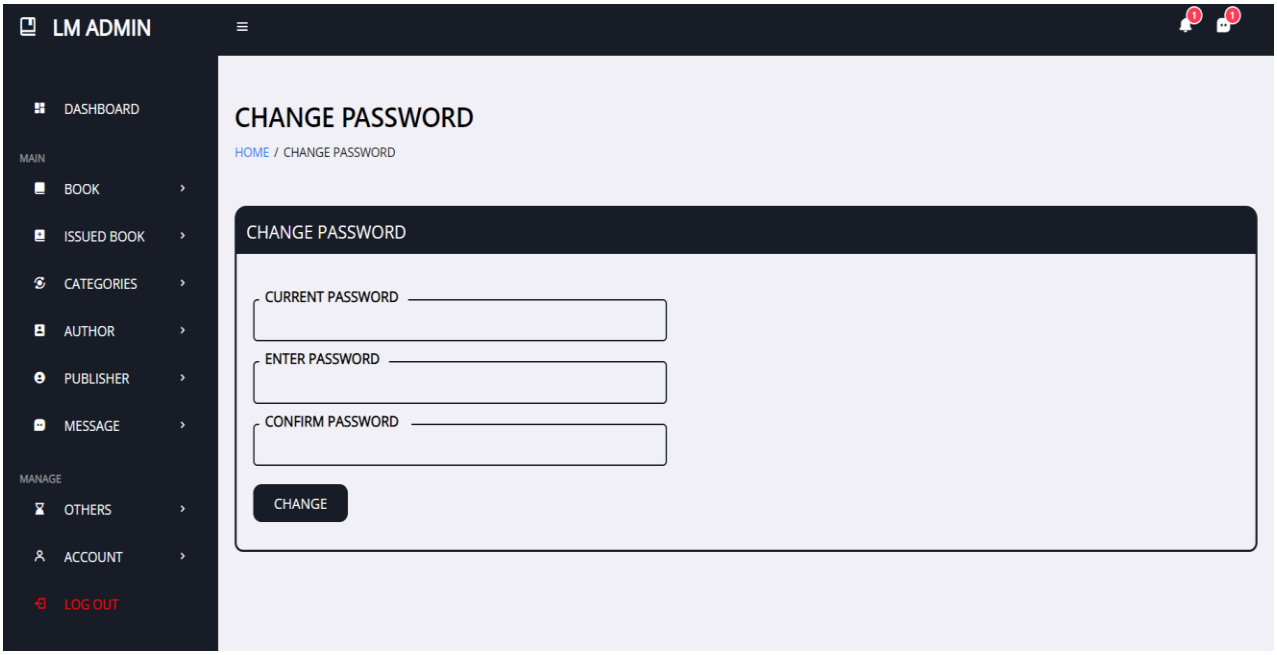
17. FINE HISTORY



18. MY PROFILE

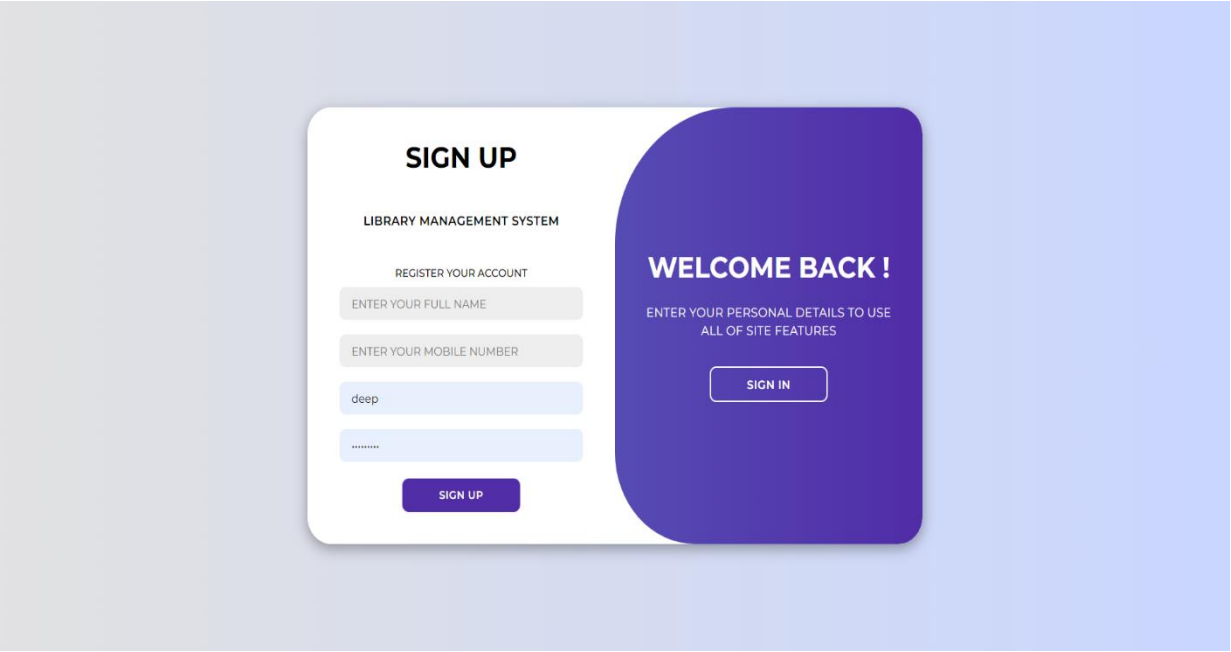


19. CHANGE PASSWORD

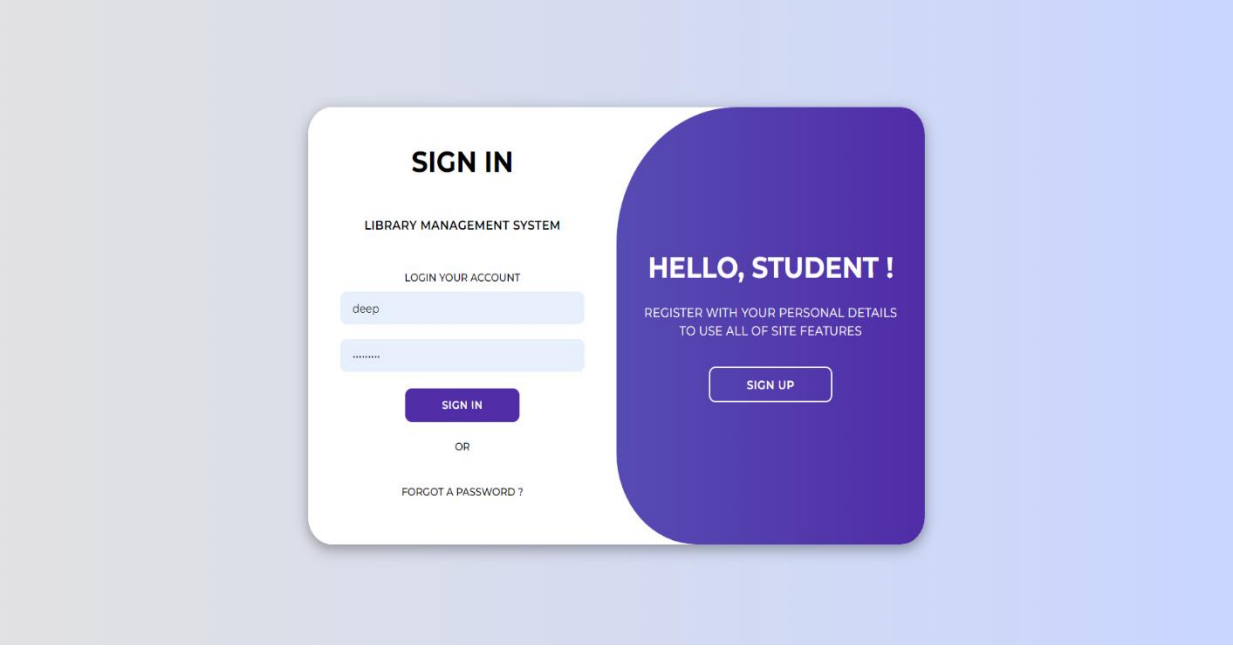


6.4 OUTPUT DESIGN

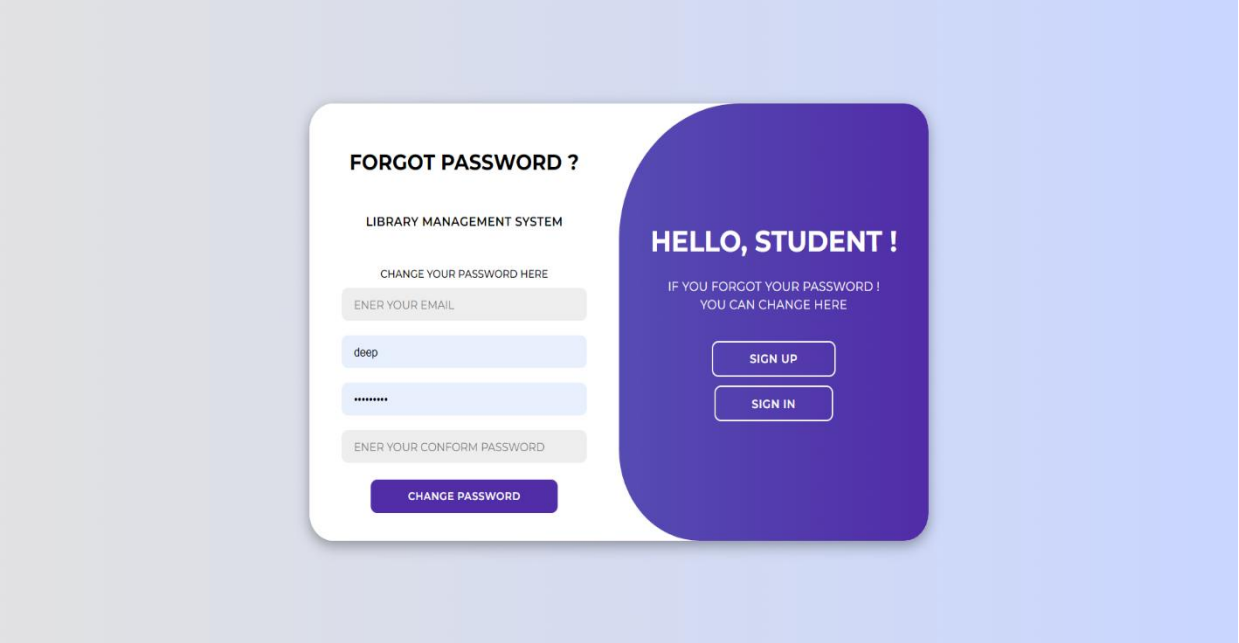
1. SIGNUP



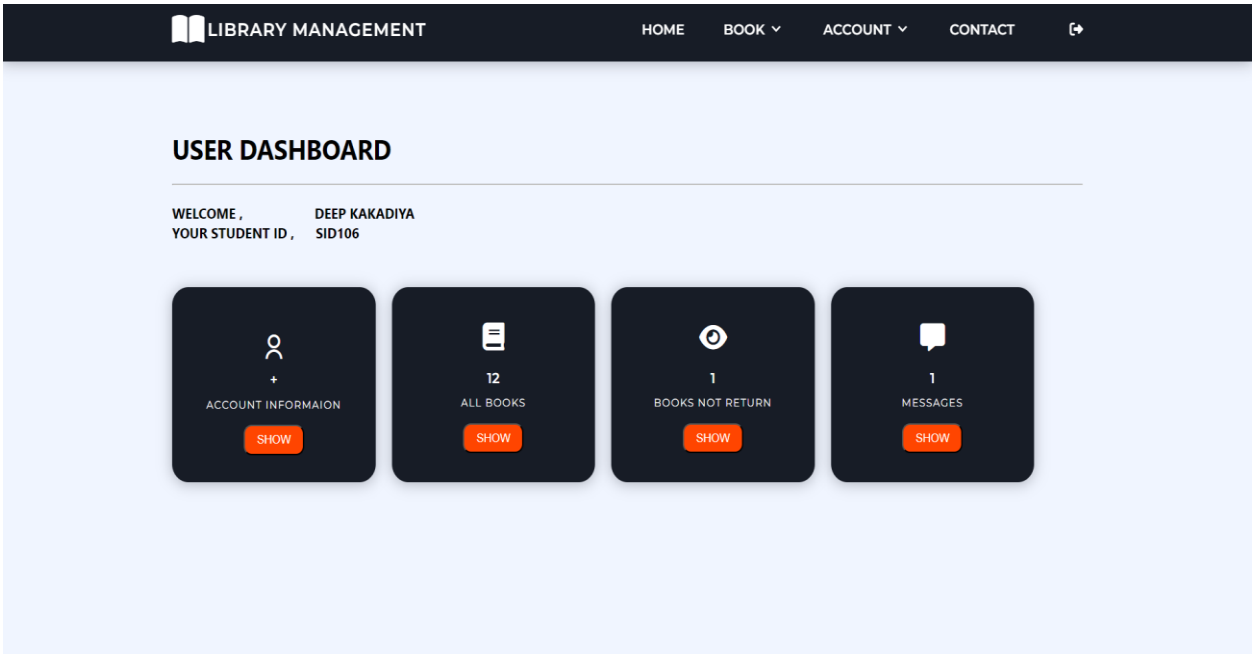
2. SIGN IN



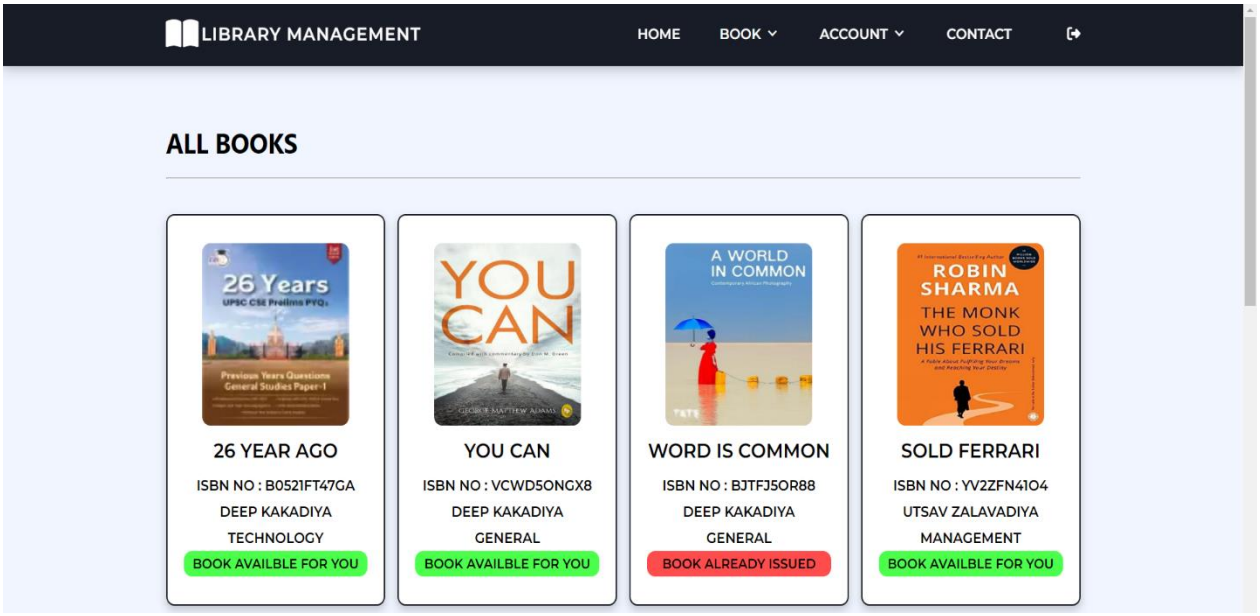
3. CHANGE PASSWORD



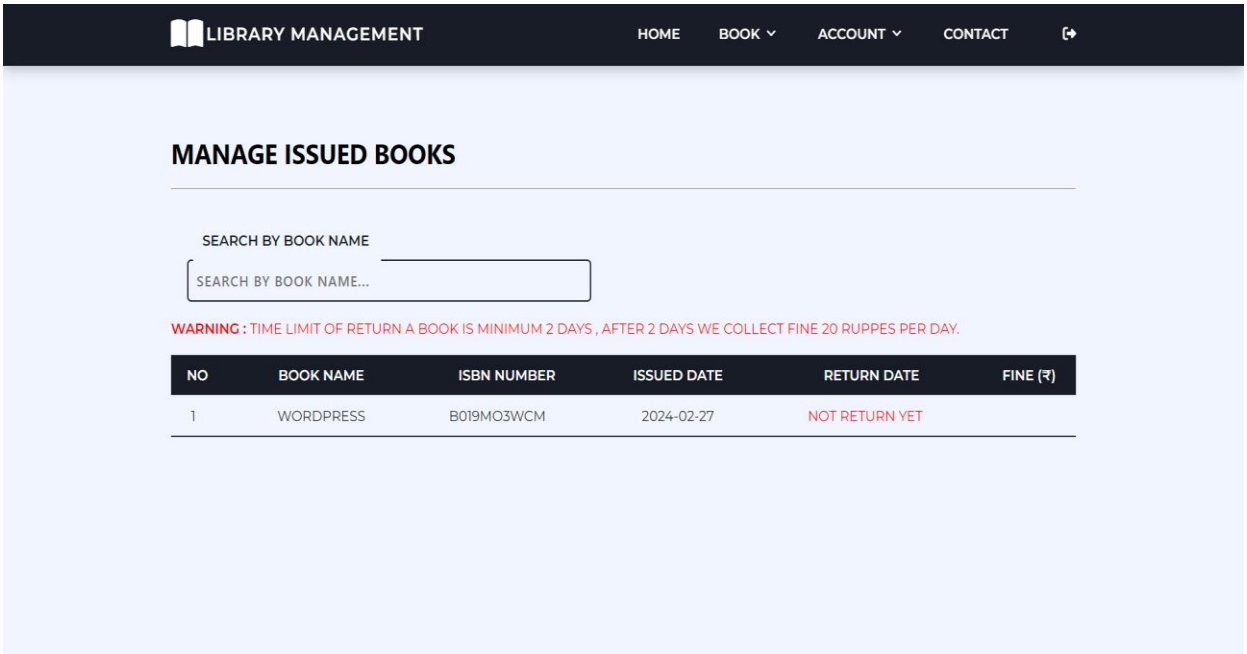
4. DASHBOARD



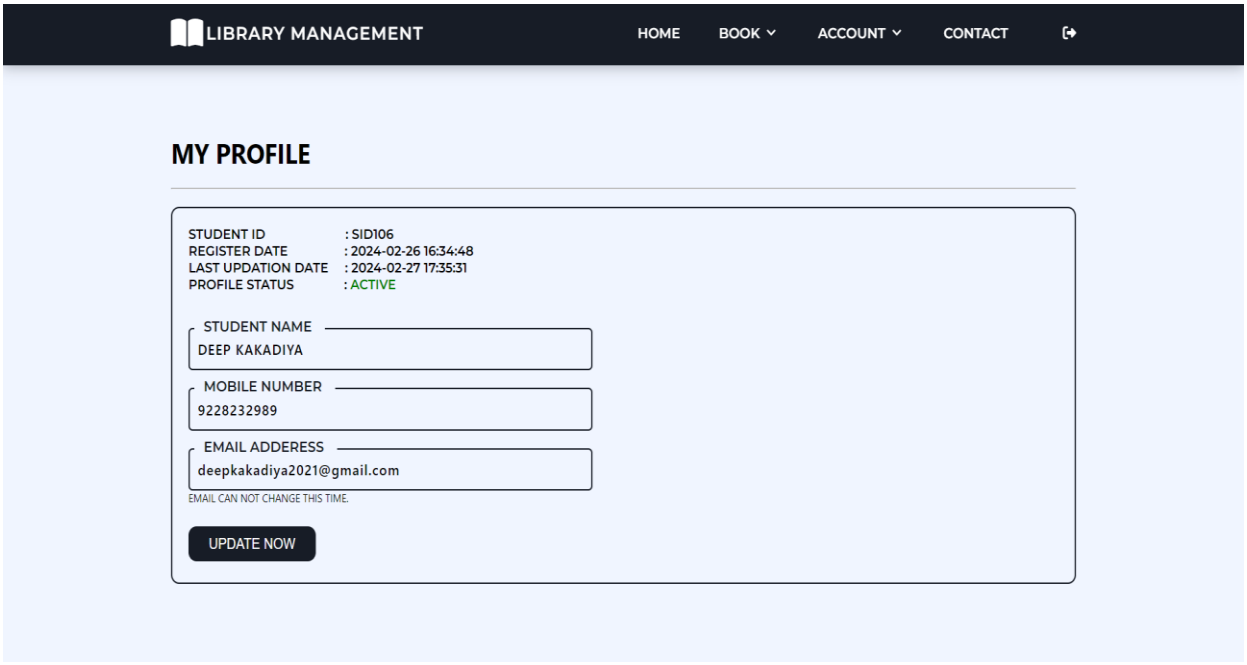
5. ALL BOOK



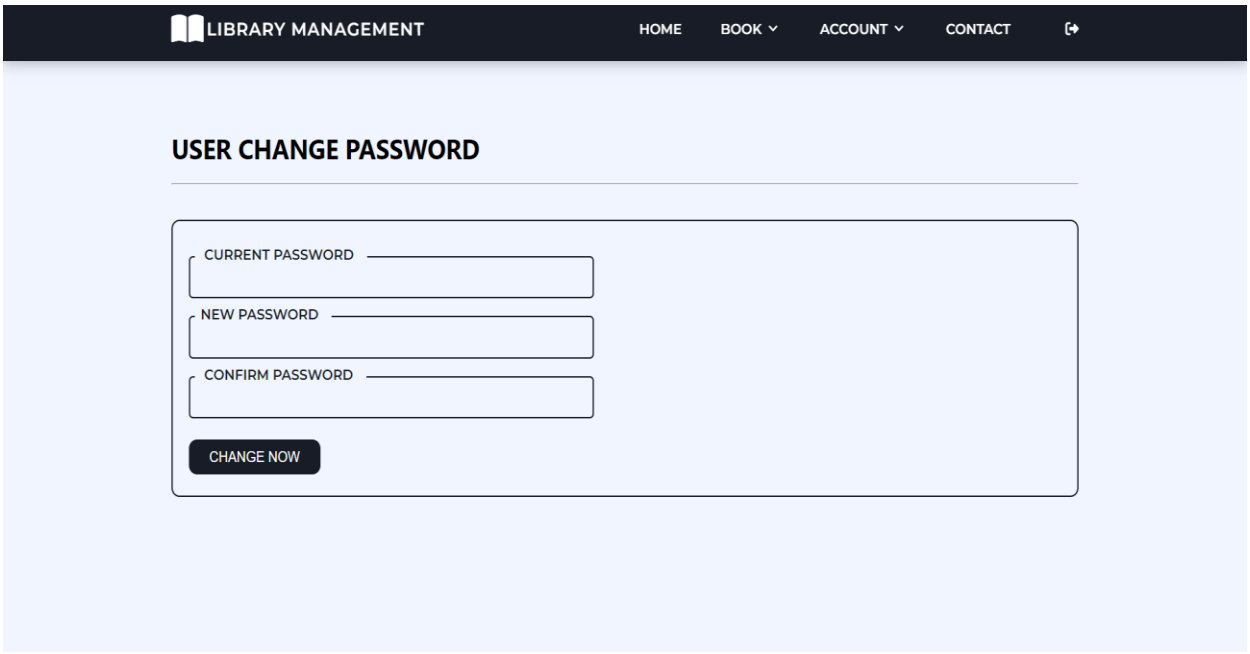
6. ISSUED BOOK



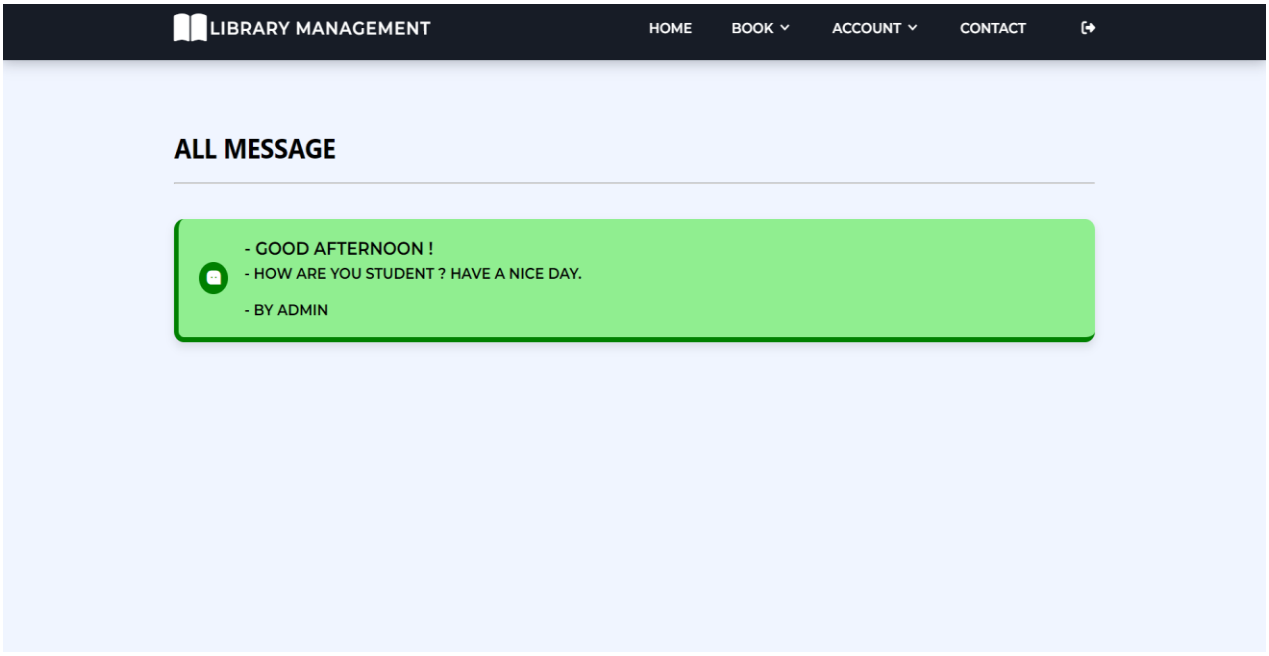
7. MY PROFILE



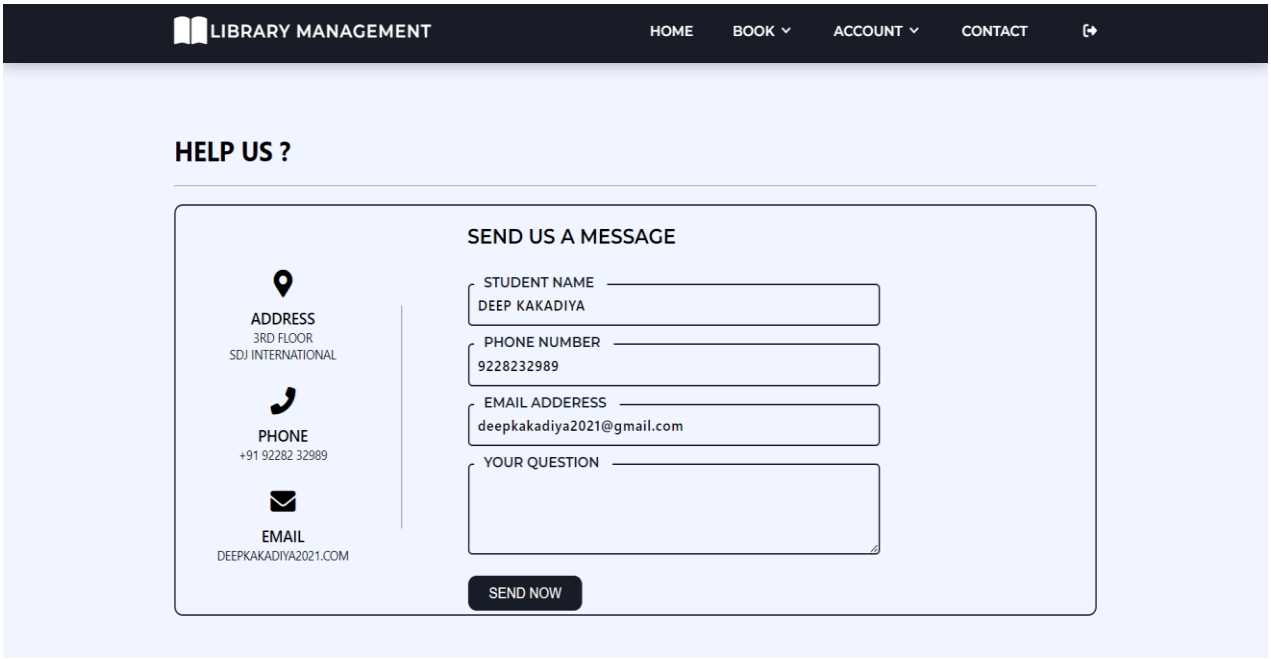
8. CHANGE PASSWORD



9. MESSAGE



10. HELP



7. SOFTWARE TESTING

- The testing process focuses on the logical intervals of the software ensuring that all statements have been tested and on functional interval is conducting tests to uncover errors and ensure that defined input will produce actual results that agree with the required results. Program level testing, modules level testing integrated and carried out.

7.1 UNIT TESTING

- Unit testing is an essential aspect of software development, including the development of a library management system. Here's how you can approach unit testing for a library management system.

    - Identify units
    - Write test cases
    - Mock dependencies
    - Automate tests
    - Continuous integration
    - Test coverage
    - Refactor and repeat
    - Integration and system testing
    - Regression testing
    - Feedback and improvement

7.2 INTEGRATION TESTING

- Integration testing of a library management system involves testing the interactions between various modules or components to ensure that they work together as expected. Here's an outline of how integration testing can be approached for a library management system.

    - Identify Components
    - Define Interfaces
    - Test Cases Creation
    - Dependency Management
    - Mocking and Stubbing
    - Performance Testing

7.3 SYSTEM TESTING

- System testing of a library management system involves testing the system as a whole to ensure that it meets the specified requirements and functions correctly in its intended environment. Here's how system testing can be approached for a library management system.

    - Requirement Analysis
    - Test Environment Setup
    - Test Cases Creation
    - Boundary Testing
    - Usability Testing
    - Security Testing
    - Performance Testing
    - Integration Testing
    - Regression Testing
    - Documentation

8. LIMITATIONS AND FUTURE SCOPE OF ENHANCEMENTS

❖ LIMITATION

- Although i have put my best efforts to make the software flexible, easy to operate but limitations cannot be ruled out even by me. Though the software presents a broad range of options to its users some intricate options could not be covered into it; partly because of logistic and partly due to lack of sophistication. Paucity of time was also major constraint, thus it was not possible to make the software foolproof and dynamic. Lack of time also compelled me to ignore some part such as storing old result of the candidate etc.

- Library management, whether manual or computerized, has its own set of limitations that can affect its effectiveness. Here are some common limitations.
  - Limited Resources
  - Outdated Technology
  - Manual Processes
  - Limited Accessibility
  - Limited Collection
  - Security Concerns
  - Lack of Data Analysis
  - Limited Outreach
  - Resistance to Change

❖ FUTURE SCOPE

- The future scope includes expand the technologies like html and php we can also add new technologies like laravel, reactjs many more for improving the efficiency of the software. Book which will provide these two basic services like portability, security.

- The future of library management holds significant potential for innovation and transformation. Here are some areas where we can expect to see advancements and new developments
  - Digital Transformation
  - Data Analytics
  - Personalized Services
  - Augmented Reality (AR) and Virtual Reality (VR)
  - Artificial Intelligence (AI)
  - Blockchain Technology
  - Community Engagement
  - Sustainability Initiatives
  - Collaborative Spaces
  - Accessibility and Inclusivity

9. BIBLIOGRAPHY & REFERENCE

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3. **ABOUT LEARN VIDEO OF PROJECT**
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4. **ABOUT LEARN PHP BOOK**
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5. **ABOUT DESIGN OF PROJECT**
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