eLibraryX : Enhancing and Easing the Digital Library Experience

BY

Kazi Shafiul Azam
ID: 201-15-3334

This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

Supervised By

Ms. Fabliha Haque
Lecturer
Department of CSE
Daffodil International University

Co-Supervised By

Mr. Rahmatul Kabir Rasel Sarker
Lecturer
Department of CSE
Daffodil International University

DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

JANUARY 2024

©Daffodil International University

APPROVAL

This Project titled "eLibraryX : Enhancing and Easing the Digital Library Experience", submitted by Kazi Shafiul Azam, ID No:201-15-3334 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on January 22,2024.

BOARD OF EXAMINERS

Chairman

Narayan Ranjan Chakraborty (NRC)
Associate Professor & Associate Head
Department of Computer Science and Engineering
Daffodil International University

Internal Examiner 1

Saiful Islam (SI)
Assistant Professor
Department of Computer Science and Engineering
Daffodil International University

Internal Examiner 2

Lamia Rukhsara (LR)
Senior Lecturer
Department of Computer Science and Engineering
Daffodil International University

External Examiner 1

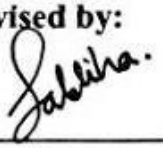
Dr. Md. Zulfiker Mahmud (ZM)
Associate Professor
Department of Computer Science and Engineering
Jagannath University

©Daffodil International University

DECLARATION

I hereby declare that, this project has been done by myself under the supervision of **Ms. Fabliha Haque, Lecturer, Department of CSE** Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Supervised by:

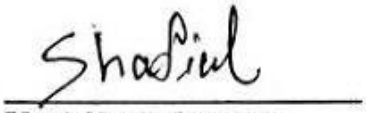


Ms. Fabliha Haque
Lecturer
Department of CSE
Daffodil International University

Co-Supervised by:

Mr. Rahmatul Kabir Rasel Sarker
Lecturer
Department of CSE
Daffodil International University

Submitted by:



Kazi Shafiul Azam
ID: -201-15-3334
Department of CSE
Daffodil International University

ACKNOWLEDGEMENT

First I express my heartiest thanks and gratefulness to almighty God for His divine blessing makes us possible to complete the final year project/internship successfully.

I really grateful and wish my profound my indebtedness to **Ms. Fabliha Haque**
, **Lecturer**, Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of my supervisor in the field of "Web Design and Development" to carry out this project. Her endless patience ,scholarly guidance ,continual encouragement , constant and energetic supervision, constructive criticism , valuable advice ,reading many inferior draft and correcting them at all stage have made it possible to complete this project.

I would like to express our heartiest gratitude to Ms. Fabliha Haque, Mr. Rahmatul Kabir Rasel Sarker, and Dr. Sheak Rashed Haider Noori, Head**,** Department of CSE, for his kind help to finish my project and also to other faculty member and the staff of CSE department of Daffodil International University.

I would like to thank my entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

Finally, I must acknowledge with due respect the constant support and patients of my parents.

ABSTRACT

The online library management system is a significant development in the field of library services that seeks to optimise and change conventional methods by incorporating modern technologies. Essentially, the system aims to provide librarians with more power by introducing automated recording, digitizing resource management procedures, and optimizing operational workflows. Implementing intuitive user interfaces and sophisticated search features is anticipated to improve librarians' overall effectiveness in managing resources. At the same time, the system puts the needs of users first, providing a smooth and customized interface for users to browse, borrow, and return materials. The digital architecture of the system is positioned to lower operating expenses, save time commitments, and greatly improve the caliber and usability of library services, all while meeting the changing needs of the modern information environment. This online library management system, with its combination of user-friendly features and efficient operations, is a complete solution that is ready to redefine and modernize the functioning of library services in the digital era. The electronic library management system allows any student to check the stock quantity of the books they are looking for and find out if they are not available on the website. It is so easy for librarians to manage the books. Following the return and issue of the books, the stock will be automatically updated. If students are still unable to find the book they want through searching, they can still submit a stock request to have the book added to the inventory. The librarian can let the students know by sending them messages once the book stock has been restocked with new books. A librarian can easily and successfully add, view, update, and remove books from the collection. Librarians have the authority to activate and deactivate student accounts in order to create a system that is well-organized and under control.

TABLE OF CONTENTS

CONTENTS	PAGE
Board of examiners	i
Declaration	ii
Acknowledgements	iii
Abstract	iv
CHAPTER	
CHAPTER 1: INTRODUCTION	**1-2**
1.1 Introduction	1
1.2 Motivation	1
1.3 Objectives	2
1.4 Expected Outcomes	2
1.5 Summary	2
CHAPTER 2: BACKGROUND	**3-6**
2.1 Preliminaries	3
2.2 Existing System	3
2.3 Scope of the problem	6
2.4 Challenges	6

CHAPTER 3: REQUIREMENT SPECIFICATION 7-13

3.1 Requirement Specification 7

3.2 Book Adding Requirement 7

3.3 Data requirement 8

3.4 Requirement collection 8

3.5 Use Case diagram 9

3.6 Description of Use case diagram 10

3.7 ER diagram 12

3.8 Class Diagram 13

3.9 Data Flow Diagram 13

CHAPTER 4: DESIGN SPECIFICATION 14-25

4.1 Design Specification 14

4.2 Front- end design 14

4.3 Student Registration design 15

4.4 Student Login Design 15

4.5 Librarian Registration design 16

4.6 Librarian Login Design 17

4.7 Student Dashboard 17

4.8 Librarian Dashboard 20

4.9 Registration/ Login 24

4.10 Dashboard 25

4.11 Search 25

CHAPTER 5: IMPLEMENTATION AND TESTING 26-29

5.1 Test 26

5.2 List of Tests 26

5.3 Unit Testing 26

5.4 Integration Testing 26

5.5 Database Testing 26

5.6 User Data 27

5.7 DATABASE 28

CHAPTER 6: IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY 30-31

6.1 Impact on Society 30

6.2 Impact on the Environment 30

6.3 Ethical Aspects 30

6.4 Sustainability Plan 30

CHAPTER 7: CONCLUSION AND FUTURE SCOPE 32

7.1 Conclusion 32

7.2 Future Plan 32

APPENDIX 33-34

REFERENCES **35**

PLAGIARISM REPORT **36-37**

LIST OF FIGURES

FIGURES	PAGE NO
Figure 2.1: Indiana University Library Website	4
Figure 2.2 : Daffodil University Library Website	4
Figure 2.3 : Dhaka University Library Website	5
Figure 2.4 : North South University Library Website	5
Figure 3.1: Use case diagram	9
Figure 3.2: ER diagram	12
Figure 3.3: Class diagram	13
Figure 3.4: Data flow diagram	13
Figure:4.1: Student Registration design	15
Figure:4.2: Student login design	16
Figure:4.3: Librarian Registration design	17
Figure:4.4: Librarian login design	18
Figure:4.5: Student Dashboard	19
Figure:4.6: Stock Request	19
Figure:4.7: Checking message from librarian	20
Figure:4.8: Showing profile details of a student	20
Figure:4.9: Librarian Dashboard	21
Figure:4.10: All the student list in the librarian dashboard	22
Figure:4.11: Adding book	22
Figure:4.12: Managing books	23
Figure:4.13: Issue book	23
Figure:4.14: Sending message from the librarian side	24
Figure:4.15: Exploring Stock Requests	25

Figure 5.1: Student Data	28
Figure 5.2: MySQL Database	28
Figure 5.3: Librarian Data	29
Figure 5.4: Books Data	29
Figure 5.5: Issue Books Data	29
Figure:A1: Librarian Login Code1	33
Figure:B2: Librarian Login Code2	33
Figure:C3: Student Sign In Code1	34
Figure:D4: Student Sign In Code2	34

LIST OF TABLES

TABLES	**PAGE NO**
Table 3.1: Description of use case modeling named “eLibrayX”	10-11

CHAPTER 1

INTRODUCTION

1.1 Introduction

eLibraryX project is web-based. The goal of my project is to use technology to modernize and streamline traditional library management processes while also improving the user experience and increasing user access to library resources. The goal is to develop an efficient and effective system that allows librarians to more easily manage resources and operations while also allowing users to access and interact with library materials in a more convenient and user-friendly manner. By digitizing library services, an online library management system can save time and effort, cut costs, and improve the overall quality and accessibility of library services.

Front-End: Html, CSS, JavaScript, Bootstrap, HelsinkiUI.

Back-End: PHP.

Database: MySQL.

Some features of this application: -

□ Librarian/Student: Login and Registration.

□ Effortless searching of books.

□ Showing the available books.

□ Controlling the account activation of students on the librarian side.

□ A useful, informative dashboard for librarian.

□ Smart issue and return book management.

□ Stock request option.

□ Provide a message option so that librarians can message students.

1.2 Motivation

My project is web-based. The goal of my project is to use technology to modernize and streamline traditional library management processes while also improving the user experience and increasing user access to library resources. The goal is to develop an efficient and effective system that allows librarians to more easily manage resources and

©Daffodil International University

operations while also allowing users to access and interact with library materials in a more convenient and user-friendly manner. By digitizing library services, an online library management system can save time and effort, cut costs, and improve the overall quality and accessibility of library services.

1.3 Objectives

- Efficient management of library resources.
- User experience improvement.
- Enhanced accessibility.
- Streamlined operations.
- More effective data management.

1.4 Expected Outcomes

- The ability to maintain and manage books/inventory .
- The ability to manage users. (e.g. students, librarian)
- The ability to check in/check out books.
- The ability to track book circulation and borrowing history.
- Possibility of managing multiple databases within the same system.
- When compared to traditional/manual management systems, there is the potential for increased efficiency and cost-effectiveness.

1.5 Summary

This electronic library management system does more than just store books catalogs. It manages the entire library ecosystem. It can manage various databases while tracking inventory, handling users, streamlining borrowing and returns, and monitoring book circulation. It promises better efficiency than traditional methods, saving time and money while keeping your library running smoothly.

CHAPTER 2
BACKGROUND

2.1 Preliminaries

- Project Scope: Specify the specific functions and features that will be included in the system.
- User Needs: Determine the major users (librarians, students) and their particular requirements.
- Existing Systems: Examine any existing systems or processes for compatibility and integration.
- Technical Infrastructure: Assess the library management system's hardware, software, and network capabilities.
- Budget and Resources: Set aside finances and manpower for the implementation, and maintenance of the system.
- Timeline: Create a workable project timetable for implementation and rollout.
- Security: Put in place safeguards to protect sensitive data and prevent unwanted access.

2.2 Existing System

Example of similar websites:

- Indiana University Library.[1]
- Daffodil University Library.[2]
- Dhaka University Library .[3]
- North South University Library.[4]

1.

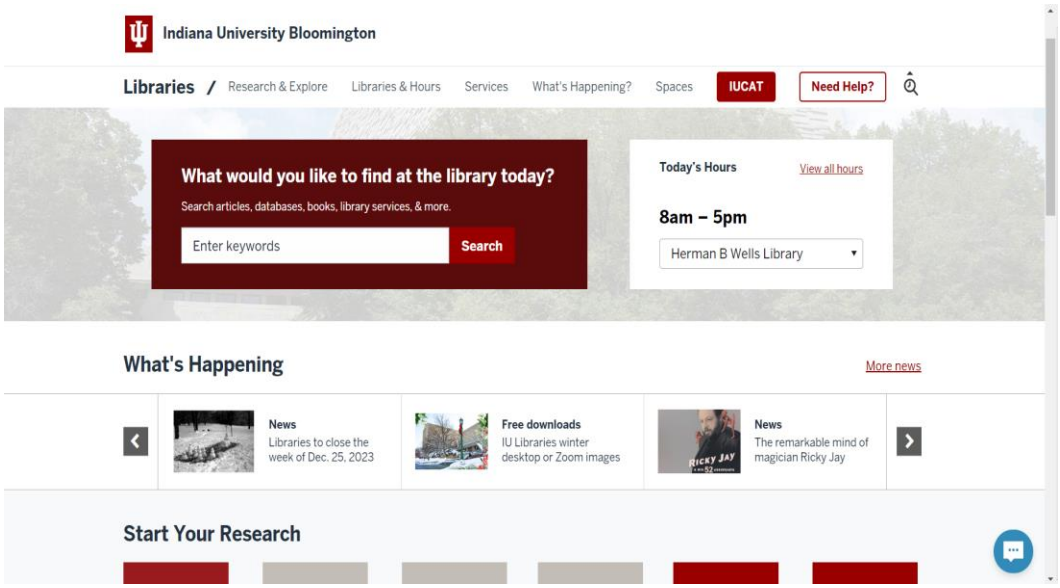


Figure 2.1 : Indiana University Library

2.

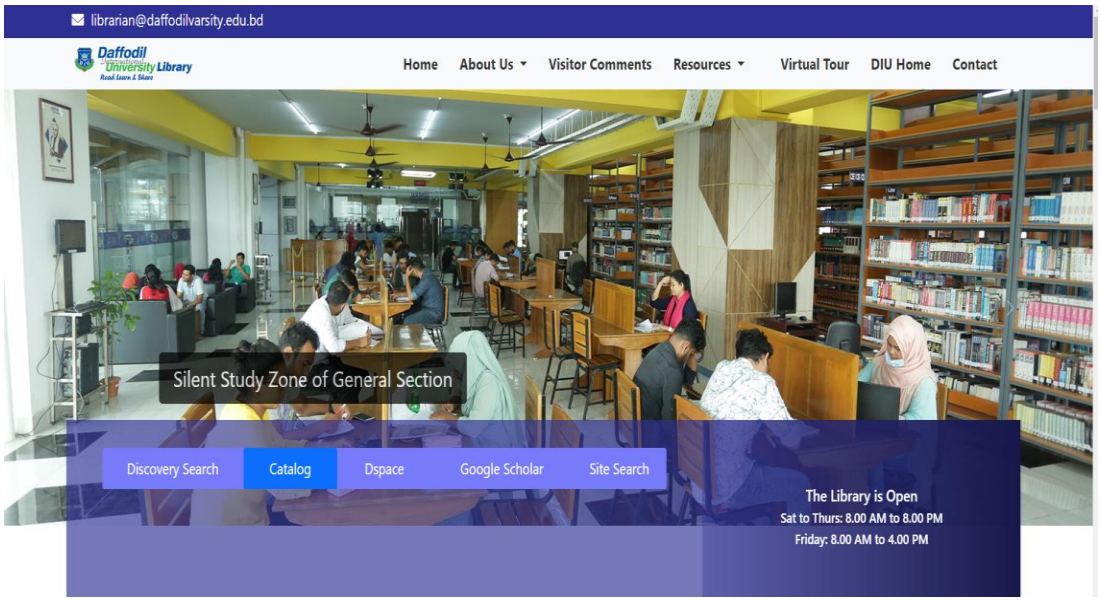


Figure 2.2 : Daffodil University Library

3.

Figure 2.3 : Dhaka University Library

4.

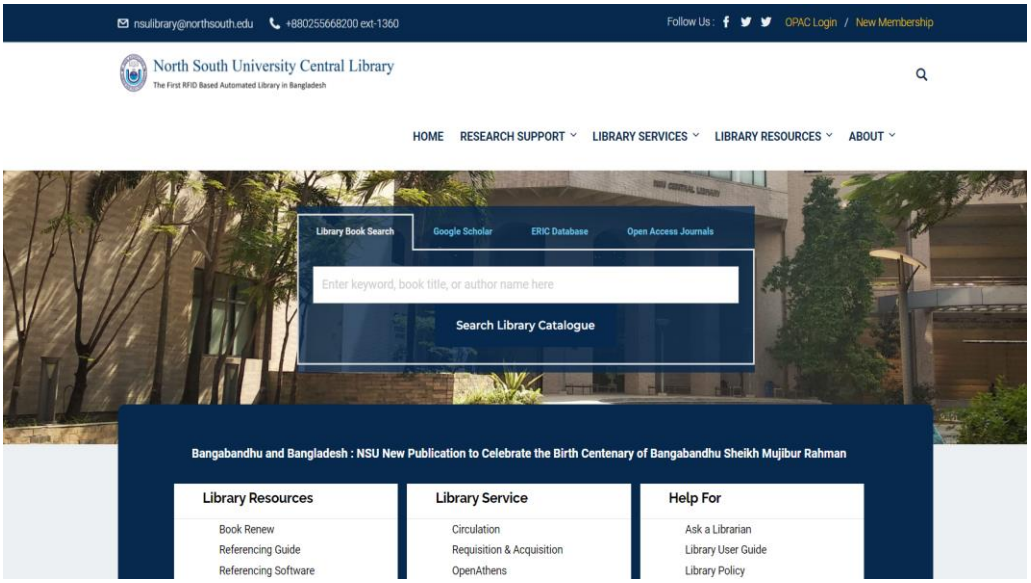


Figure 2.4 : North South University Library

All the basic functionalities are offered together on these websites. But some differences have been added to this project: the active status of students controlled by the librarians, a simple and effective dashboard for both students and librarians, and book stock requests from the students.

2.3 Scope of the Problem

- There may not be an internet connection available everywhere.
- Lack of user engagement.
- Scalability and performance are significant challenges.
- Privacy and security.
- There may be many who do not have internet-capable gadgets. They cannot search for books online.
- Space accessibility.
- It will be difficult to obtain constantly updated information.

2.4 Challenges

There are many websites that provide these services online. So, the biggest challenge is being noticed in public. The most difficult challenge is gaining people's trust for a new website. Inform people about how the system works. To keep each structure safe, an effective online library management system employs both required and desirable information. We also had to deal with a complex database and different user access issues all at once.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Requirement Specification

This application's primary requirement was project planning. Web development terminology, including HTML, CSS, Bootstrap, and JavaScript, must be known. They are often referred to as "web building blocks." The three primary tools used in web development are HTML, CSS, and JavaScript. A programmer can process the system in a variety of ways. Then we have to work on the back end to make the system functional. PHP was used for this, and MySQL was used for the database. After obtaining a large amount of information, we had to settle on all of the requirements for the project's success.

3.2 Book adding requirement

- The first step in adding a book requires registration.
- After that, the librarian has to log in.
- Click the `Add Book` option.
- Write the title or book name.
- Upload the book image file.
- Write the publisher's name.
- Give the author information.
- Give the purchase date.
- Give the price information.
- Write the book quantity.
- Fill up the available quantity of the book.
- Then, at the end, click the Save Book button.

3.3 Data Requirement

- A librarian can make an account, and after that, they can add, delete, and remove books using their own profile.
- Students can also search books and get stock information on books in their timeline.
- Book stock requests are yet another important element on this website. The user can send a request for books that are not stocked in the library.

3.4 Requirement Collection

In web development, requirement gathering is the critical first step towards creating a successful website or online application.These are :

- Surveys and questionnaires: Ask specific inquiries to get quantitative data and user input.
- User research and competitive analysis: Study current websites and user behaviour to acquire insights.
- Wireframing and prototyping: Create visual representations of the website's layout and functionality to get feedback.

3.5 Use Case Diagram

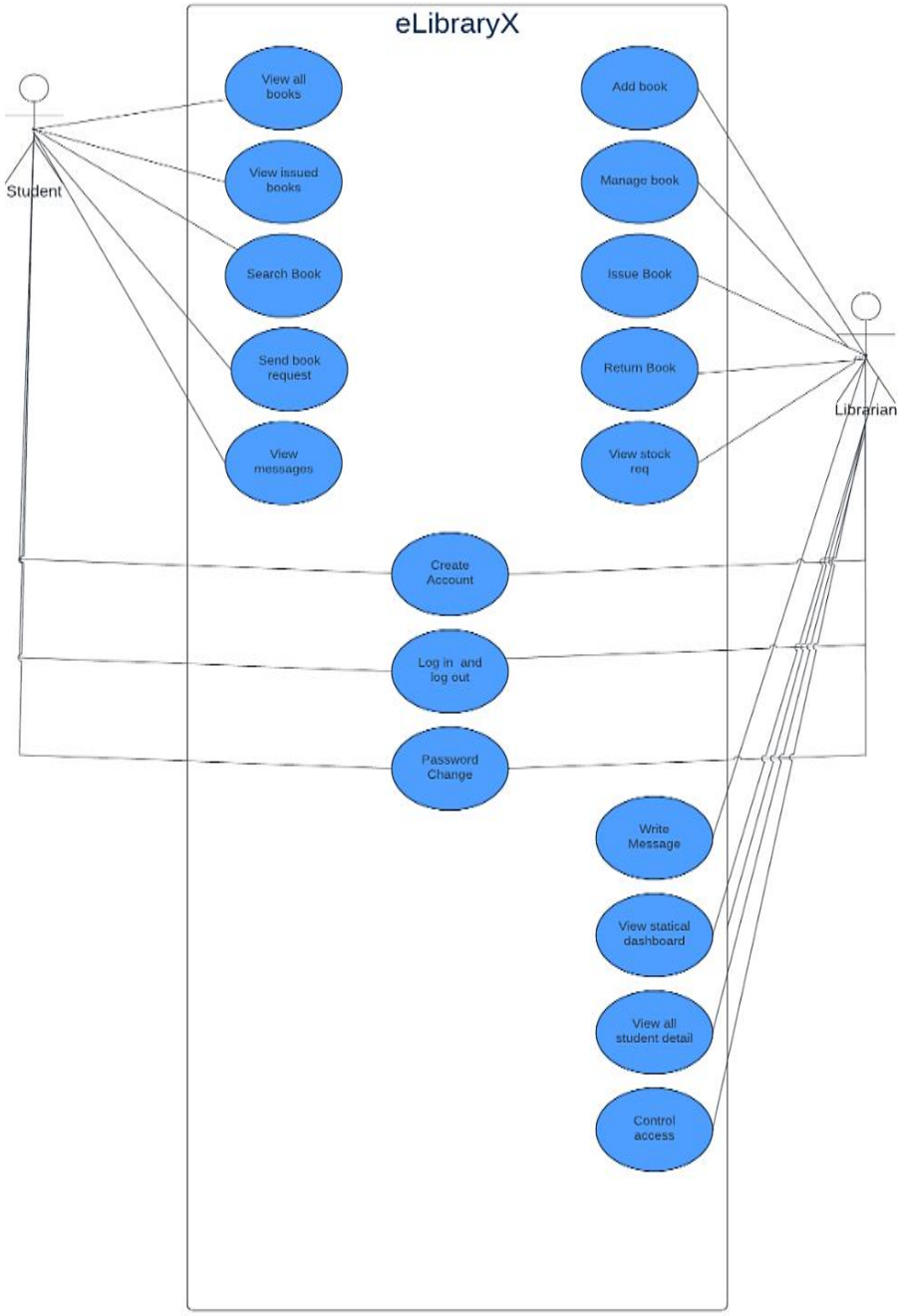


Figure 3.1: Use case diagram

3.6 Description of Use case diagram

Table 3.1: Description of use case modelling named “eLibrayX”

Use Case ID	Use Case Description	Actor(s)	Precondition	Post condition
UC01	Student Account Creation	Student	Student is not registered	Student is successfully registered
UC02	Student account Login and Logout	Student	Student is not logged in	Student is successfully logged in and can be logged out
UC03	Password change for student	Student	Student forgot password	Password has been changed
UC04	View all books	Student	Student must be logged in	Student search a book
UC05	View issued books	Student	Librarian issues book	Student within a time period have to return the book
UC06	Search	Student	Student must click the search button	Searched book will be shown if exist otherwise not book found will be shown
UC07	Student book request	Student	The book is not there in the stock	Librarian add book
UC08	View messages	Student	Librarian send short message	Student get the notice and got to dashboard
UC09	Librarian Account Creation	Librarian	Librarian is not registered	Librarian is successfully registered

UC010	Librarian account Login and Logout	Librarian	Librarian is not logged in	Librarian is successfully logged in
UC011	Password change for Librarian	Librarian	Librarian forgot password	Password has been changed
UC012	Add book	Librarian	Librarian must be logged in	Manage the books
UC013	Manage book	Librarian	Librarian have to add books	Update, Delete successfully
UC014	Issue Book	Librarian	Librarian have to select student	Book is issued successfully
UC015	Return Book	Librarian	Student returns the issued book	Book is returned to the available stock
UC016	View Book Stock request	Librarian	Student sends book request	Add the requested book
UC017	Write message	Librarian	Librarian select student	Message is sent successfully
UC018	View Statistical Dashboard	Librarian	Librarian have to be logged in	View all stock information on homepage
UC019	View All student Details	Librarian	Student must create an account	Control the activation of student account
UC020	Control Access	Librarian	Click the status button	Active /Deactivate the selected student account

3.7 ER diagram

This is the system's ER diagram

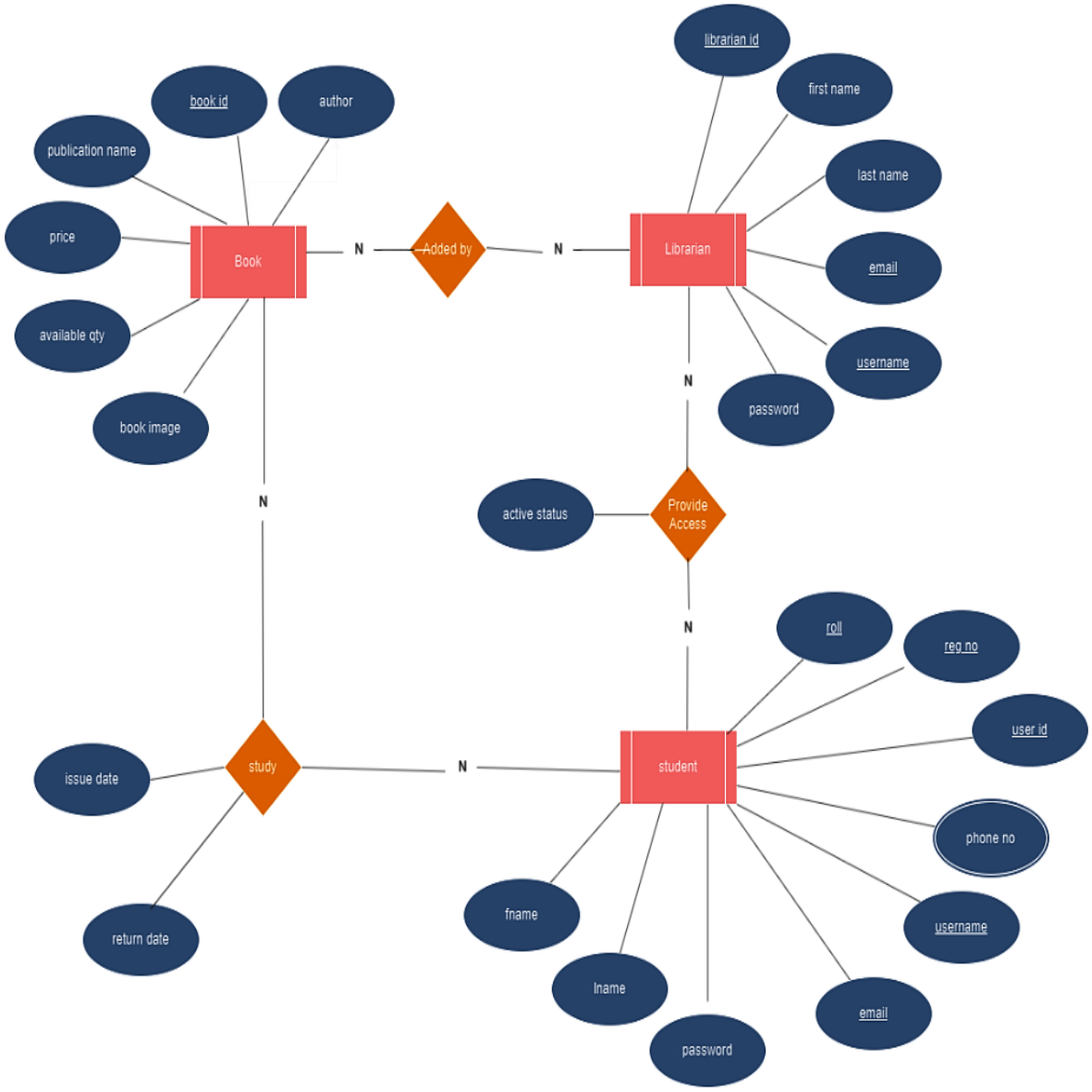


Figure 3.2: ER diagram

3.8 Class Diagram

This is the system's Class diagram

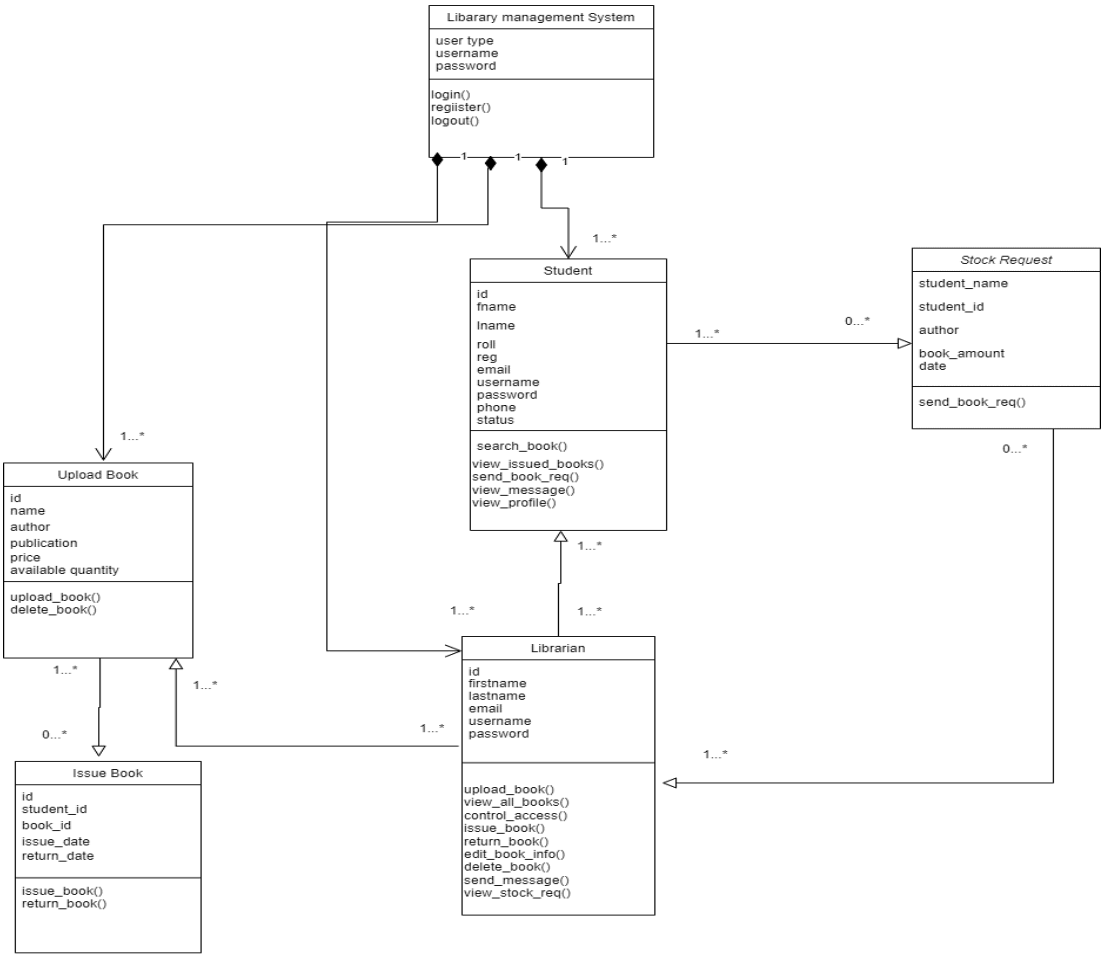


Figure 3.3: Class diagram

3.9 Data Flow Diagram

Figure 3.4: Data flow diagram

CHAPTER 4

DESIGN SPECIFICATION

4.1 Design Specification:

Every website is made up of two interconnected environments: the lively, dynamic front end that greets users and the unseen but critical backend that drives everything behind the scenes. These multiple domains, created by separate development teams, combine to provide the seamless online experience we enjoy. Front-end developers use code to create the stunning images, simple interfaces, and animations that we see on our screens. Meanwhile, their server-side counterparts work relentlessly to construct the complex logic, solid databases, and secure systems that keep everything running. They work in harmony to grab our attention and tempt our clicks, while the backend secretly organizes the symphony of data, logic, and functionality that makes it all possible. since it's this harmonic combination of front and back that puts life into the digital worlds we explore.

4.2 Front- end design

The front end refers to whatever a user sees or interacts with on a website. It is in charge of determining the overall look and feel of an online experience. The user interface and visual appeal (aesthetics) (the feel) compose the front end. The user interface for each of them took the majority of the technical effort using web languages such as HTML, CSS, and JavaScript. Despite their differences, the terms "user interface" and "user experience" are comparable and both contribute considerably to a project's success. UI focuses primarily on the intended look and feel of the website, app, or system, whereas UX encompasses every phase of creation, development, and delivery. Furthermore, UX can be used.

Front-End:

- Html
- CSS

- JavaScript
- jQuery
- Bootstrap
- HelsinkiUI

4.3 Student Registration design

Students must complete the registration procedure correctly in order to view their profile. The user name and email must be unique for a successful registration. Password and user name must be six characters or more.

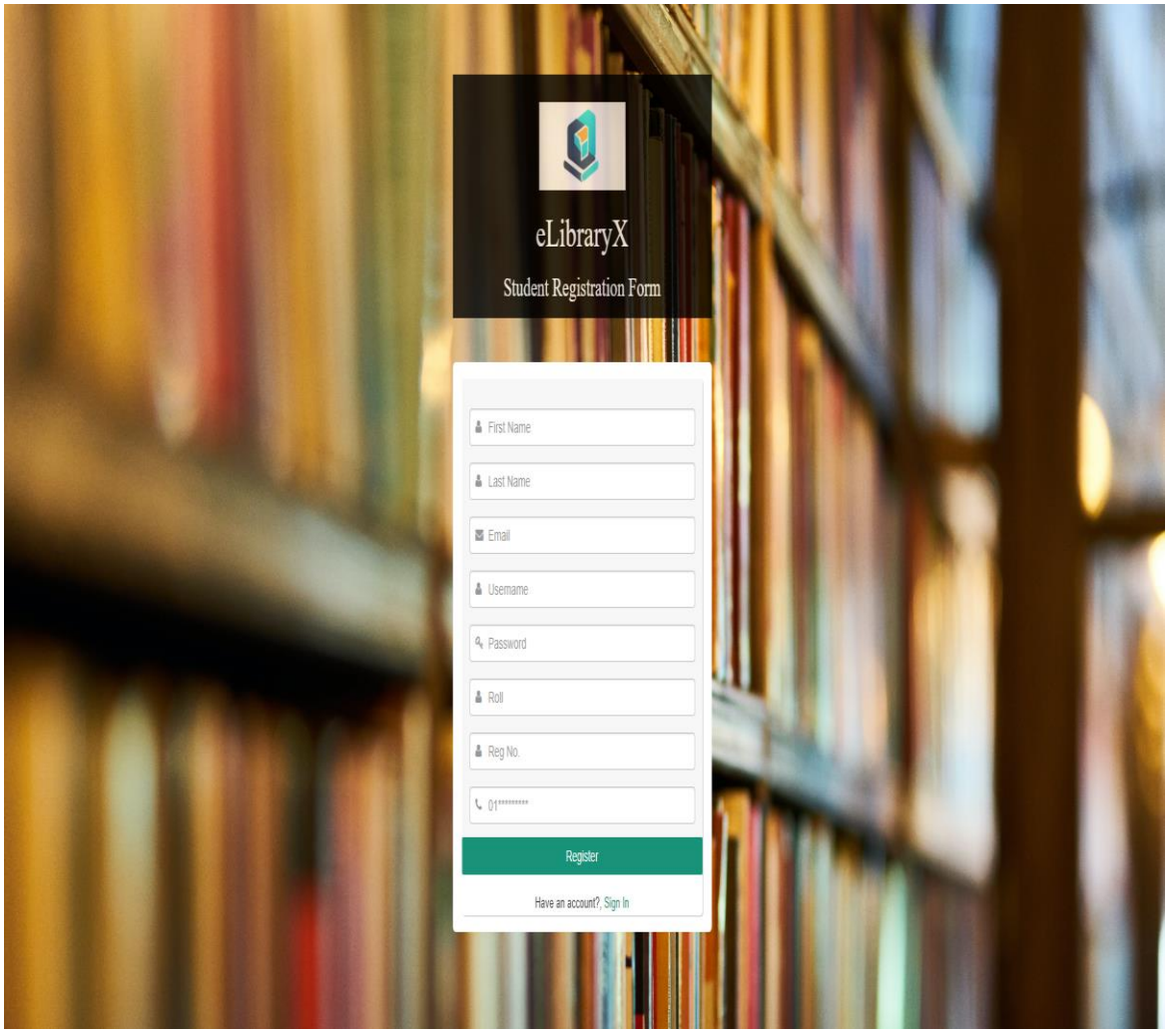


Figure:4.1: Student Registration design

4.4 Student Login Design

After registration, a student just signs in to his account. By using a mail or username, they can sign in with the correct password; otherwise, they have to change their password if they forget.

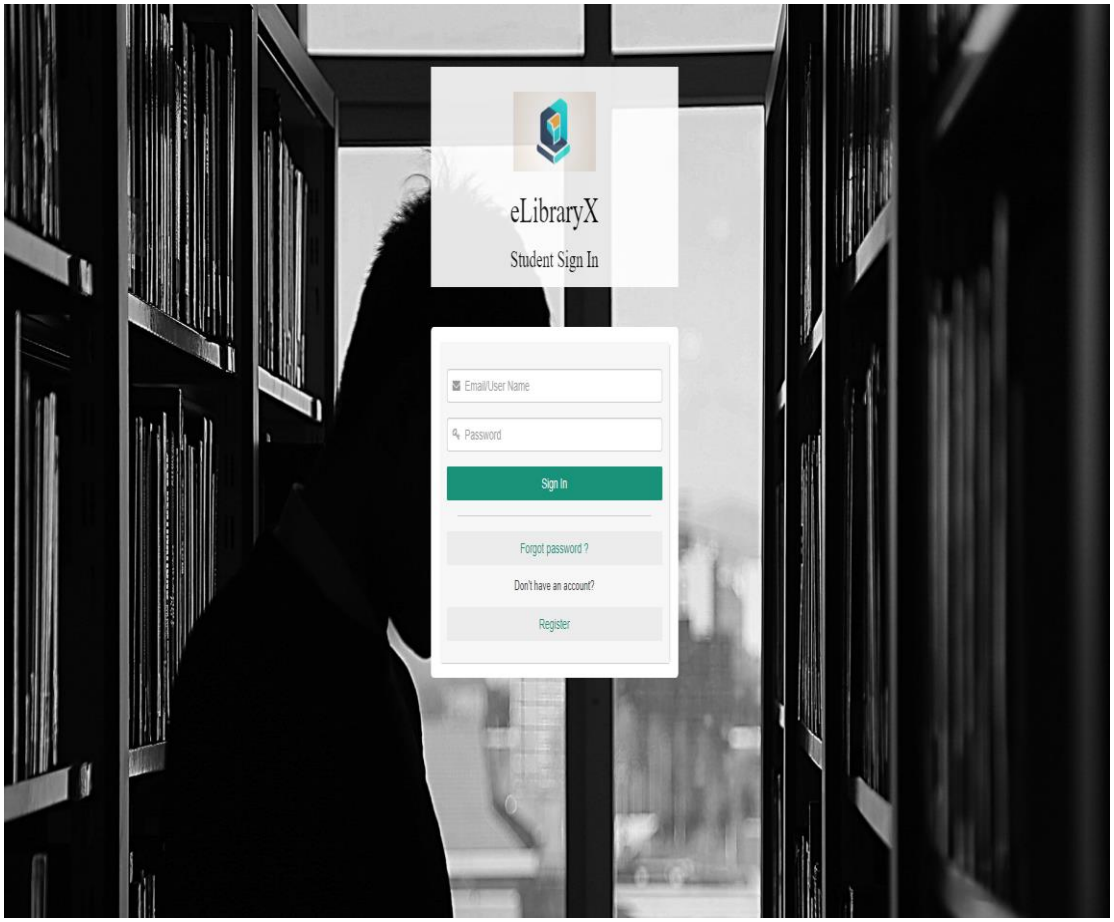


Figure:4.2: Student login design

4.5 Librarian Registration design

Librarians must correctly finish the registration procedure in order to gain access to the system. The user name and email must be unique for a successful registration. Password and user name must be six characters or more.

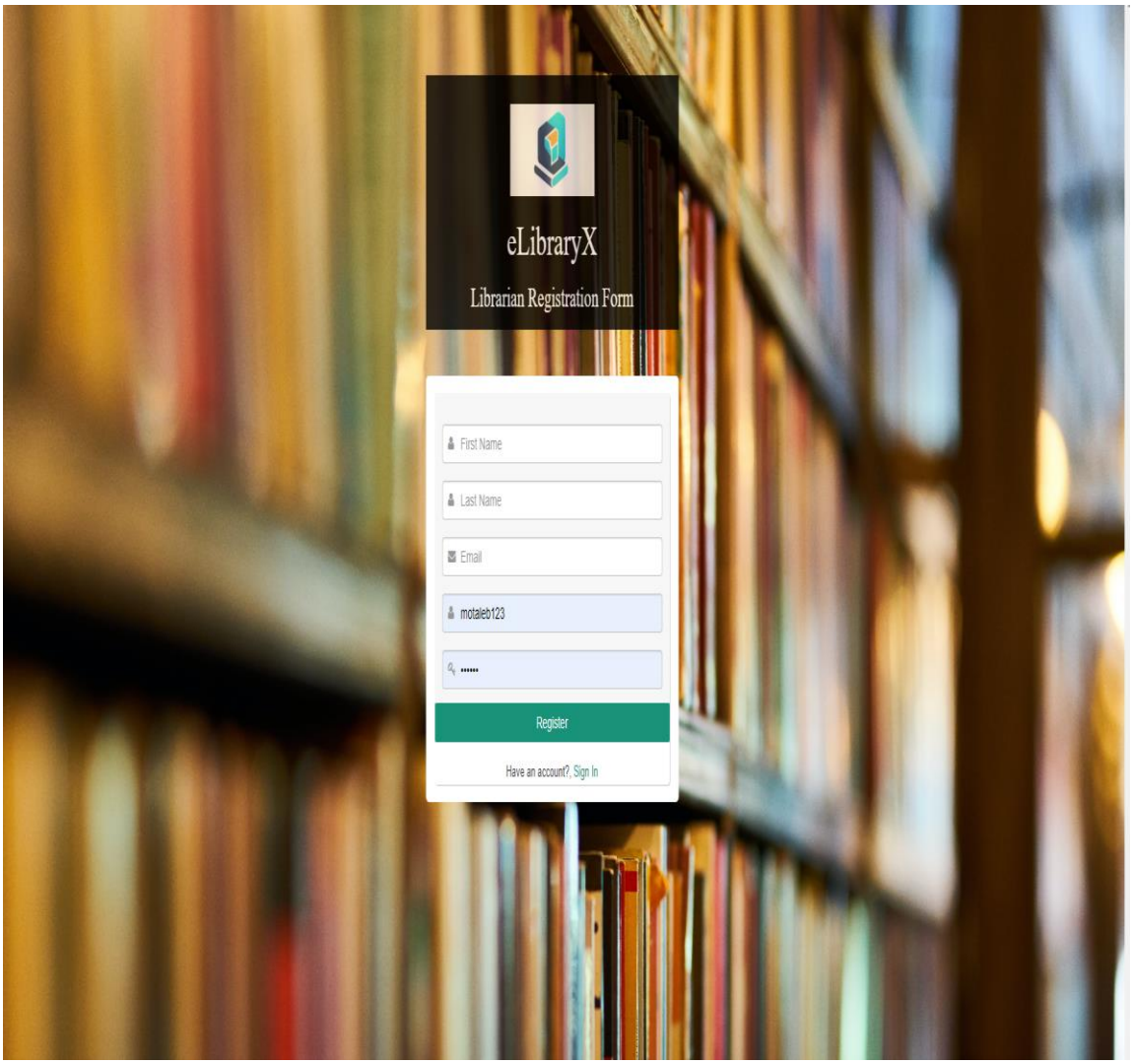


Figure:4.3: Librarian Registration design

4.6 Librarian Login Design

After registration, librarians just login and can then easily do the tasks for organizing the library management system. They can sign in with the proper password by using a mail address or username; otherwise, if they forget their password, they must change it.

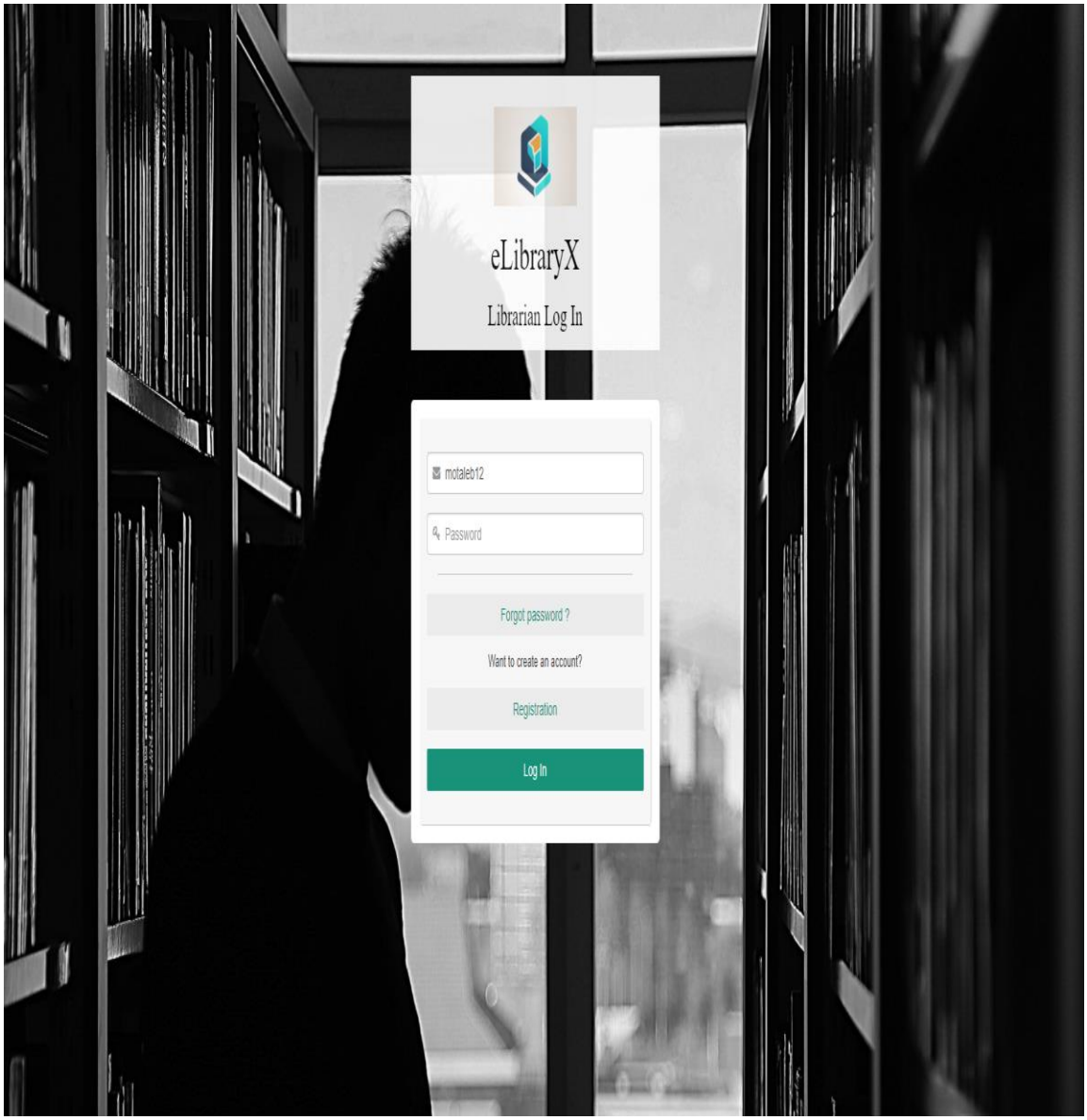


Figure:4.4: Librarian login design

4.7 Student Dashboard

In the student dashboard, students can see all the books they issued, which were done by the librarian. And can do many tasks like searching books, sending stock request, checking messages, seeing profile details, etc.

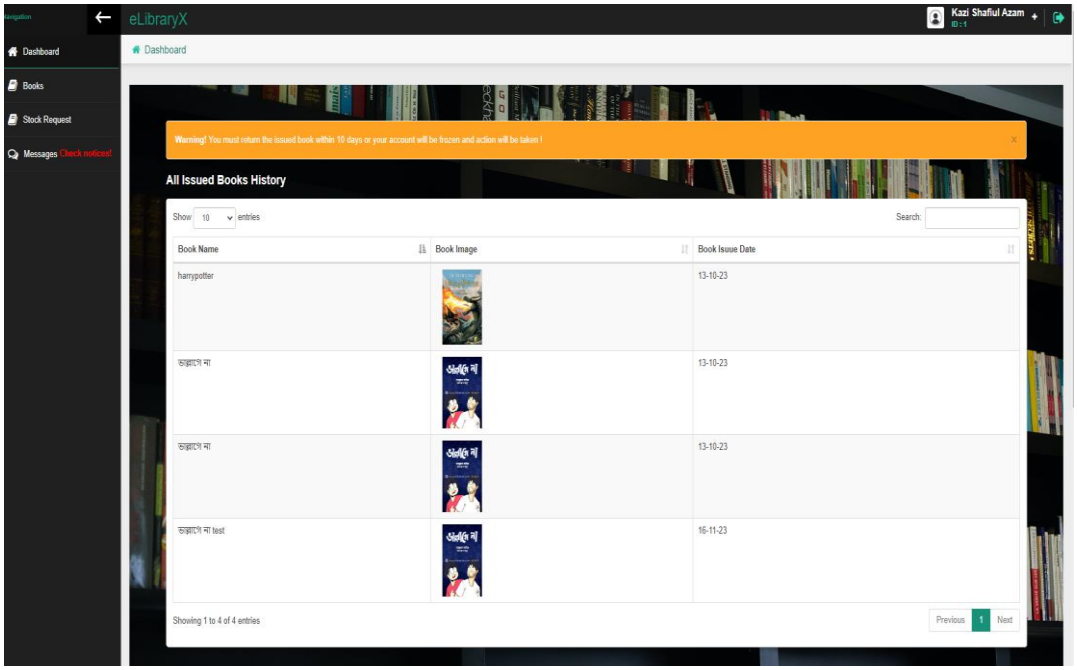


Figure:4.5: Student Dashboard

In the stock request section, students send requests for books that are not stocked in the library to the librarian to add the books.

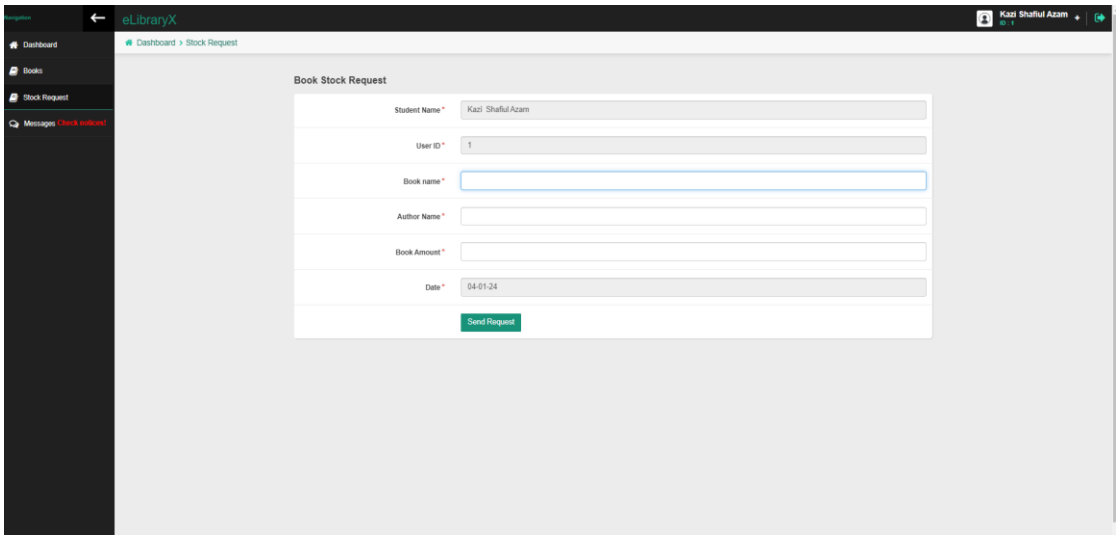


Figure:4.6: Stock Request

In the messages section, students can see all the important messages from the librarian, along with the date and time.

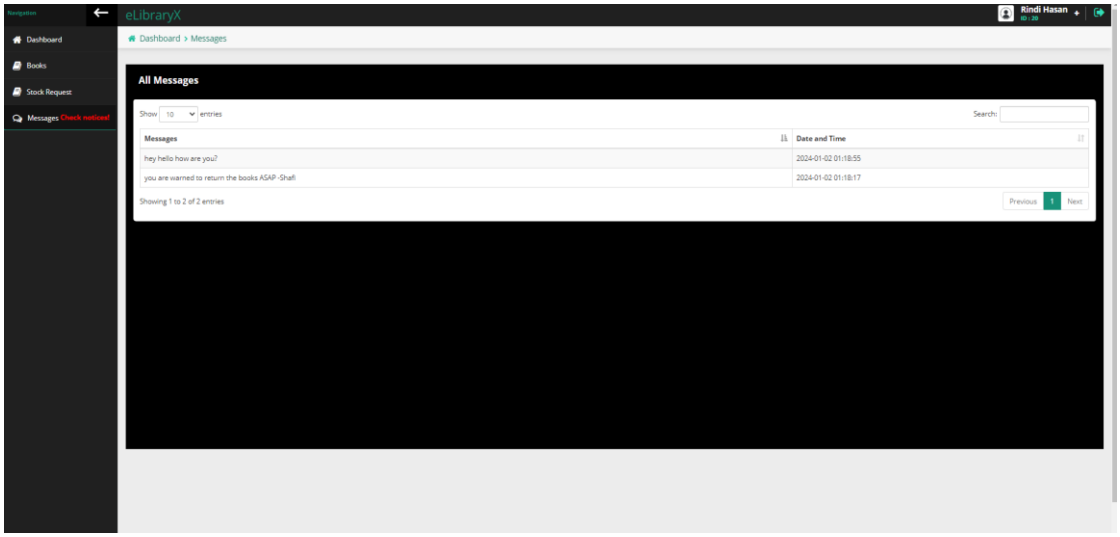


Figure:4.7: Checking message from librarian

Students can see their profile details if they go to the profile section. And they can get to know if their information is right and successfully stored in the system.

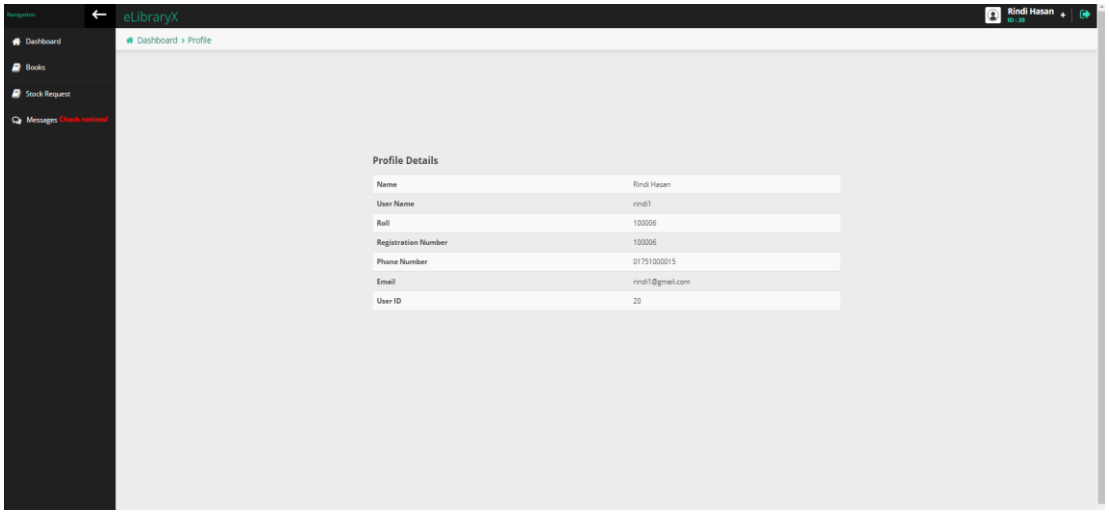


Figure:4.8: Showing profile details of a student

4.8 Librarian Dashboard

In the librarian dashboard, the librarian can manage everything. It is possible to see all the stock values of books and other information about the system. They can send messages, see all student information, control account access, issue and return operations, etc.

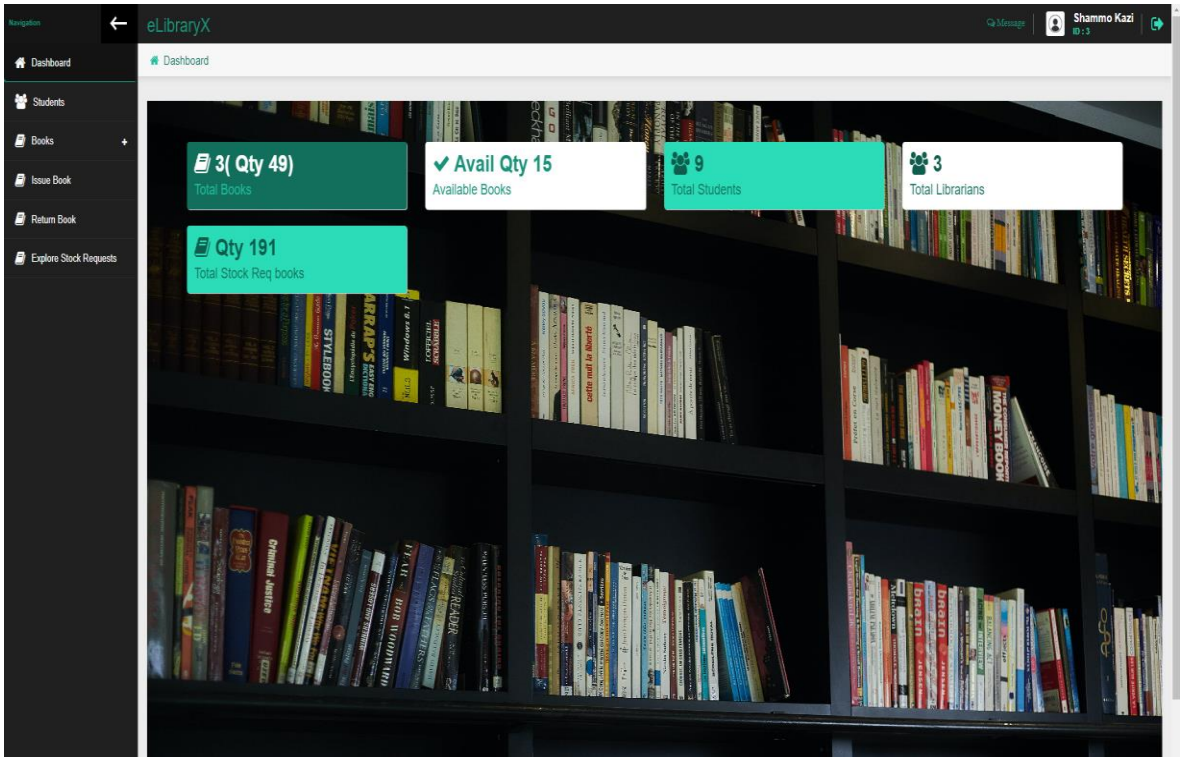


Figure:4.9: Librarian Dashboard

In the students section, the librarian can see all the information about students and set their status to active or inactive.

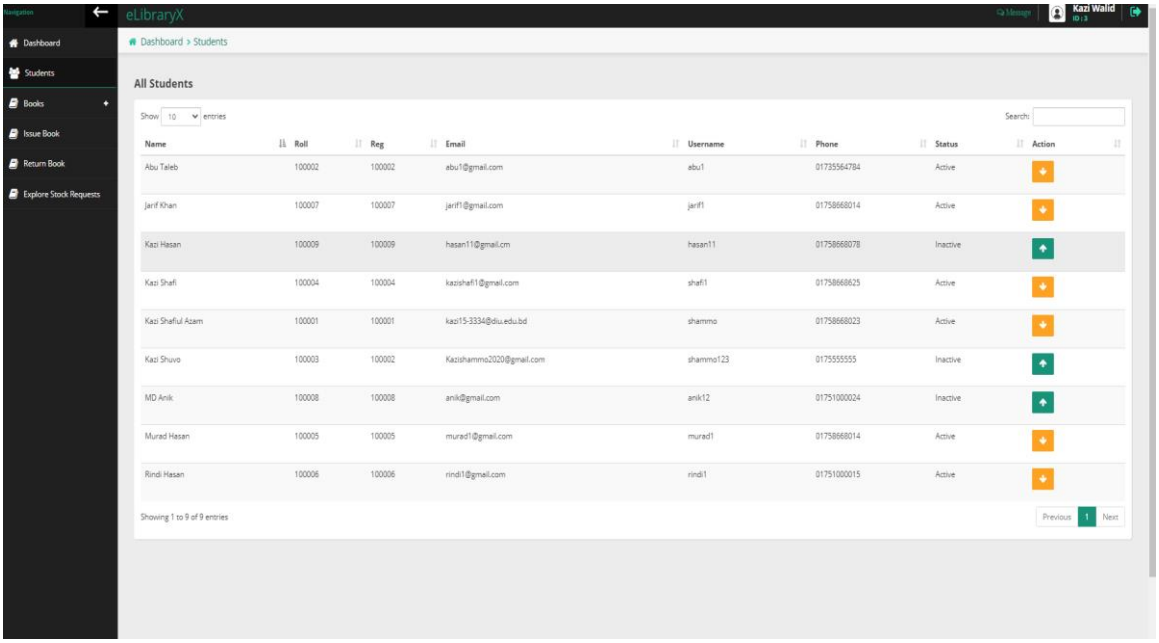


Figure:4.10: All the student list in the librarian dashboard

On the librarian side, this is the book portion, where you can add, manage, update, and remove operations. This is the add book section where librarians can add books with their name,image,publication name,author name, and many more details.

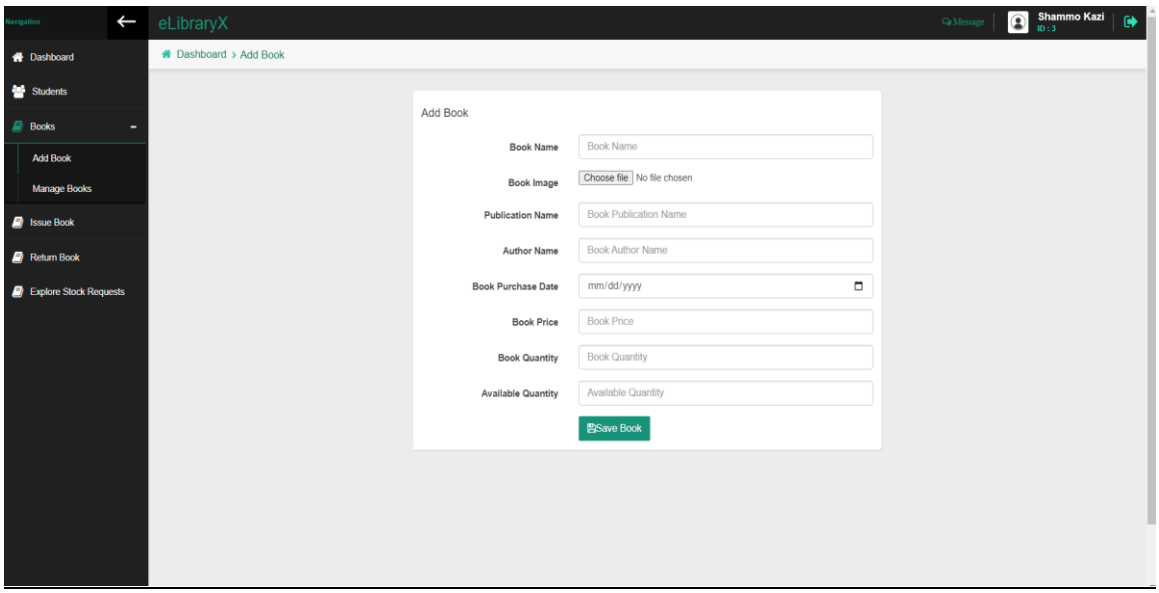


Figure:4.11: Adding book

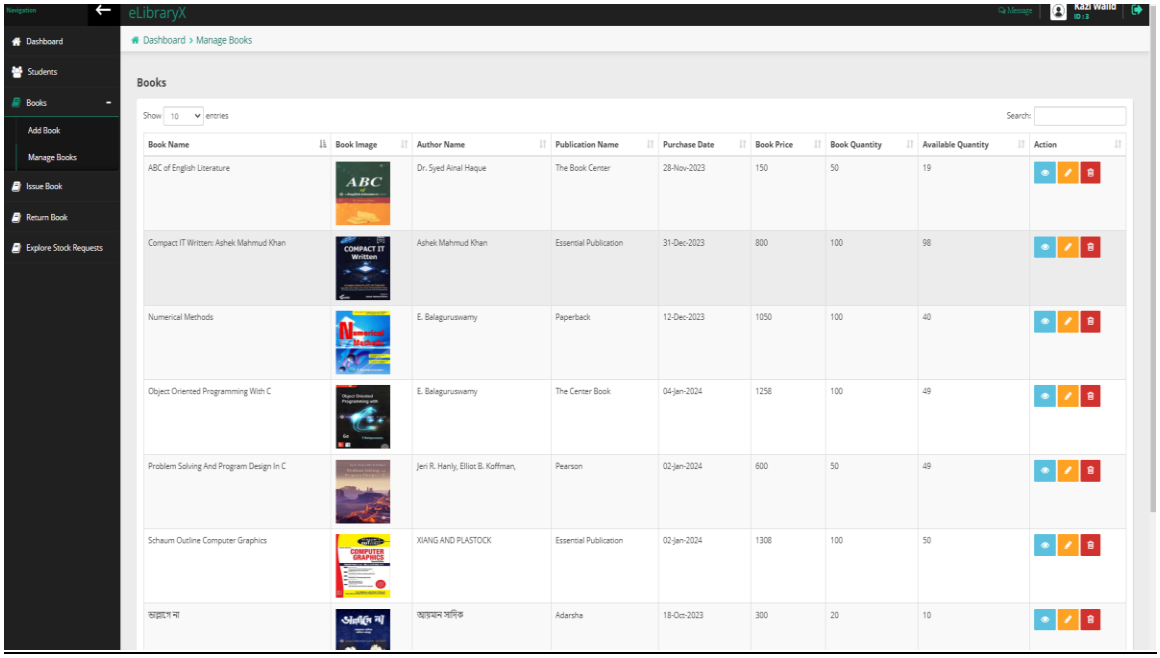


Figure:4.12: Managing books

On the librarian side, this is the issue book section. Here, the librarian has to select a student for whom they will issue a book with the book name and issue date.

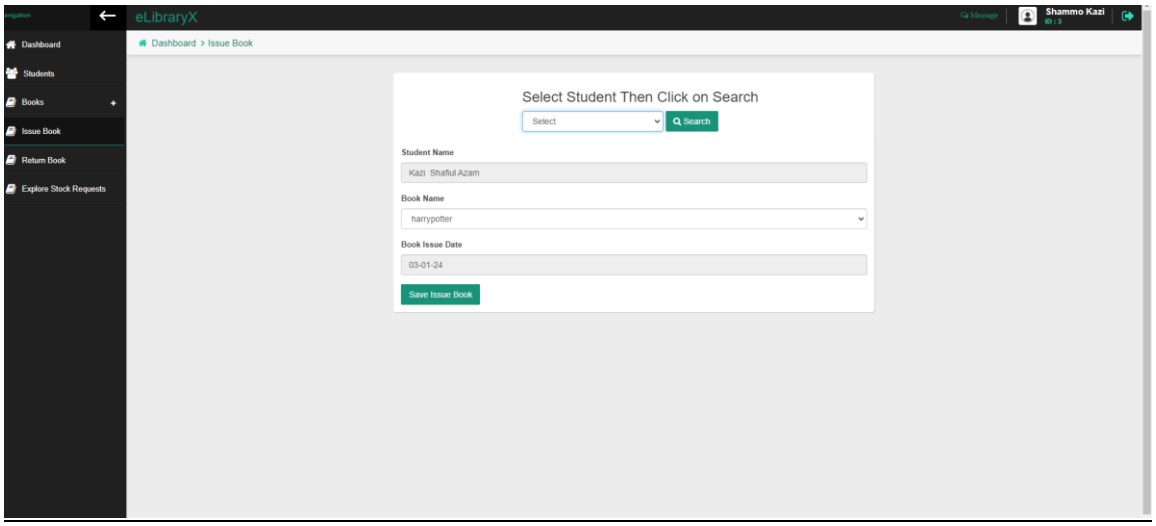


Figure:4.13: Issue book

Librarians deliver messages to students as important messages or alerts about the book's return deadline. Librarians have to select the student ID and send the important message after writing it.

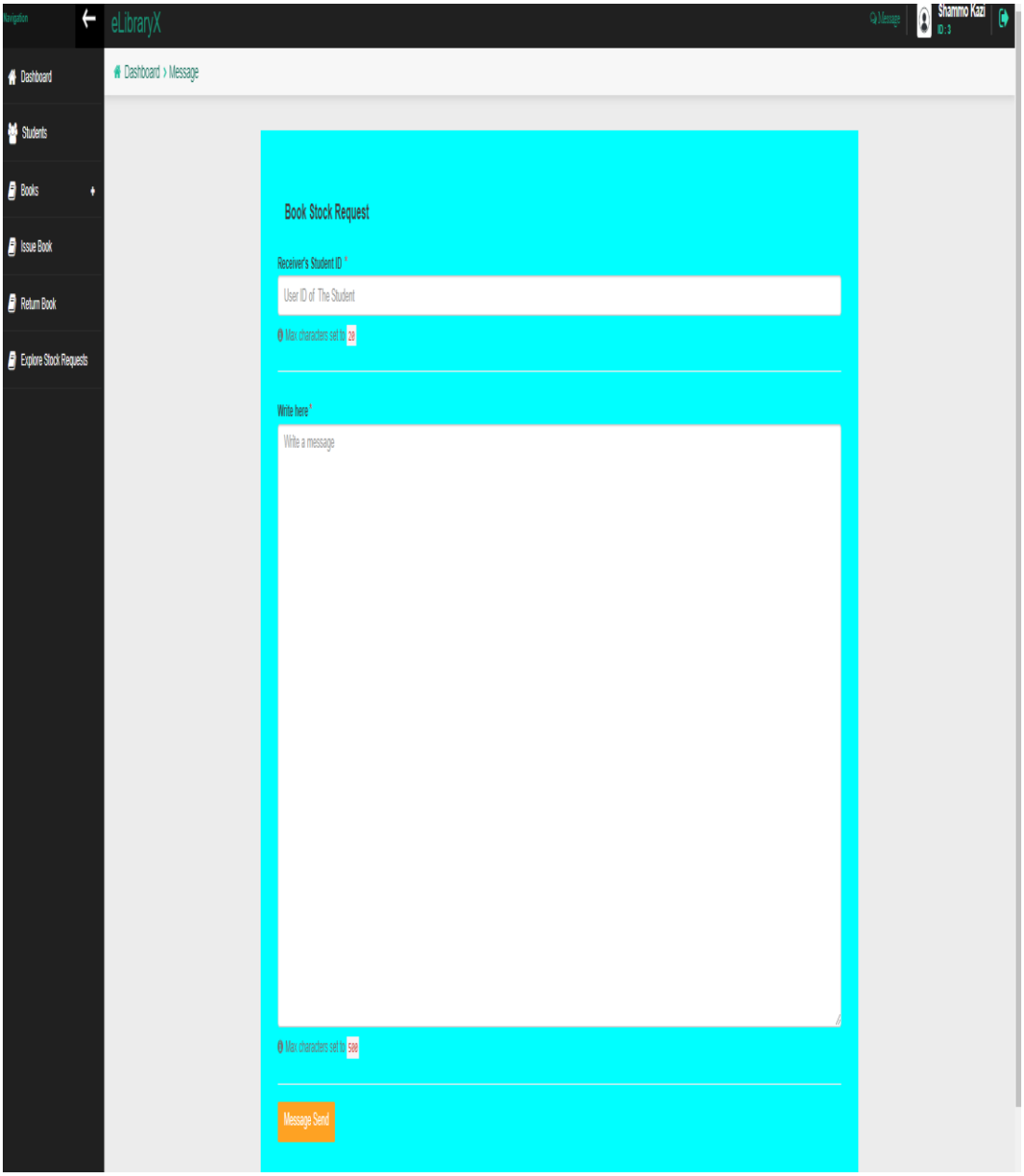


Figure:4.14: Sending message from the librarian side

Librarians explore the stock request section for checking the requests from the students that the students want the needed books that are not found in the stock.

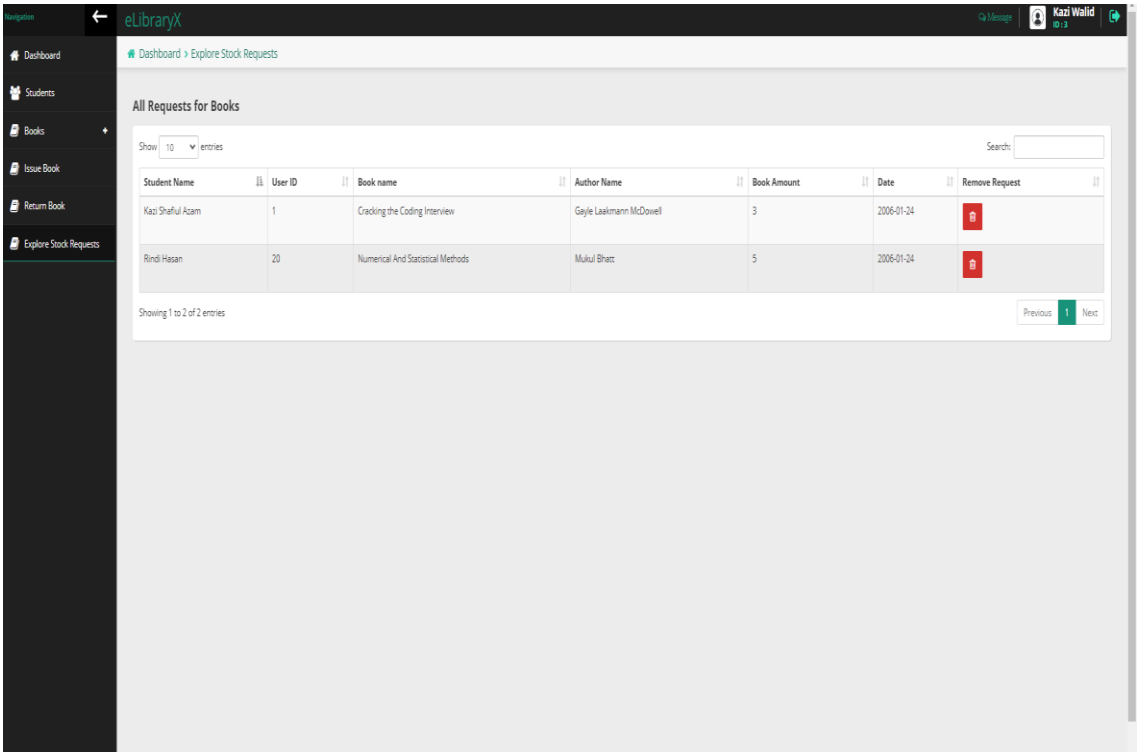


Figure:4.15: Exploring Stock Requests

4.9 Registration/ Login

Registration and login are the digital gatekeepers in a library management system, guaranteeing safe and individualized access to the literary domain. Registration serves as a welcome ambassador, allowing visitors to build unique accounts by gathering key facts and constructing digital identities that serve as their passports to knowledge. Logging, on the other hand, stands guard, rigorously validating the credentials of those seeking admittance and providing access only to those who present the necessary combination of username and password - a digital handshake that opens a world of books and resources. They work together to build trust and organization, ensuring that only authorized users

may traverse the library's digital shelves while also protecting the privacy and integrity of its massive collection. Users can register and log in in this area. Customers, or students, and administrators, or librarians, are the two types of people who will utilize this website. Customers can use this website to register an account, search for books in the library's book stock, and make stock requests for unstocked books from their personal accounts. The website administrator will have complete control.

4.10 Dashboard

The user may access the admin panel dashboard after logging in as the administrator/librarian. In the dashboard, the librarians will have access to many functions. Examples are:

1. Total Books.
2. Available Books.
3. Total Students.
4. Total Librarians.
5. Total Stock Request amount.
6. Students List.
7. Books.
   - Add book.
   - Manage Books.
8. Issue Book.
9. Return Book.
10. Explore Book Requests.
11. Write Message.

4.11 Search

Students may use this to search for the book they desire, and if any results match their search keyword, they will be presented. If there are no matches, students will be notified that no results were found for the specified search term.

CHAPTER 5
IMPLEMENTATION AND TESTING

5.1 Test

During testing, we looked for bugs in this program. If there are no problems, the program works fine; however, if there are errors, we must use particular techniques to resolve them.

5.2 List of Tests

- Unit Testing
- Integration Testing
- Database Testing

5.3 Unit Testing

Unit testing is a fundamental software testing approach that involves assessing the smallest, testable parts of a program, known as units. Traditional unit testing methods usually relate to functions, methods, or classes. We do manual testing on variables and write test scripts to analyse and validate their values.

5.4 Integration Testing

Integration testing often involves evaluating the interaction of several components or modules to ensure that they function properly. Even if we don't explicitly use classes or functions in PHP, we may arrange our code so that we can test separate components or logics.

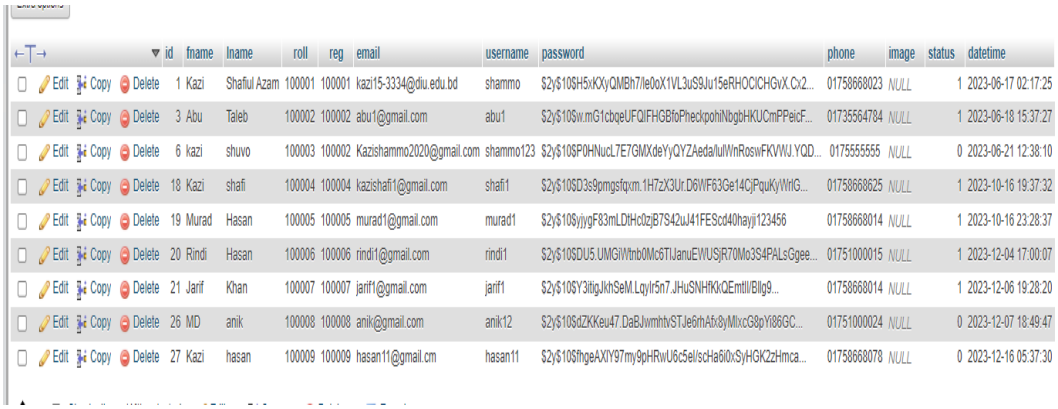
5.5 Database Testing

Database testing in core PHP and MySQL involves monitoring the accuracy of database interactions inside an application. It entails testing CRUD activities,

ensuring data integrity, and managing a variety of situations. Test cases are created to insert, retrieve, and change data in the database.

5.6 User Data

The first step in implementing my project is to find users for this application, which requires registration. The users can access various system features and view their profile details on their timeline after registering.



	id	fname	lname	roll	reg	email	username	password	phone	image	status	datetime
Edit Copy Delete	1	Kazi	Shafiul Azam	100001	100001	kazi15-3334@diu.edu.bd	shammo	$2y$10$H5xKXyQMBh7/le0oX1VL3uS9Ju15eRHOClCHGvX.Cx2...	01758668023	NULL	1	2023-06-17 02:17:25
Edit Copy Delete	3	Abu	Taleb	100002	100002	abu1@gmail.com	abu1	$2y$10$w.mG1cbqeUFQlFHGBfoPheckpohiNbgbHKUCmPPeicF...	01735564784	NULL	1	2023-06-18 15:37:27
Edit Copy Delete	6	kazi	shuvo	100003	100002	Kazishammo2020@gmail.com	shammo123	$2y$10$P0HNucL7E7GMXdeYyQYZAeda/lulWnRoswFKVWJ.YQD...	0175555555	NULL	0	2023-06-21 12:38:10
Edit Copy Delete	18	Kazi	shafi	100004	100004	kazishafi1@gmail.com	shafi1	$2y$10$D3s9pmgsfqxm.1H7zX3Ur.D6WF63Ge14CjPquKyWrlG...	01758668625	NULL	1	2023-10-16 19:37:32
Edit Copy Delete	19	Murad	Hasan	100005	100005	murad1@gmail.com	murad1	$2y$10$yjygF83mLDfHc0zjB7S42uJ41FEScd40hayjj123456	01758668014	NULL	1	2023-10-16 23:28:37
Edit Copy Delete	20	Rindi	Hasan	100006	100006	rindi1@gmail.com	rindi1	$2y$10$DU5.UMGiWtnb0Mc6TIJanuEWUSjR70Mo3S4PALsGgee...	01751000015	NULL	1	2023-12-04 17:00:07
Edit Copy Delete	21	Jarif	Khan	100007	100007	jarif1@gmail.com	jarif1	$2y$10$Y3itigJkhSeM.Lqylr5n7.JHuSNHfKkQEmtll/Bllg9...	01758668014	NULL	1	2023-12-06 19:28:20
Edit Copy Delete	26	MD	anik	100008	100008	anik@gmail.com	anik12	$2y$10$dZKKeu47.DaBJvmhtvSTJe6rhAfx8yMlxcG8pYi86GC...	01751000024	NULL	0	2023-12-07 18:49:47
Edit Copy Delete	27	Kazi	hasan	100009	100009	hasan11@gmail.cm	hasan11	$2y$10$fhgeAXlY97my9pHRwU6c5el/scHa6i0xSyHGKZzHmca...	01758668078	NULL	0	2023-12-16 05:37:30

Figure 5.1: Student Data

5.7 DATABASE

The project has been implemented using a MySQL database.

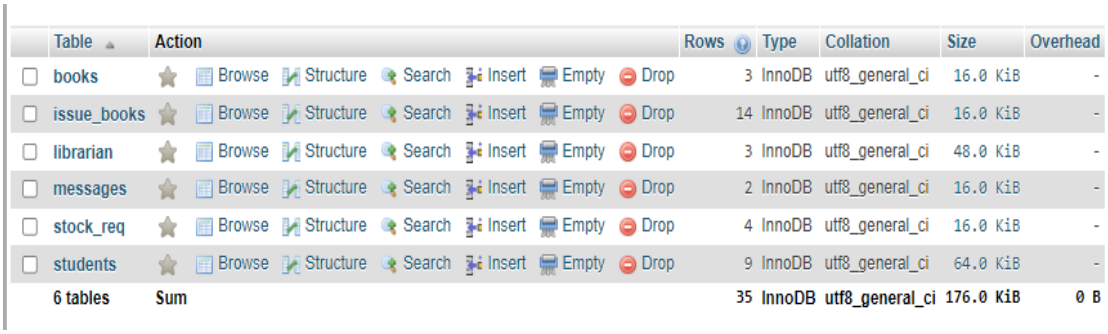


Table	Action	Rows	Type	Collation	Size	Overhead
books	Browse Structure Search Insert Empty Drop	3	InnoDB	utf8_general_ci	16.0 KiB	-
issue_books	Browse Structure Search Insert Empty Drop	14	InnoDB	utf8_general_ci	16.0 KiB	-
librarian	Browse Structure Search Insert Empty Drop	3	InnoDB	utf8_general_ci	48.0 KiB	-
messages	Browse Structure Search Insert Empty Drop	2	InnoDB	utf8_general_ci	16.0 KiB	-
stock_req	Browse Structure Search Insert Empty Drop	4	InnoDB	utf8_general_ci	16.0 KiB	-
students	Browse Structure Search Insert Empty Drop	9	InnoDB	utf8_general_ci	64.0 KiB	-
6 tables	Sum	35	InnoDB	utf8_general_ci	176.0 KiB	0 B

Figure 5.2: MySQL Database

	id	firstname	lastname	email	username	password	datetime
Edit Copy Delete	1	motaleb	hossain	motaleb123@gmail.com	motaleb123	123456	2023-06-19 02:40:23
Edit Copy Delete	3	Kazi	Walid	kazi15-3336@diu.edu.bd	kazi123	$2y$10$sdxJpBHugr/oeRN/B48io.Nc3oC0W4b1lcLYxNAvJQw...	2024-01-06 21:40:26

Figure 5.3: Librarian Data

	id	book_name	book_image	book_author_name	book_publication_name	book_purchase_date	book_price	book_qty	available_qty	librarian_username	datetime
Edit Copy Delete	23	ভাল্লাগে না	20231010032300.jpg	আয়মান সাদিক	Adarsha	2023-10-18	300	20	10	kazi123	2023-10-10 19:23:00
Edit Copy Delete	26	Problem Solving And Program Design In C	20240106113428.png	Jeri R. Hanly, Elliot B. Koffman,	Pearson	2024-01-02	600	50	49	kazi123	2024-01-06 16:34:28
Edit Copy Delete	27	Compact IT Written: Ashek Mahmud Khan	20240106113828.png	Ashek Mahmud Khan	Essential Publication	2023-12-31	800	100	98	kazi123	2024-01-06 16:38:28
Edit Copy Delete	28	স্ট্যাক অ্যাইটি বিপি,প্রোসি স্পেশাল (IT/CSE)	20240106114302.png	Jamal Uddin	Stockit	2024-01-04	450	50	35	kazi123	2024-01-06 16:43:02
Edit Copy Delete	29	Numerical Methods	20240106114606.png	E. Balaguruswamy	Paperback	2023-12-12	1050	100	40	kazi123	2024-01-06 16:46:06
Edit Copy Delete	30	ABC of English Literature	20240106031017.png	Dr. Syed Ainal Haque	The Book Center	2023-11-28	150	50	19	kazi123	2024-01-06 20:10:17
Edit Copy Delete	31	Object Oriented Programming With C	20240106032131.png	E. Balaguruswamy	The Center Book	2024-01-04	1258	100	49	kazi123	2024-01-06 20:21:31
Edit Copy Delete	32	Schaum Outline Computer Graphics	20240106034306.png	XIANG AND PLASTOCK	Essential Publication	2024-01-02	1308	100	50	kazi123	2024-01-06 20:43:06

Figure 5.4: Books Data

	id	student_id	book_id	book_issue_date	book_return_date	datetime
Edit Copy Delete	1	1	23	13-10-23	16-11-23	2023-10-13 05:45:46
Edit Copy Delete	4	18	22	16-10-23	16-11-23	2023-10-16 20:11:39
Edit Copy Delete	5	18	25	16-10-23	16-11-23	2023-10-16 20:13:04
Edit Copy Delete	6	19	25	16-10-23	16-11-23	2023-10-16 23:31:48
Edit Copy Delete	7	19	23	16-10-23	16-11-23	2023-10-16 23:32:05
Edit Copy Delete	8	19	23	16-10-23		2023-10-17 00:09:14
Edit Copy Delete	9	19	23	16-10-23		2023-10-17 00:09:27
Edit Copy Delete	10	1	22	16-11-23	16-11-23	2023-11-16 20:19:34
Edit Copy Delete	11	18	22	16-11-23	16-11-23	2023-11-16 20:20:48
Edit Copy Delete	12	18	22	16-11-23		2023-11-16 20:23:09
Edit Copy Delete	13	18	22	16-11-23	03-01-24	2023-11-16 20:23:57
Edit Copy Delete	14	21	23	06-12-23	06-12-23	2023-12-06 20:30:45
Edit Copy Delete	15	1	26	06-01-24		2024-01-06 20:47:26
Edit Copy Delete	16	1	30	06-01-24		2024-01-06 20:47:42
Edit Copy Delete	17	20	27	06-01-24		2024-01-06 20:47:55
Edit Copy Delete	18	20	31	06-01-24		2024-01-06 20:48:07
Edit Copy Delete	19	18	27	06-01-24		2024-01-06 20:49:31

Figure 5.5: Issue Books Data

CHAPTER 6

IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY

6.1 Impact on Society

The design of my project reflects its user-friendliness. In all cases, it is more suitable for student community systems. This web application's use has positive effects on society. Librarians can organize all the library materials very easily and effectively. All the data will be stored on the server; that's why it is accessible anywhere an internet connection is available. This type of activity can improve one's employability and professional development.

6.2 Impact on the Environment

No environmental harm is caused by it. The amount of paperwork and hard copies will decrease by offering a standardized platform for an online library management portal. Because of its design, there is very little to no paperwork, which helps to control property waste. We've also been trying to put a strong focus on not causing any harm to the environment. However, there may be issues if, for example, the servers that these websites use to store and transfer their data need a lot of energy.

6.3 Ethical Aspects

The web portal does not violate ethical law. This project is suitable for many different types of people and communities worldwide. This web project stands firmly on the ground of ethical law.

6.4 Sustainability Plan

Most sustainability theories consider social equality as well as economic progress. Its purpose is to maintain balance in the economy, society, and environment. High

sustainability has been the project's long-term goal from the beginning. Modern technology has made it possible to use some of the features of this project. There is more sustainability and utility in this project. It is simple to edit in any format you need.

1. Energy Efficiency:

- Use energy-saving devices like power management programs, LED lighting, and renewable energy sources.
- Reduce the requirement for physical servers and other infrastructure by utilizing cloud-based services.
- Make the website as energy-efficient as possible.

2. Waste Reduction:

- Make use of digital resources to cut expenses on paper and printing.
- When possible, reuse materials; when recycling is required, do so.

3. Social Responsibility:

- Donations and volunteer activities help to support local communities and charities.
- Employ fair labor practices and offer employees a living wage.

CHAPTER 7

Conclusion and Future Scope

7.1 Conclusion

Today, everyone is so busy with their everyday lives that they don't have enough time to go searching for their books in the library to know if they are available or not. Additionally, this website helps students send requests to librarians for their needed books in quantity. Librarians can also organize the library resource records and materials so nicely. It reduces paper work; that's why it has a good impact on the environment compared to the traditional library management system. With the help of this application, the stock information will be automatically updated after the book add, issue, and return operations. Because of its simple and easy user interface, librarians don't need a lot of experience to operate the system. Additionally, it provides convenience, affordability, and access to a wide variety of materials that may not be easily available in traditional bookstores. It provides an opportunity for anyone to access materials quickly and easily, without the need to travel to a physical book library. Furthermore, it saves both time and money.

7.2 Future Plan:

- More sections will be added to our website over time.
- We will release an Android application on our website.
- A system for rating will be implemented.
- We will have an online chat system.
- Advanced Service Provisioning.
- Personalization Using Improved Data Analytics.

APPENDICES

Login Code

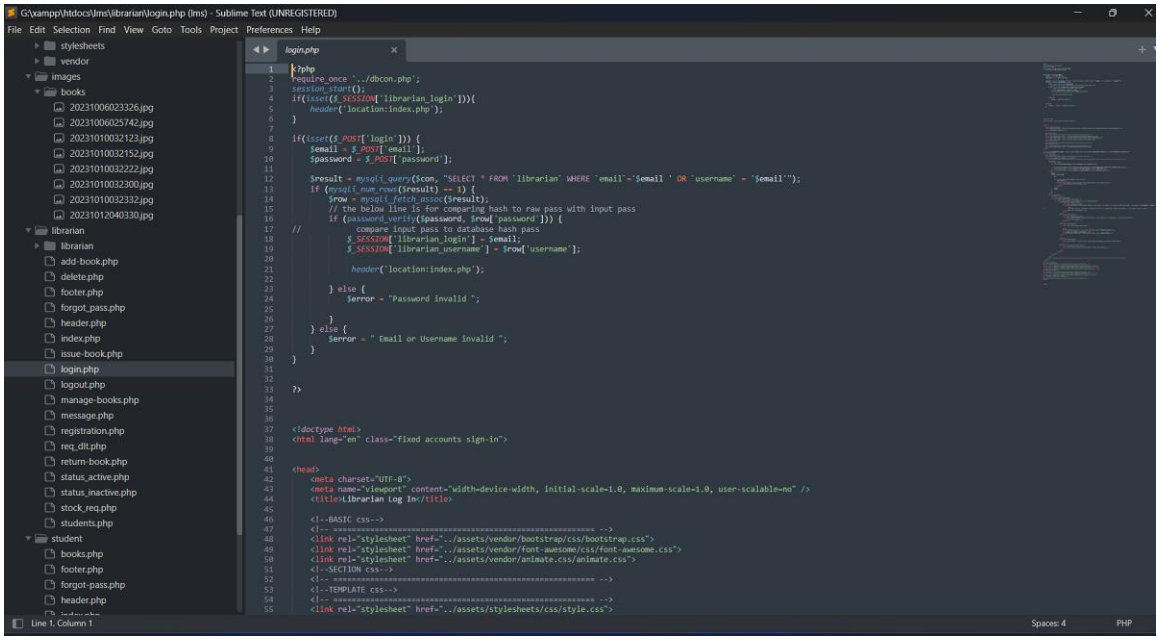


Figure:A1: Librarian Login Code1

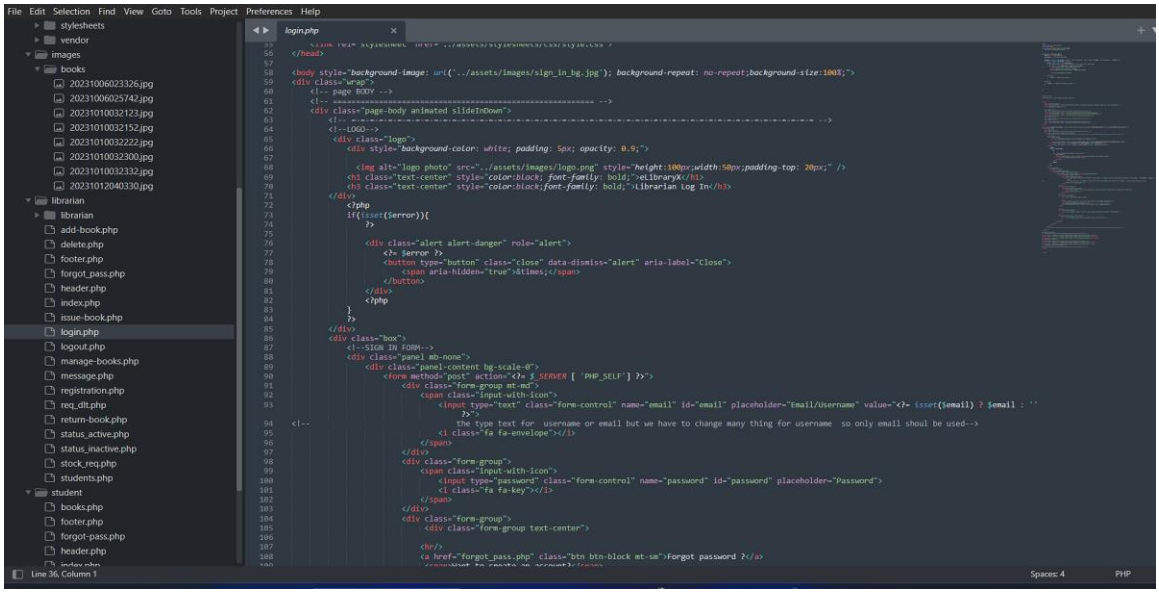


Figure:B2: Librarian Login Code2

Sign IN Code

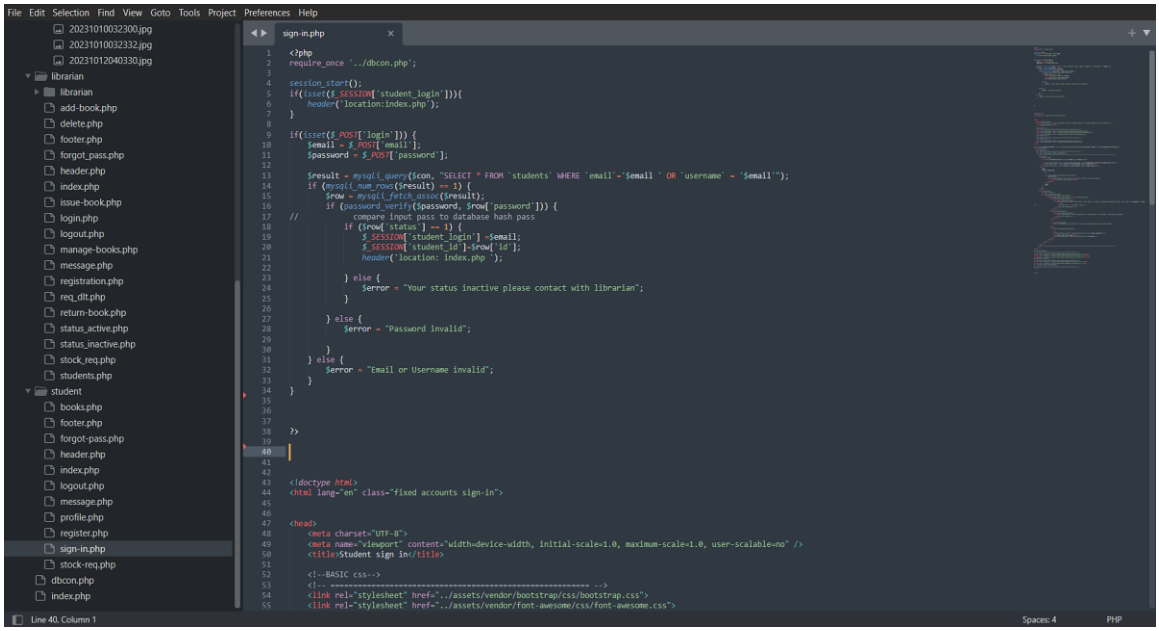


Figure:C3: Student Sign In Code1

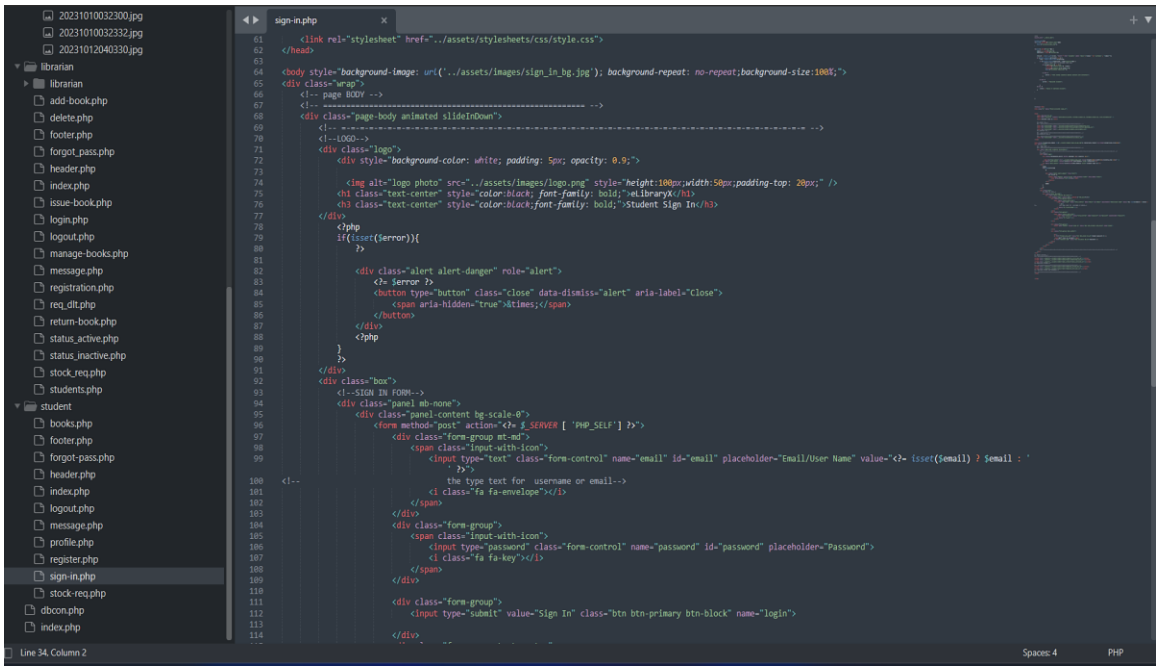


Figure:D4: Student Sign In Code2

References

[1] I. U. B. Libraries, “Indiana University Libraries,” Indiana University, https://libraries.indiana.edu/ (accessed Jan. 17, 2024).

[2] “Daffodil International University,” Library, https://library.daffodilvarsity.edu.bd/ (accessed Jan. 17, 2024).

[3] “Off-campus access to eresources ,” Dhaka University Library, http://www.library.du.ac.bd/ (accessed Jan. 17, 2024).

[4] “Home,” NSU Library, https://library.northsouth.edu/ (accessed Jan. 17, 2024).

[5] “Self-guided demo - apollo LSP for public libraries - ARTEMIS ILS for Schools,” Biblionix, https://www.biblionix.com/selfguideddemo/ (accessed Jan. 17, 2024).

[6] “PHP admin panel #1: How to download admin template and setup files in PHP in Hindi,” YouTube, https://www.youtube.com/watch?v=UgcvvS7yMpA&list=PLGqfsP66Ztnyu5_GyTGT7OakHCYxcIWOx (accessed Jan. 17, 2024).

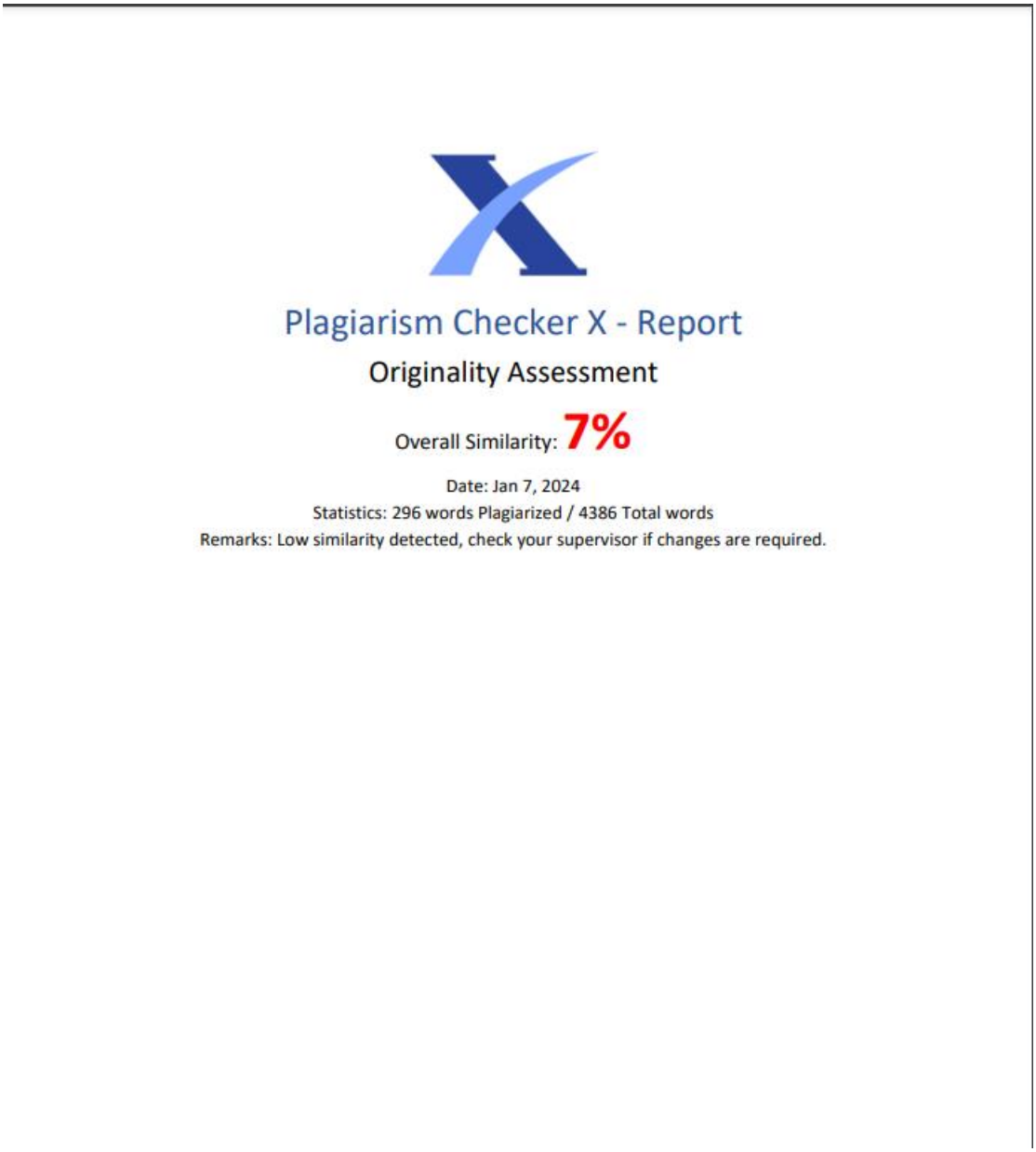
[7] “Where developers learn, share, & build careers,” Stack Overflow, https://stackoverflow.com/ (accessed Jan. 17, 2024).

[8] “Helsinki - responsive Admin Template,” ThemeForest, https://themeforest.net/item/helsinki/18871245 (accessed Jan. 17, 2024).

[9] “Learn to code,” W3Schools Online Web Tutorials, https://www.w3schools.com/ (accessed Jan. 17, 2024).

[10] J. T. Mark Otto, “Bootstrap,” Bootstrap · The most popular HTML, CSS, and JS library in the world., https://getbootstrap.com/ (accessed Jan. 17, 2024).

PLAGIARISM REPORT



Plagiarism Checker X - Report

Originality Assessment

Overall Similarity: **7%**

Date: Jan 7, 2024

Statistics: 296 words Plagiarized / 4386 Total words

Remarks: Low similarity detected, check your supervisor if changes are required.

Sources

1	https://123dok.com/bd/docs/entire-course-daffodil-international-university-discuss-completing-course.10926386 INTERNET 3%
2	https://elearn.daffodilvarsity.edu.bd/course/view.php?id=11840 INTERNET 1%
3	http://dspace.daffodilvarsity.edu.bd:8080/bitstream/handle/123456789/8608/181-15-11196.pdf?sequence=1 INTERNET <1%
4	http://dspace.daffodilvarsity.edu.bd:8080/bitstream/handle/123456789/10129/22769.pdf?sequence=1 INTERNET <1%
5	https://www.researchgate.net/publication/336568141_CUSTOMER_RELATIONSHIP_MANAGEMENT INTERNET <1%
6	https://documents.pub/document/chapter-7-conclusion-and-future-scope-chapter-7-conclusion-and-future-scope-71.html INTERNET <1%
7	http://dspace.daffodilvarsity.edu.bd:8080/bitstream/handle/123456789/8306/171-15-9424.pdf?sequence=1 INTERNET <1%
8	https://en.wikipedia.org/wiki/Look_and_feel INTERNET <1%
9	https://medium.com/@solutions.cakiweb/revolutionizing-libraries-the-online-library-management-system-4ac872c13849 INTERNET <1%
10	https://shivam-sinha.medium.com/design-a-library-management-system-5f178e4ce3ce INTERNET <1%
11	https://community.neo4j.com/t/password-has-been-changed/14419 INTERNET <1%
12	https://faculty.daffodilvarsity.edu.bd/profile/cse/fabliha.html INTERNET <1%
13	https://www.lambdatest.com/learning-hub/security-testing INTERNET <1%