**SOFTWARE CONSTRUCTION AND DEVELOPMENT**

**Software Requirement Specification Document**

***Library Management System***

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1. **Introduction:**

With the increase in the number of readers, better management of the library system is required. The goal of the library management system is to enhance the administration of libraries in a city or community. What if you could check online to see if a book is available at the library? or you can read the plot or summary of the books available. Librarians now have all the tasks automated and with a click of a some buttons they can perform the tasks in seconds which would require much time doing manually.

**1.1 Purpose**

The major goal of this project is to maintain a simple system for both librarians and students to borrow books from libraries, to issue books using id, to search for and reserve any book from all available libraries, and to keep track of user information (id, Batch, Department , phone number). The user can however check out all of all the features that’s available for Student Portal.

**1.2 Document Conventions**

The conventions and acronyms used in this work are listed below.

* **User**: A general login id assigned to most users
* **Client**: Intended users for the software
* **Admin**: In charge of the admin module
* **Interface**: Something used to communicate across different mediums

**1.3 Intended Audience and Reading Suggestions**

The intended audiences for this document are:

The team members of Library Management system and the Project

supervisors Ma'am Abeeha Sattar, Ma'am Nida Munawar

**1.4 Product Scope:**

**Justification of the project:**

This project primarily involves converting the manual library system into an internet-based application so that users can learn more about their accounts and the books that are now available.

Project Characteristics and Requirements:

* Search Features.
* Checking the availability of Books.
* Print Library Cards of each students.
* Show Summary of the books.
* Delete, Update Books and Student details From Database.
* Insert Book and Student details in Database.
* Secured Database.
* User Tracking.
* Issuing of books to students and maintaining the records.
* Returning of books issued by the students.

1. **OVERALL DESCRIPTION**

**2.1 Project Perspective**

This system will provide a search functionality to facilitate the search of resources. This search will be based on a number of categories, and users can look up a book by book’s name, author's name or book ID. Moreover, the library staff members have the authority to add, update, and remove books as well as resource users from the system.

The system will also have multiple Admins (Librarians), who has full fledged rights with regards to managing resources. The users can now view the number of available books and information about their account etc.

**2.2 Product Features**

There are two different users who will be using this product:

* Student of the university who will be accessing the library online
* Librarian who will be acting as the administrator

The system will be used in two different perspectives.

One for the user Student who will be issuing the books from the library after adding his details and the second one will be the librarian who will be acting as an administrator.

The main features of our library management system for the students :

* Students/Users can view the different categories of books available in the Library.
* Students can own his account in the management system.
* Students can print his library card containing their personal details as well as the details of the books that have issued.
* The user can read the summary just by clicking on a particular book so that he may get a better idea about the book.
* The user can search for a particular book.
* The user can see all the books issued on his id.

Main features of the system for admin are

* A librarian can issue a book to student.
* He can view all the books available in the library.
* Admin can delete or update the information in the database
* He can delete, update and insert the books and user’s details
* He can access the accounts of students.
* He can put charges on the students if they returns a damaged book.
* He can edit the information of the existing book
* He can issue a book to a students on the students id and keep record of it in the database.
* He can return a book for the students and ask for the payment of charges in case the book is damaged or the return date has passed.

**2.3 Operating Environment :**

Our system is executable and operable in any environment that supports web browser. The only requirement for using this system is internet connections.

## **2.4 Assumptions and Dependencies**

The product needs the following third party product:

* Mysql Workbench to store the database.
* Eclipse to develop the Product.
* Tomcat server.

This is in case the system is not hosted. After it has been hosted, it only requires web browser and a connection.

## **2.5 Design and Implementation Constraints**

The Product is developed using Eclipse IDE having tomcat installation and server running which all the required libraries. To store data in back-end, MySQL workbench is used to create the schema and make tables.

# **3. System Features**

**3.1. Database Storage**

The proposed database is designed to hold, retrieve, update, and otherwise handle data, such as

* Book details
* Student Details
* Admin Username and Password.
* Issue details.

**3.2. Functional Requirements:**

* R1 : login
* R2 : Add new Books
* R3 : Author New Students
* R4 : View Registered Students
* R5 : View All Books
* R6 : Remove Students
* R7 : Delete Books
* R8 : Return Book
* R9 : Issue Book
* R10 : View Book Summary
* R11 : Print Library card
* R12 : Update Books
* R13 : Update Students
* R14 : Search Books
* R15 : Search Students

## **4. Non Functional Requirements**

# **4.1 Performance Requirements**

The proposed system, which we have created, will be utilized in the institution to communicate with faculty members and students. As a result, it is anticipated that the database will functionally meet all of the standards set forth by the university.

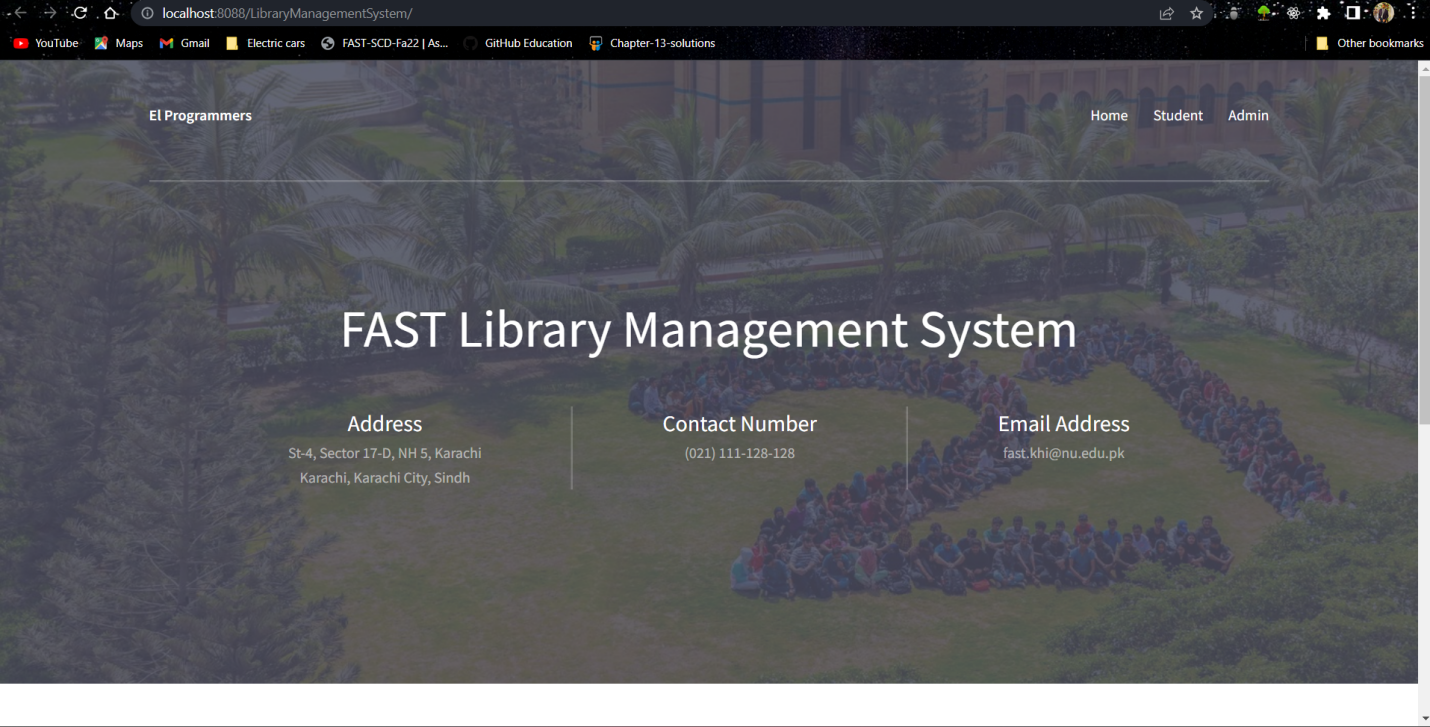
**4.2 Security Requirements**

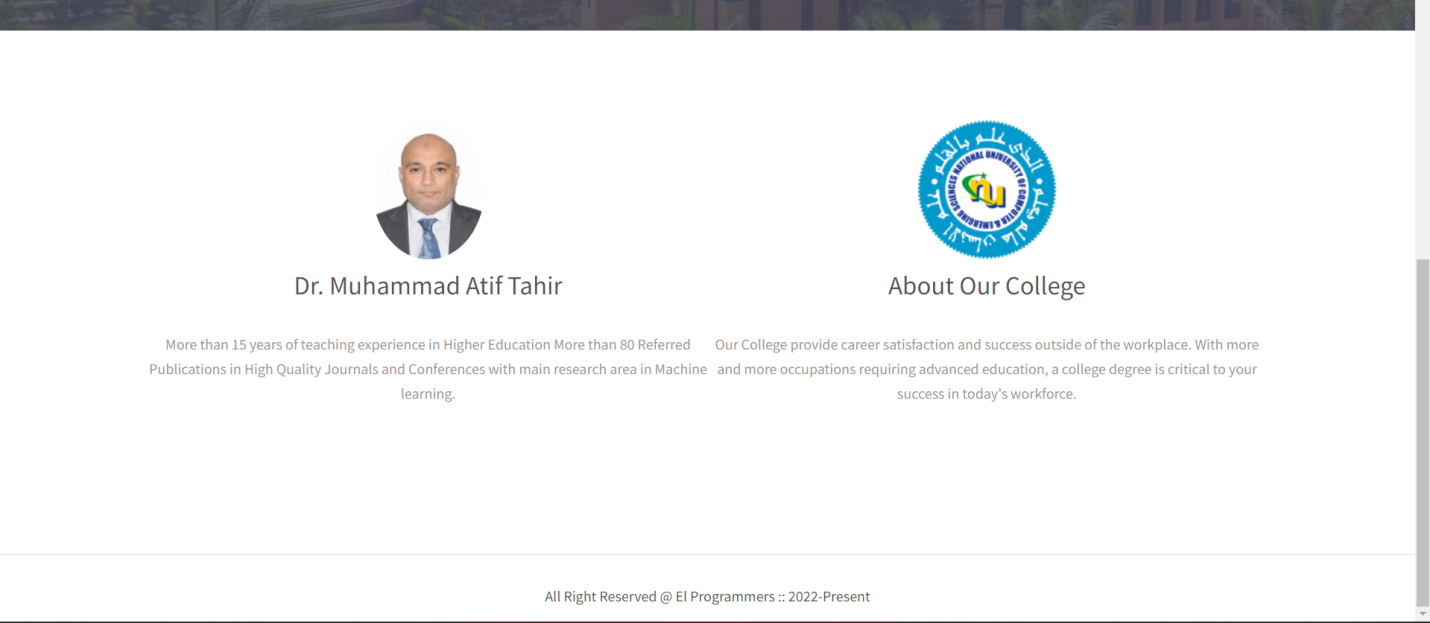
We have created a secure database. There are numerous two types of users, including students and librarians. Access privileges are determined based on the type of user. It indicates that if a user has administrative privileges, he or she may edit, delete, or add data. All other users, except library employees, are only permitted to retrieve database information.

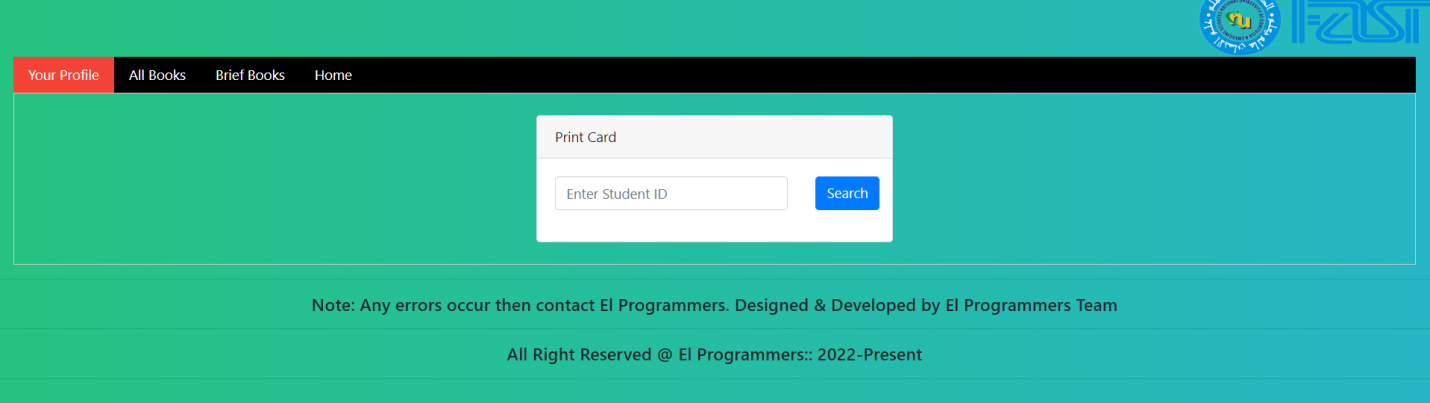
**4.3 Software Quality Attributes**

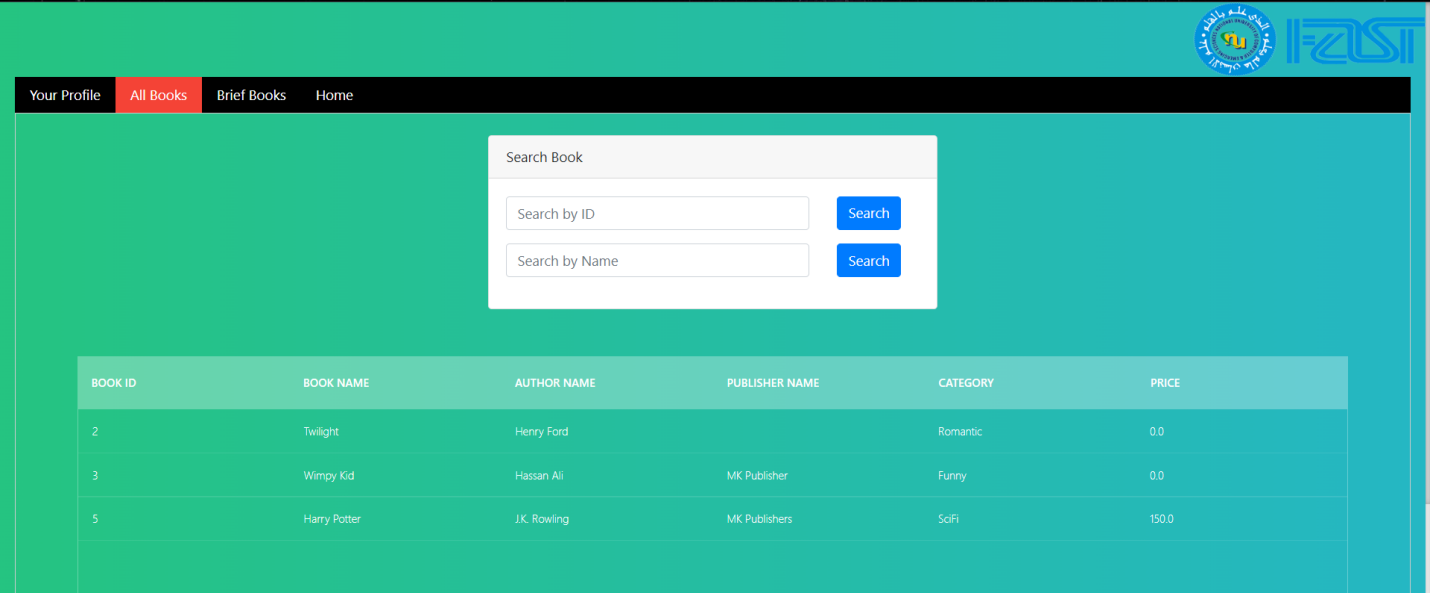
The Quality of the database is maintained in such a way so that it can be very user friendly to all the users of the database

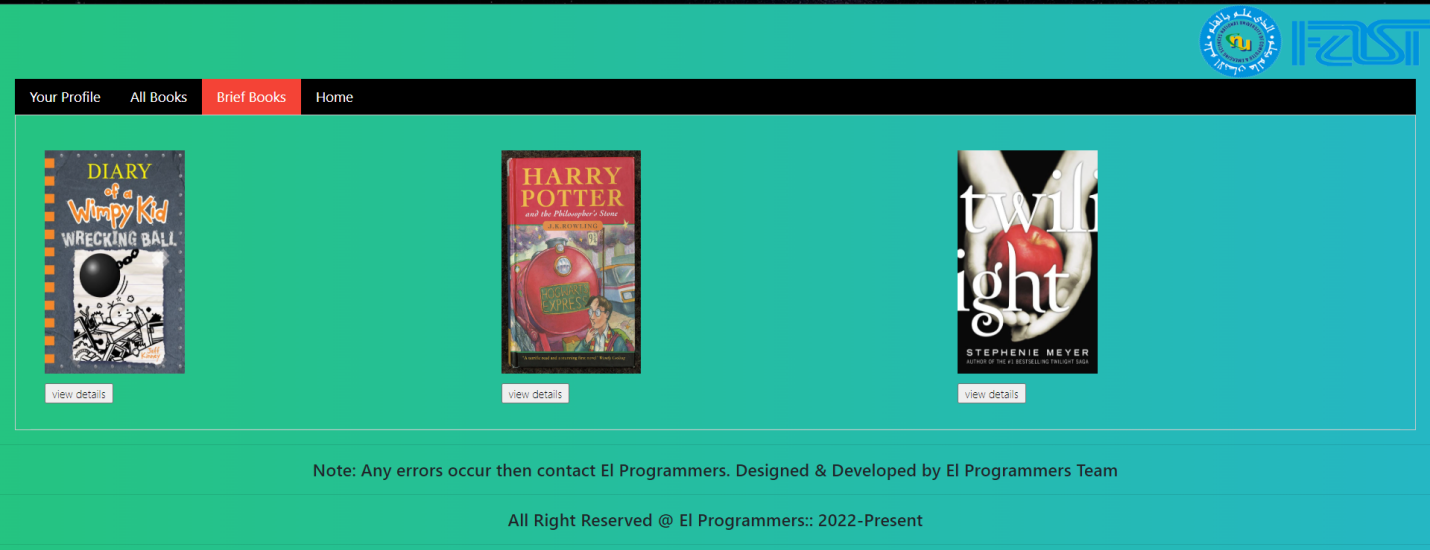
**5. Visual Representation**

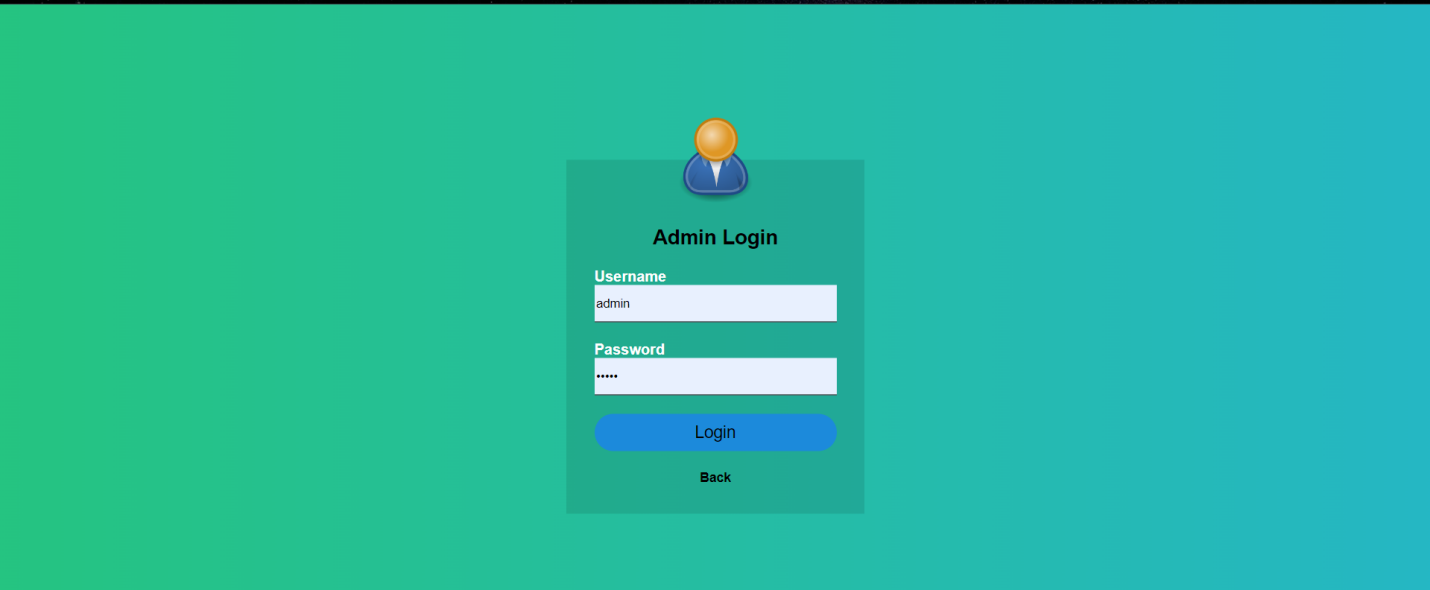
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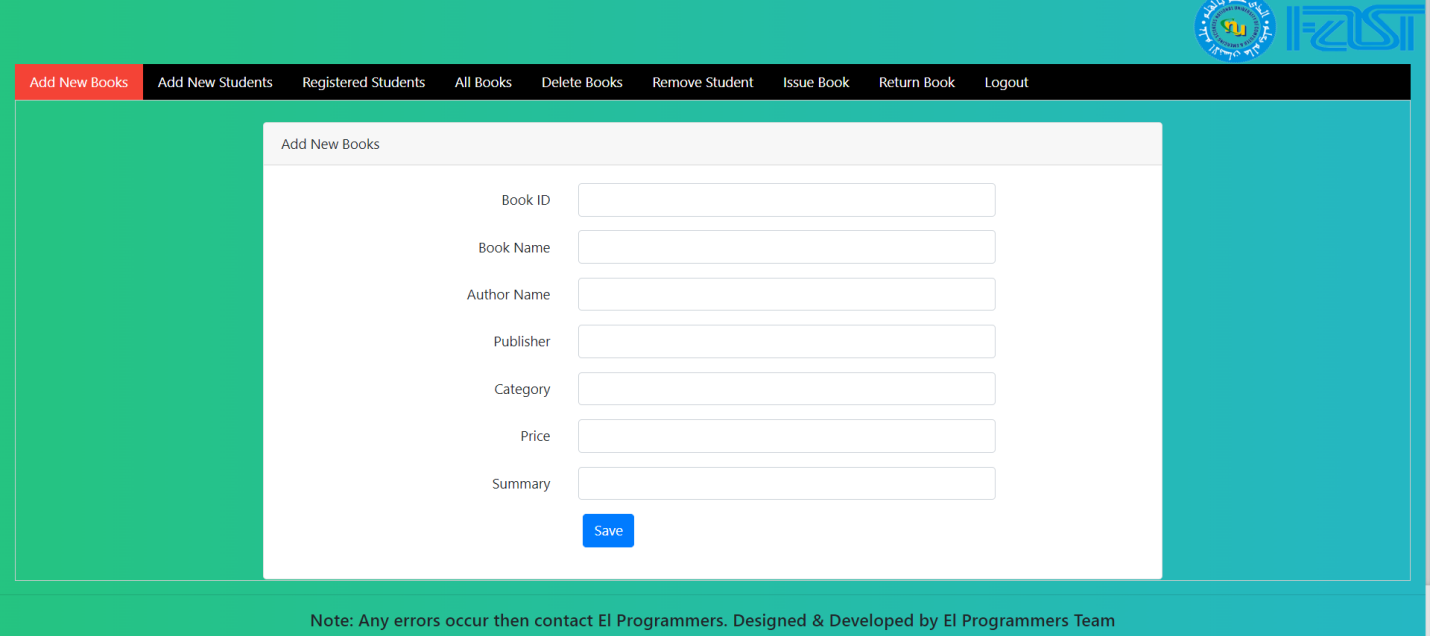
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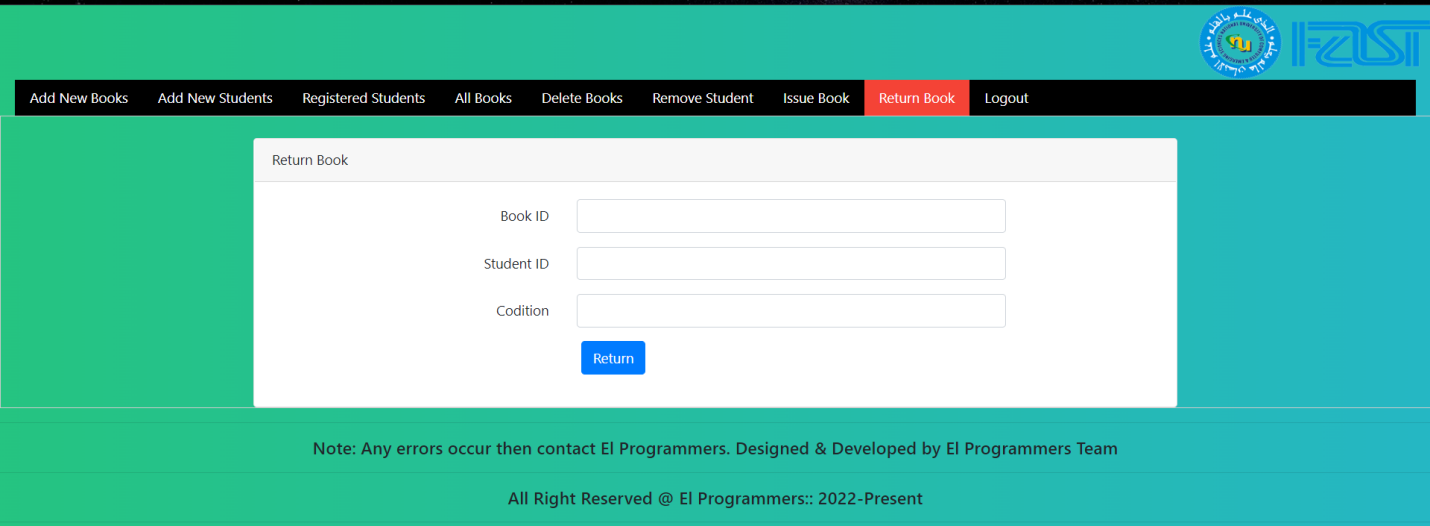
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