Abstract: The goal of this project is to streamline library operations, enhance user experience, and improve overall efficiency. This includes organizing library materials effectively, simplifying the borrowing and returning of items, providing accurate and accessible information to members and facilitating administrative tasks such as inventory management and reporting. Ultimately, the Library Management System aims to optimize resource utilization, save time for both library staff and members and ensure the smooth functioning of the library as a valuable information center.

Introduction: The Library Management System project arises from the pressing need to modernize and streamline library operations in an increasingly digital and fast-paced world. Libraries have long served as critical repositories of knowledge, offering a diverse range of resources to students, scholars and the general public. However, managing these resources, tracking their availability and ensuring efficient access has become a complex challenge. Traditional which is paper-based methods are no longer sufficient to meet the demands of today's libraries. Therefore, this project aims to develop a robust Library Management System which is named as '*The Codex Collection*' in our project addresses these challenges ultimately revolutionizing the way libraries operate and serve their communities.

The primary objective of '*The Codex Collection*' is to create a comprehensive, user-friendly and automated system that enhances the overall library experience for both members and librarians(admin). In essence, members can easily search, access and request library materials whether they are physical books or digital resources. This system will not only streamline the borrowing and returning of items but also enable members to reserve books and check if the book they want to reserve is accepted or denied by admin on their account status. Additionally, the system will support digital resource management and enable librarians to expand their digital collections and enhance accessibility. The librarian can issue the books to the members and if the return of the book is late there will be a manual fine system. The librarians won't have to take notes of the returning date of books were late or not.

In summary, this project seeks to transform traditional library management into a dynamic, efficient and user-centric process by creating a modern Library Management System that aligns with the evolving technological system in this changing world and also change in perspective of library members.

Objective:

- To streamline the process of tracking library materials to improve resource management and accessibility for members.
- To enhance user experience by providing a user-friendly interface for searching, borrowing and returning library items while making library services more efficient and user-centric.

Methodology:

- ➢ Admin (Librarian) Panel
- ➢ Member Panel
- ❑ **Admin Panel** : Responsibilities are to:

- ✓ Login as admin

- ✓ Checking members

- ✓ Add new books

- ✓ Check the availability of books

- ✓ Issue books to the members

- ✓ Give a return date to the members

- ✓ View or modify any information

- ❑ **Member Panel**: Responsibilities are to:

- ✓ Create account as new member

- ✓ Request to borrow book

- ✓ Borrow book

- ✓ Pay fine if not returned books in assigned date

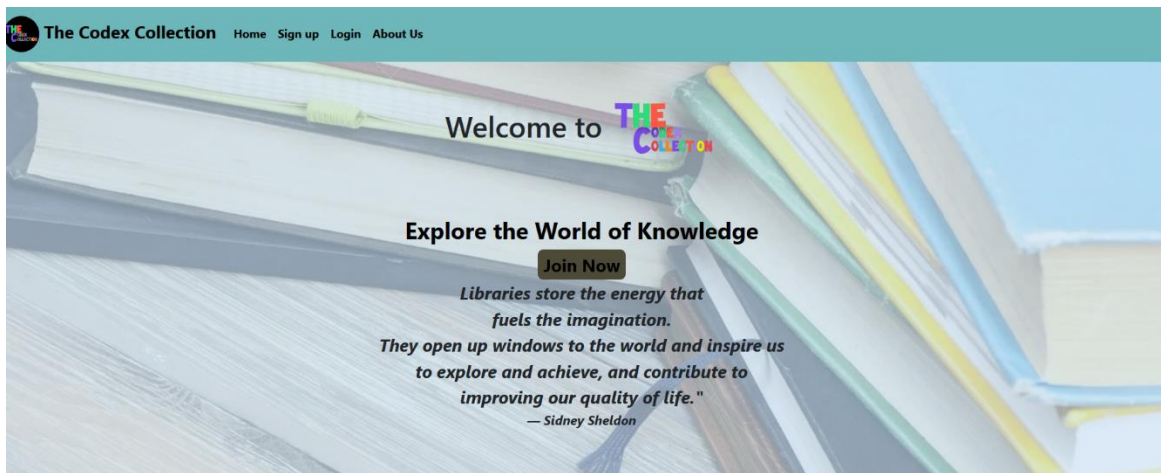- ✓ View the authorized information

Database design:
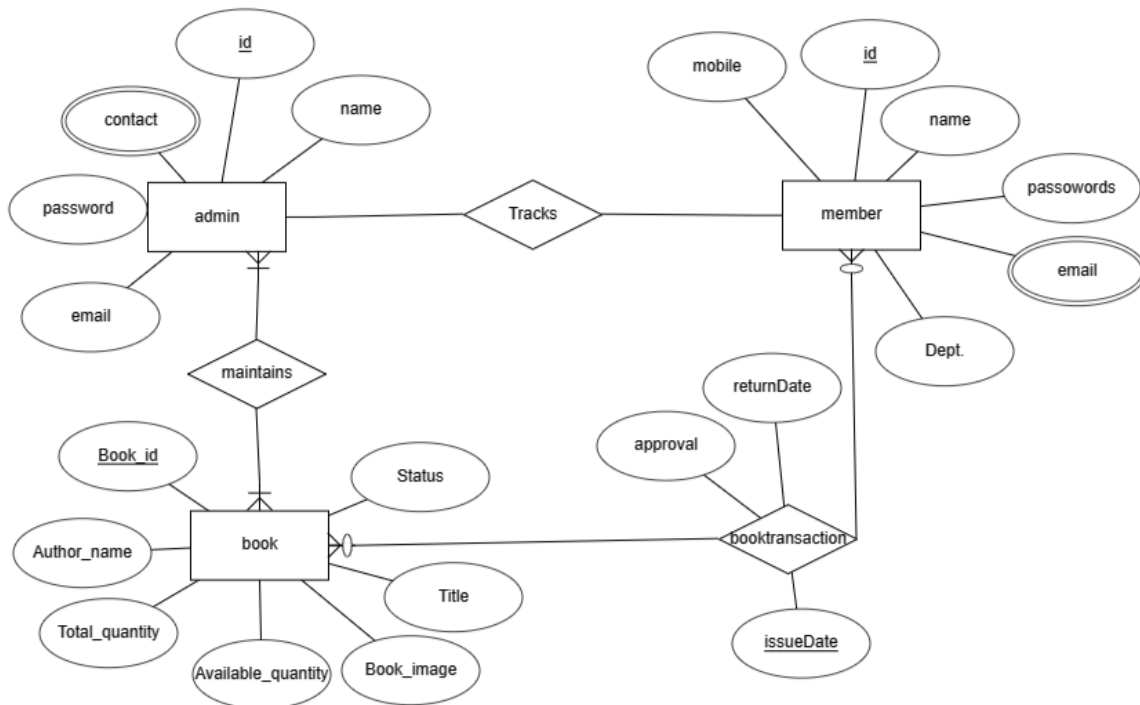
System Outputs:

Fig: Index page

This is the first page that will show after the website is loaded.
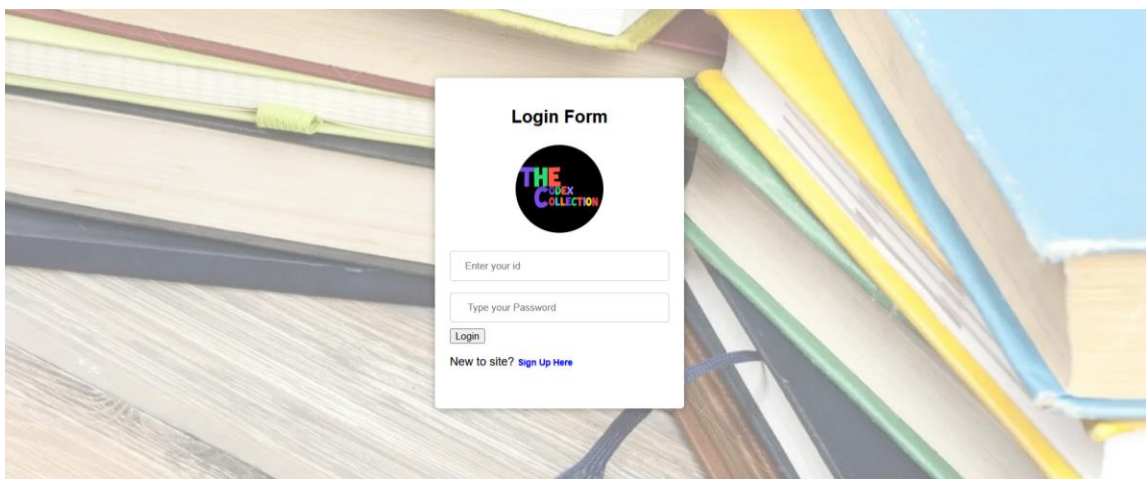
Fig: Login form for members/admin

Members and admins can login to the main home page for member/admin(librarian). They can do their required works after the login.
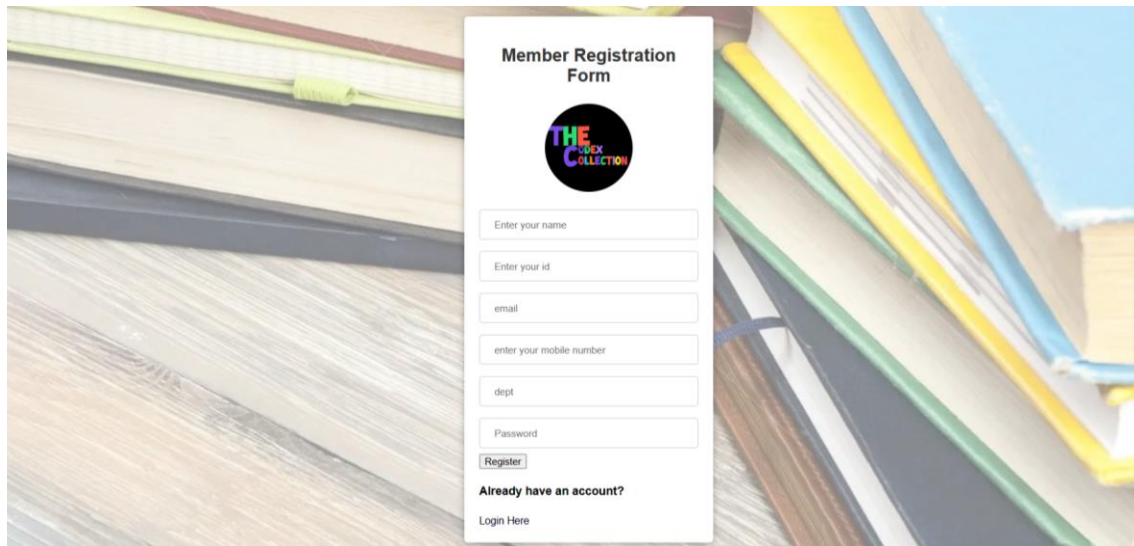
Fig: Member Registration form

If members didn't sign up beforehand, they can't login to their account. They have to signup to create an account.

Fig: Member Home page

Here members can see and can do the required works like changing the password or logout and book borrow, request related work. Now we will show the book borrow related work.

Fig: The list of book page

From this page member can search for books and request for books to be borrowed. They can just send request for the books. The admin will accept or deny the requested book after the request is made.

Fig: Requested book before approving book

Member can see if the requested book is accepted or not. If the request is accepted then the member can pick the book.

Fig: Admin After Login

Admin will see this page after login that how many members have joined the website. Admin can also change password or logout from the page from navigation bar. Admin can also issue book, book request, borrowed books and see book list from book drop down link. Now if a member requests a book it will show in book request section.

Fig: Book request page

Here, admin will see the requested book. Then admin will enter the requested bookid and memberid to accept the request. If a member has received same book before the approval will automatically denied.

Fig: Approve book page

The book will be approved in this page. Admin will approve or reject the request.

Fig: Requested book after approved

This will show after the admin approved the requested book. The issue date and return date will show here.

Fig: Borrowed books page

This page will show the list of borrowed books of the members.

Fig: Date Expiration page

This page will show if the member has returned the book before expire date or not. If a member did not return the book before expire date it will show here. If the member has returned the book after expire date admin can submit it as returned from the BOOK RETURN FORM.

Fig: Expired book returned

Conclusion: This project has successfully developed as a modern Library Management System that streamlines library operations and enhances member experiences and perspectives. This enables users to search, borrow and return items while also offering library staff control the issue date and return date of a book and automated fine system. It also aligns with the evolving needs of libraries in the 21st century where almost everything is automated.