



# LIBRARY MANAGEMENT SYSTEM

C PROGRAMMING & SQL  
DATABASE

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## Contents

No table of contents entries found.

INTRODUCTION.....	2
SignUp Page & Login Page.....	2
Home Page.....	3
Mainform.....	4
Testing & validation.....	5

## INTRODUCTION

The Library Management System is built using C# (.NET Framework) programming and a local SQL server (.mdf) database. It is a Windows Forms-based project.

The System is designed to allow both users and members to manage members, books and loans. Users need to register first by creating an account. Their credentials such as email, username and password are stored in a local database namely admin. The system also includes a simplified cart and checkout simulation for borrowing books.

## Sign Up Page & Login Page

Initially, users would be displayed with the login page. If the user already has an account in the Library Management System he can directly log in with the same username and password. Else he will be required to register to the system where his credentials will be stored in a local SQL database, admin.

## LOGIN PAGE



## SIGN UP PAGE

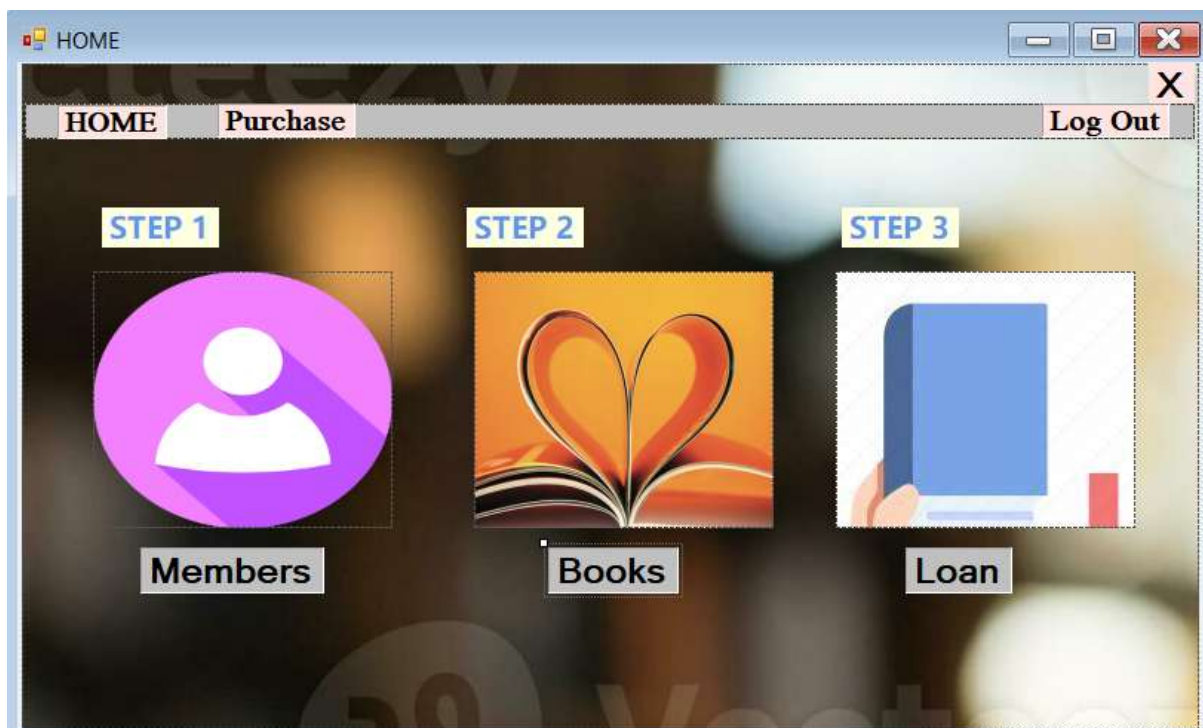


A screenshot of a web browser window titled "SignUp". The background image shows a curved staircase in a library. The page features the heading "Get Started!" in a large, white, serif font. Below the heading are three input fields: "Email Address", "Username", and "Password". To the right of the "Password" field is a checkbox labeled "Show Password". Below these fields is an orange button with the text "SIGN UP". At the bottom of the form, there is a link that says "Already have an account? Login".

## HOME PAGE

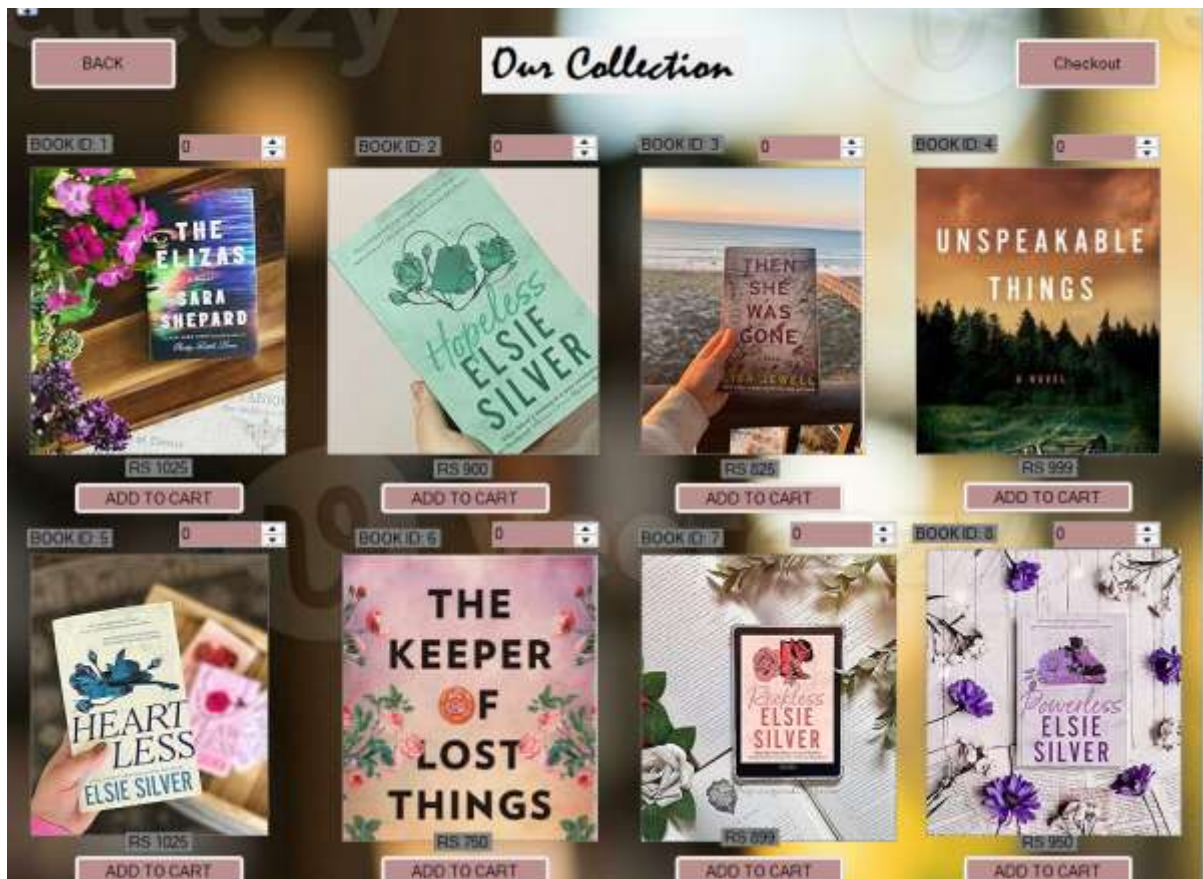
The Home Page allow users to navigate the different functionalities of the Library Management System such as Members, Books, Loan.

## HOME PAGE



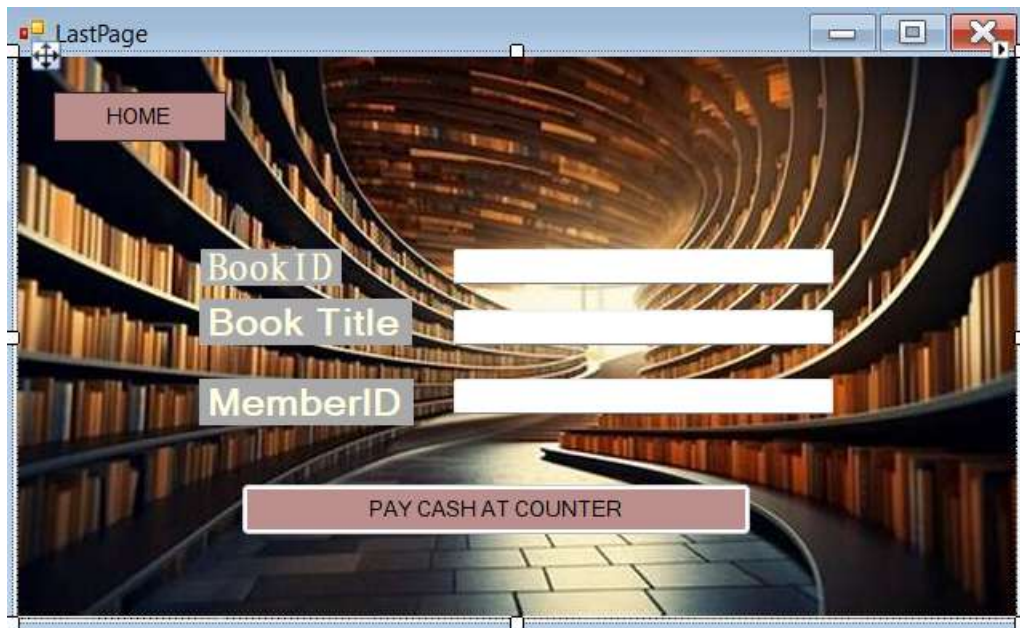
## MAINFORM

The main form allows users to navigate between the different books available to purchase or rent.



Upon pressing the checkout button users are automatically redirected to the checkout page where he can purchase the books selected using the Book ID.





## DATABASE STRUCTURE

Memberstbl – stores MemberId, MemberName, ContactNo

Bookstbl – stores BookID, Book Title, Author, Genre, Year

Loantbl – stores BookID, BookTitle, MemberID, MemberName, LoanDate, DueDate

admin – stores user login credentials

## Testing & Validation

**Empty field checks** prevent incomplete form submissions

**Book ID check** ensures only values between 1–8 are accepted

**Member ID existence** is verified before issuing a loan

**DataGridView** displays database contents after every insert/update/delete

**Clear buttons** reset form fields for clean input