R-Books Project

By

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Centre for Development of Advanced Computing

Juhu

February 2020

CERTIFICATE

This is to certify that the project entitled **"RBooks"** is a bonafide work of **"Akash Chaudhari (200240520007**), **Amit Rathor** (**200240520015), Heena Khan (200240520037), Krishna Somwanshi(200240520043), Madhuri Wayal (200240520049) .** Submitted to C-DAC Mumbai in partial fulfillment of the requirement for the award of the Post Graduate Diploma in Advanced Computing.

Mr Satish Kumar
Supervisor/Guide

Mr Amit Kumar Upadhyay
Faculty Supervisor/Guide

Declaration

I declare that this written submission represents our ideas in our own words and where others' ideas or words have been included, we have adequately cited and referenced the original sources. We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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Date:

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Chapter 1

Introduction

The project R-Book is made to bring the customer on one platform for renting books. There are a lot of readers who love to read a book but there is an overhead of buying the book and maintaining the condition of it. Instead, why not we just rent the books out to the reader this will also make them valuable. On this platform, some libraries can rent out their collection of books and user can get it online from the comfort of their home.

1.1 Description

This project is a web application in which Admin user and libraries can register to where Main Admin will have to verify the libraries and enroll them in the system . The librarians will able to log in and update about their books which they wish to rent. The portal will provide information about the books , rate etc to the user. The user will be able to add books to the cart make payments just like in ecommerce websites

1.2 Problem Formulation

Rental Book System provides a solution to reduce and optimize these expenses. Authorized customers do not need to go to the actual shops to choose and bring the books it saves time and save human efforts. The customer can save lots of money of the actual book price. Also reusing books proves helpful to save nature. And would generate extra income for library

1.3 Motivation

From pure closed stacks of books to open stacks; from digital resources to e-collections - the concept of a library has evolved so much that today we have virtual users from anywhere using the service at anytime they wish. This sudden transformation has brought a pressing need on every library to exchange data and information across the digital library system automatically with help of which a user can select and rent a book

1.4 Scope

The software system being produced is called 'R-Books'. It is being produced for a customer interested in renting books via the Internet. This system is designed to "provide automation support" for the process of ordering books on rent. The R-Book system will allow any user to create an account to become a customer. The customer through the process of account creation will have the option to become a member of the site. The system will allow customers to browse, search, select and add books to a shopping cart. Then provided they have books in their shopping cart check out books in a shopping cart and decrement the stock that the inventory the system maintains. The system also allows a library to manage the inventory with full create, retrieve, update and delete functionality with regards to books in the system. Admin has authority to add, delete Library User grant permissions to members and users to rent books and in return is also responsible for generating mail messages for customer regarding book purchase transaction and delivery.

Chapter 2

Review of Literature

India's book market, currently worth Rs 261 billion making it the sixth largest in the world and the second largest of the English language ones, is expected to touch Rs 739 billion by 2020, says a survey.

"Nielsen India Book Market Report 2015: Understanding the India Book Market" was conducted in association with Association of Publishers in India (API) and the Federation of Indian Publishers (FPI) to evaluate the opportunities and challenges facing the industry, as well as where its future lies.

The study estimates a CAGR (compound annual growth rate) of 19.3 per cent for the industry in the next five years. However, the Indian book industry receives no direct investment from the government - "a serious roadblock for publishers," the report says.

Other challenges include the fragmented nature of publishing and bookselling, a tortuous distribution system; long credit cycles that make it difficult to manage cash flows, and increases in direct costs. Piracy is widespread, with virtually every street in the country home to stalls selling pirated texts.

The report, among other interesting facts, also highlights that India is the second largest English-language print book publisher in the world with over 9000 publishers. More than 70 per cent of publishers in India have digitised their content to produce e-book versions - smartphones and e-readers offer consumers opportunities to access digital content.

Further, books have emerged as an instrumental category for e-commerce business, accounting for 15 per cent of the overall e-commerce trade, just trailing behind electronics (34 per cent) and apparel and accessories (30 per cent).

The study said that "general and literary fiction" was ranked the #1 genre in the trade books segment while "test prep" was the most sought after genre in Academic books.

A survey of 2,000 consumers, representative of the urban population aged 18+ during the study provides deep insights into changing consumer preference for books in India.

The consumer data survey shows that on average people read books 2.1 times a week while nearly two-thirds read the book occasionally; interestingly, 56 per cent of the respondents bought at least one e-book a year and nearly half of these bought at least 3-4 e-books a year indicating a growing demand for digital books.

Fifty-five per cent of trade sales are of books in English. Books in Hindi account for 35 per cent of Indian language sales, but the largest share of these sales is taken by "Others," despite what the report identifies as a "highly disorganised" local publishing sector.

Here, both in trade and educational publishing, there is significant room for growth.

Estimated at over $2 billion, the books industry in India is growing at about 20%. Of the total industry, more than 10% makes for second hand books, estimates suggest.

Many websites have come up solely dedicated to selling second hand books. Among the popular names are madbooks.com, secondhandbooksindia.com. Even websites such asinfibeam.com, bookadda.com have started pilot projects and free applications that help people buy and sell second hand books.

Chapter 3

System Analysis

3.1 Functional Requirements

PROJECT MODULE (Functional Requirements):

1. **User Module (Store-Front Module)**
2. **Library Module**
3. **Admin Module**

USER MODULE

- user can login/logout to the system.
- Visit the website.
- browse books based on different genre , prize ,availability etc
- can add to cart, remove from cart,
- Place the order.
- Cancel the order.

LIBRARY MODULE

- This person can login/ logout
- see request of books from the user.
- approve request .

ADMIN PORTAL

- Admin can login to the system.
- Verify the library\user\books\payments information database.
- Generate price strategy.
- Handle the payment system
- Update delete information about library\user\books

3.2 Non-functional Requirements

3.2.1 Performance Requirements

The system should store all the database records of Books , prize, Library and the application should be available for use 24*7 through the server. Also, the application should be user friendly with a proper user interface which makes it easy for the user to understand. All the options should be present in properly accessible places for user convenience.

3.2.2 Safety Requirements

The system provides username and password to prevent the system from unauthorized access. The password must be greater than eight characters. The subsystem should provide a high level of security and integrity of the data held by the system, only authorized person can gain access ; and only users with valid password and username can login to view user's page..

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3.2.4 Software Quality Attributes

3.2.4.1 Availability

The system should always be available for access at 24 hours, 7 days a week. Also in the occurrence of any major system malfunctioning, the system should be available in 1 to 2 working days, so that business process is not severely affected**.**

3.2.4.2 Accessibility

The software will be accessible to admin, user and library employees.

3.2.4.3 Compatibility

The software will be compatible with multiple platforms.

3.2.4.4 Performance:

The system response time for every instruction conducted by the user must not exceed more than a minimum of 10 seconds. The system should have high performance rate when executing user's input and should be able to provide response within a short time span usually 50 second for highly complicated task and 20 to 25 seconds for less complicated task.

3.2.4.5 Effectiveness

Error should be considerably minimized and an appropriate error message that guides the user to recover from an error should be provided. Validation of user's input is highly essential. Also the standard time taken to recover from an error should be 15 to 20 seconds. 5.6 Ease of use: Considered the level of knowledge possessed by the users of this system, a simple but quality user interface should be developed to make it easy to understand and required less training.
in themselves, but they may imply certain functional requirements to enforce the rules.

3.2.4.6 Maintainability

The system should be easy to maintain. There should be a clear separation between the interface and the business logic code. There should be a clear separation between the data access objects that map the database and the business logic code.

3.2.4.7 Usability:

The system provides a help and support menu in all interfaces for the user to interact with the system. The user can use the system by reading help and support.

SYSTEM SPECIFICATION

Hardware Requirements:-

- Pentium-IV(Processor).
- 256 MB Ram
- 512 KB Cache Memory
- Hard disk 10 GB
- Microsoft Compatible 101 or more Key Board

Software Requirements: -

Language	: Java, Angular
Database	: SQL SERVER 2000,05
Web Server	: IIS
Operating System	: WINDOWS

Chapter 4

NUMBER OF MODULES

This project is divided into modules:

1. User Module
2. Library Module
3. Admin Module
4. Shopping Cart Module
5. Payment Module

Chapter 5

Analysis Modeling

DATA FLOW DIAGRAM

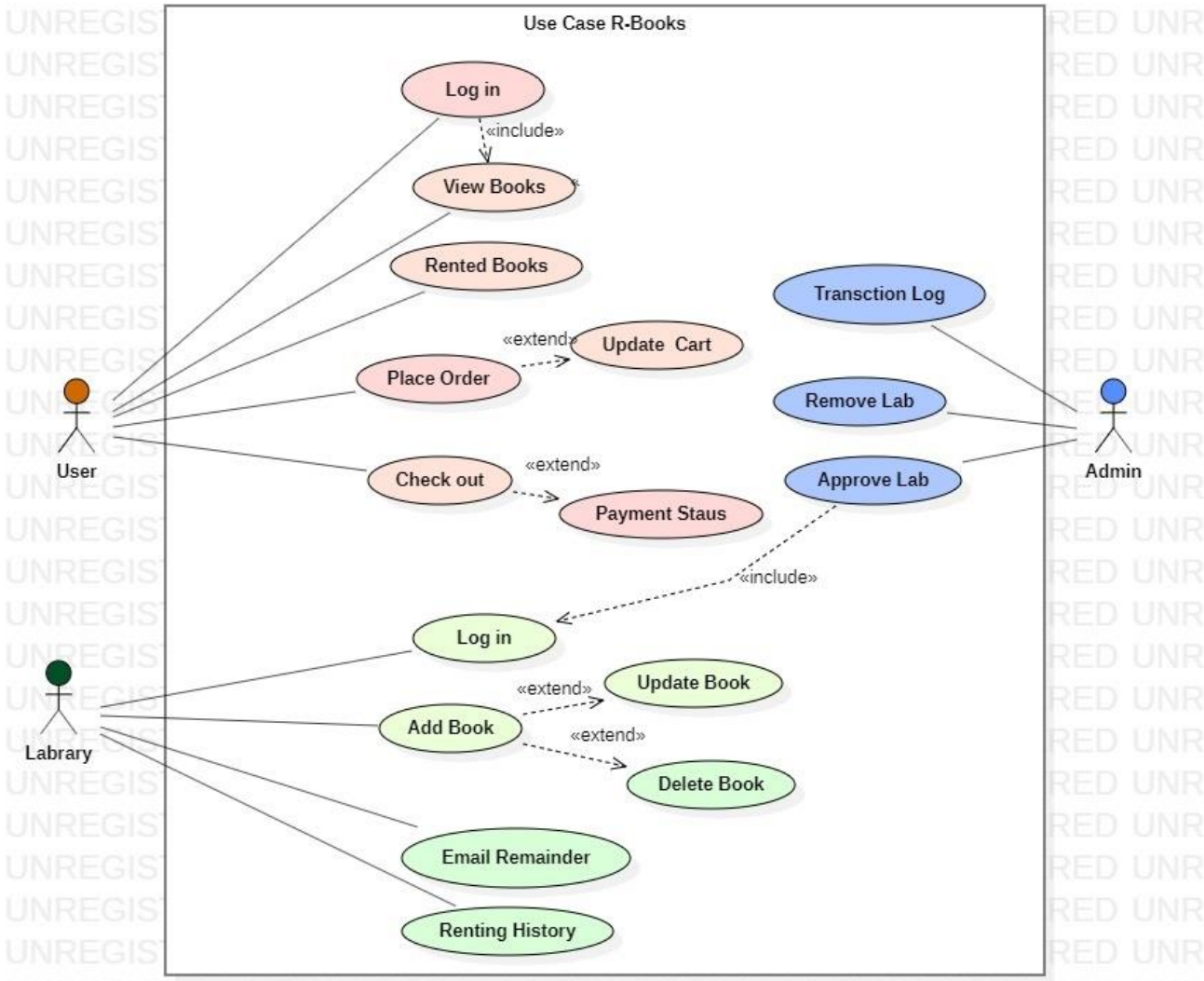
The DFD takes an input-process-output view of a system i.e. data objects flow into the software, are transformed by processing elements, and resultant data objects flow out of the software.

Data objects represented by labeled arrows and transformation are represented by circles also called as bubbles. DFD is presented in a hierarchical fashion i.e. the first data flow model represents the system as a whole. Subsequent DFD refine the context diagram (level 0 DFD), providing increasing details with each subsequent level.

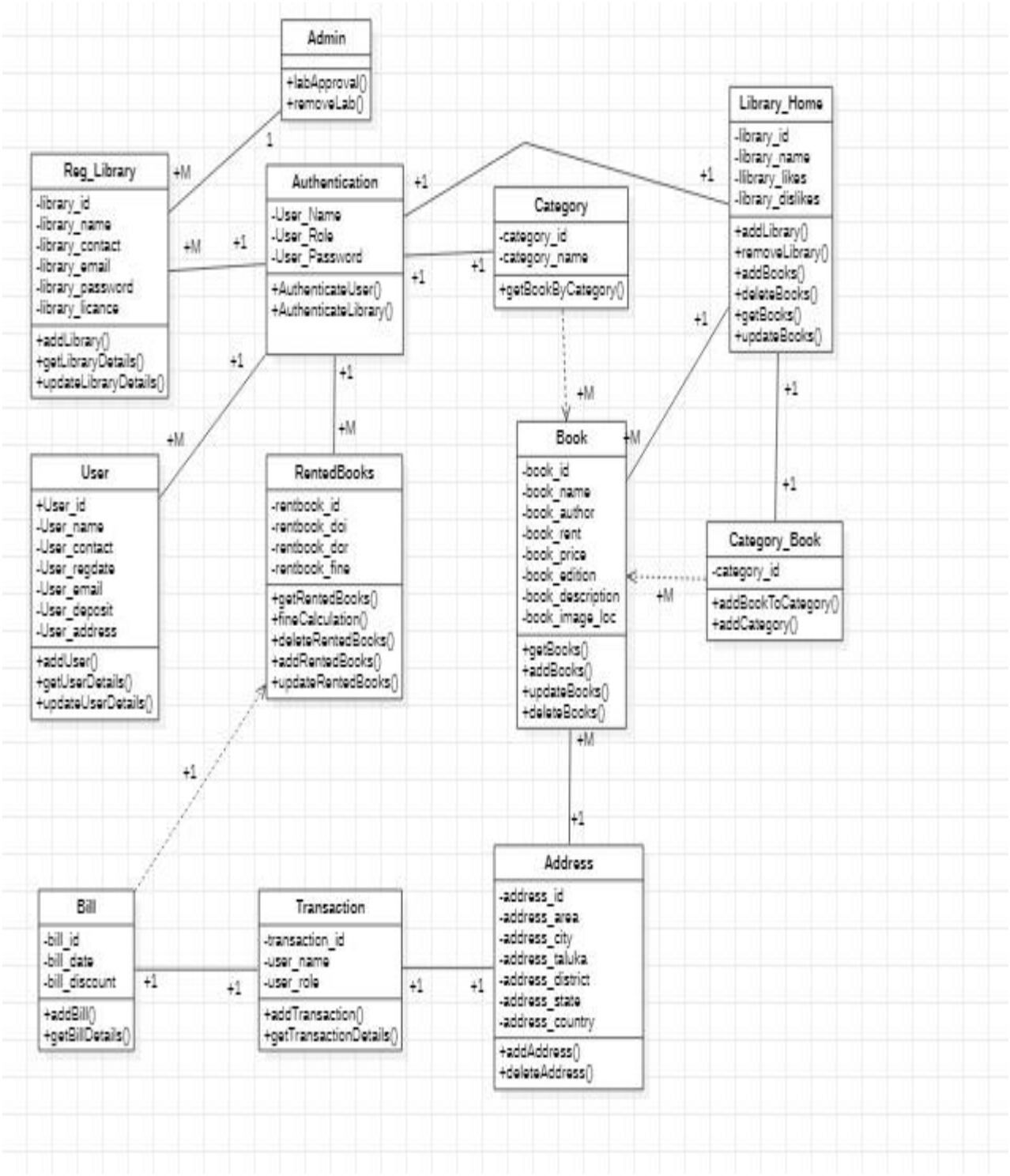
The DFD enables the software engineer to develop models of the information domain & functional domain at the same time. As the DFD is refined into greater levels of details, the analyst perform an implicit functional decomposition of the system. At the same time, the DFD refinement results in a corresponding refinement of the data as it moves through the process that embody the applications.

A context-level DFD for the system the primary external entities produce information for use by the system and consume information generated by the system. The labeled arrow represents data objects or object hierarchy

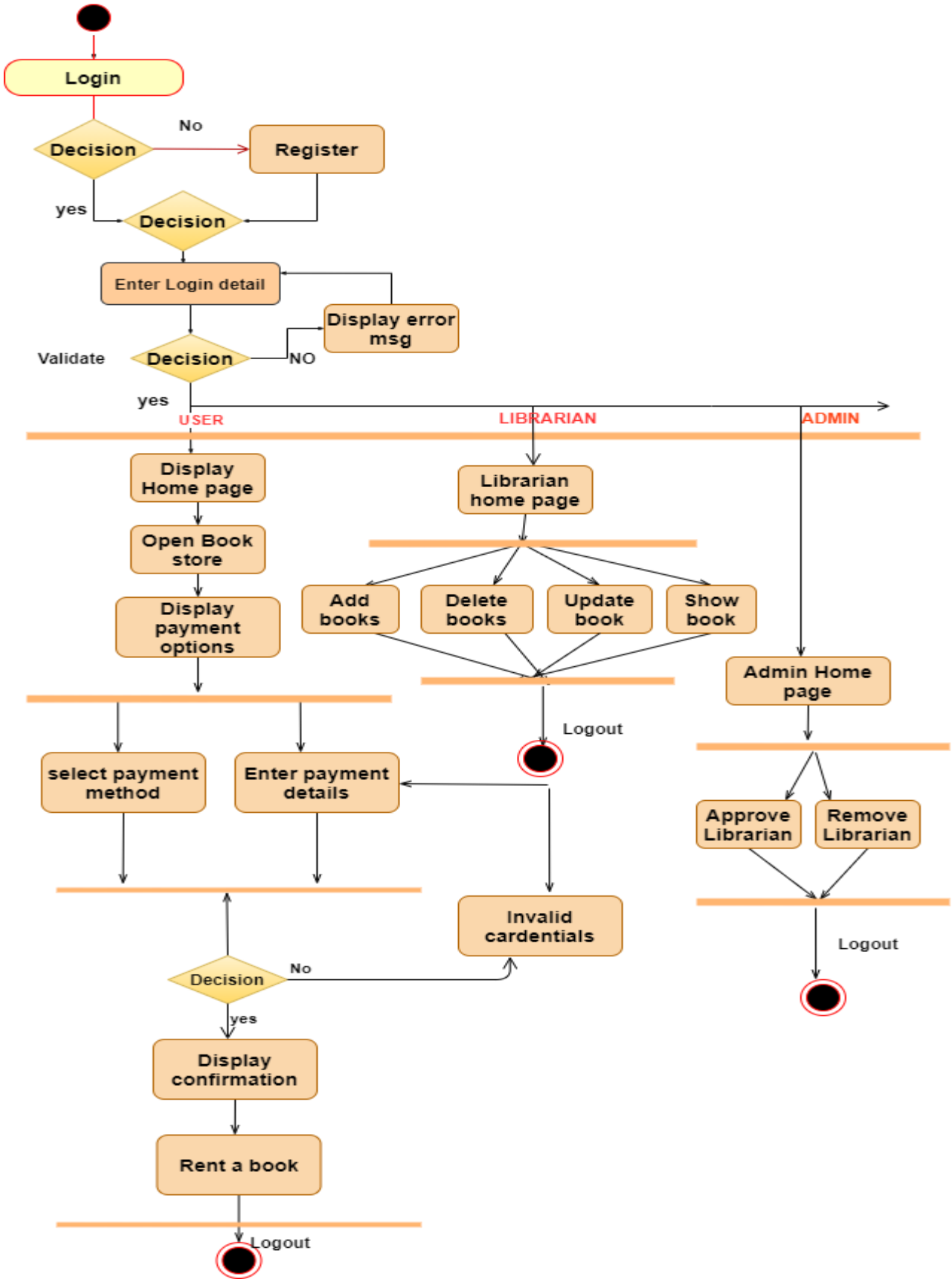
5.1 Use Case Diagram: -



5.2 Class Diagram

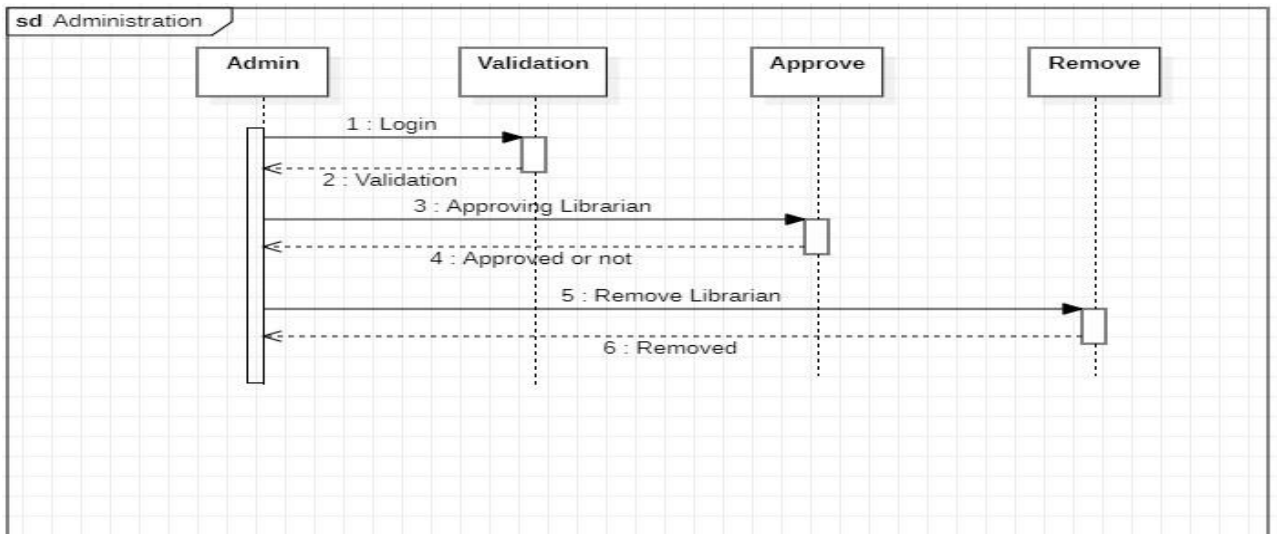


5.3 Activity Diagram

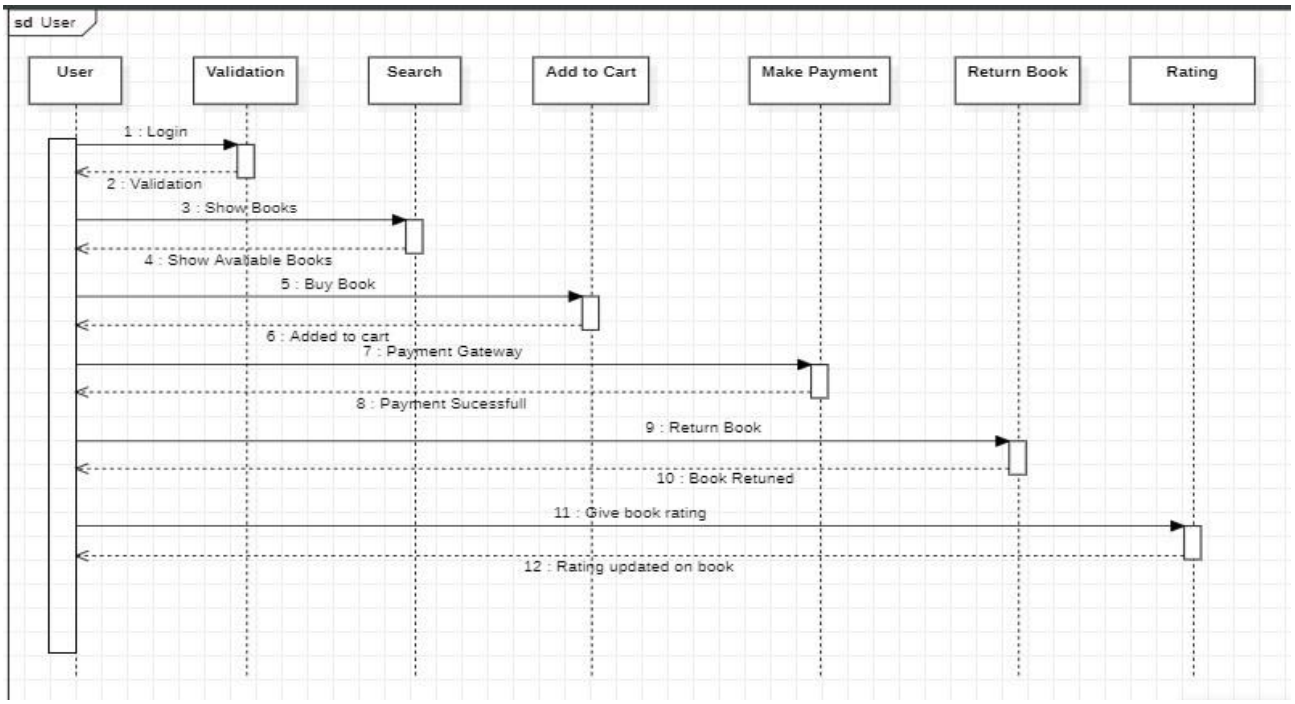


5.4 Sequence Diagram

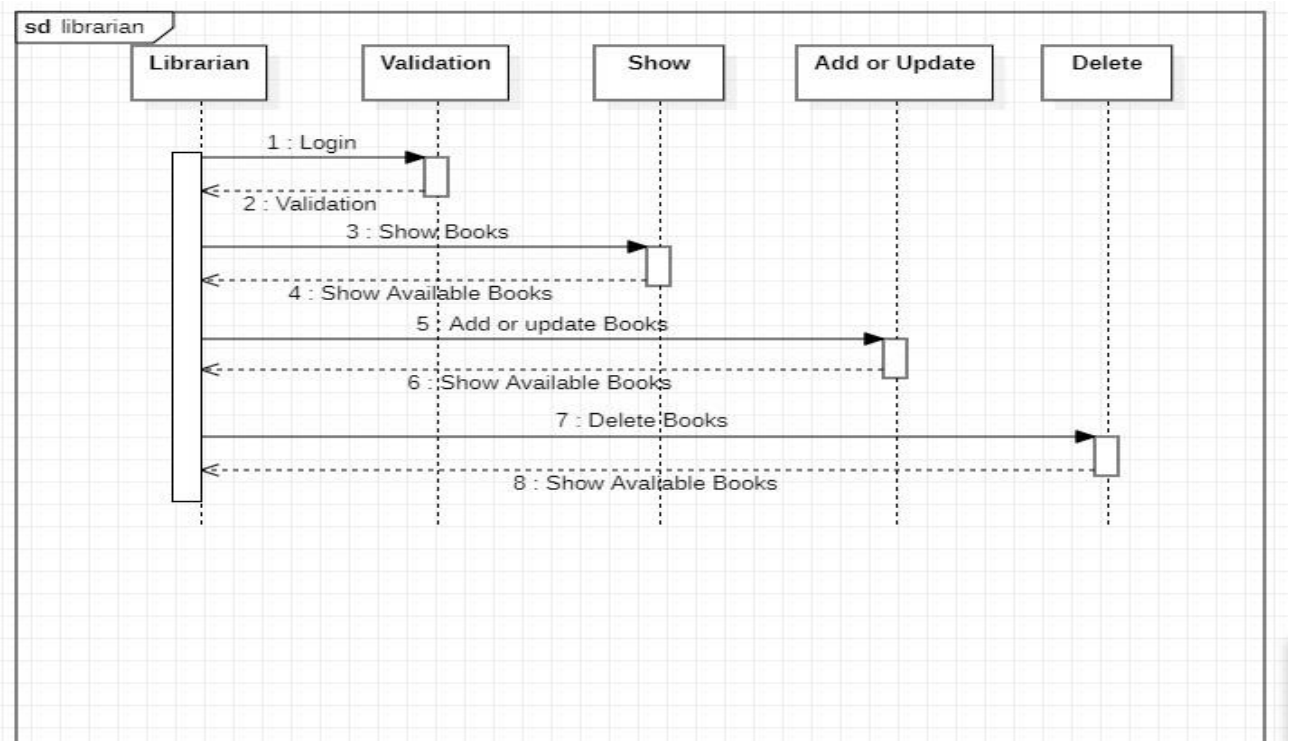
5.4.1 Admin Sequence Diagram



5.4.2 User Sequence Diagram

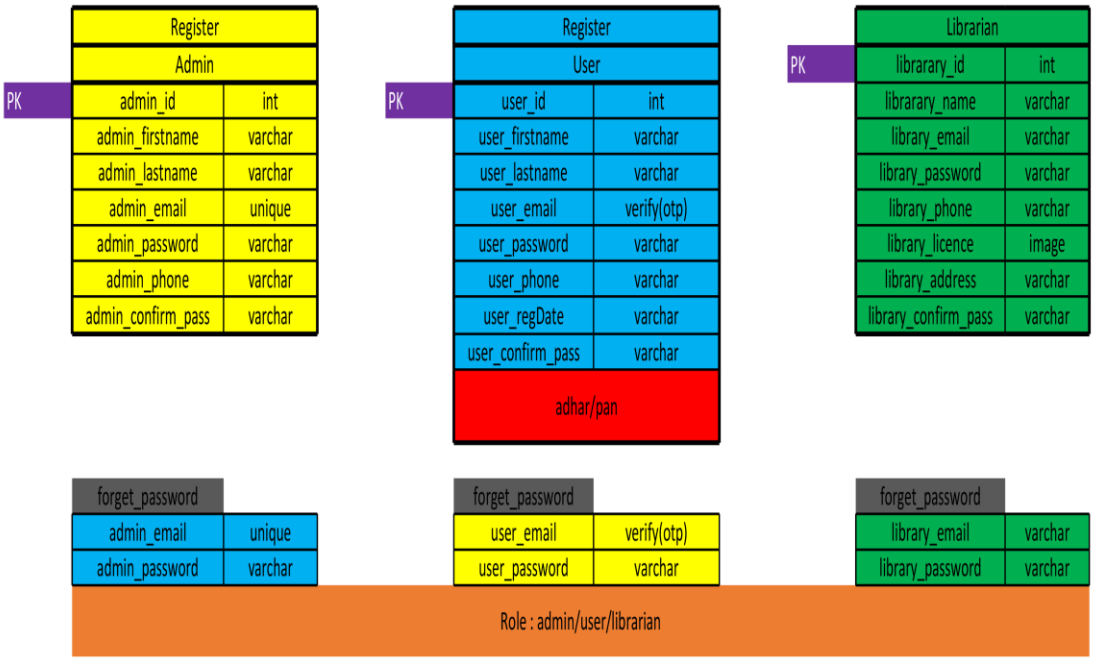


5.4.3 Librarian Sequence Diagram



Chapter 6

databases



Chapter 7

TESTING

Test Id	Item to be Tested	Steps	Input	Actual Output	Expected Output	Pass/Fail
1	User Id	User enters user Id	User Id	Display Success	Display Message successful	Pass
2	System check for proper username and password entered by users	System compares the data entered by user and the entered data in database				
		If username and password is valid		Make Connection	Make connection	Pass
		If username and password is invalid		Report invalid user id	Report error	Pass

3	**System checks whether details of user are entered as per the format**	**System checks the data entered by user is in valid form or not.**				
		If valid	**User entered data**	**Entered in database**	**Entered in database**	**Pass**
		If invalid	**User entered data**	**“Invalid Data” message will be printed**	**“Invalid Data” message will be printed**	**Pass**

Chapter 8

Maintain Account

1) **Register**

Purpose: If the user doesn't have an account then he will be asked to register.

Actor: User

Input: The user will enter details in the registration form according to the required fields. The fields include

- Username
- Password
- confirm password
- first name
- last name
- email
- Address
- Phone

Output: After registration the user will be directed to the main home page.

2) **Login**

Purpose: If the user wants to get access to all the functionalities of Online Book Store he should login using his username and password.

Actor: User

Input: The user will enter his username and password.

Output: If it is a successful login the user will be directed to the main home page. Else if the user enters invalid information he will be asked to check the entered information.

3) **Update Profile**

Purpose: If the user wants to change his personal account information then he can update his selected fields and the entire data will be updated in the data base through an update query.

Actor: User

Input: The user will update his account information.

Output: The system will update the entered information in the database using an update query.

Logout

Purpose: If the user wants to end his session and sign out of the website then he can use the logout option.

Actor: User

Input: The user will click the logout button.

Output: The user's account session comes to an end and he should login again if he wants to enter into the website.

Manage Shopping Cart

1) **Place an order Purpose:**

   If the user wants to purchase a book then he can place an order by selecting the add to shopping cart button and entering the quantity required under the book description.

   Actor: User

   Input: The user will enter the quantity required and click the add to shopping cart button

   Output: The order will be added to the user's shopping cart.

2) **Update Shopping Cart**

   Purpose: If the user wants to change the quantity of a book or change a book then he can update his shopping cart.

   Actor: User

   Input: The user will click the details button in the shopping cart summary to edit and update his order details..

   Output: The updated order details are reflected in the shopping cart summary.

3) **View Shopping Cart**

   Purpose: If the user wants to view the items he added to the shopping cart then he can click the shopping cart link at the top of the page.

   Actor: User

   Input: The user will click the shopping cart link at the top of every page.

   Output: The user's shopping cart summary will be displayed in the form of a tabular format with all the books and their quantity. A total cost of all the items is also displayed at the bottom.

About the Project

Login Page-

In this page, user has to enter the username and password. This username and password will be checked from the database. If the user exists then he/she will be directed to the home page or Dashboard. But if the user doesn't exist then there a message will be shown "Invalid User email- Pass-, then user has to do the registration.

Registration Page-

In this page, user has to provide name, email id, phone no., password and then he has to select the blood group from the given options. Once, the registration is done the user will be redirected to the Login page.

Home Page-

Home page or Dashboard consists of List All, Search and Logout options. If List All is selected then the list of all the support module will be shown to the user. And then user can support whatever they want.

If Logout button is pressed then the user will be logged out and redirected back to the Login page. If the app is closed without logging out, when the user opens the app next time he will be directly in the Dashboard and doesn't have to login again.

Chapter 9

Technologies Used

Spring Framework

The Spring Framework is an application framework and inversion of control container for the Java platform. The framework's core features can be used by any Java application, but there are extensions for building web applications on top of the Java EE (Enterprise Edition) platform. Although the framework does not impose any specific programming model, it has become popular in the Java community as an addition to the Enterprise JavaBeans (EJB) model. The Spring Framework is open source.

The Spring Framework provides a comprehensive programming and configuration model for modern Java-based enterprise applications - on any kind of deployment platform.

A key element of Spring is infrastructural support at the application level: Spring focuses on the "plumbing" of enterprise applications so that teams can focus on application-level business logic, without unnecessary ties to specific deployment environments.

Features

- Create stand-alone Spring applications
- Embed Tomcat, Jetty or Undertow directly (no need to deploy WAR files)
- Provide opinionated 'starter' dependencies to simplify your build configuration

- Automatically configure Spring and 3rd party libraries whenever possible
- Provide production-ready features such as metrics, health checks, and externalized configuration
- Absolutely no code generation and no requirement for XML configuration

Angular

Fig. Angular logo

Angular is the most popular JavaScript framework and platform for developing client-side (front-end) mobile and desktop web apps or single page applications (SPAs). Angular 11 is a client-side TypeScript based framework which is used to create dynamic web applications. Its first version was released by **Google** in **2012** and named as AngularJS..

Angular 11 is an open-source, client-side TypeScript based JavaScript framework. It is written in TypeScript and complied into JavaScript. Angular11 is used to create dynamic web applications. It is very similar to its previous versions except having some extensive features. Angular 11 is a great **UI** (User Interface) library for the developers. Angular is a reusable UI component helps us constructing attractive, consistent, and functional web pages and web application. Angular 11 is a JavaScript framework which makes us able to create an attractive **Single Page Applications** (SPAs).

Angular 11 has entirely based on component and consist of some tree structures with parent and child component. Angular 11 classes are created in such a way that the web page can fit in any screen size so that they are fully compatible with mobiles, tablets, laptops, and large systems.

What is a dynamic web application?

A dynamic web application is simply a dynamic website. i.e. www.gmail.com, www.facebook.com, www.yahoo.com etc. which has a tendency to change data/information with respect to 3 parameters:

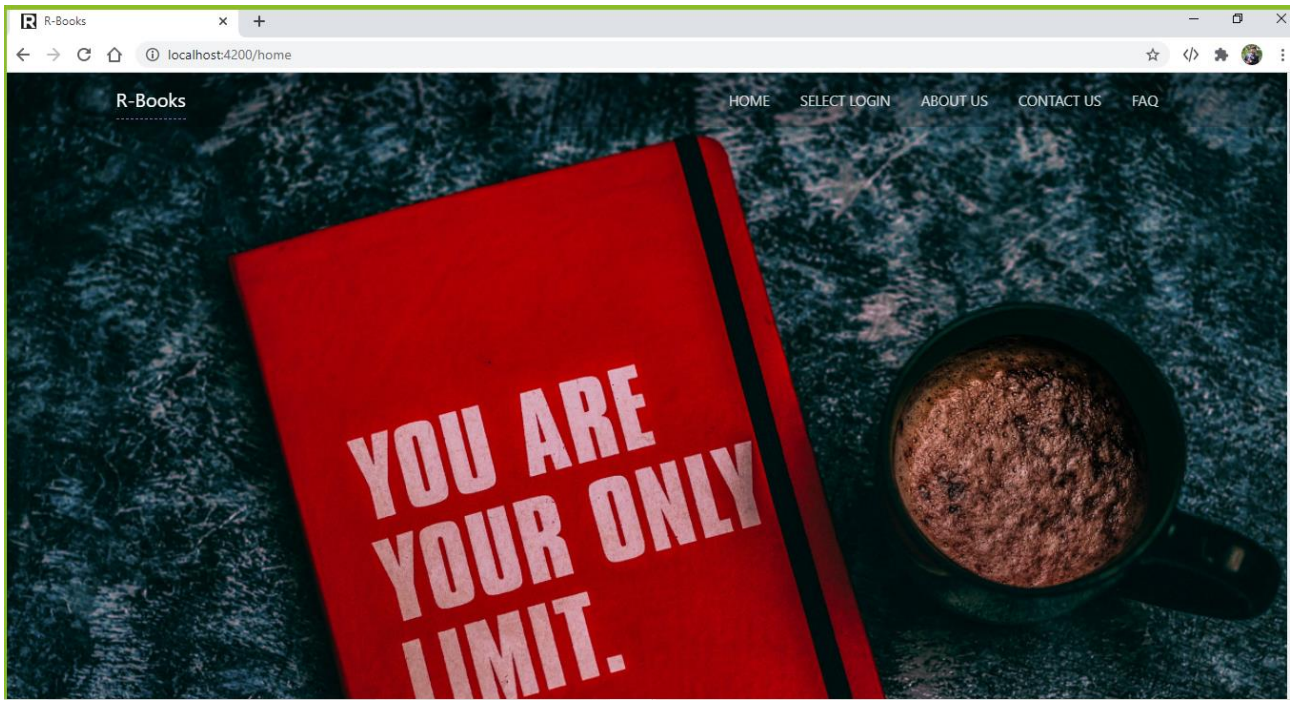
- Time-to-time (eg. news update webs applications)
- Location-to-location (eg. Weather-report web applications)
- User-to-user (eg. Gmail, Facebook type applications)

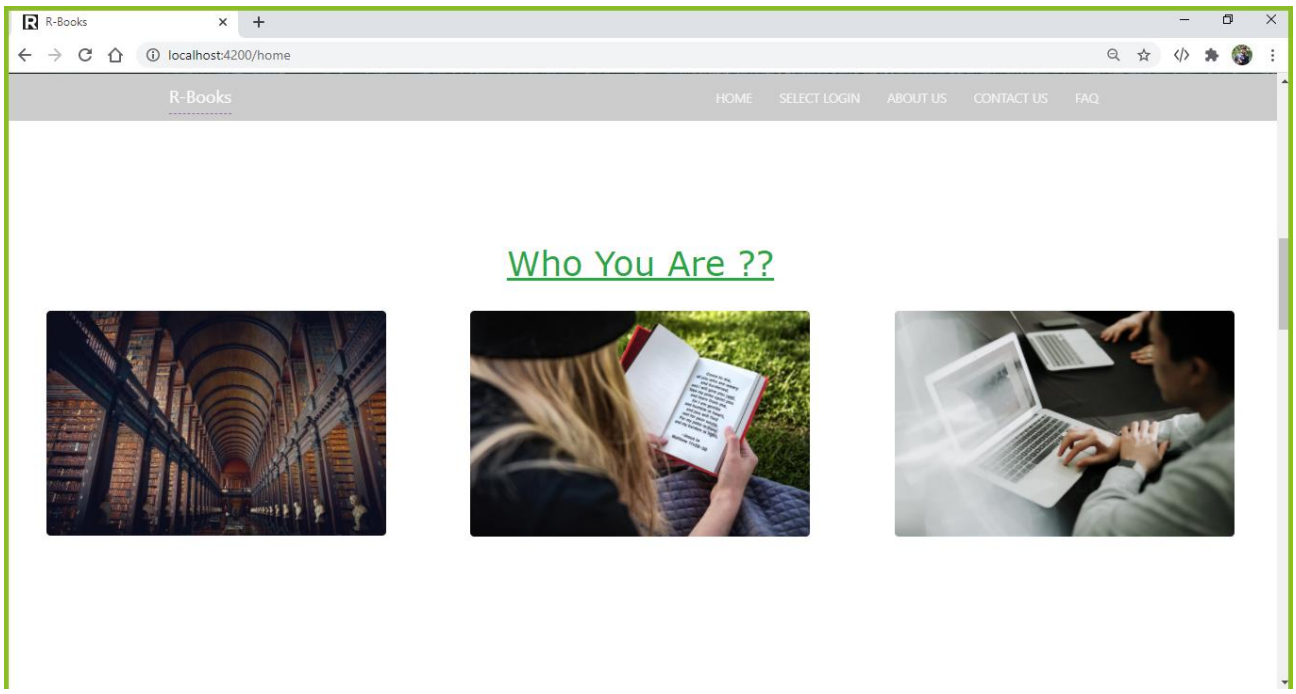
These are the most prominent features of Angular 11:

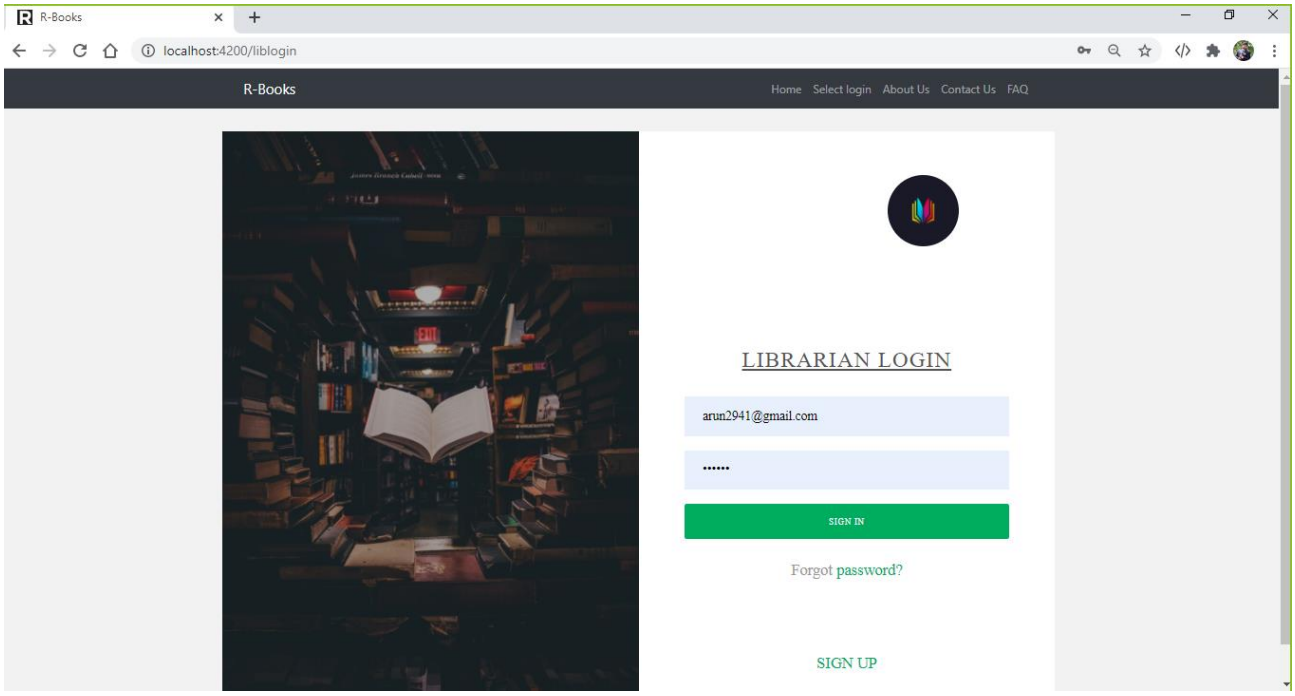
- Angular 11 supports TypeScript
- Angular 11 supports Web Workers
- The new compiler for Angular 11 is Ivy Rendering Engine
- Angular 11 provides dynamic imports for lazy-loaded modules.
- Improvement of ngUpgrade

Chapter 10

UI - PORTAL



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Select login
About Us
Contact Us
FAQ
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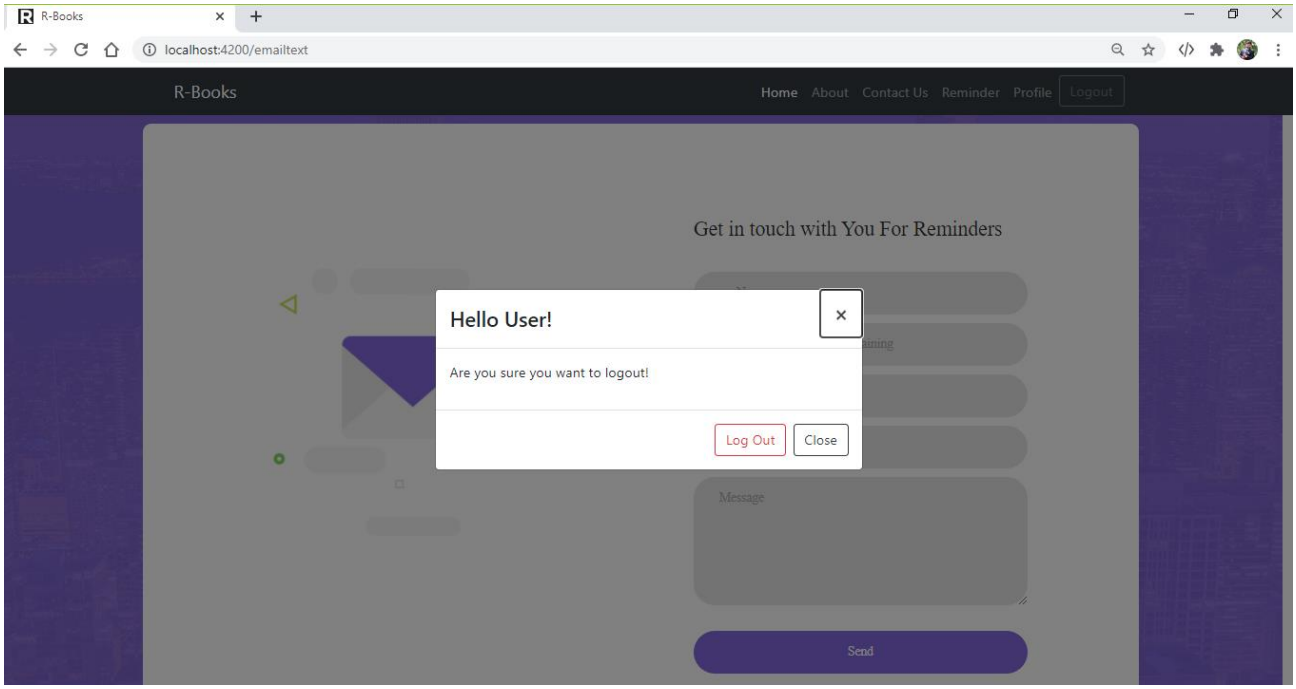
SIGN IN
Forgot password?
SIGN UP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About
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Logout
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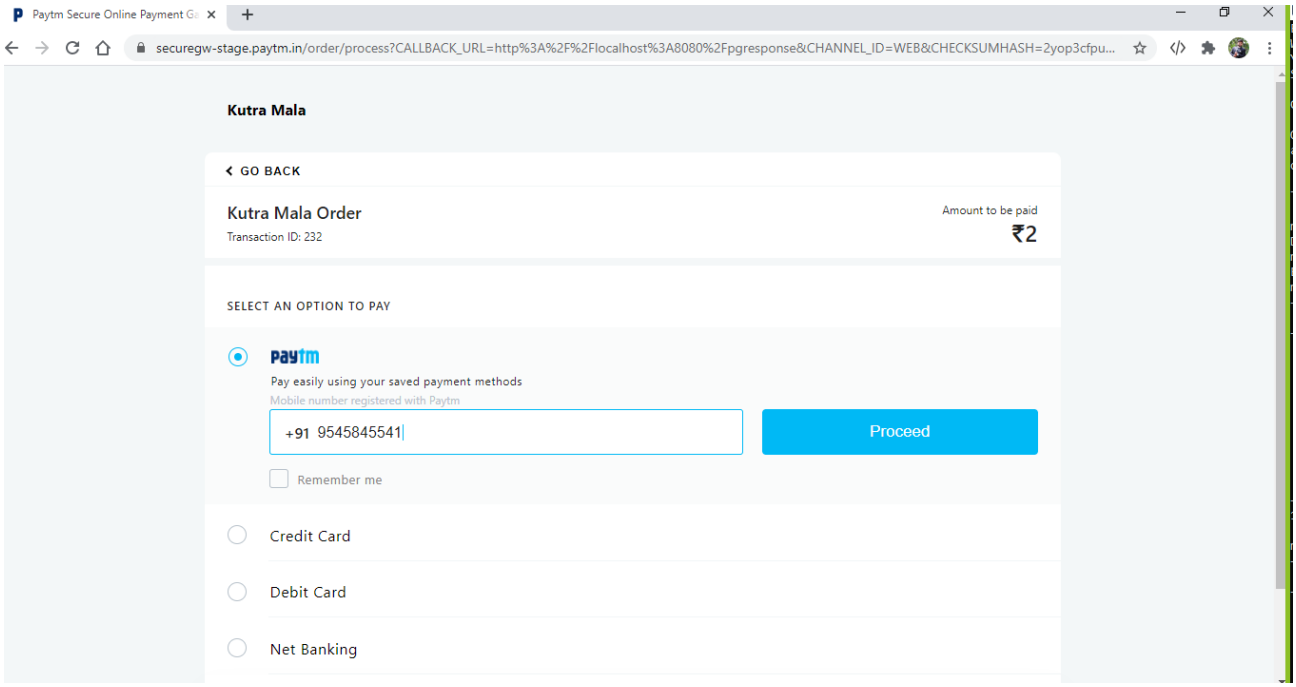
Are you sure you want to logout!
Log Out
Close
Message
Send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Amount to be paid
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Paytm
Pay easily using your saved payment methods
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Proceed
Remember me
Credit Card
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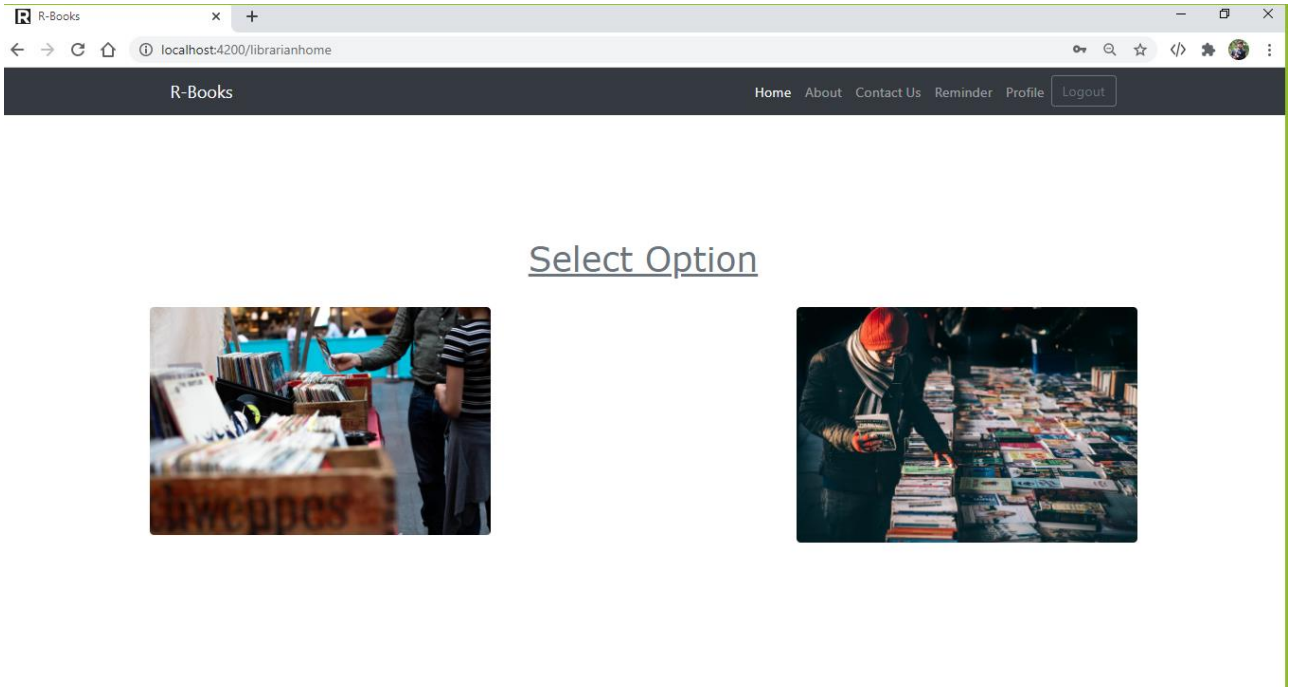
Net Banking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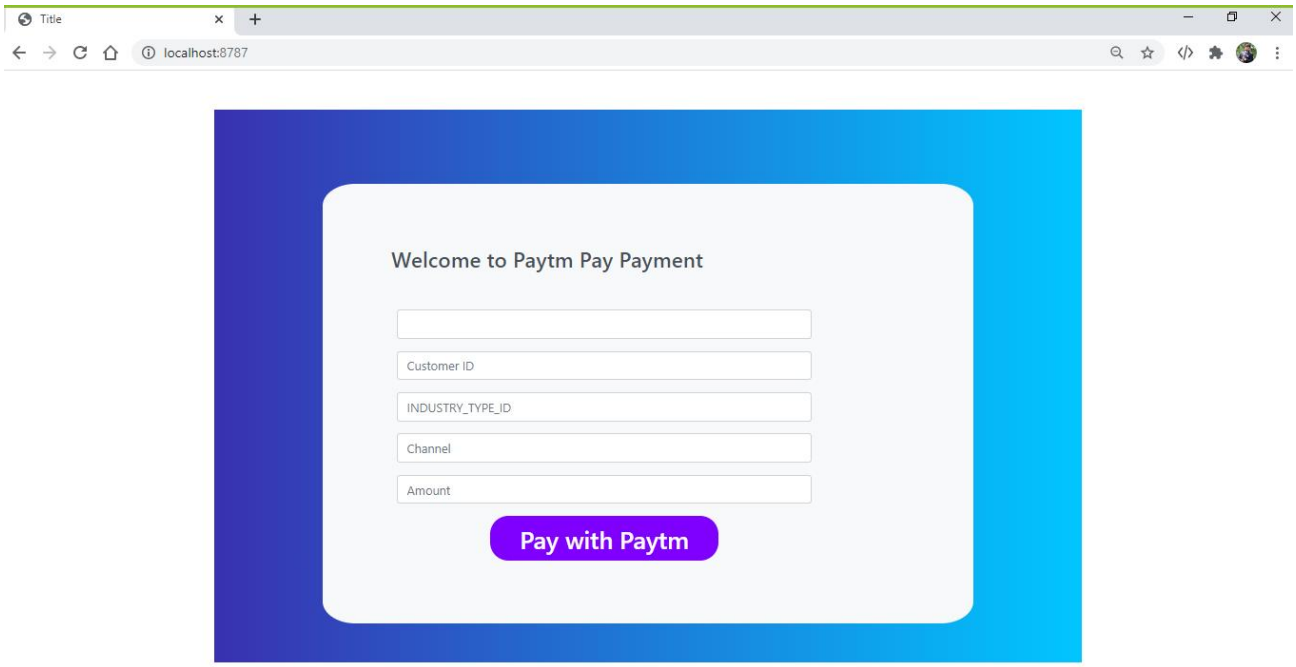
About
Contact Us
Reminder
Profile
Logout
Select Option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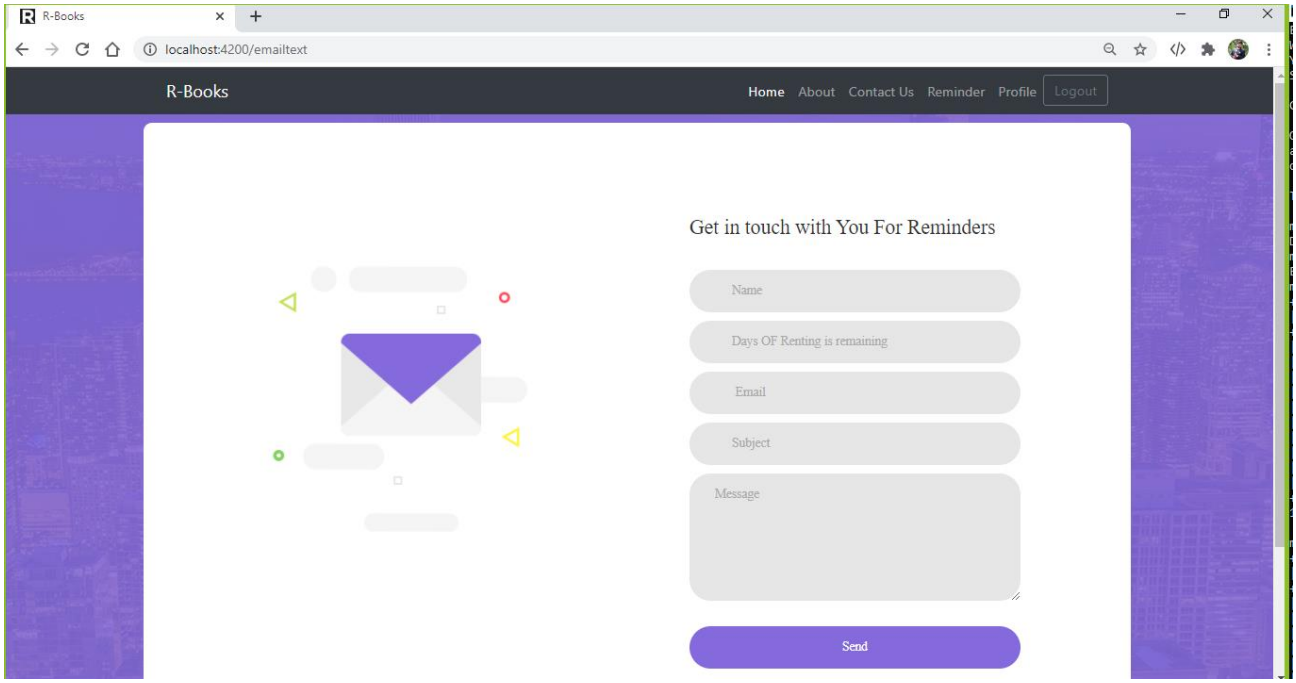
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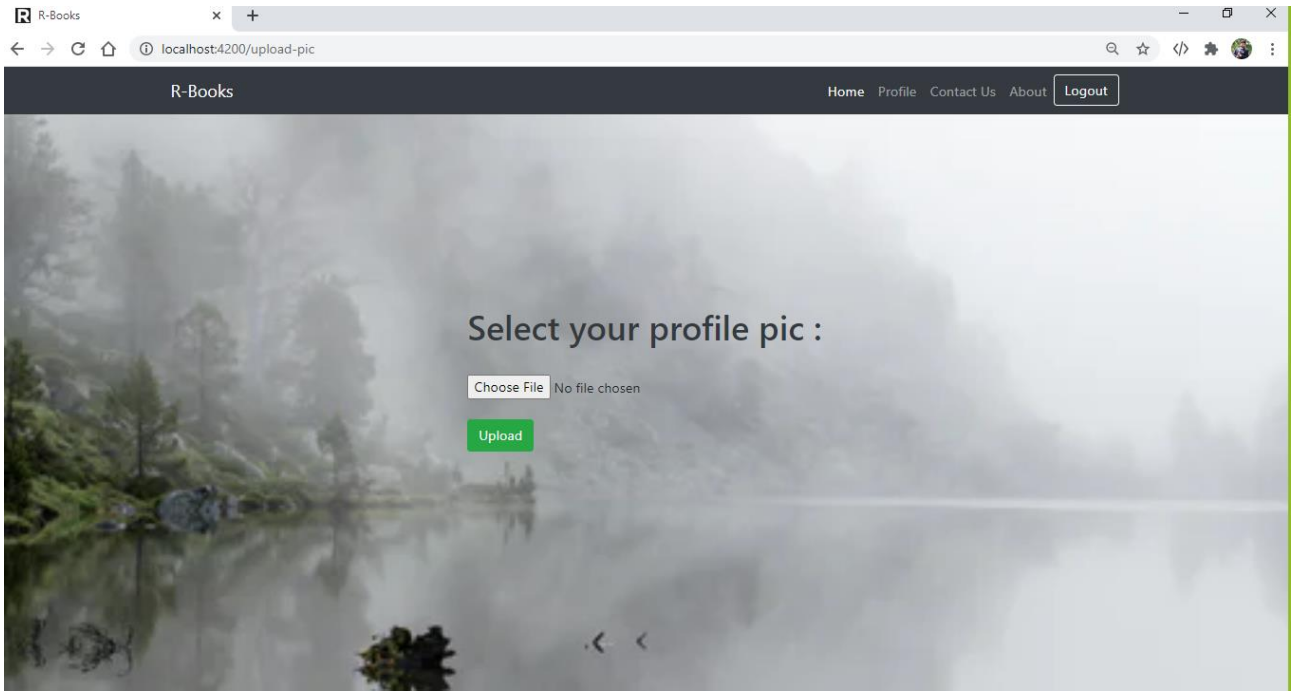
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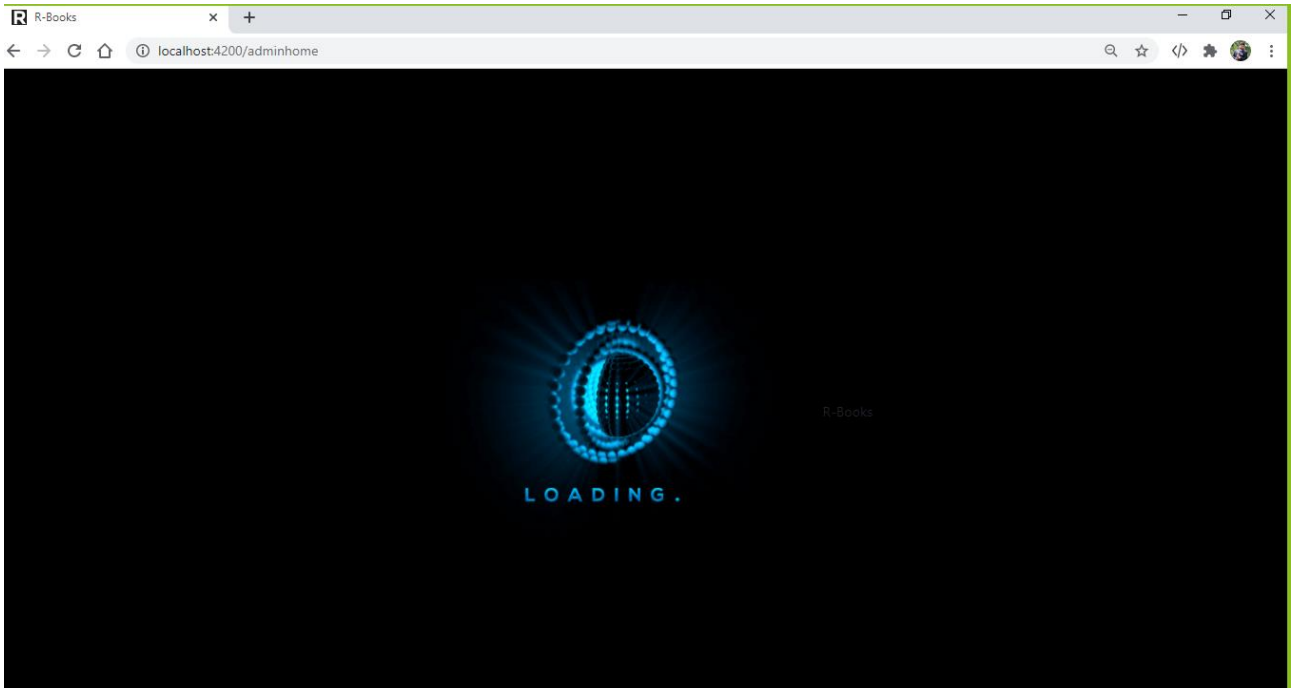
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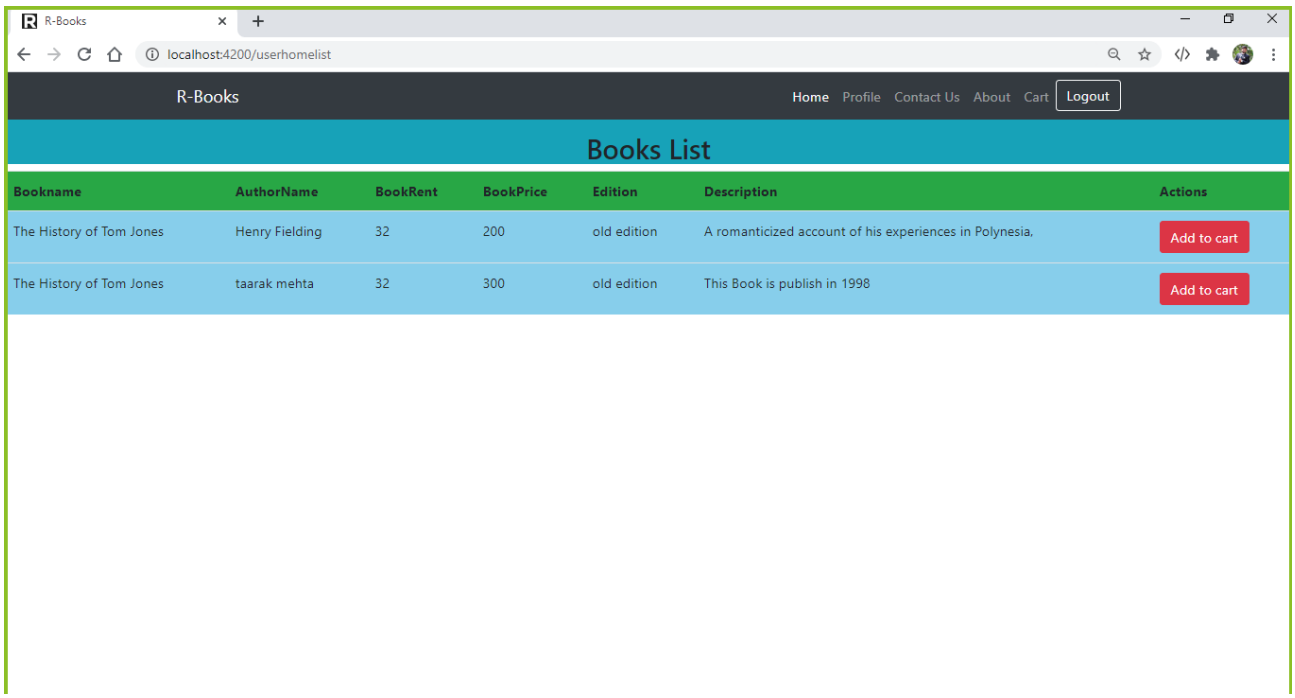
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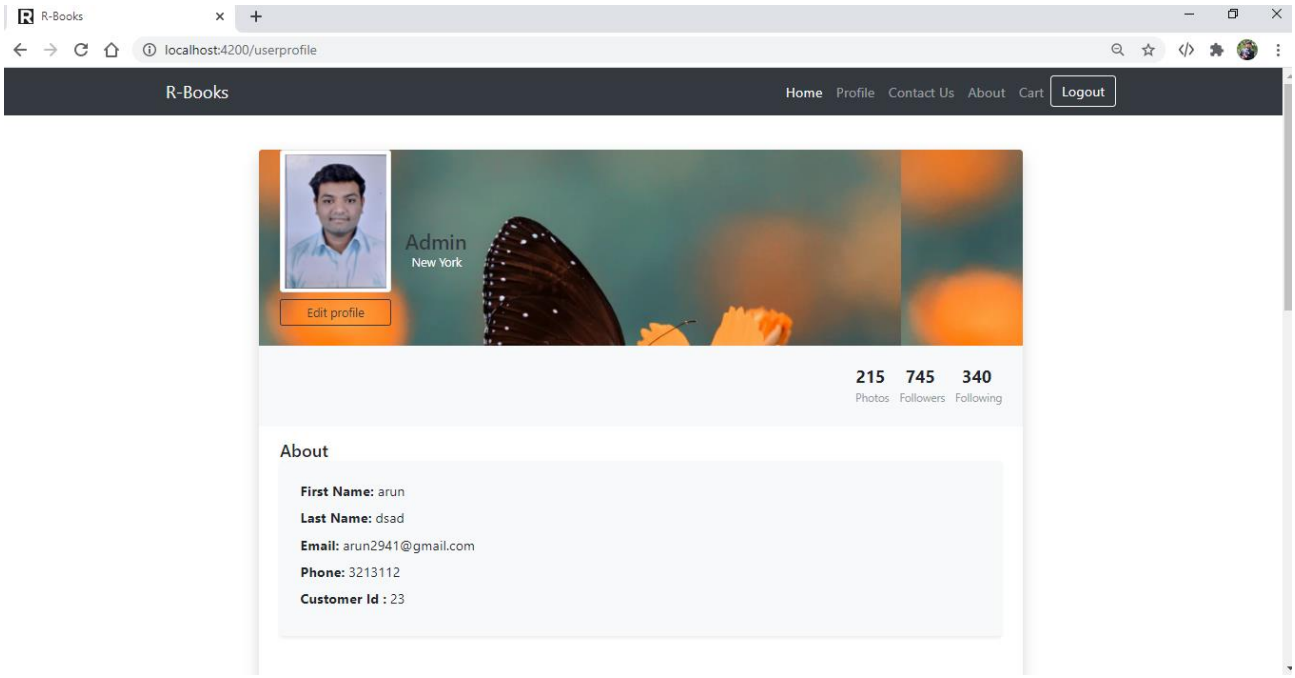
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Phone: 3213112
Customer Id : 23

FUTURE SCOPE

In future we are going to implement automatic bill generation system which will be sent to the user and for improved security we are going to implement encryption mechanism while sending or receiving data from server to client or vice-versa. This will be the first motive later we would like to implement the same system for cross platform for mobile user in the form of app.

User Interface is most crucial factor in the online web application in this we have great scope of improvement so that user interface will be more attractive and easy tous

Conclusions

In general by this project one can rent book from anywhere at any time. The convenience of an online book rental is a major consideration for most of us, especially those living in areas where the access to a large bookstore is limited or is quite far away. Many books are too much expensive and for this types of books This system most preferable. If book is too much expensive then one can rent that Book on some amount and can read that book by spending very small amount of money. After reading whole book they can return book and another one can take Benefit of this type of expensive books. So overall by this system one can read book of their choice at any time by spending very small amount of money. In this knowledge era this system will help to spread knowledge across whole World and will provide much knowledge about old and new books.

BLIOGRAPHY

The following books were referred during the analysis and execution phase of the project

1. Black book by DT Editorial Services(Covers css3,Javascript,xml,xhtml,Php,and Jquery)

2. MYSQL by Paul DuBois

WEBSITES:

www.google.com

W3schools.com

Stackoverflow.com

Appendix I

- **SRS:** Software Requirement Specification
- **GUI:** Graphical User Interface
- **P4:** Pentium 4
- **SQL:** Structured Query Language
- **HTML:** Hyper Text Markup Language
- **CSS:** Cascading Style Sheet

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