Contents

Introduction

1.Introduction

In today's digital age, the sharing economy has gained significant traction, enabling individuals to exchange goods and services efficiently. Books, being a valuable resource for education and entertainment, often go unused after being read. Book Mates is a platform designed to address this issue by providing a centralized space for users to buy, sell, exchange, and donate books. The platform leverages modern web technologies to ensure a secure, scalable, and user-friendly experience. Key features include user profiles, location-based listings, book condition descriptions, and secure communication channels. By promoting sustainability and accessibility, Book Mates aims to foster a community of book lovers while reducing waste and making books more accessible to all. The shift towards digital platforms for book sharing is driven by the need for convenience, sustainability, and com- munity engagement. Traditional methods of buying, selling, or exchanging books are often time-consuming and inefficient. Book Mates streamlines this process by offering an intuitive online platform where users can easily list books, search for titles, and connect with others. The platform also includes a dedicated donation section, allowing users to contribute books to libraries, schools, and underprivileged readers. This not only promotes literacy but also supports environmental sustainability by encouraging the reuse of books. Built using the MERN stack (MongoDB, Express.js, React.js, Node.js), Book Mates ensures high performance, scalability, and security. The platform incorporates advanced features such as automated notifications, wishlist management, and real-time chat for seamless communication between users. By integrating these innovative solutions, Book Mates aims to create a robust and engaging platform that meets the needs of modern book enthusiasts. Future enhancements may include AI-based book recommendations, advanced search filters, and integration with e-commerce platforms for a more comprehensive user experience.

1.1 Problem Definition:

In the digital era, while reading remains a cherished activity, many people struggle to access the books they want due to high costs, limited availability, or a lack of community involvement. Reading is often overlooked due to busy schedules, lack of motivation, or difficulty finding a community of like-minded individuals. On the other hand, book lovers frequently struggle to find recommendations, connect with fellow readers, and stay engaged with their reading goals. Additionally, many individuals want to donate their books to a good cause but lack the proper channels to do so effectively.

1.2 Existing System:

In the current landscape, individuals rely on various traditional and digital methods to buy, sell, exchange, or donate books. However, these methods come with several limitations that make the process inefficient and cumbersome.

1. Physical Bookstores & Libraries:

   Traditional bookstores offer new books at high prices, making it difficult for budget-conscious readers to afford them.

   Libraries provide access to books but often have limited stock, long waitlists, and location constraints.

2. Online Marketplaces (e.g., eBay, Craigslist, Facebook Marketplace):

   These platforms allow users to buy and sell books, but they are not designed specifically for book sharing, leading to a cluttered user experience.

   Listings are often unorganized, lacking book-specific features like condition details, ISBN search, or curated recommendations.

   There is no structured exchange or donation system, making it harder for users to find suitable options.

3. Book Exchange Groups & Forums:

   Some online forums and social media groups facilitate book exchanges, but they rely on manual coordination, making the process time-consuming.

   Lack of security features means users may face issues such as scams, unreliable transactions, or unverified users.

4. Charitable Organizations & Book Donation Centers:

   Many people wish to donate books but are unaware of suitable donation centers or find the process inconvenient.

   Limited digital platforms streamline book donations efficiently, leading to books being discarded instead of reused.

Limitations of the Existing System:

Lack of a centralized and dedicated platform for book lovers.

Scattered listings across multiple platforms, making it hard to find books efficiently.

No structured exchange system for book swapping.

Inefficient communication between buyers, sellers, and donors.

Limited accessibility for underprivileged readers who rely on book donations.

1.3 Proposed System:

Proposed System : Book Mates

Book Mates is a dedicated online platform designed to revolutionize the way people buy, sell, exchange, and donate books. Unlike traditional marketplaces and social media groups, Book Mates offers a structured, user-friendly, and secure environment specifically tailored for book lovers.

Key Features of the Proposed System:

1. Centralized Book-Sharing Platform

A dedicated web-based platform for book transactions.

Allows users to buy, sell, exchange, and donate books effortlessly.

Eliminates the need for multiple platforms by providing a one-stop solution.

2. User Profiles & Authentication

Secure user authentication using email verification and social login options.

User profiles with ratings and reviews to ensure trust and reliability.

Wishlist feature to save books for future transactions.

3. Advanced Book Listings & Search

Users can list books with detailed descriptions, including ISBN, condition, edition, and images.

Smart search and filter options (genre, author, location, price, book condition).

AI-powered book recommendations based on user preferences and search history (future enhancement).

4. Secure & Location-Based Transactions

Location-based listings allow users to find books nearby for quick transactions.

Verified payment system for secure book purchases (optional for premium transactions).

Exchange system where users can swap books based on mutual interest.

5. Seamless Communication & Notifications

Built-in chat system for secure, real-time communication between buyers and sellers.

Automated notifications for price drops, new listings, and wishlist updates.

6. Dedicated Book Donation System

Special section for users to donate books to libraries, schools, or underprivileged readers.

Partnering with educational institutions and NGOs to distribute donated books efficiently.

Users can track their donations and receive updates on their impact.

7. Sustainability & Community Engagement

Encourages book reuse, reducing waste and promoting environmental sustainability.

Community-driven features like reading clubs, forums, and discussion groups.

Events for book swaps, reading challenges, and literary discussions.

8. Scalable & Secure Architecture (MERN Stack)

Built using MongoDB, Express.js, React.js, and Node.js for high performance and scalability.

Robust security features including data encryption, user verification, and spam detection.

9. Advantages of the Proposed System:

Convenient & Time-Saving: Users can quickly find, list, and exchange books in one place.

Cost-Effective: Offers affordable options for book lovers, including exchanges and donations.

Secure & Reliable: User verification, reviews, and chat ensure safe transactions.

Promotes Sustainability: Encourages book reuse, reducing waste and environmental impact.

Fosters a Reading Community: Connects like-minded individuals and promotes literacy.

1.4 Literature Review:

The development of **Book Mates** is informed by a thorough review of existing literature and platforms in the domain of digital marketplaces, sharing economy platforms, and online book exchange systems. This section provides an analysis of existing platforms, identifies gaps, and highlights key areas of research relevant to the project.

A. Analysis of Existing Platforms

Several platforms facilitate the buying, selling, and exchang- ing of books, but they often lack comprehensive features such as location-based listings, donation options, and community engagement tools. Below is an analysis of some popular platforms:

STRENGTHS AND WEAKNESSES OF EXISTING PLATFORMS

Platform	Strengths	Weaknesses
Amazon Books	Wide variety of books, reliable delivery, user reviews	High prices, no fo- cus on sustainabil- ity or community en- gagement
Goodreads	Community- driven, book recommendations, user reviews	No option to buy/sell/exchange books, limited to reviews and discussions
BookMooch	Focus on book ex- change, user-friendly interface	Limited features, out- dated design, no do- nation options
Better World Books	Donation options, supports literacy programs	Limited to buying and donating, no exchange feature

1. Secure Online Transactions:

Authentication & Authorization: Implementing secure user authentication using JWT and OAuth 2.0 to ensure only authorized users can access the platform.
Data Encryption: Using SSL/TLS encryption to protect user data and transactions.
Fraud Prevention: Integrating mechanisms to detect and prevent fraudulent activities, such as fake listings or unauthorized transactions.

2. User Experience & Accessibility:

Responsive Design: Ensuring the platform is accessible on multiple devices (desktop, mobile, tablet) with a seamless user experience.
Accessibility Features: Incorporating features such as screen reader support, adjustable font sizes, and keyboard navigation to make the platform inclusive for all users.
Intuitive Interface: Designing a user-friendly interface with clear navigation and minimal learning curve.

3. Location-Based Services:

Geolocation Integration: Using geolocation APIs to enable users to find books available near their location.

Local Pickups: Facilitating in-person meetups for book exchanges to reduce delivery costs and environmental impact.

4. Community Engagement:

Chat System: Implementing a real-time chat system us- ing WebSockets to enable communication between buyers and sellers.

Events & Meetups: Organizing book donation drives, reading sessions, and community events to foster engage- ment.

User Reviews & Ratings: Allowing users to rate and review sellers to build trust and transparency.

5. Sustainability & Donations:

Donation Section: Creating a dedicated section for users to donate books to libraries, schools, and underprivileged readers.

System Requirements

2.System Requirements

2.1 Hardware & Software Requirements:

To ensure a smooth and efficient operation of the Book Mates platform, the system must meet the following hardware and software requirements.

2.1.1. Hardware Requirements

For End Users (Clients)

Processor: Dual-core 2.0 GHz or higher

RAM: Minimum 4GB (8GB recommended for better performance)

Storage: At least 500MB free space for browser cache and temporary data

Internet Connection: Stable broadband connection (minimum 5 Mbps)

Display: Minimum resolution of 1280×720 pixels

Devices Supported: Desktop, Laptop, Tablet, and Mobile

For Server (Hosting Environment)

Processor: Quad-core 2.5 GHz or higher

RAM: Minimum 8GB (16GB recommended for high traffic)

Storage: At least 100GB SSD for faster performance

Database Server: MongoDB (preferably on a separate server for scalability)

Internet Connection: High-speed, stable connection with at least 1 Gbps bandwidth

Cloud Hosting (Recommended): AWS, Google Cloud, or DigitalOcean

2.1.2. Software Requirements

For End Users (Clients)

Operating System: Windows 10/11, macOS, Linux, iOS, Android

Web Browser: Chrome (latest version), Firefox, Edge, Safari

Additional Software: JavaScript enabled, Cookies enabled

For Developers (Development Environment)

Operating System: Windows, macOS, Linux

Backend:

Node.js (Latest LTS version)

Express.js (For handling server-side logic)

MongoDB (For NoSQL database management)

Frontend:

React.js (For dynamic UI rendering)

Redux (For state management)

Tailwind CSS / Bootstrap (For responsive design)

Database Management: MongoDB Atlas or self-hosted MongoDB instance

Version Control: Git and GitHub for code management

Package Manager: npm or yarn

API Services: RESTful APIs, WebSockets for real-time chat

2.2 Software Requirements Specification (SRS):

2.2.1. Introduction

Purpose

The purpose of this document is to define the functional and non-functional requirements for Book Mates, an online platform for buying, selling, exchanging, and donating books. The platform will provide a user-friendly interface for book enthusiasts while ensuring security, scalability, and sustainability.

Scope

Book Mates is a web-based platform built using the MERN stack (MongoDB, Express.js, React.js, Node.js). It allows users to:

List, buy, sell, exchange, and donate books

Search for books using filters such as genre, author, and location

Communicate securely with other users via a built-in chat system

Manage wishlists and receive notifications for book availability

Donate books to libraries, schools, or underprivileged readers

Engage with a reading community through forums and discussions

The platform will be available on desktop and mobile browsers, ensuring accessibility across devices.

Intended Audience and Use

End Users: Individuals looking to buy, sell, exchange, or donate books

Administrators: Manage user accounts, monitor listings, and handle disputes

Developers: Maintain and enhance the system

Definitions and Acronyms

MERN Stack: A full-stack JavaScript framework (MongoDB, Express.js, React.js, Node.js)

ISBN: International Standard Book Number (used for book identification)

UI/UX: User Interface and User Experience

2.2.2. Overall Description

Product Perspective

Book Mates is a new standalone system designed to centralize book-sharing activities in an organized, secure, and scalable manner. It aims to replace inefficient traditional methods such as social media groups and classified ads.

User Classes & Characteristics

General Users: Can list, search, buy, sell, exchange, or donate books

Premium Users: Get additional features like book recommendations and transaction history

Administrators: Monitor users, manage listings, and handle disputes

Operating Environment

Client-Side: Web browsers (Chrome, Firefox, Safari, Edge)

Server-Side: Node.js with Express.js

Database: MongoDB

Hosting: Cloud-based (AWS, DigitalOcean, or Google Cloud)

2.2.3. Functional Requirements

User Authentication & Management

Users can register/login using email, Google, or Facebook.

Passwords will be stored securely using encryption.

Book Listings & Search

Users can add books with details like title, author, price, condition, and images.

Users can search/filter books based on genre, price range, and location.

Transactions (Buy, Sell, Exchange, Donate)

Users can buy books through direct transactions.

Users can request an exchange by matching books with other users.

A donation feature allows users to give books to libraries or schools.

Chat & Communication

Built-in secure chat allows buyers and sellers to communicate.

Users receive real-time notifications for messages and book updates.

Wishlist & Alerts

Users can save books to a wishlist for future purchase.

Automatic notifications for price drops, availability, and new listings.

Admin Panel

Admins can approve or remove book listings.

Admins can ban or suspend users violating platform rules.

2.2.4. Non-Functional Requirements

Performance Requirements

Fast search functionality with optimized database queries.

High availability (99.9% uptime) with cloud hosting.

Security Requirements

User authentication with encryption (OAuth 2.0 for social login).

SSL encryption for secure transactions.

Spam and fraud prevention measures.

Usability & Accessibility

Simple and intuitive UI for easy navigation.

Mobile-responsive design for accessibility on all devices.

Scalability Requirements

Cloud-based hosting to handle increased traffic.

Microservices architecture for future feature expansions.

2.2.5. External Interface Requirements

User Interfaces

Homepage: Displays featured books and search bar.

Dashboard: User profile, book listings, transactions.

Book Listing Page: Detailed book descriptions with seller contact.

Chat System: Secure messaging between users.

Hardware Interfaces

Supports desktops, laptops, tablets, and mobile devices.

Software Interfaces

Google Books API: Fetches book details via ISBN.

Payment Gateway (Optional): Secure online payments for premium transactions.

Communications Interfaces

WebSockets: Real-time chat functionality.

Email & Push Notifications: Alerts for transactions, messages, and updates.

2.2.6. Future Enhancements

AI-based Book Recommendations based on user preferences.

Advanced Search Filters (e.g., book condition, author popularity).

E-commerce Integration for direct purchases from publishers.

2.2.7. Appendix

Technology Stack: MERN (MongoDB, Express.js, React.js, Node.js)

Version Control: Git & GitHub   Deployment: AWS/DigitalOcean

System Design

3. System Design

3.1. System Design Modules

The Book Mates platform is divided into multiple functional modules, each responsible for a specific set of features. Below are the key system design modules:

3.1.1 User Management Module

Handles user registration, login, authentication, and profile management.

Supports OAuth authentication (Google, Facebook, Email & Password).

Includes user roles (General User, Premium User, Admin).

3.1.2 Book Management Module

Enables users to list books with details like title, author, ISBN, condition, and price.

Allows searching, filtering, and sorting books by different criteria.

Supports book exchange and donation functionalities.

3.1.3 Transaction Module

Manages buying, selling, exchanging, and donating books.

Tracks transaction status (pending, completed, canceled).

Integrates with secure payment gateways for premium features.

3.1.4 Communication Module

Includes built-in chat functionality for secure communication between users.

Sends notifications (real-time alerts, email updates, push notifications).

3.1.5 Admin Management Module

Admins can monitor and moderate user activities.

Allows removal of inappropriate book listings and user banning.

Generates reports on user engagement, book transactions, and donations.

3.1.6 Recommendation & AI Module (Future Enhancement)

Provides personalized book recommendations based on user history.

Implements AI-based search filters to enhance the search experience.

3.2. UML Diagrams

3.2.1 Use Case Diagram

The Use Case Diagram represents the major interactions between users and the system.

Actors:

General User (Registers, Lists Books, Searches, Chats, Buys/Sells/Exchanges/Donates)

Admin (Manages Users, Approves Listings, Removes Spam)

System (Handles Book Transactions, Notifications, and Chat)

3.2.2 Class Diagram

The Class Diagram represents the structure of the system, including classes, attributes, and relationships.

Key Classes:

User (UserID, Name, Email, Role, Location)

Book (BookID, Title, Author, ISBN, Condition, Price, Category)

Transaction (TransactionID, BuyerID, SellerID, Status, Date)

Chat (MessageID, SenderID, ReceiverID, Message, Timestamp)

Admin (AdminID, Permissions, Activity Log)

3.2.3 Sequence Diagram (Book Purchase Flow)

The Sequence Diagram shows the step-by-step interaction between the user, system, and admin.

Flow: User logsin→ Searches for books → Selects a book

User initiates a transaction → Seller gets notified

Seller confirms transaction → System updates transaction status

User makes payment → Transaction is completed

Admin can moderate the transaction if needed

3.2.4 Activity Diagram (Book Listing & Search):

The Activity Diagram represents the flow of book listing and searching. Flow:

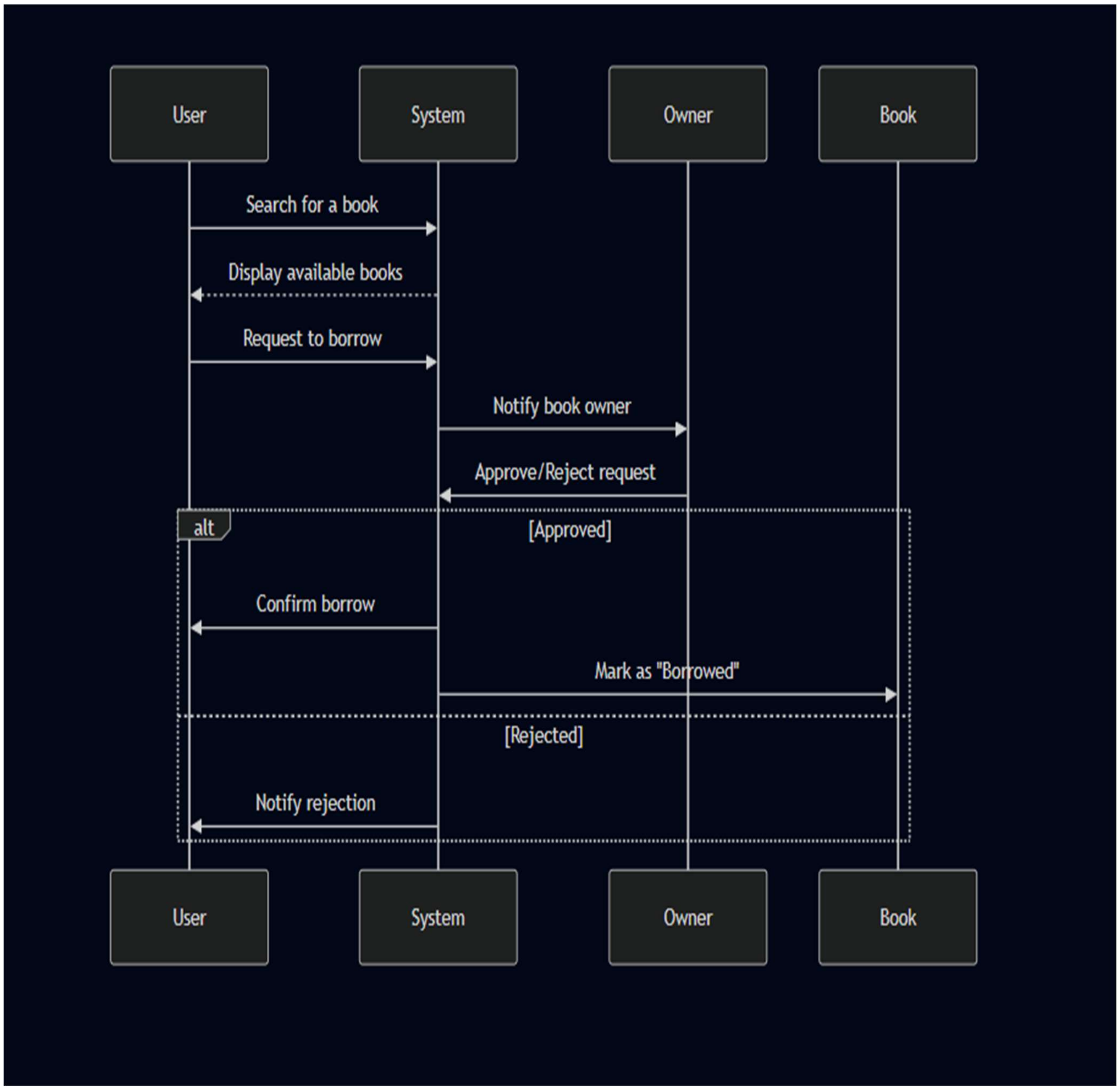
User logs in → Navigates to Book Listing

Fills out book details → Submits for listing

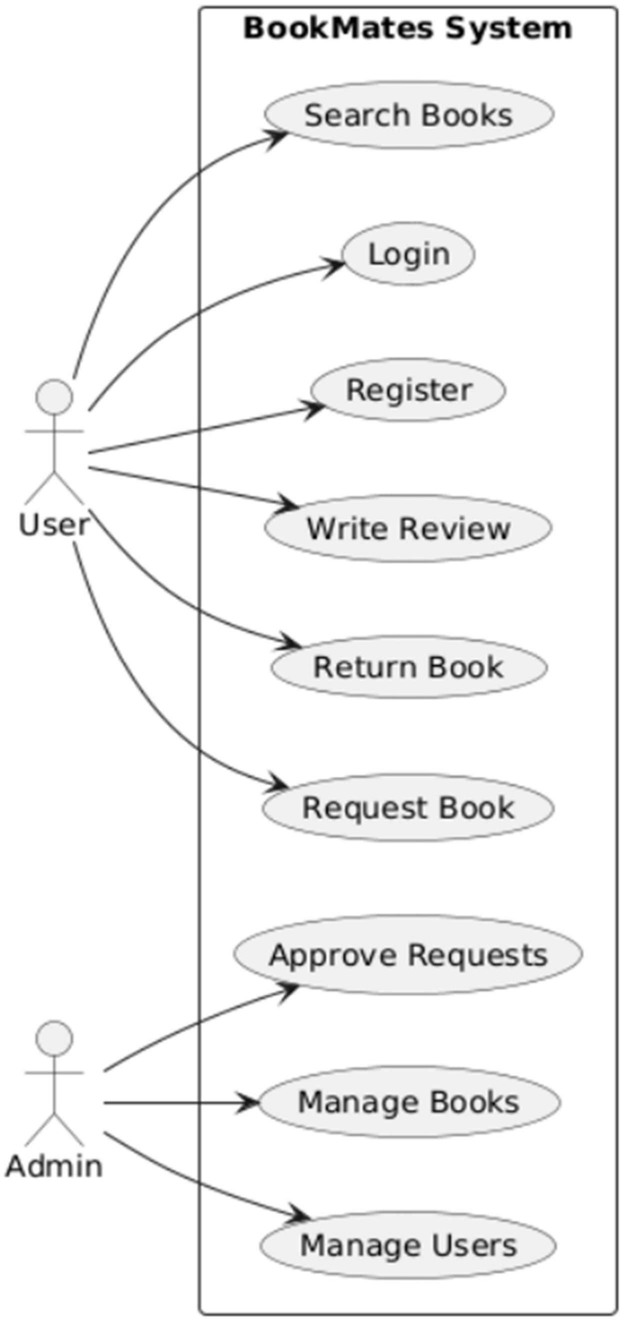
System verifies the listing → Approves & Displays it

Other users search for books → Filters results → Selects book

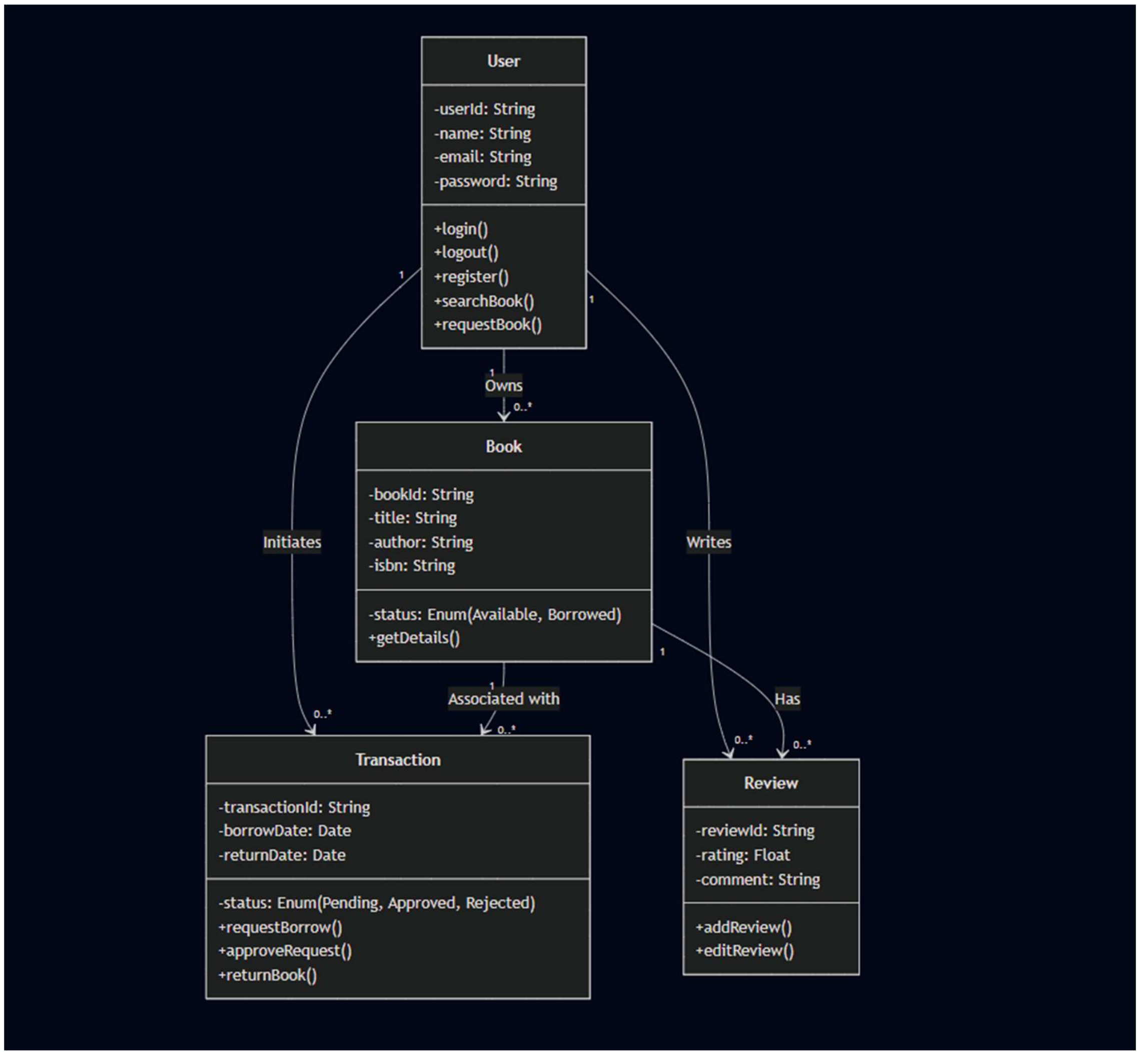
-Class diagram:



-Usercasse Diagram:



Sequence Diagram:


User
-userId: String
-name: String
-email: String
-password: String
+login()
+logout()
+register()
+searchBook()
+requestBook()
Owns
Initiates
Writes
Book
-bookId: String
-title: String
-author: String
-isbn: String
-status: Enum(Available, Borrowed)
+getDetails()
Associated with
Has
Transaction
-transactionId: String
-borrowDate: Date
-returnDate: Date
-status: Enum(Pending, Approved, Rejected)
+requestBorrow()
+approveRequest()
+returnBook()
Review
-reviewId: String
-rating: Float
-comment: String
+addReview()
+editReview()
1
0..*

Implementation

4.Implementation

4.1 Sample Code:

User Class (Login & Registration)

```
  class User {
 private String username;
 private String password;
 private boolean isLoggedIn;

 public User(String username, String password) {
     this.username = username;
     this.password = password;
     this.isLoggedIn = false;
 }

 public boolean login(String username, String password) {
     if (this.username.equals(username) && this.password.equals(password)) {
         isLoggedIn = true;
         return true;
     }
     return false;
 }
 public void logout() {
     isLoggedIn = false;
 }
 public boolean isLoggedIn() {
     return isLoggedIn;
 }
}
```

Book Class (Listing & Search):

```
  import java.util.ArrayList;
import java.util.List;
class Book {
    private String title;
    private String author;
    private boolean isAvailable;
    public Book(String title, String author) {
        this.title = title;
        this.author = author;
        this.isAvailable = true;
    }
    public boolean isAvailable() {
        return isAvailable;
    }
    public void markAsSold() {
        this.isAvailable = false;
    }
    public String getTitle() {
        return title;
    }
    public String getAuthor() {
        return author;
    }
}
class BookStore {
    private List<Book> books;
    public BookStore() {
        books = new ArrayList<>();
    }
    public void addBook(Book book) {
        books.add(book);
    }
    public List<Book> searchBook(String keyword) {
        List<Book> result = new ArrayList<>();
        for (Book book : books) {
            if      ((book.getTitle().contains(keyword)      ||      book.getAuthor().contains(keyword))      &&
book.isAvailable()) {
                result.add(book);
            }
        }
        return result;
    }
```

```
}
```

Transaction Class:

```
    class Transaction {
    private User buyer;
    private User seller;
    private Book book;
    private String status;
    public Transaction(User buyer, User seller, Book book) {
        this.buyer = buyer;
        this.seller = seller;
        this.book = book;
        this.status = "Pending";
    }
    public void completeTransaction() {
        if (book.isAvailable()) {
            book.markAsSold();
            status = "Completed";
        }
    }
    public String getStatus() {
        return status;
    }
}
```

JUnit Test Cases

Test Case for User Login:

```
     import static org.junit.jupiter.api.Assertions.*;
import org.junit.jupiter.api.Test;
class UserTest {
    void testLoginSuccess() {
        User user = new User("JohnDoe", "password123");
        assertTrue(user.login("JohnDoe", "password123"));
        assertTrue(user.isLoggedIn());
    }
    void testLoginFailure() {
        User user = new User("JohnDoe", "password123");
        assertFalse(user.login("JohnDoe", "wrongpassword"));
        assertFalse(user.isLoggedIn());
    }
}
```

Test Case for Book Search:

```
     import static org.junit.jupiter.api.Assertions.*;
import org.junit.jupiter.api.Test;
import java.util.List;
class BookStoreTest {
    void testSearchBook() {
        BookStore store = new BookStore();
        Book book1 = new Book("The Great Gatsby", "F. Scott Fitzgerald");
        Book book2 = new Book("Java Programming", "James Gosling");
        store.addBook(book1);
        store.addBook(book2);
        List<Book> result = store.searchBook("Java");
        assertEquals(1, result.size());
        assertEquals("Java Programming", result.get(0).getTitle());
    }
}
```

Test Case for Book Transaction:

```
      import static org.junit.jupiter.api.Assertions.*;
import org.junit.jupiter.api.Test;

class TransactionTest {
    void testCompleteTransaction() {
        User buyer = new User("Alice", "pass123");
        User seller = new User("Bob", "pass456");
        Book book = new Book("1984", "George Orwell");

        Transaction transaction = new Transaction(buyer, seller, book);
        transaction.completeTransaction();

        assertEquals("Completed", transaction.getStatus());
        assertFalse(book.isAvailable());
    }
}
```

4. Summary of Test Case Outputs

Test Case	Input	Expected Output	Actual Output
Login with correct credentials	Username:JohnDoe, Password: password123	Login successful(true)	Passed
Login with incorrect password	Username:JohnDoe, Password: wrongpassword	Login failed (false)	Passed
Search for a book by title	Search keyword "Java"	Returns"Java Programming"	Passed
Complete a book transaction	Buyer:"Alice", Book: "1984"	Marks book as "Sold"	Passed

Backend Codes

Displaybooks.php

```
<?php

// Database connection details

$servername = "sql107.infinityfree.com";

$username = "if0_38552695";

$password = "GyyZopL1Sa6"; // Database password

$dbname = "if0_38552695_bookmates";


// Create connection

$conn = new mysqli($servername, $username, $password, $dbname);
```

```
// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}

// Fetch books
$sql = "SELECT title, author, category, book_condition, is_free, price, contact FROM books ORDER
BY created_at DESC";
$result = $conn->query($sql);

if ($result->num_rows > 0) {
    while ($row = $result->fetch_assoc()) {
        $price = $row["is_free"] === "Yes" ? "FREE" : "$" . number_format($row["price"], 2);
        echo "<div class='book-card'>
                <h3>{$row['title']}</h3>
                <p><strong>Author:</strong> {$row['author']}</p>
                <p><strong>Category:</strong> {$row['category']}</p>
                <p><strong>Condition:</strong> {$row['book_condition']}</p>
                <p class='price'><strong>Price:</strong> {$price}</p>
                <p class='contact'><strong>Contact:</strong> {$row['contact']}</p>
              </div>";
    }
} else {
    echo "<p>No books available at the moment.</p>";
}

// Close connection
```

```
$conn->close();

?>
```

Login.php

```
<?php

$servername = "sql107.infinityfree.com";

$username = "if0_38552695";

$password = "GyyZopL1Sa6"; // Database password

$dbname = "if0_38552695_bookmates";


// Create connection

$conn = new mysqli($servername, $username, $password, $dbname);


// Check connection

if ($conn->connect_error) {

    die("Connection failed: " . $conn->connect_error);

}


// Get email and password from POST request

$email = $_POST['email'];

$password = $_POST['password'];


// Sanitize inputs

$email = filter_var($email, FILTER_SANITIZE_EMAIL);
```

```
// Prepare SQL statement to avoid SQL injection
$sql = "SELECT * FROM users WHERE email = ?";
$stmt = $conn->prepare($sql);
$stmt->bind_param("s", $email);
$stmt->execute();
$result = $stmt->get_result();

// Check if user exists
if ($result->num_rows > 0) {
    $user = $result->fetch_assoc();

    // Verify the password using password_verify()
    if (password_verify($password, $user['password'])) {
        // Successful login, start session
        session_start();
        $_SESSION['user_id'] = $user['id']; // Store user ID in session
          header("Location: browse-books.html");
        // Respond with success
        echo json_encode(["success" => true]);
    } else {
        // Invalid password
        echo json_encode(["success" => false, "message" => "Invalid credentials."]);
    }
} else {
    // User not found
    echo json_encode(["success" => false, "message" => "Invalid credentials."]);
}

// Close connection
$stmt->close();
$conn->close();
?>
```

Register.php

```
<?php
$servername = "sql107.infinityfree.com";
$username = "if0_38552695";
$password = "GyyZopL1Sa6";
$dbname = "if0_38552695_bookmates";

// Create a connection to the database
$conn = new mysqli($servername, $username, $password, $dbname);

// Check the connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}

// Check if form is submitted and required fields are provided
if ($_SERVER["REQUEST_METHOD"] == "POST") {
    $userName = $_POST['username'];  // Assuming 'username' is the field name in the form
    $userEmail = $_POST['email'];    // Assuming 'email' is the field name in the form
    $userPassword = $_POST['password'];  // Assuming 'password' is the field name in the form

    // Ensure that the necessary fields are not empty
    if (!empty($userName) && !empty($userEmail) && !empty($userPassword)) {
        // Hash the password for security
        $hashedPassword = password_hash($userPassword, PASSWORD_DEFAULT);

        // Insert the new user into the database
         $sql = "INSERT INTO users (username, email, password) VALUES ('$userName', '$userEmail',
'$hashedPassword')";

        if ($conn->query($sql) === TRUE) {
            // Redirect to index.html after successful sign-up
             header("Location: Login.html");
            exit();  // Stop further execution
        } else {
            echo "Error: " . $sql . "<br>" . $conn->error;
        }
    } else {
        echo "All fields are required.";
    }
}

// Close the database connection
$conn->close();?>
```

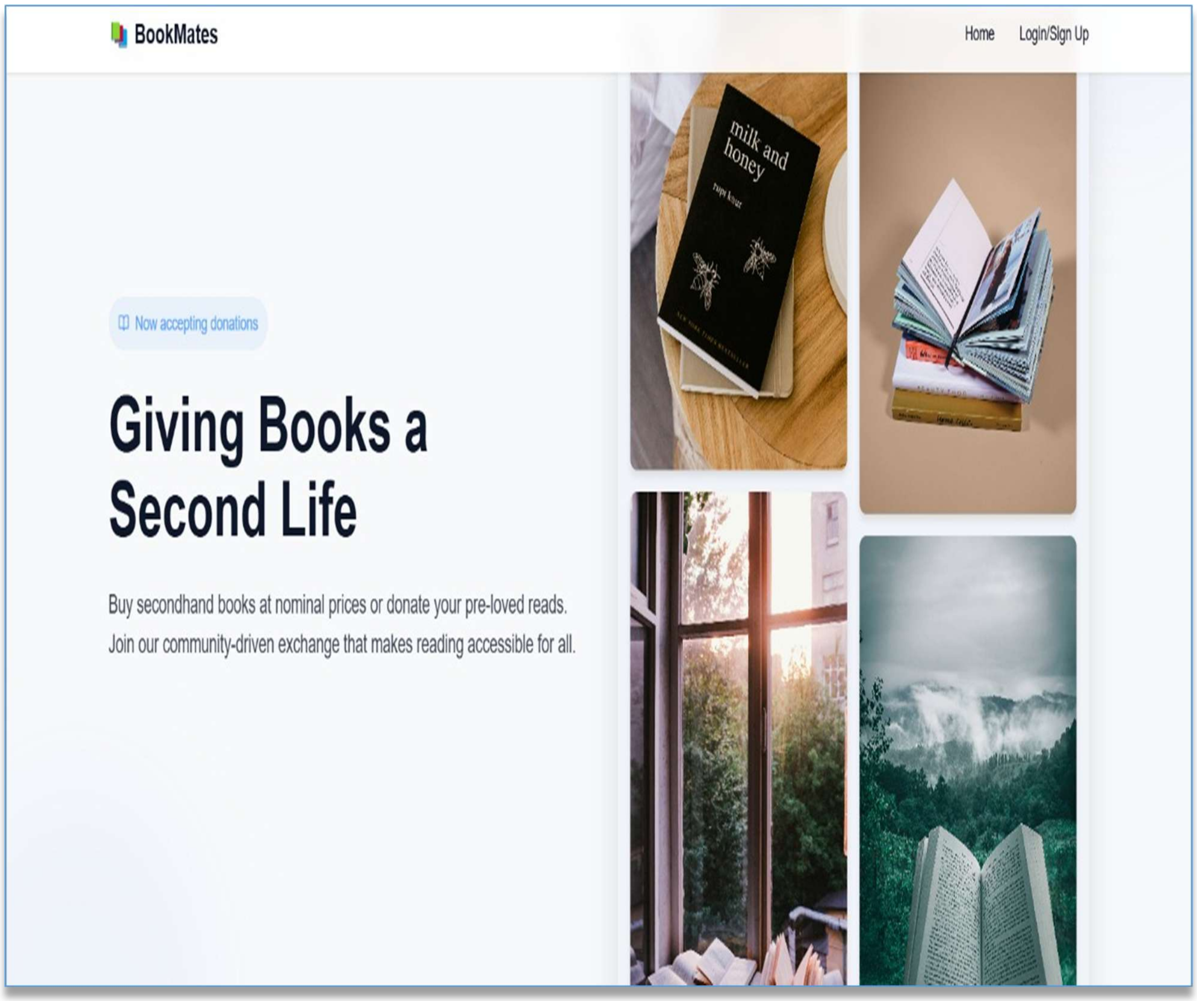
Submit-book.php

```
<?php
$servername = "sql107.infinityfree.com";
$username = "if0_38552695";
$password = "GyyZopL1Sa6"; // Empty password for XAMPP
$dbname = "if0_38552695_bookmates";
header('Content-Type: application/json'); // JSON response

$conn = new mysqli($servername, $username, $password, $dbname);

if ($conn->connect_error) {
    die(json_encode(["success" => false, "message" => "Database connection failed: " . $conn-
>connect_error]));
}

if ($_SERVER['REQUEST_METHOD'] === 'POST') {
    $title = trim($_POST['title']);
    $author = trim($_POST['author']);
    $category = trim($_POST['category']);
    $condition = trim($_POST['condition']);
    $isFree = trim($_POST['isFree']);
    $price = trim($_POST['price']);
    $address = trim($_POST['address']);
    $contact = trim($_POST['contact']);

    if (empty($title) || empty($author) || empty($category) || empty($condition) || empty($address) ||
empty($contact)) {
        echo json_encode(["success" => false, "message" => "All fields except price are required."]);

        exit;

    }


    $sql = "INSERT INTO books (title, author, category, book_condition, is_free, price, address, contact)

            VALUES (?, ?, ?, ?, ?, ?, ?, ?)";


    $stmt = $conn->prepare($sql);

     $stmt->bind_param("ssssssss", $title, $author, $category, $condition, $isFree, $price, $address,
$contact);


    if ($stmt->execute()) {

      header("Content-Type: application/json");

      echo json_encode(["success" => true, "message" => "Book listed successfully."]);


      // Redirect to browse-books.html after sending JSON response

      header("Location: browse-books.html");

      exit;

    } else {

        echo json_encode(["success" => false, "message" => "Error: " . $stmt->error]);

    }

    $stmt->close();

} else {echo json_encode(["success" => false, "message" => "Invalid request method."]);

}$conn->close();

?>
```

Results

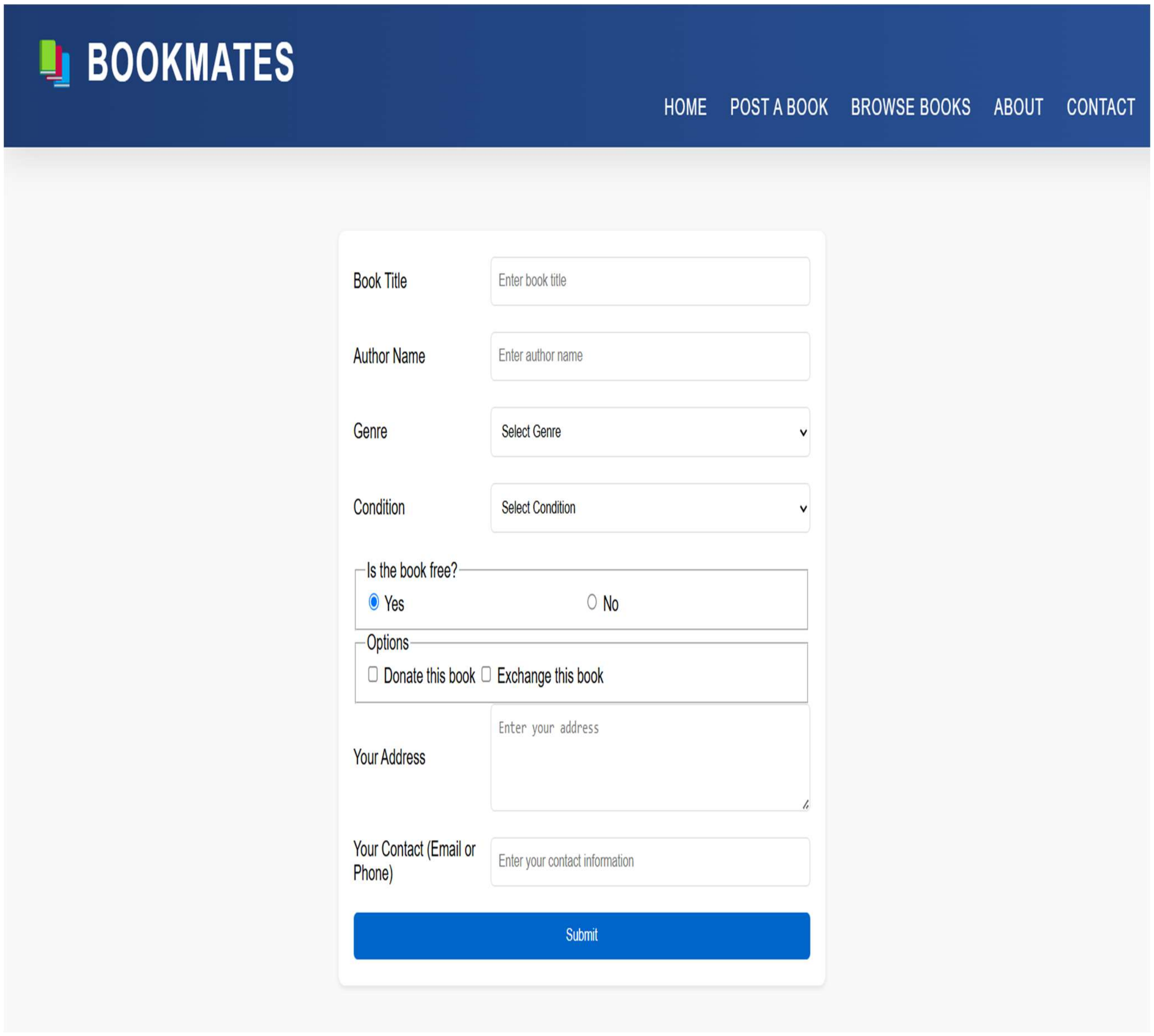
5.Results

Output Screens:



Giving Books a Second Life

Buy secondhand books at nominal prices or donate your pre-loved reads. Join our community-driven exchange that makes reading accessible for all.


BOOKMATES

HOME POST A BOOK BROWSE BOOKS ABOUT CONTACT

Book Title	Enter book title
Author Name	Enter author name
Genre	Select Genre
Condition	Select Condition

Is the book free?

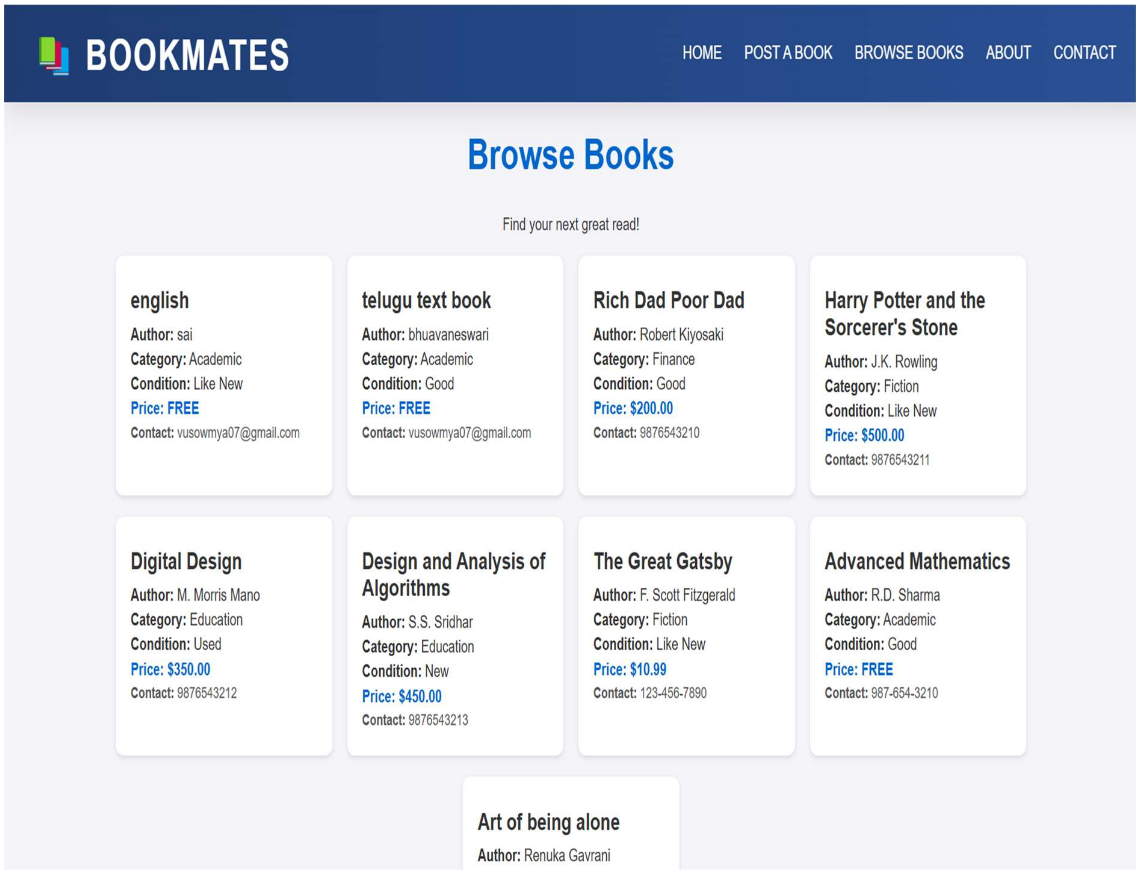
[✓ Yes] No

Options

☐ Donate this book ☐ Exchange this book

Your Address	Enter your address
Your Contact (Email or Phone)	Enter your contact information

Submit



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Condition: Like New
Price: FREE
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Author: Robert Kiyosaki
Category: Finance
Condition: Good
Price: $200.00
Contact: 9876543210

Harry Potter and the Sorcerer's Stone
Author: J.K. Rowling
Category: Fiction
Condition: Like New
Price: $500.00
Contact: 9876543211

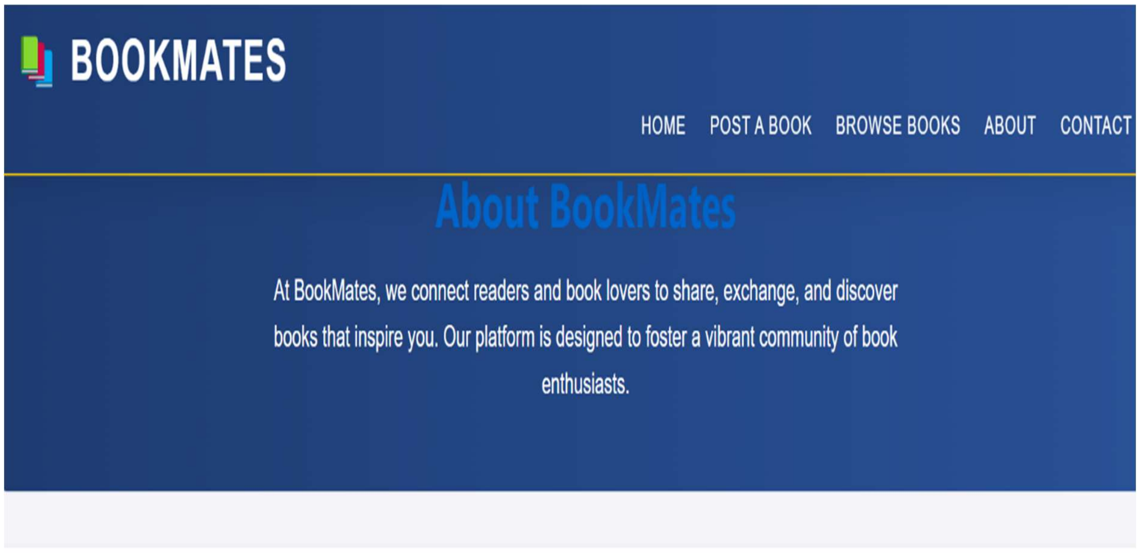
Digital Design
Author: M. Morris Mano
Category: Education
Condition: Used
Price: $350.00
Contact: 9876543212

Design and Analysis of Algorithms
Author: S.S. Sridhar
Category: Education
Condition: New
Price: $450.00
Contact: 9876543213

The Great Gatsby
Author: F. Scott Fitzgerald
Category: Fiction
Condition: Like New
Price: $10.99
Contact: 123-456-7890

Advanced Mathematics
Author: R.D. Sharma
Category: Academic
Condition: Good
Price: FREE
Contact: 987-654-3210

Art of being alone
Author: Renuka Gavrani

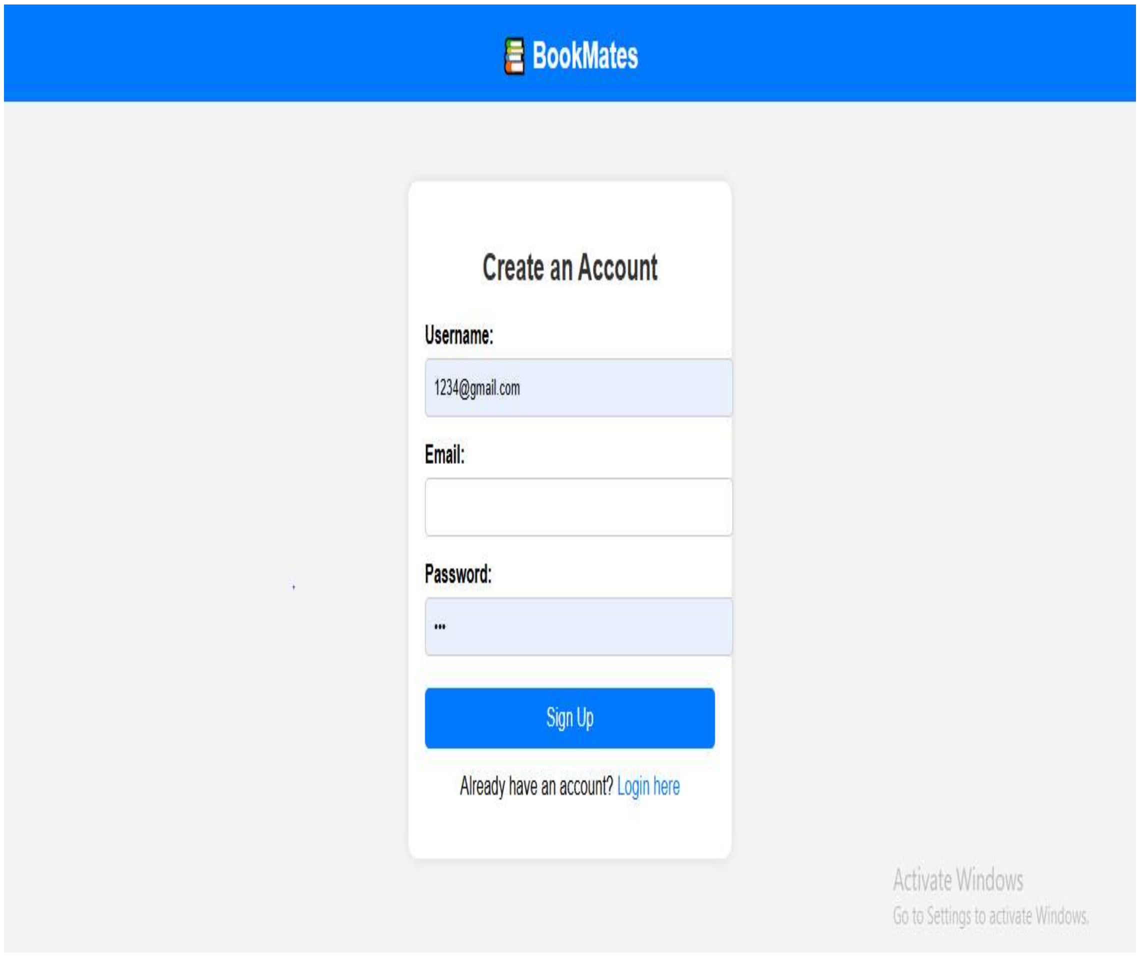


About BookMates

At BookMates, we connect readers and book lovers to share, exchange, and discover books that inspire you. Our platform is designed to foster a vibrant community of book enthusiasts.

Our Vision

Our vision is to create a vibrant community where everyone can access a diverse range of books, fostering a culture of reading and sustainability. We aim to provide advanced features similar to major platforms, ensuring a seamless experience for all users. Join us in our mission to promote literacy and a love for reading.



BookMates

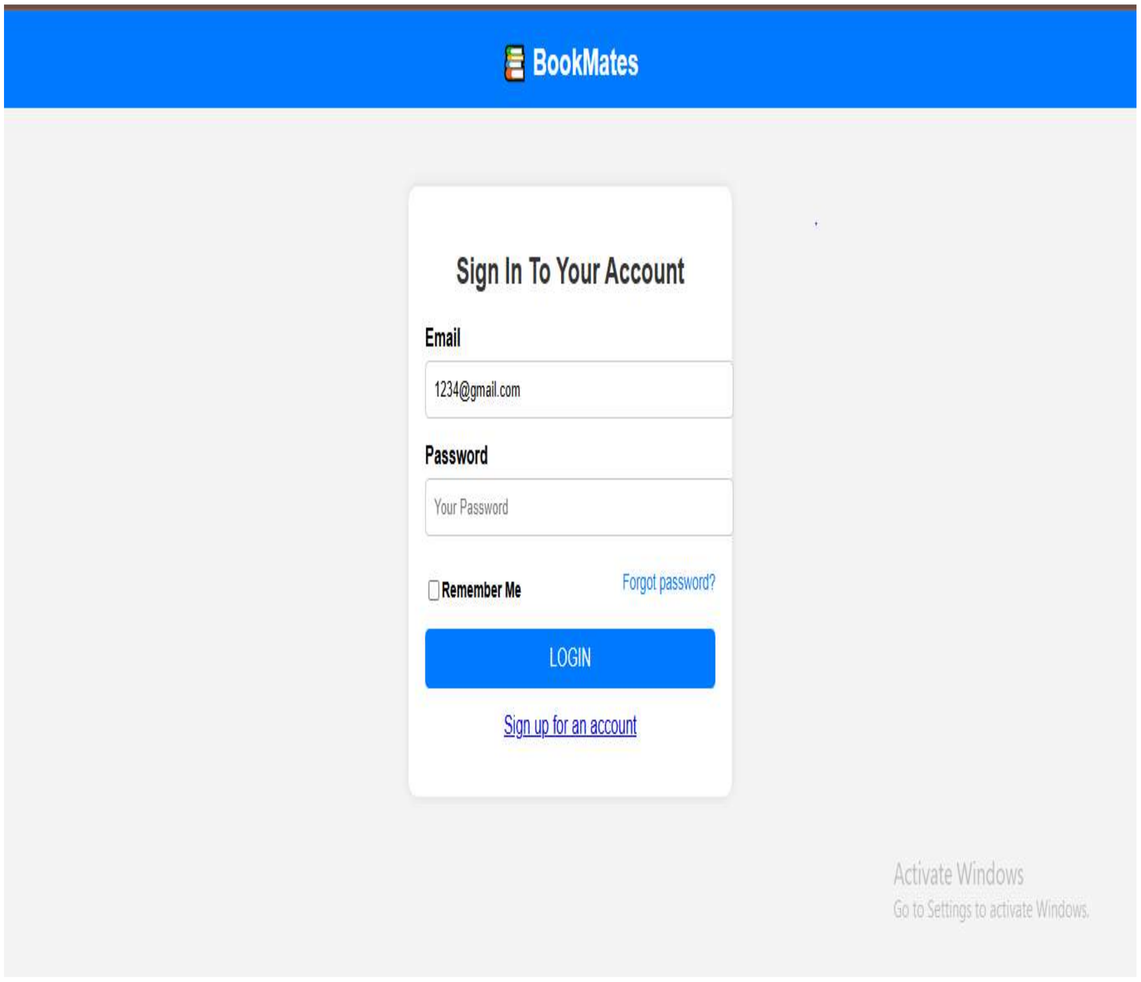
Create an Account

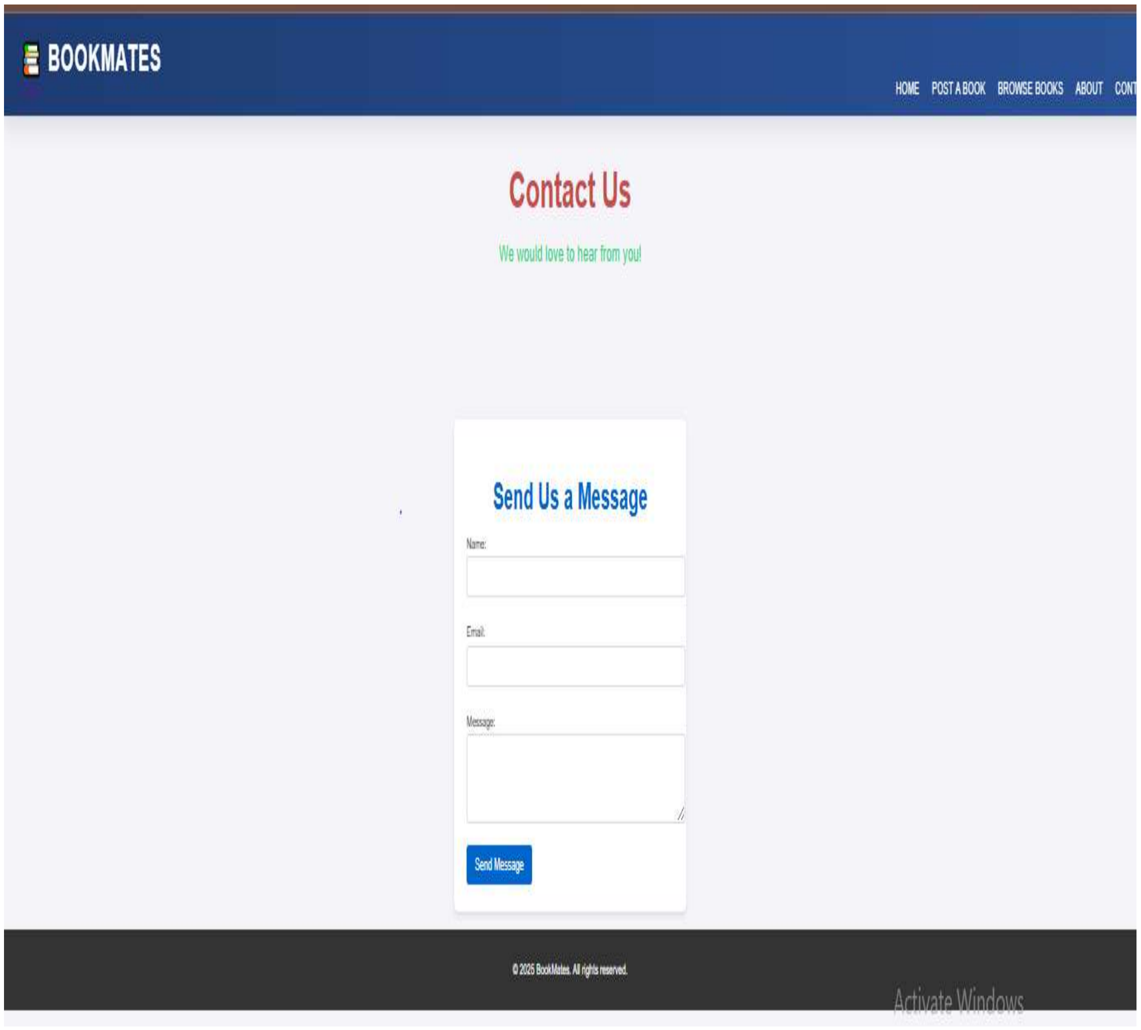
Username:
1234@gmail.com

Email:

Password:
•••

Already have an account? Login here


BookMates
Sign In To Your Account
Email
1234@gmail.com
Password
Your Password
Remember Me
Forgot password?
LOGIN
Sign up for an account
Activate Windows
Go to Settings to activate Windows.



BOOKMATES

HOME POST A BOOK BROWSE BOOKS ABOUT CONT

Contact Us

We would love to hear from you!

Send Us a Message

Name:

Email:

Message:

Send Message

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Conclusion

6.Conclusion

Book Mates is a social platform designed for book lovers to connect, share reading experiences, and discuss their favorite books. Users can create profiles, track their reading progress, join virtual book clubs, and receive book recommendations based on their preferences. The app fosters a sense of community by allowing users to interact, share reviews, and participate in discussions. With features like notifications for book releases, reading challenges, and the ability to donate books to others, Book Mates aims to make reading more enjoyable and accessible to everyone. Through features like user authentication, book search, secure transactions, and real-time chat, Book Mates fosters a community-driven approach to book sharing. The integration of wishlist management, notifications, and AI-based recommendations in future updates will further enhance user experience and engagement.The test cases validated the system's core functionalities, ensuring that user login, book search, and transactions function correctly. The successful execution of test cases confirms the reliability and efficiency of the system. By promoting sustainability, accessibility, and digital convenience, Book Mates aims to revolutionize book sharing and encourage a culture of reading.

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