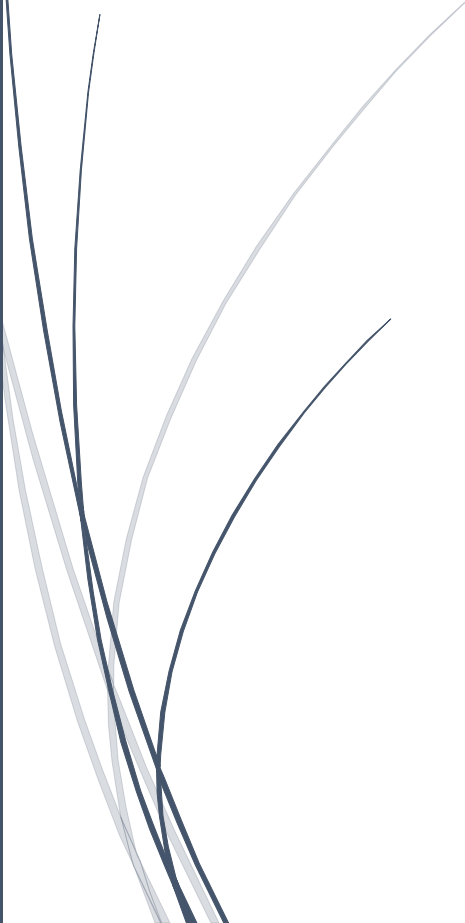


A dark blue vertical bar on the left side of the slide. A blue arrow points to the right from the bar, containing the date 6/30/2016.

6/30/2016

Online Book Store

Several thin, curved lines in dark blue and light grey originate from the bottom left and sweep upwards and to the right.

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1. Introduction

The main objective of the project is to create an online book store that allows users to search and purchase a book online based on title, author, name & ISBN. The customer can search for books and add them to shopping cart and proceed to checkout. The customer can use a credit card for purchasing the books. A new user can create his account through a registration page by entering all the required details. The registered user can login using his login credentials. The registered user can edit his personal information, add or delete a credit card and view order history. If a customer does not register, then they can purchase the book as guest user. The customer can place the order of the books selected. Once the order is placed he can edit the shipping information and view the status of the order. The Administrator has the privileges to add, delete and update book information as well as update the customer information.

2. Requirement/Feature List

CUSTOMER

- Registration
- Login
- Browse books
- Order
- Manage order
- Checkout
- View Order history

ADMIN

- Manage customer account
- Update books in the system
- Update admin Profile

BANK SYSTEM

- Verify payment information

GUEST

- Browse Books
- Order
- Manage Order
- Checkout

3. Domain Dictionary

Name	Type	Description
Admin	Role	Has all privileges and can cancel/update/delete any type of order.
Guest	Role	<ol style="list-style-type: none">1. Search for books by category, title, author, or ISBN.2. Add or remove books to/from the shopping cart3. Checkout books in the shopping cart.4. Search for their orders to change the shipping address or to cancel the order.
Customer	Role	<ol style="list-style-type: none">1. Search for books by category, title, author, or ISBN.2. Add or remove books to/from the shopping cart3. Checkout books in the shopping cart.4. Search for their orders to change the shipping address or to cancel the order.5. Create customer account6. Login to the system to view orders history, view shipping info, or update account.
Bank System	Role	Verify the payment information.
Search books	Process	Guests, customers, and administrators search for books by category, title, author, or ISBN.

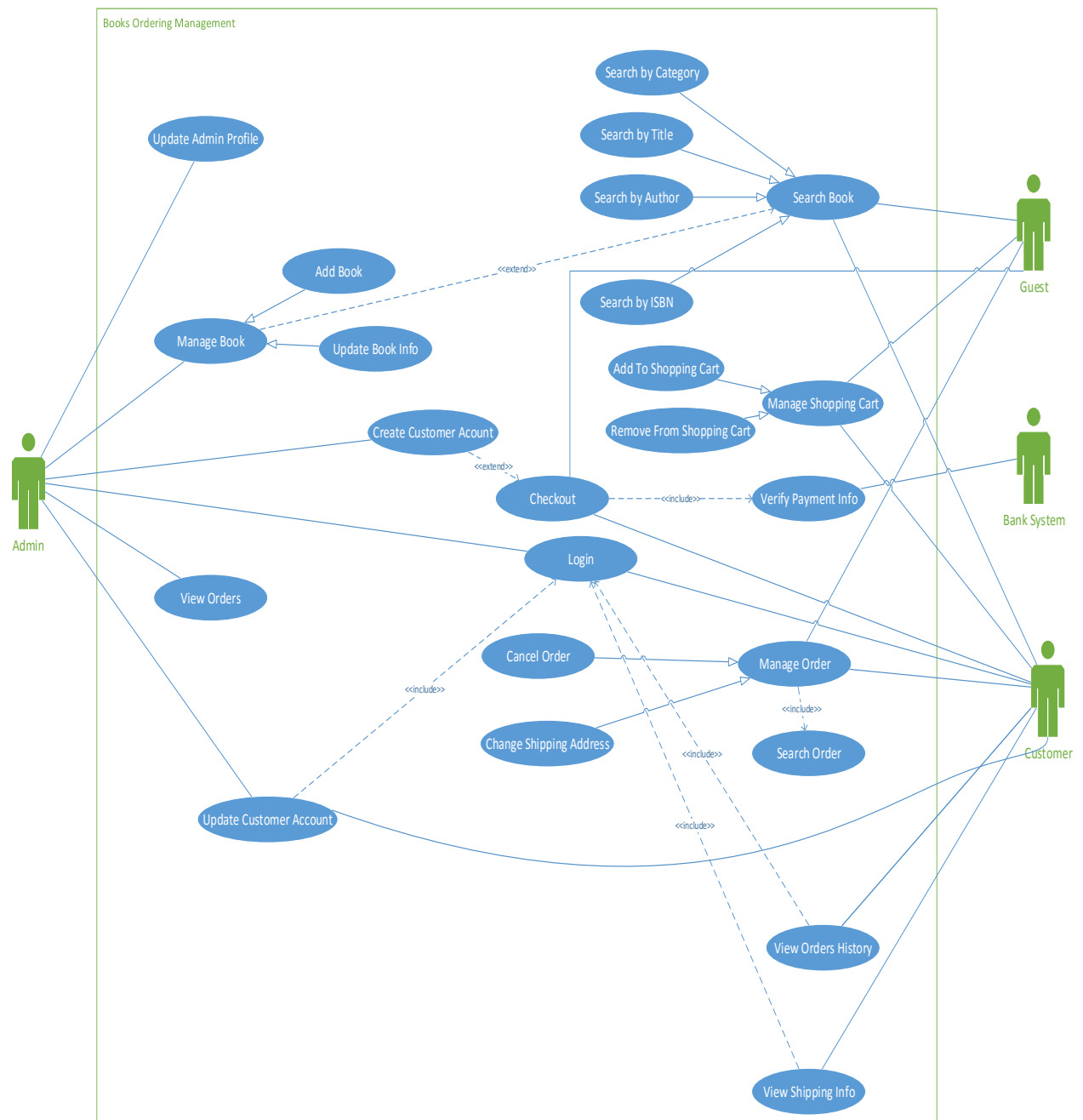
Add to the shopping cart	Process	Adding a book to the shopping cart.
Remove from the shopping cart	Process	Remove a book from the shopping cart.
Creating Customer Account	Process	Create an account for a new customer by an Admin or by a guest at the checkout.
Shopping cart	Object	A temporary place where a book can be added or removed before the checkout.
Customer Account	Object	The created account by the admin or the guest at the checkout in order for the customer to login and do different activities like: view orders history, view shipping info, and update account.
Checkout	Process	Paying for the ordered books. Guests have the option to create an account at the checkout if they want to.
Login	Process	Admins can login to add and update admins, add and update books, create and update customers accounts, and view all orders. Customers can login to the system to view orders history, view shipping info, and update account.
Change Shipping Address	Process	Change the shipping address associated with an order.
/Cancel Order	Process	Cancel an order by a guest or a customer.
View orders history	Process	View previous orders by the customers.
View shipping info	Process	View the shipping information by the customers.
Add admin	Process	Add new administrator to the system

Add a book	Process	Add new book
Update a book	Process	Update book information
Order Confirmation number	Identifier	The order confirmation number is generated when an order is placed and a payment is received. It can be used later to change the shipping information associated with that order or to cancel the order.
Book	Object	Books are added and updated by administrators in order for guests and customers to buy them.
View orders	Process	View all orders of the bookstore by the administrator.
Order	Object	A guest or a customer can make an order to by book(s). The order can be cancelled or updated.
View shipping info	Business rule	The person has to register to the system to be able to view the shipping info.
View orders history	Business rule	The person has to register to the system to be able to view orders history.

4. Actor Dictionary

Actor	Description	Abstract	Use Case
Admin	The admin has the privileges of creating/updating the customer account, Manage Books, view Orders.	No	Update Admin Profile Login Manage Books Create Customer Account View orders Update Customer Account
Customer	Can search for books by category, title, author, or ISBN. Add or remove books to/from the shopping Cart. Checkout books in the shopping cart. Search for their orders to change the shipping address or to cancel the order. Create customer account. Login to the system to view orders history, view shipping info, or update account.	No	Search Books Checkout Manage Shopping Cart Manage Order Login View Order History View Shopping Info Update Customer Account
Guest	Search for books by category, title, author, or ISBN. Add or remove books to/from the shopping Cart. Checkout books in the shopping cart. Search for their orders to change the shipping address or to cancel the order.	No	Search Books Checkout Manage Shopping Cart Manage Order
Bank Systems	The bank system will verify the payment information.	No	Verify Payment Info

5. Use Case Diagram

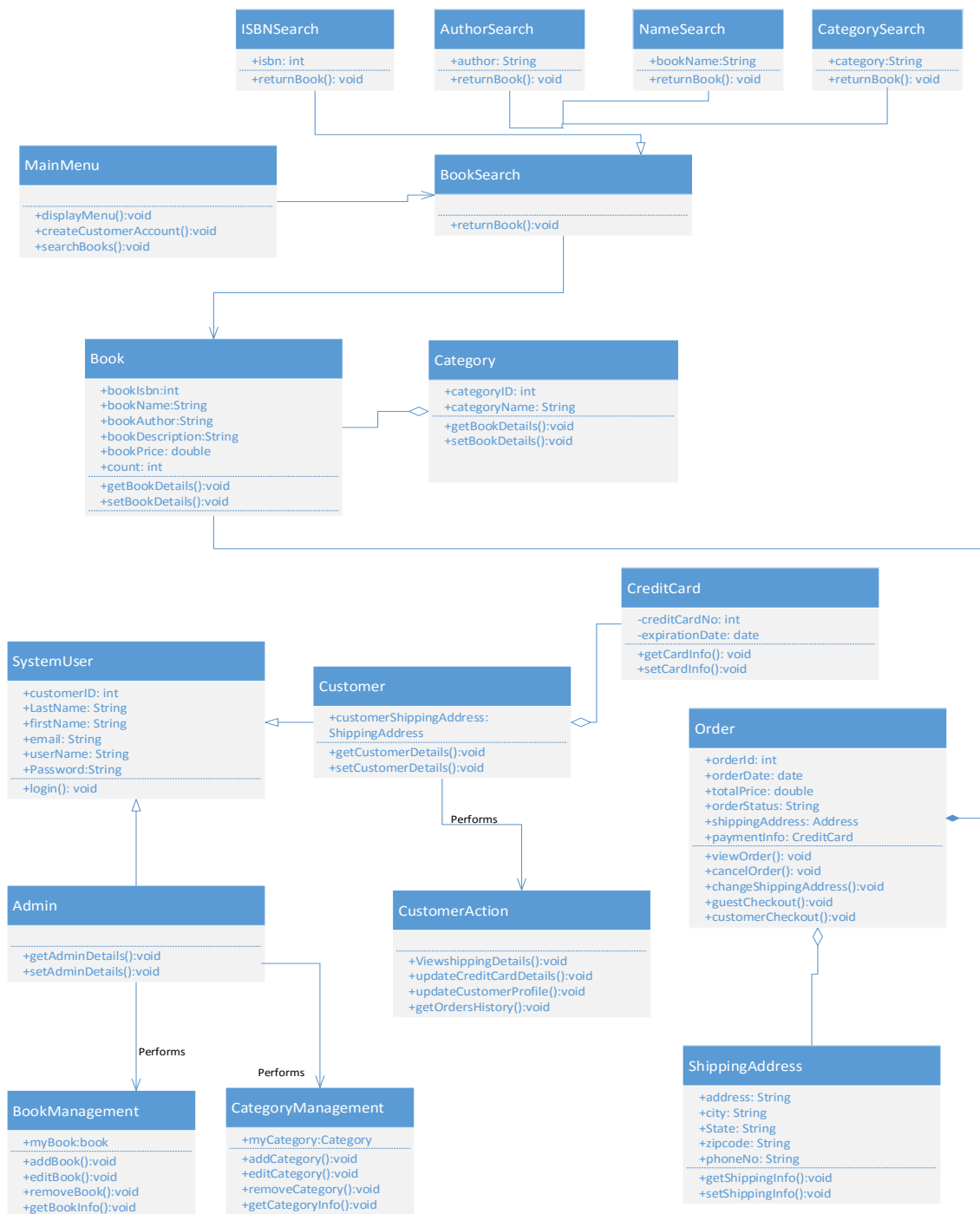


6. Use Case Summary

Name	Description	Actors
Update Admin Profile	An admin updates a particular record associated with his or her account.	Admin
Manage Book	This is an abstract parent use case encompassing the add book and update book info use cases.	Admin
Add Book	An admin adds a new book object into the system's database.	Admin
Update Book Info	An admin updates a particular record associated with an existing book object within the system's database of books.	Admin
Create Customer Account	An admin creates a new customer account to be included in the database, or a guest that does not have an existing customer account may create one for him or herself during checkout.	Admin, Guest
Checkout	An existing customer that is logged into his or her account initiates the checkout process, or a guest initiates the checkout process without creating or logging into any customer account.	Customer, Guest
Verify Payment Info	The bank system internally verifies forwarded payment information regarding a processing order and send verification information back to the books ordering management system.	Bank System
Login	An admin or customer inputs his or her account and password information to initiate the login process.	Admin, Customer
Update Customer Account	An admin updates a particular record associated with an existing customer account, or a customer updates a record associated with his or her own account.	Admin, Customer
View Orders History	A customer opens the order history display associated with his or her account.	Customer
View Shipping Info	A customer opens the shipping info display showing all shipping information associated with his or her currently active/open order.	Customer
View Orders	An admin opens the order history display showing a portion of all orders that have been fully processed, prioritized by a preset condition, such as by ascending or descending order.	Admin

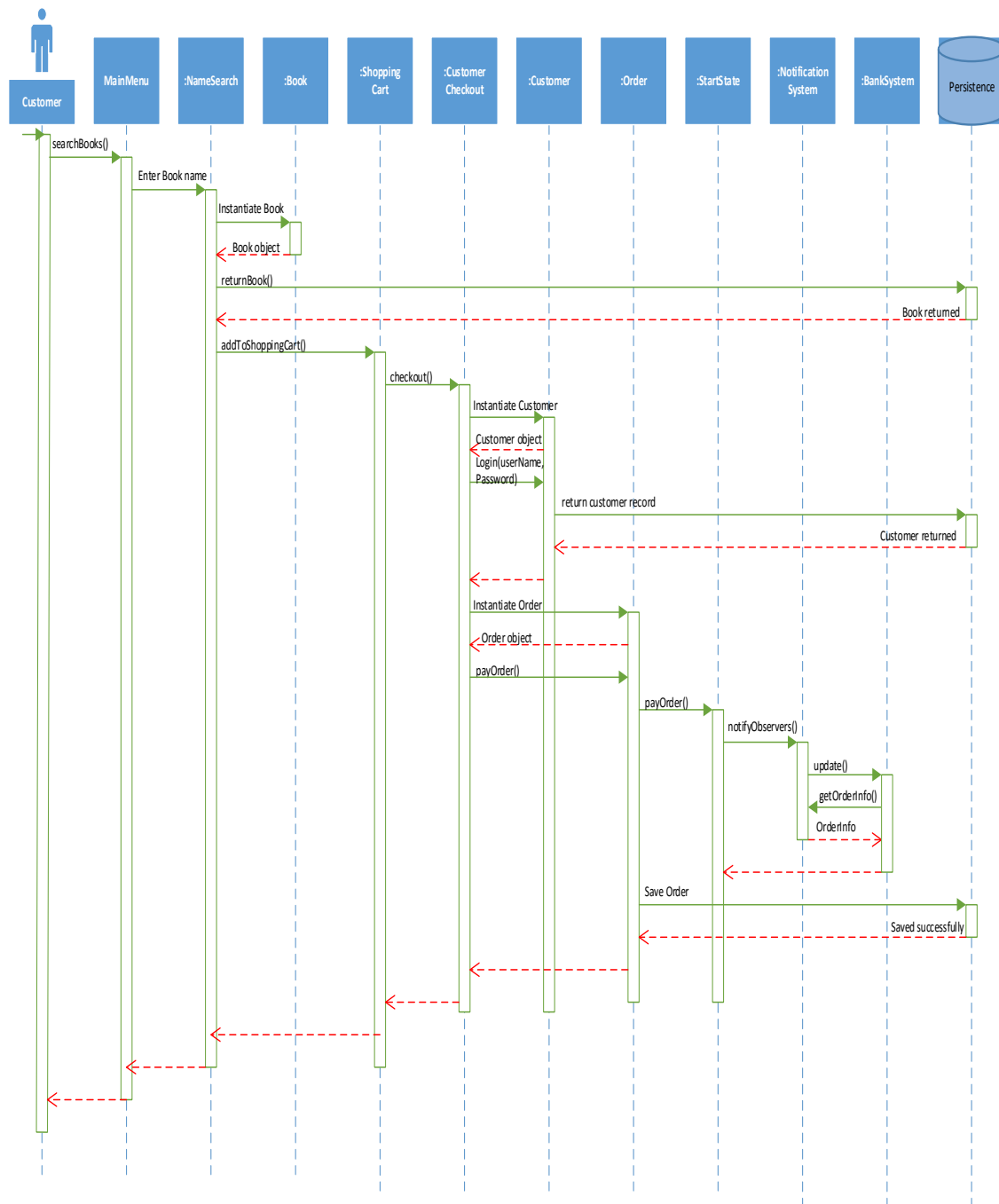
Search Book	This is an abstract parent use case encompassing the search by category, search by title, search by author, and search by ISBN use cases.	Guest, customer
Search by Category	A guest or customer searches the system database for an existing record that matches the user inputted category information.	Guest, customer
Search by Title	A guest or customer searches the system database for an existing record that matches the user inputted title information.	Guest, customer
Search by Author	A guest or customer searches the system database for an existing record that matches the user inputted author information.	Guest, customer
Search by ISBN	A guest or customer searches the system database for an existing record that matches the user inputted ISBN information.	Guest, customer
Manage Shopping Cart	This is an abstract parent use case encompassing add to shopping cart and remove from shopping cart use cases.	Guest, customer
Add to Shopping Cart	A guest or customer adds an existing book on display to his or her active shopping cart.	Guest, customer
Remove from Shopping Cart	A guest or customer removes an existing book on display to his or her active shopping cart.	Guest, customer
Manage Order	This is an abstract parent use case encompassing the cancel order and change shipping address use cases.	Guest, customer
Cancel Order	The guest or customer cancels his or her active order.	Guest, customer
Change Shipping Address	The guest or customer changes the designated shipping address information of his or her active order.	Guest, customer
Search Order	The guest or customer searches his or her active order with user inputted information, such as related order information or information related to any existing books attached to that order.	Guest, customer

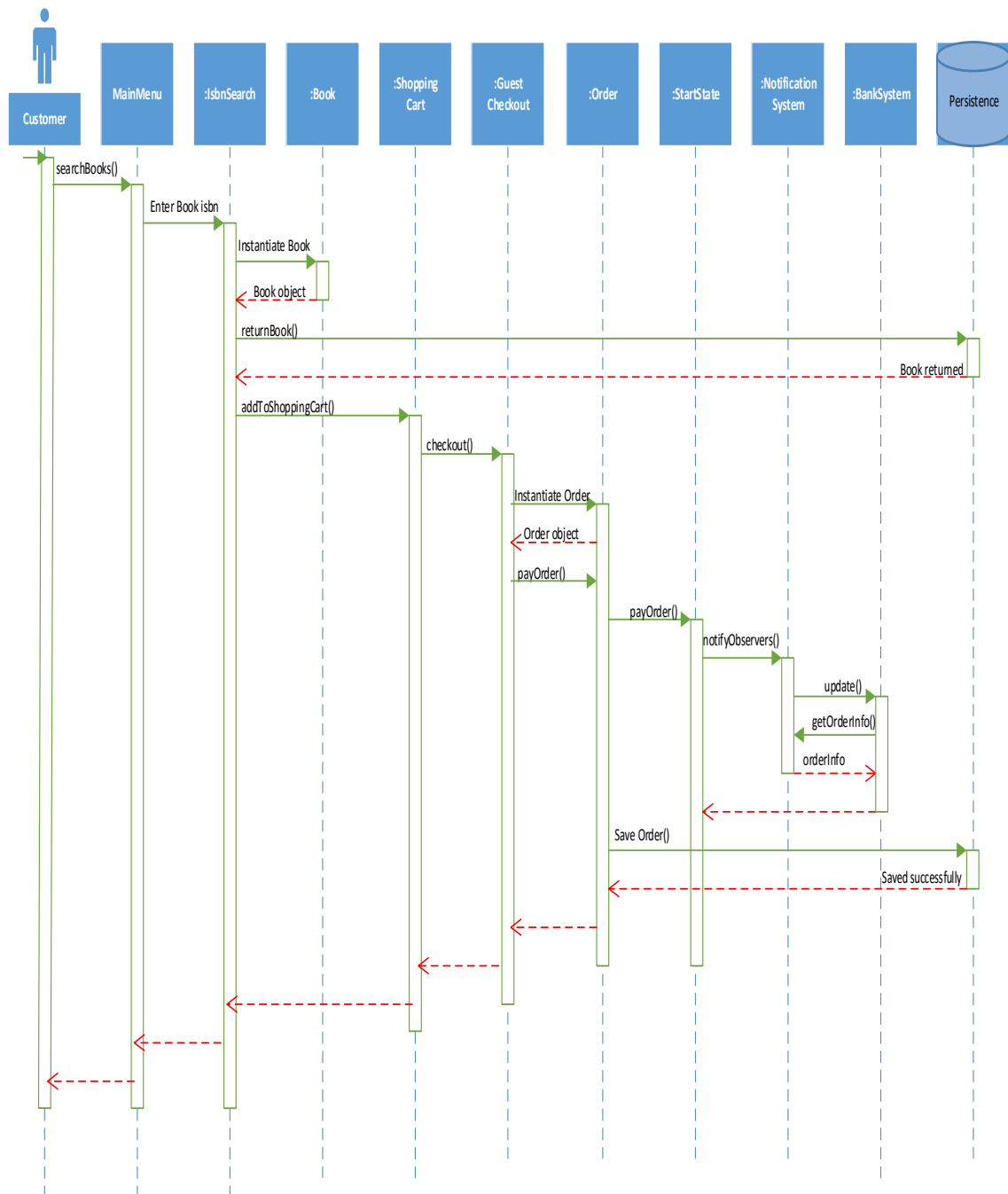
7. Analysis Diagram

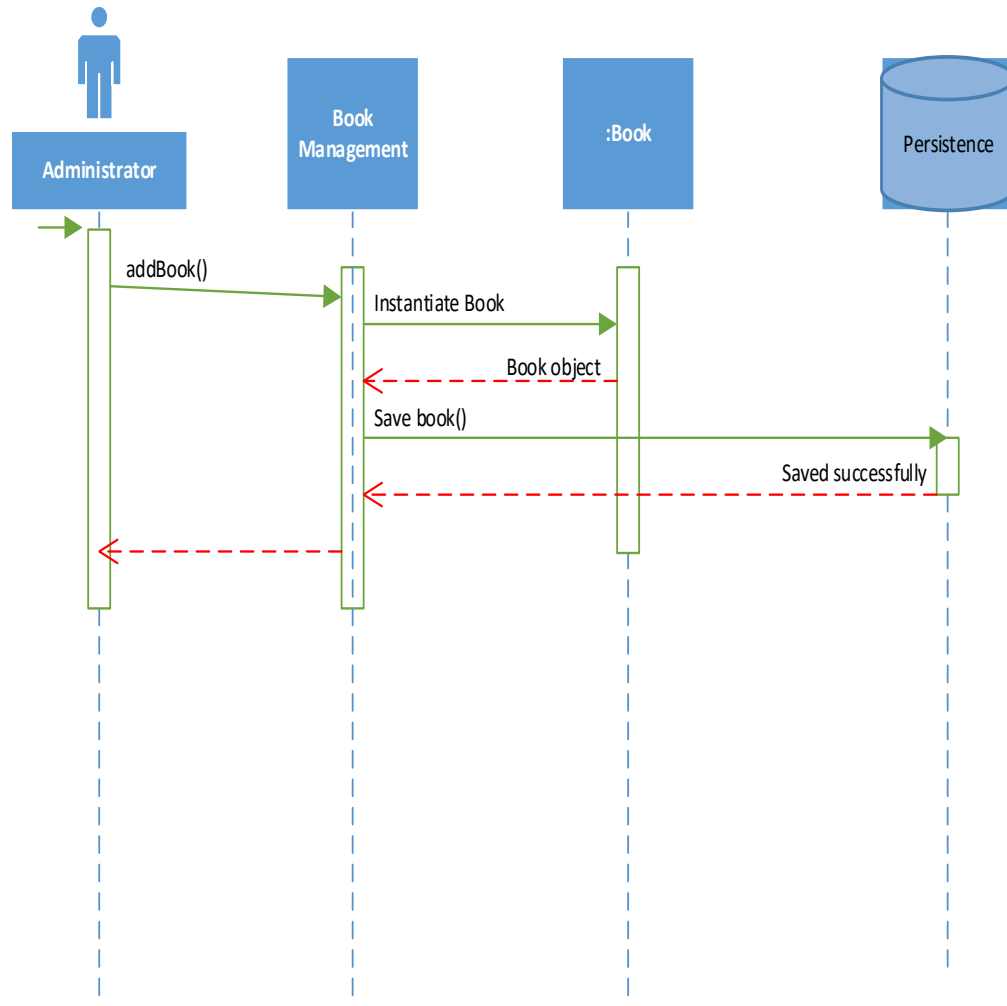


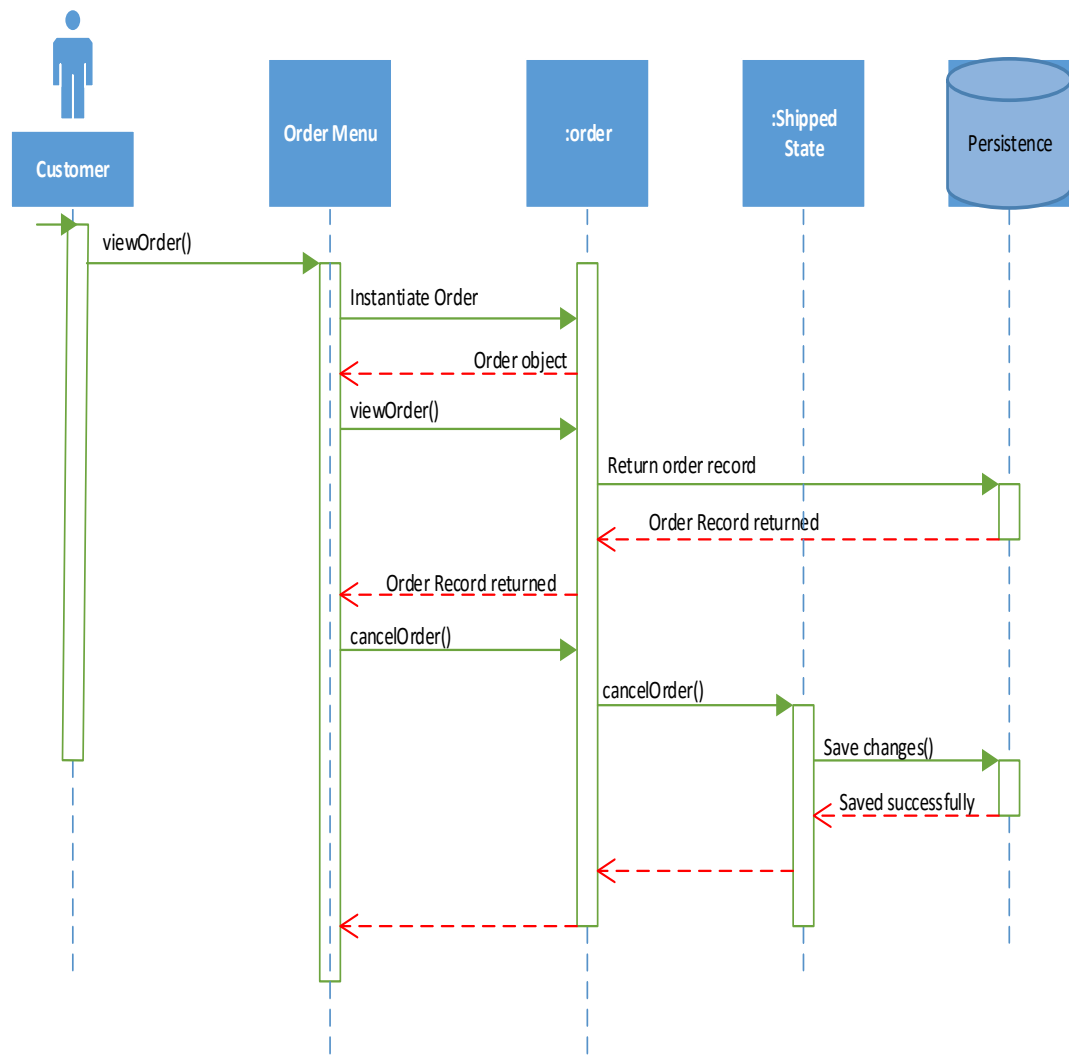
8. Sequence Diagram

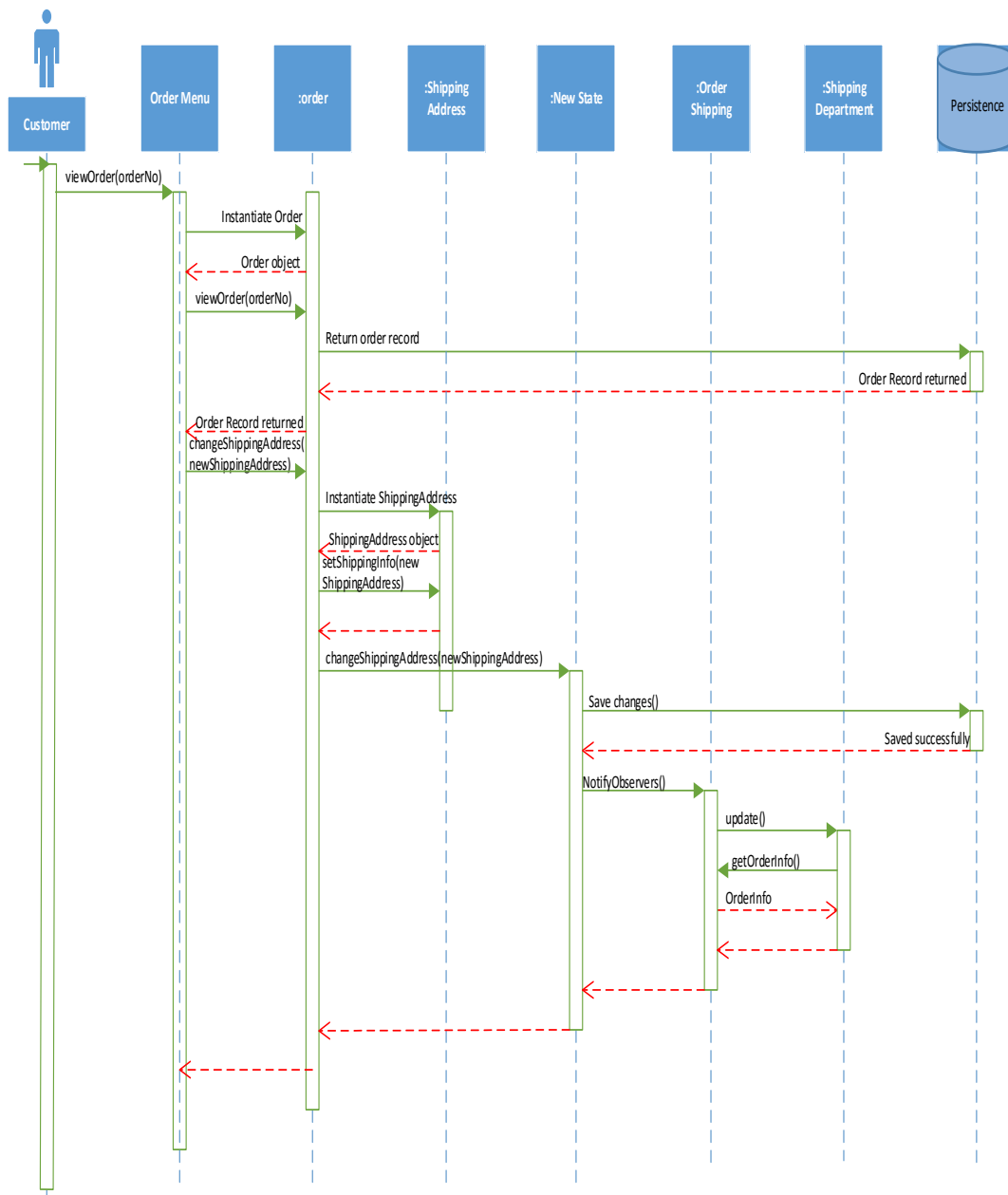
a. Customer Placing an Order

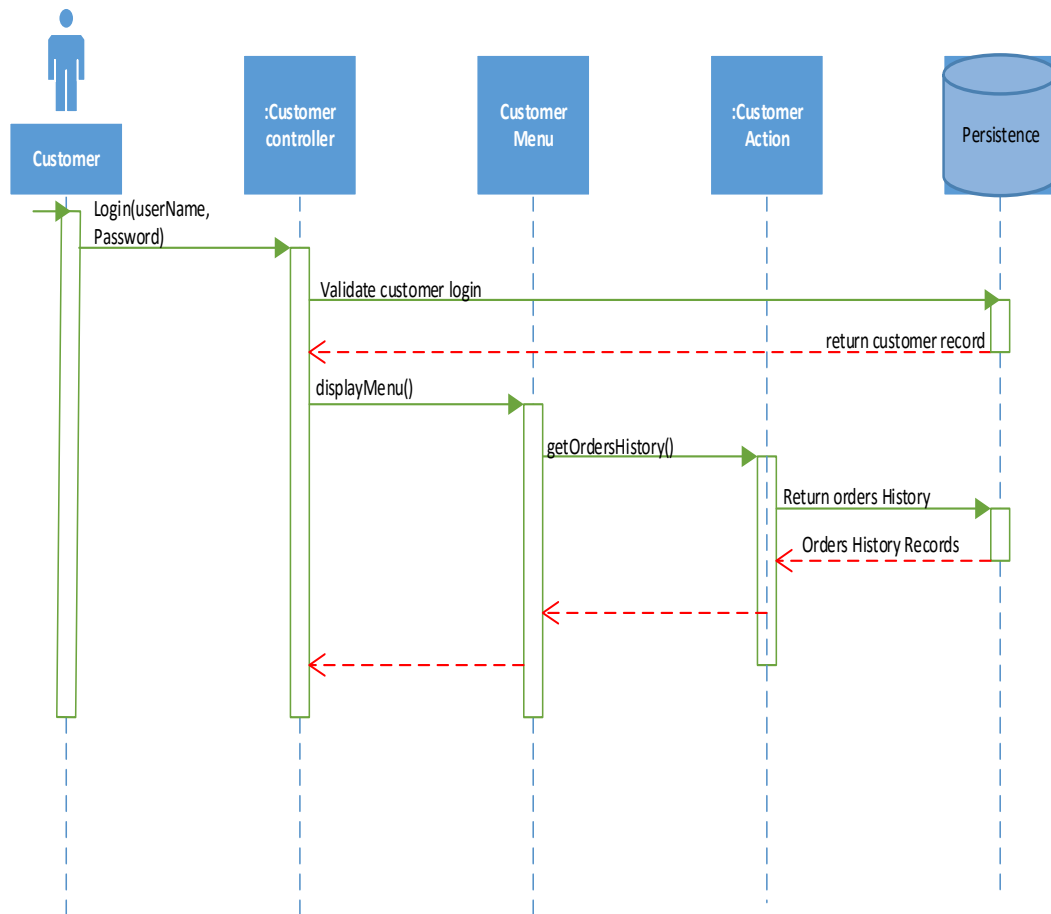


b. Guest Placing an Order

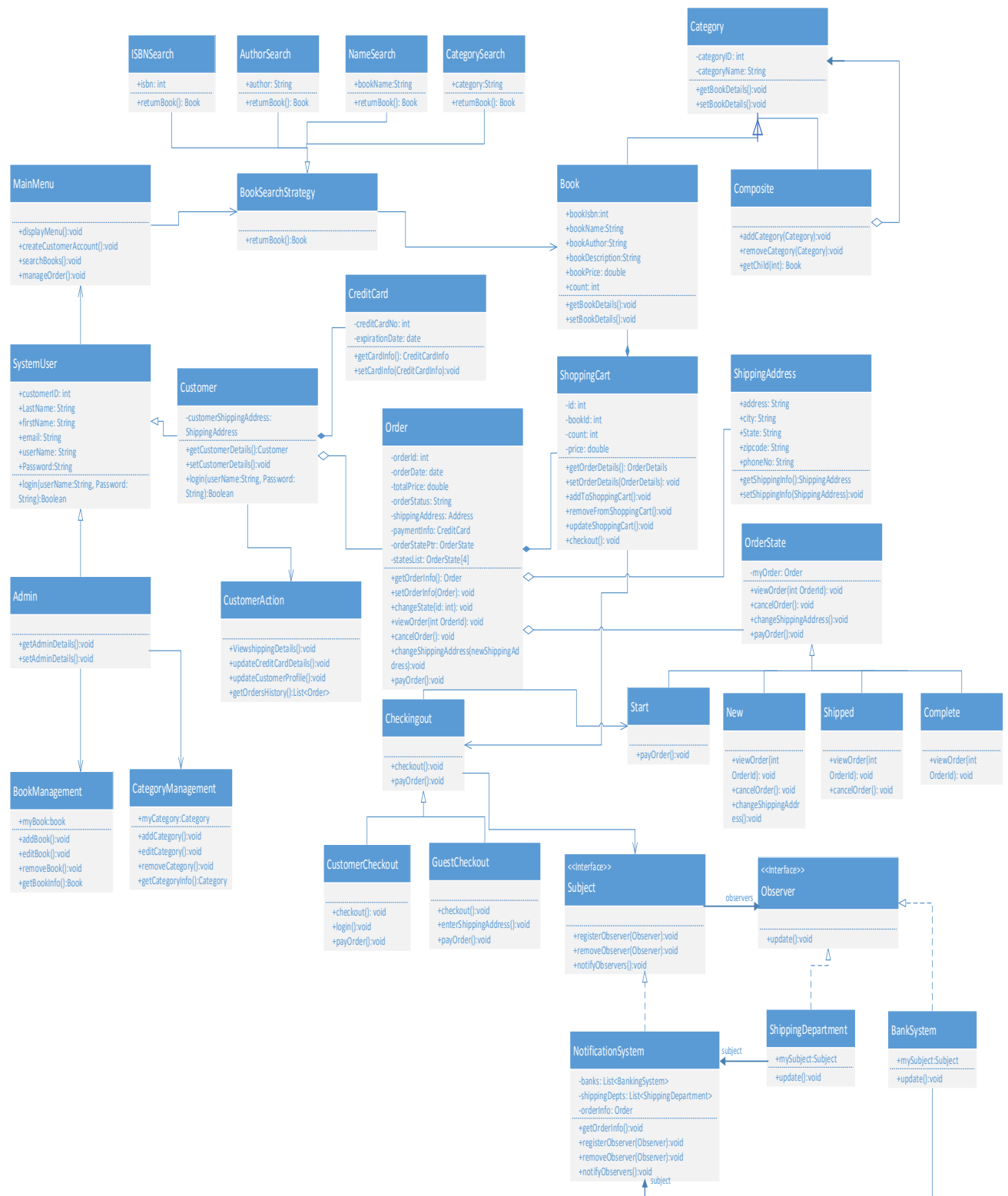
c. Add a Book (Admin Functionality)

d. Cancel Order

e. Change Shipping Address

f. View Order History

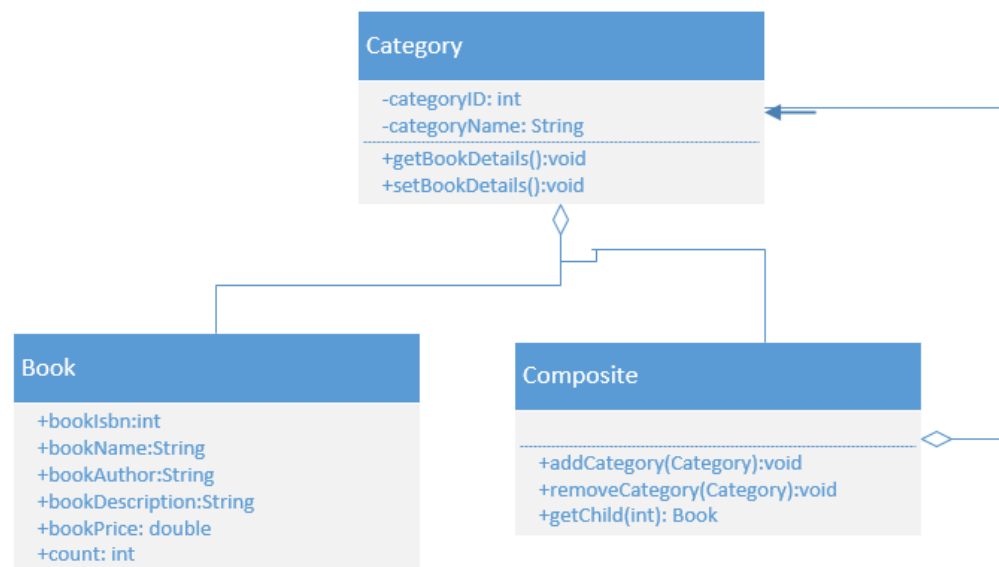
9. Design Model



10. Design Pattern

a. Composite Design Pattern.

Composite pattern is used where we need to treat a group of objects in similar way as a single object. Composite pattern composes objects in term of a tree structure to represent part as well as whole hierarchy. This type of design pattern comes under structural pattern as this pattern creates a tree structure of group of objects.

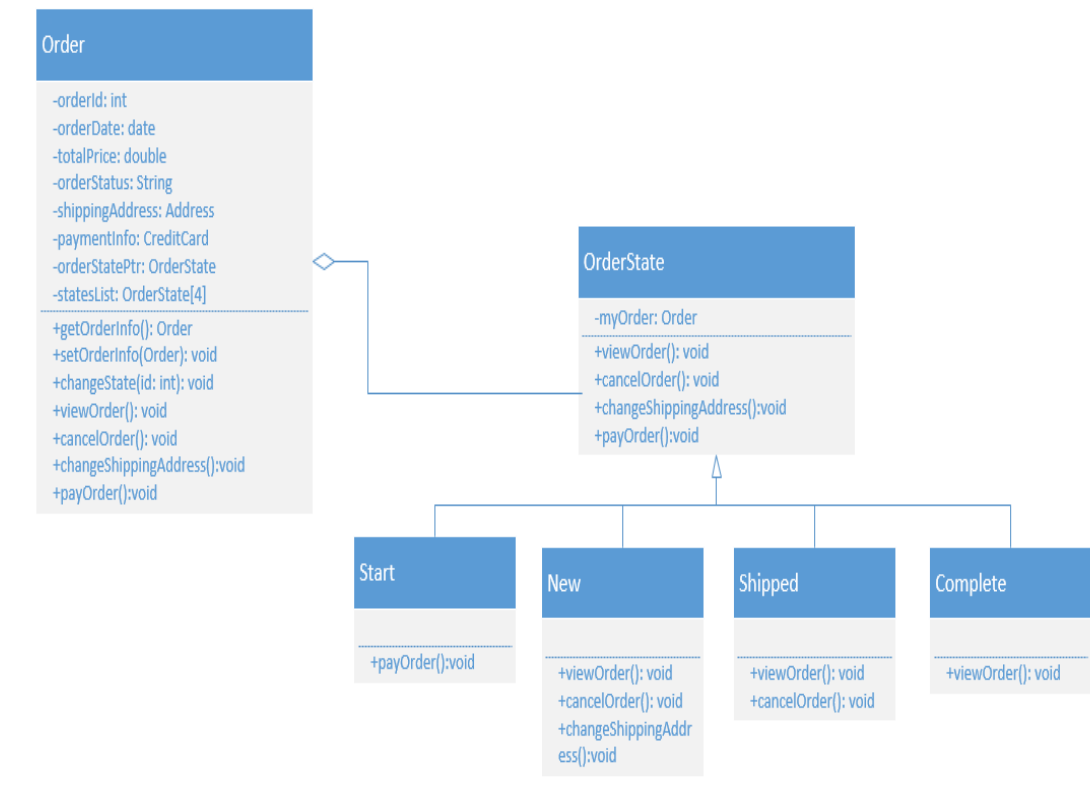


The composite design patter is used here with books category because a category can contain books and may also contain other categories.

b. State Design Pattern

In State pattern a class behaviour changes based on its state. This type of design pattern comes under behaviour pattern.

In State pattern, we create objects which represent various states and a context object whose behaviour varies as its state object changes.



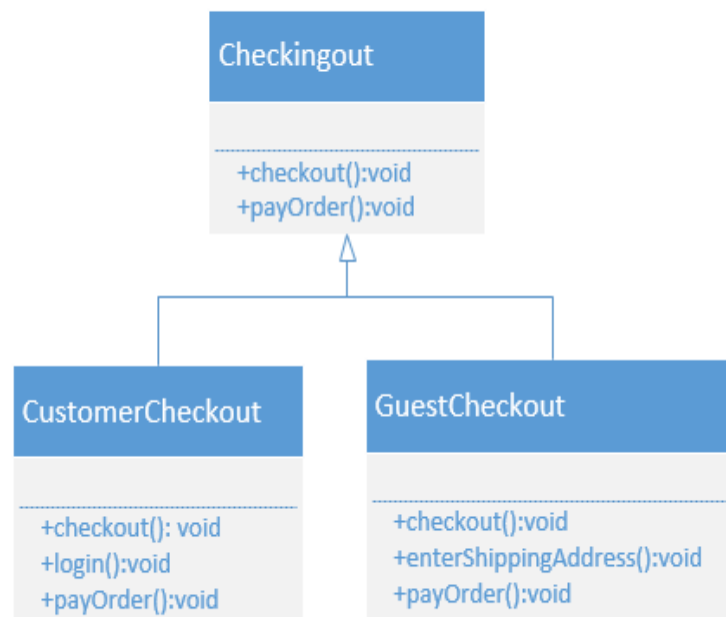
The state design pattern is used here for the order states because the system is going to perform certain methods based on the order state.

The order has four different states:

1. Start State (the initial state for the order)
2. New State
3. Shipped State
4. Complete State

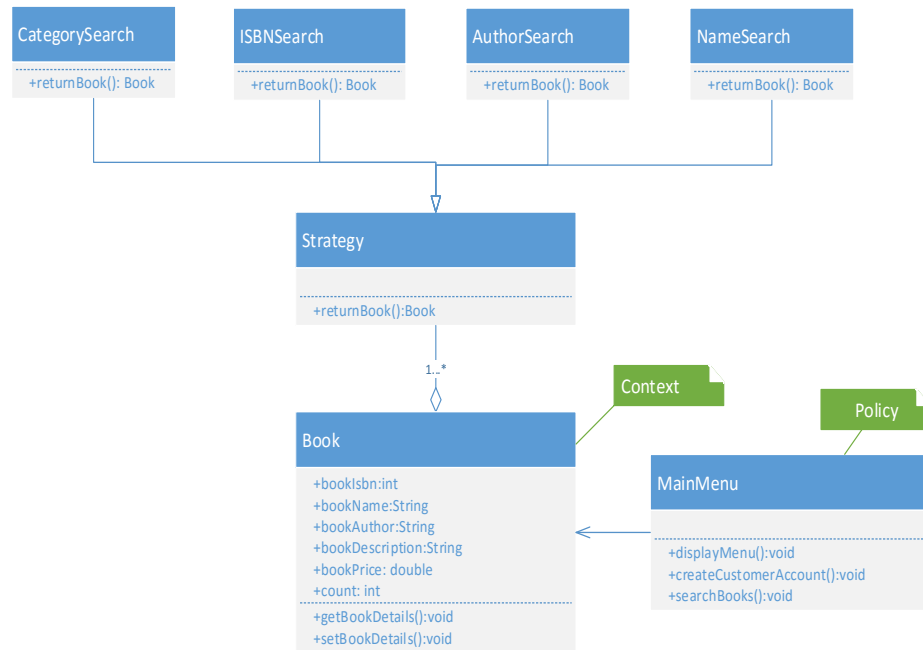
c. Template Design Pattern

In Template pattern, an abstract class exposes defined way(s)/template(s) to execute its methods. Its subclasses can override the method implementation as per need but the invocation is to be in the same way as defined by an abstract class. This pattern comes under behaviour pattern category.



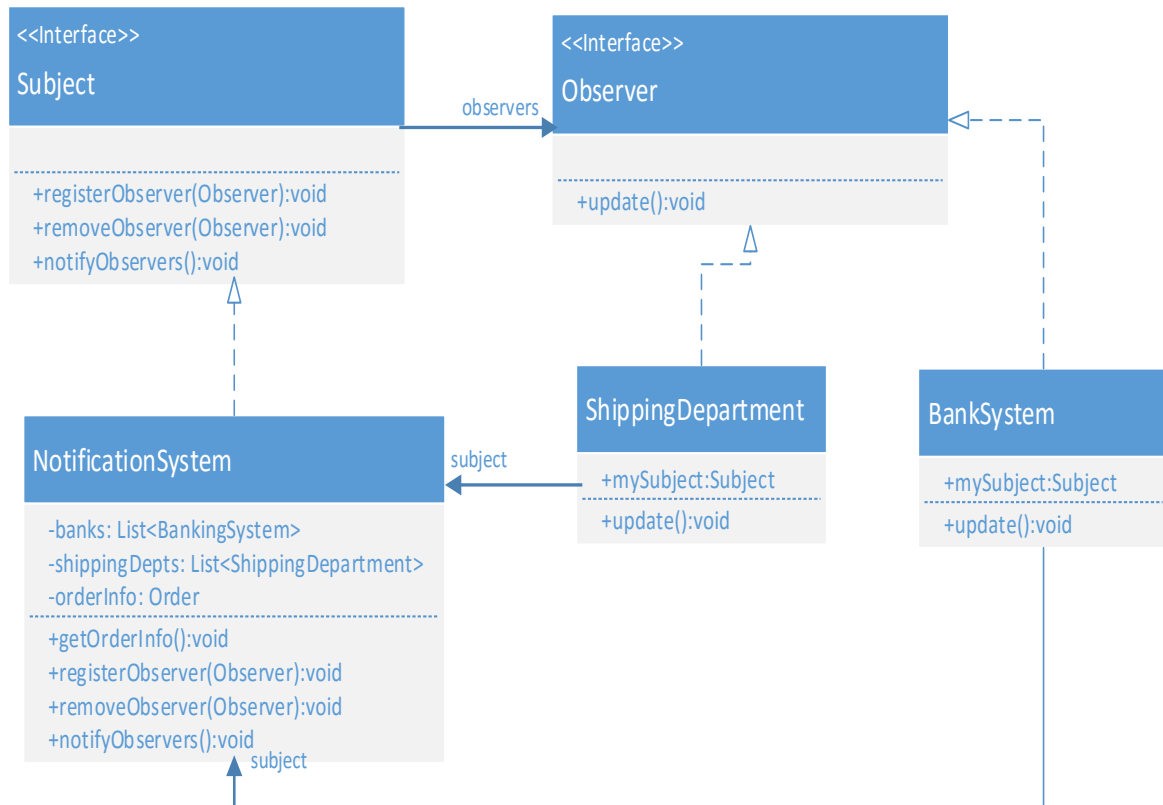
d. Strategy Design Pattern

The strategy pattern was utilized for the organization of our search function implementation. As there are 4 existing search functions in our system, and we may include additional search functions in future iterations of our system, the strategy pattern is ideal for scalability, extensibility, and added flexibility. Each search algorithm is best suited for different situations, and are organized beneath the strategy hierarchy. The Book class serves as our **context** class, and MainMenu serves as our **policy** class, which dictates the context under which a specific search algorithm is chosen.



e. Observer Design Pattern

The Observer design pattern is used to notify the Bank system when a payment is made by the user in order to verify the payment information. It is also used to notify the shipping department when a new order is placed or when the customer changes their shipping address.

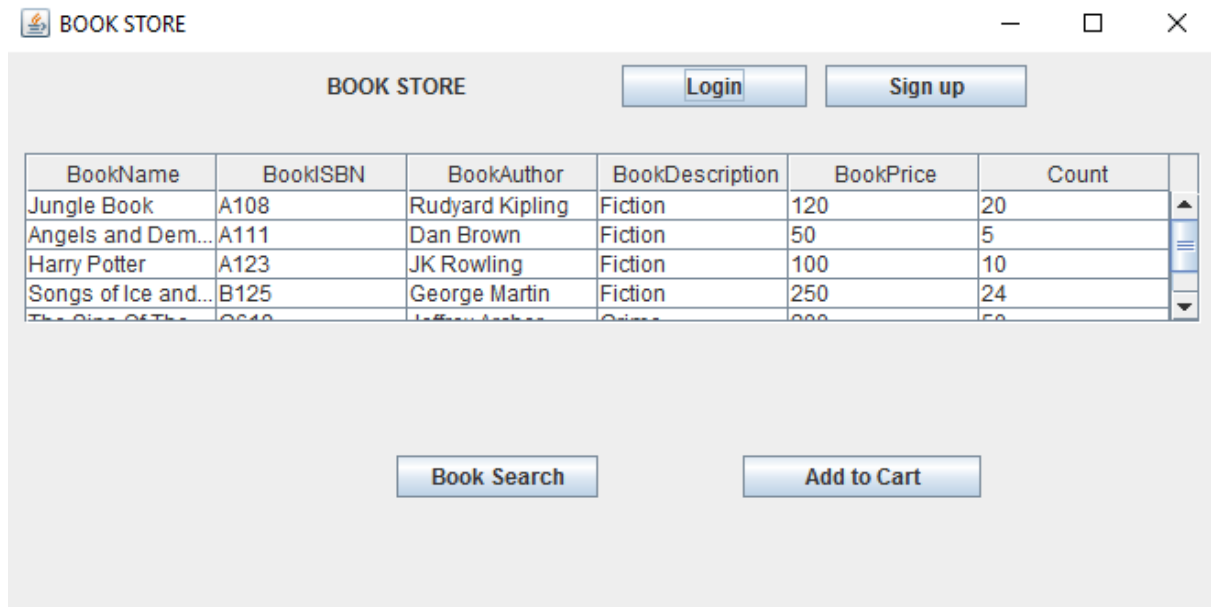


11. Screenshots

11.1 Front-End Screenshots

Main Menu:

The customer can Login or Sign up from the home page. The user also has an option to browse books without logging in. The Admin and Customer can Login through the same Login page.



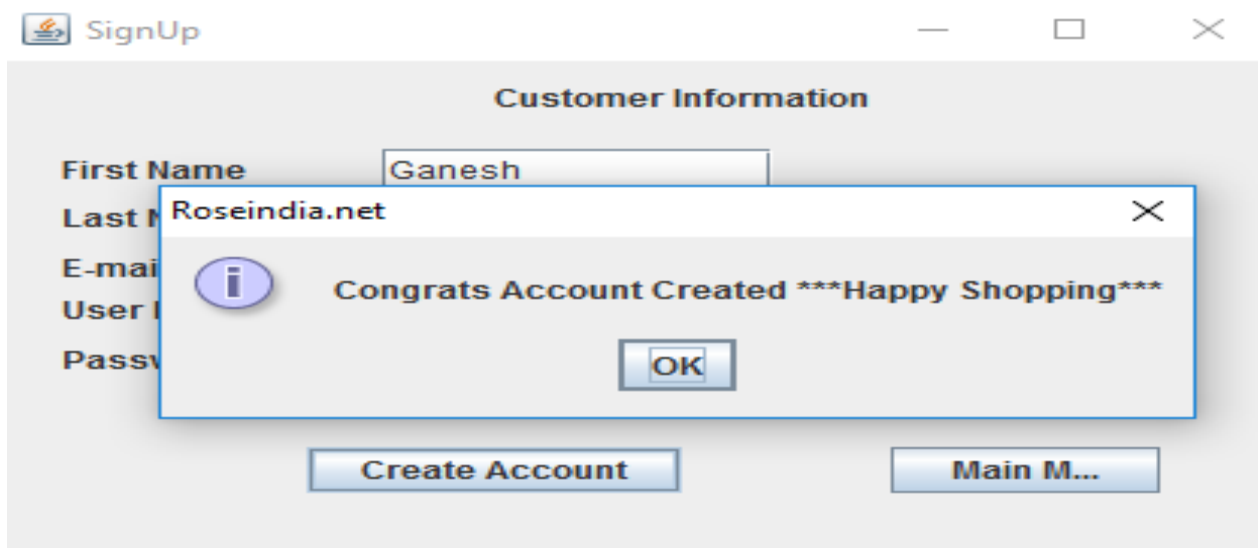
The customer can create an account by entering all the required details on the Sign Up page.

The screenshot shows a window titled "SignUp". The form is titled "Customer Information" and contains the following fields:

- First Name: Ganesh
- Last Name: Malhotra
- E-mail: G_mal@gmail.com
- User Name: Gm_ganesh
- Password: (masked with dots)

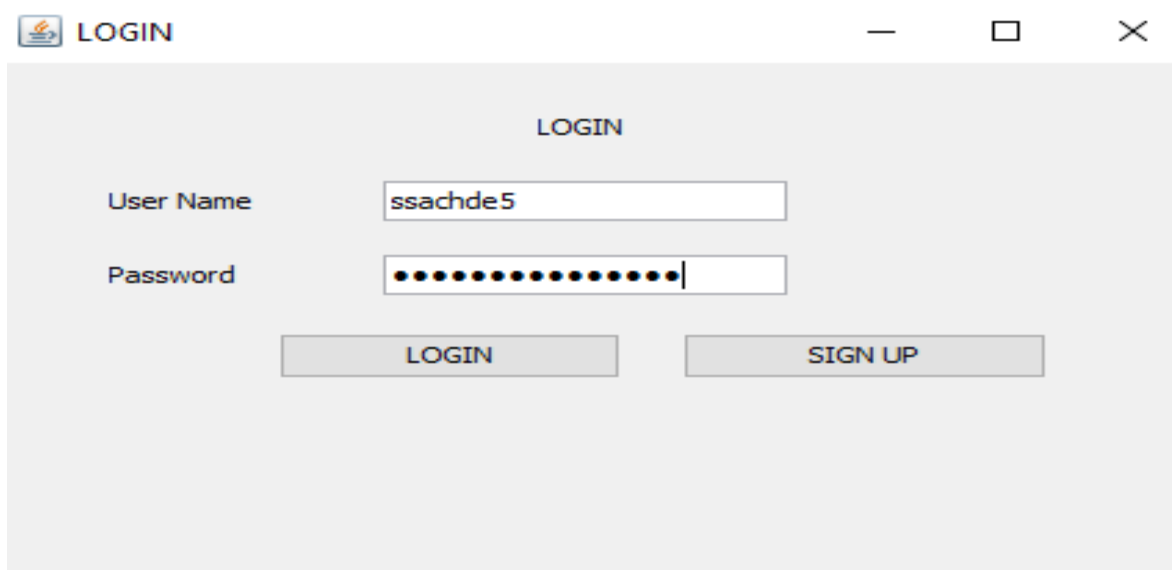
At the bottom, there are "Create Account" and "Main M..." buttons.

The system returns a success message on account creation.



The screenshot shows a window titled "SignUp" with a standard Windows title bar (minimize, maximize, close buttons). The main content area is titled "Customer Information" and contains several input fields: "First Name" (containing "Ganesh"), "Last Name" (containing "Roseindia.net"), "E-mail", "User Name", and "Password". At the bottom of the window are two buttons: "Create Account" and "Main M...". A modal dialog box is overlaid on top of the window. The dialog has a title bar with a close button and contains an information icon, the text "Congrats Account Created ***Happy Shopping***", and an "OK" button.

The registered user can Login by entering username and password



The screenshot shows a window titled "LOGIN" with a standard Windows title bar (minimize, maximize, close buttons). The main content area is titled "LOGIN" and contains two input fields: "User Name" (containing "ssachde5") and "Password" (containing a series of dots). At the bottom of the window are two buttons: "LOGIN" and "SIGN UP".

The user can select books and add books to the cart.

BOOK STORE

Login Sign up

BookName	BookISBN	BookAuthor	BookDescription	BookPrice	Count
Angels and Dem...	A111	Dan Brown	Fiction	50	5
Harry Potter	A123	JK Rowling	Fiction	100	10

Book Selected Harry Potter

Book Search Add to Cart

A123

The user can search books based on ISBN, Author Name, Book Name or Category

Search Book

Search by

☒ ISBN
☐ Auther Name
☐ Book Name
☐ Category

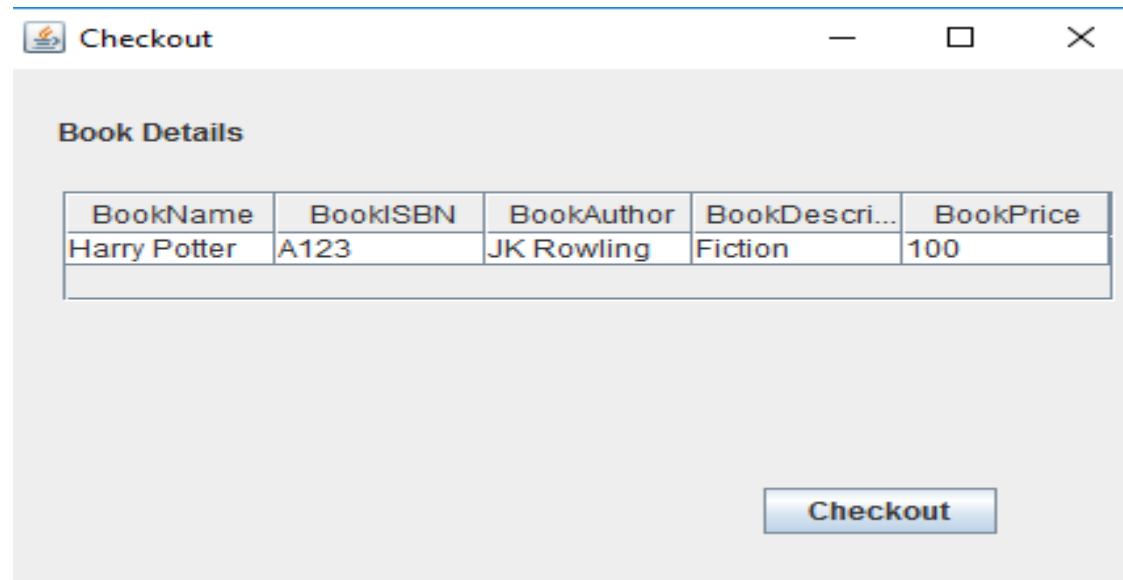
A123

Search

BookName	BookISBN	BookAuthor	BookDescription	BookPrice
Harry Potter	A123	JK Rowling	Fiction	100

Main M...

The user can view book details and proceed to checkout.

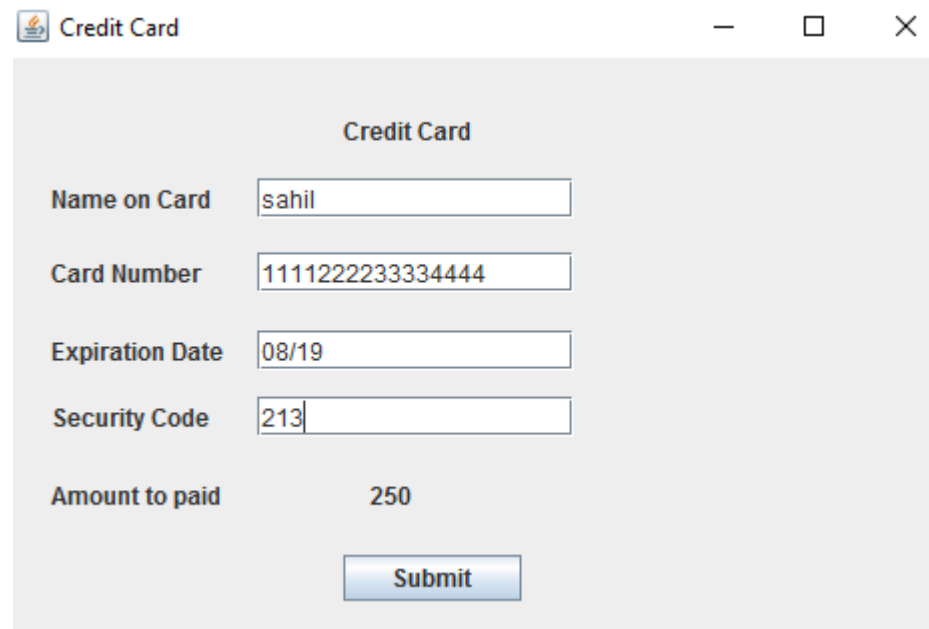


The screenshot shows a window titled "Checkout" with a standard Windows title bar (minimize, maximize, close buttons). Inside the window, there is a section titled "Book Details" containing a table with the following data:

BookName	BookISBN	BookAuthor	BookDescri...	BookPrice
Harry Potter	A123	JK Rowling	Fiction	100

Below the table, there is a "Checkout" button.

On checkout, the user enters credit card details.

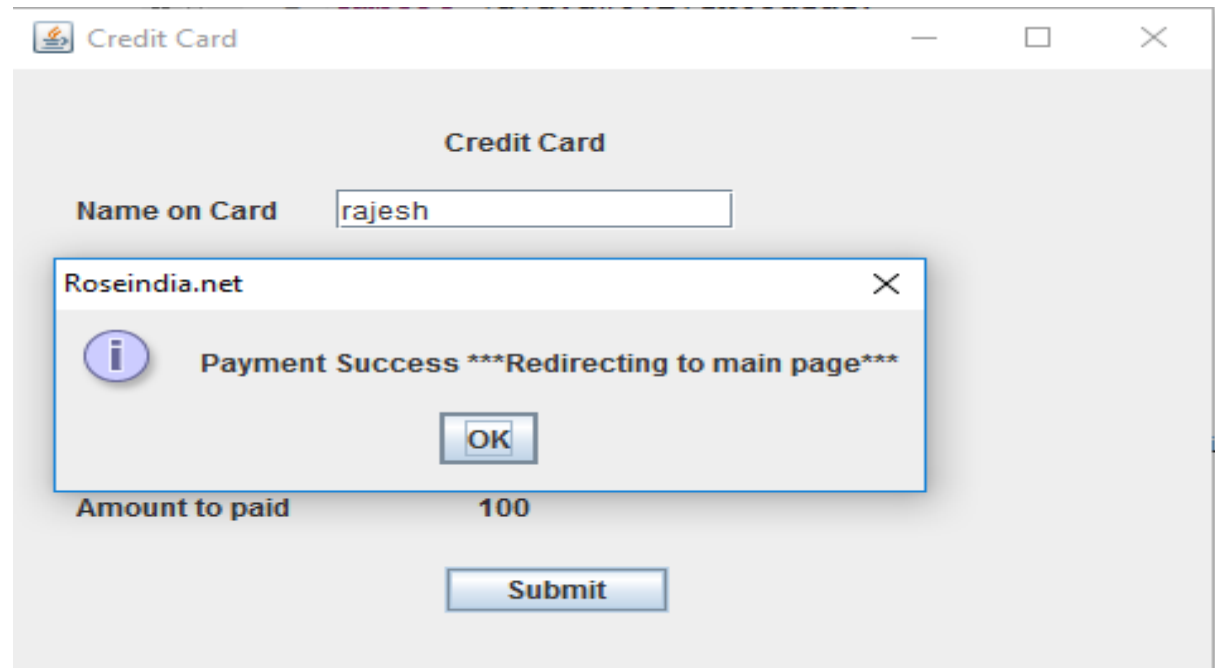


The screenshot shows a window titled "Credit Card" with a standard Windows title bar (minimize, maximize, close buttons). Inside the window, there is a section titled "Credit Card" containing the following input fields:

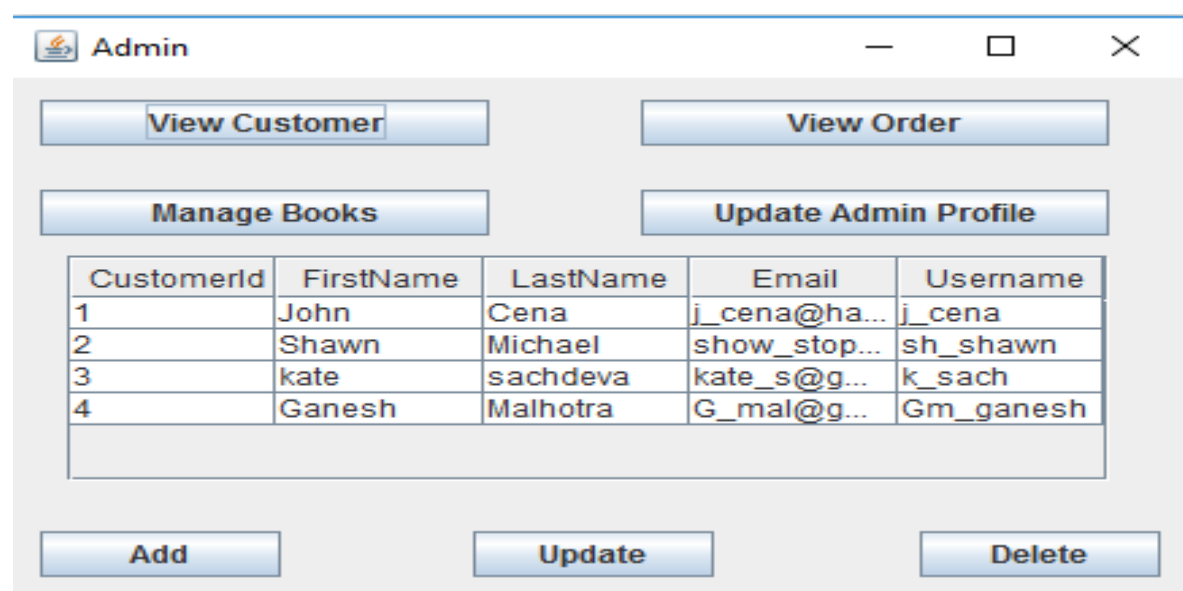
- Name on Card:
- Card Number:
- Expiration Date:
- Security Code:

Below the input fields, there is a label "Amount to paid" with the value "250". At the bottom, there is a "Submit" button.

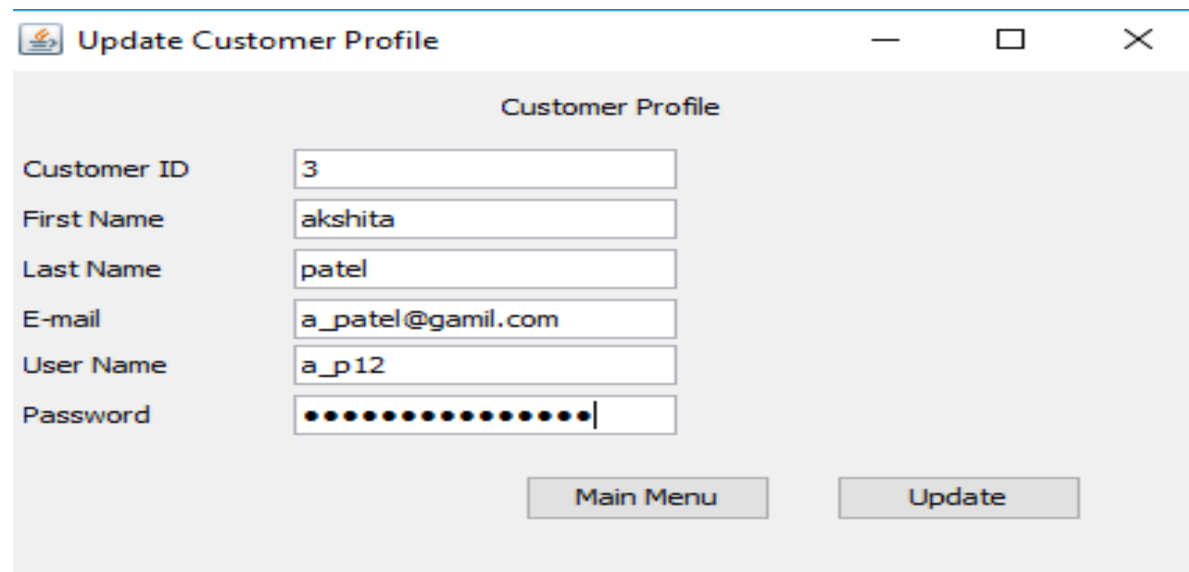
The system returns a success message on verification of the card details.



The admin can manage books, view customer details, orders and update admin profile.



The admin can update customer profile.



Update Customer Profile

Customer Profile

Customer ID: 3

First Name: akshita

Last Name: patel

E-mail: a_patel@gamil.com

User Name: a_p12

Password: ••••••••••••••••••••

Main Menu Update

11.2 Database Screenshots

Book Table: consists of all book details in the database

```
mysql> select * from book;
```

BookName	BookISBN	BookAuthor	BookDescription	BookPrice	Count
Jungle Book	A108	Rudyard Kipling	Fiction	120	20
Angels and Demons	A111	Dan Brown	Fiction	50	5
Harry Potter	A123	JK Rowling	Fiction	100	10
Songs of Ice and Fire	B125	George Martin	Fiction	250	24
The Sins Of The Father	C619	Jeffrey Archer	Crime	200	50
Tell Me Your Dreams	D028	Sydney Sheldon	Thriller	50	40

6 rows in set (0.00 sec)

Credit Card Table: consists of customer credit card info

```
mysql> select * from creditcard;
```

NameOnCard	CreditCardNumber	ExpirationDate	CVV
sanyam	1111222244445555	06/16	213
akshita korwar	5262260038132539	06/18	549
Sahil Chalke	5654323456431009	09/20	556

3 rows in set (0.00 sec)

Customer Table: consists of customer details.

```
mysql> select * from customer;
```

CustomerId	FirstName	LastName	Email	Username	Password
1	John	Cena	j_cena@hawk.iit.edu	j_cena	WEAREQT
2	Shawn	Michael	show_stopper@gmail.com	sh_shawn	KATE!@#
3	kate	sachdeva	kate_s@gmail.com	k_sach	sacdehav
4	Ganesh	Malhotra	G_mal@gmail.com	Gm_ganesh	34267533

4 rows in set (0.00 sec)

Login table: consists of customer ID, Username and Password details of customer

```
mysql> select * from Login;
+-----+-----+-----+
| CustomerId | Username | Password |
+-----+-----+-----+
| 1 | j_cena | WEAREQT |
| 2 | sh_shawn | KATE!@# |
| 3 | k_sach | sacdehav |
| 4 | Gm_ganesh | 34267533 |
+-----+-----+-----+
4 rows in set (0.00 sec)
```

Order Table: consists all the order details

```
mysql> select * from order1;
+-----+-----+-----+-----+-----+-----+
| OrderId | OrderDate | TotalPrice | OrderStatus | ShippingAddress | BookISBN |
+-----+-----+-----+-----+-----+-----+
| 1 | 06/30/2016 | 50 | Shipped | Chicago | A111 |
| 2 | 06/30/2016 | 50 | Shipped | New York | A111 |
| 3 | 06/30/2016 | 50 | Shipped | Arizona | A111 |
| 4 | 06/30/2016 | 50 | Shipped | California | A111 |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```