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1. Problem Statement

Customer can browse through the product catalog and add items to the shopping cart. He can proceed to checkout as long as his shopping cart is not empty . Customer will require to login to the system when he proceed to checkout, or he can create an account if he does not yet have one. The order will charge to the credit card registered in customer's account.

Customer need to provide full name, email address, phone number, credit card and billing address details when creating an account.

Customer can login to the system to maintain his account information, such as changing phone number, address, and credit card details, and check the status of his orders. Upon order received, the sales staff will process the order by change to customer's credit card. Once the order has been charged, he will mark the order as paid and pass to courier company and deliver them to customers. If the items customer ordered is out of stock, then the order will be marked as hold.

Once the items arrived, the order will pass to courier company for delivery. Courier company will pack the item with standard packaging, but if the order is marked as a gift, then the items will pack as gift.

If the items arrived with damage, customer can return it by register in the online shop.

Courier company will collect the item from the customer and sales staff will refund the money for that item. Marketing staff responsible to maintain the product catalog. He can also setup the promotion item list and send promotional emails to customers.

2. Vision Document

A vision document describes the higher level requirements of the system specifying the scope of the system. The vision document for the online shopping system might be

- This system can be implemented to any shop in the locality or to multinational branded shops having retail outlet chains.
- The system can run on popular web-browser platforms like Windows Explorer, Netscape navigator etc.
- The system is easy to extend with new functionality
- The system recommends a facility to accept the orders 24*7 and a home delivery system which can make customers happy.
- If shops are providing an online portal where their customers can enjoy easy shopping from anywhere, the shops won't be losing any more customers to the trending online shops such as flipkart or ebay.
- Application is available in the Smartphone it is easily accessible and always available.
- Online shopping makes use of digital technology for managing the flow of information, products, and payment between consumer, site owners and suppliers.
- Online shopping can be either B2B (Business to Business) or B2C (Business to Consumer) Or C2C(Consumer to Consumer)
- Shop owners can even add or remove the items from the website depending on the present stock of the items.

3.Glosary

Key terms are denoted in italics within the use-case specifications.

Checkout-Checkout is the process of gathering the payment and shipping information to complete the purchase of items in the shopping cart. It is the final step of purchase on an e-commerce shop that the customer reviews and places the order online.

PayPal-PayPal is a global leader in online payments and a fast and secure way for customers to pay online.

Shopping cart-Shopping cart is an online shopping software commonly used in online shops or e-commerce platforms which allows people, during online-shopping, to collect all preferred goods in a shopping cart first and then buy and pay them all together after having made all choices.

Actors

Customer: Interactive actor who uses the portal to search for items and register himself.

Registered Customer: Interactive user who uses the portal to buy items and provide feedback.

Shop owner: Interactive user who adds or removes items depending on the feedback and stock.

4. Supplementary Specification Document

Objective

The purpose of this document is to define the requirements of the Online shopping system. This document lists the requirements that are not readily captured in the use-cases of the use-case model. The supplementary specification and use-case model together capture a complete set of requirements of the system.

Scope

This supplementary specification defines the non-functional requirements of the system such as reliability, performance, supportability, and security as well as functional requirements that are common across a number of use-cases.

Reference

None.

Common Functionalities

- Multiple users must be able to log on to the website and perform their work concurrently.
- If the selected item is out of stock or has been restocked, the customer must be notified.

Usability

The desktop user interface shall be Windows 8 or Windows 10 compliant.

Reliability

The system shall be 24 hours a day, 7 days a week and not more than 10% down time.

Performance

- The system shall support up to 5000 simultaneous users against the central database of any given data
- The system must be able to complete 80% of all transactions within 5 minutes

Supportability

None.

Security

- The system must prevent customers from changing product information, seller Information and pricing information.
- Only admin can modify product information, seller information, and pricing Information.

5. Use – Case Model

5.1 Actors

Actor is something external to the system and interacts with the system. Actor may be a human being, device or some other software system.

For Online shopping system, actors might be;

- Customer
- Registered Customer
- Shop Owner

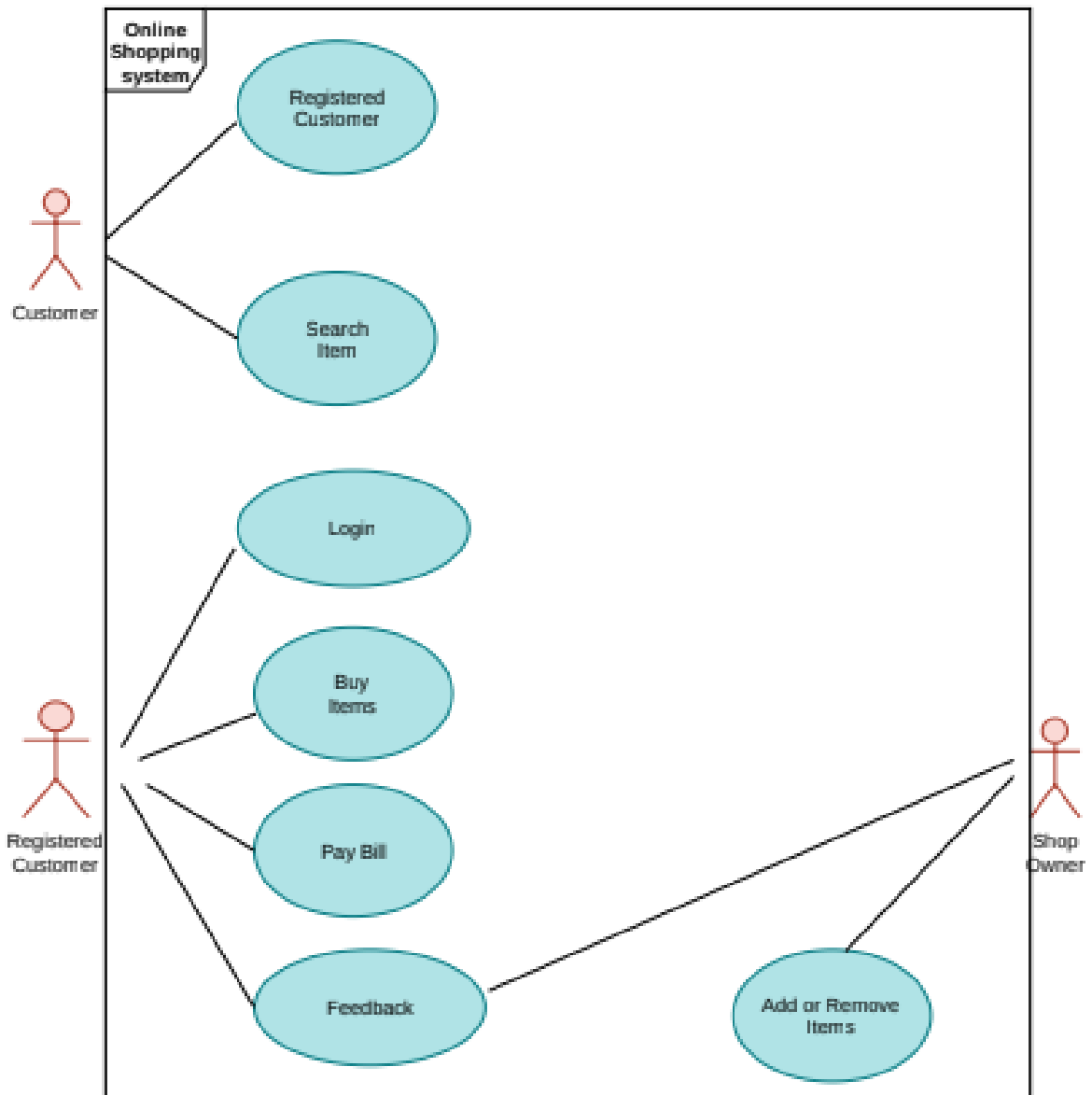
5.2 Use – Case

A use-case represents sequence of actions performed by the system that yields an observable result of value for a particular actor. Use-case represents a functional requirement of a system.

For Online shopping system, we can find the following use-cases;

1. Login
2. Register customer
3. Search items
4. Buy items
5. Validate customer
6. Prepare bill
7. Pay bill
8. Feedback
9. Add or remove items

5.3 Use - Case Diagram



5.4 Use – Case Descriptions

5.4.1 Use-Case Specification: Login

5.4.1.1 Description

This use case describes how a registered user logs into his account. A registered user can log in and, upon verification, can initiate subsequent actions.

5.4.1.2 Flow of Events

5.4.1.2.1 Basic Flow

This use case starts when the actor wishes to Login to the Payroll System.

1. The system requests that the actor enter his/her name and password
2. The actor enters his/her name and password.
3. The system validates the entered name and password and logs the actor into the system.

5.4.1.2.2 Alternative Flows

❖ Invalid Name/Password

If, in the Basic Flow, the actor enters an invalid name and/or password, the system displays an error message. The actor can choose to either return to the beginning of the Basic Flow or cancel the login, at which point the use case ends.

5.4.1.3 Special Requirements

None.

5.4.1.4 Pre-Conditions

None.

5.4.1.5 Post-Conditions

If the use case was successful, the actor is now logged into the system. If not, the system state is unchanged.

5.4.1.6 Extension Points

None.

5.4.2 Use-Case Specification: Register Customer

5.4.2.1 Description

This use case describes how a new user registers himself on the system. A new user can only browse the items.

5.4.2.2 Flow of Events

5.4.2.2.1 Basic Flow

This use case starts when the actor wishes to register himself on the system.

- 1.The system requests that the actor enter his/her details.
- 2.The actor enters his/her details.
- 3.The system creates the actor's account and saves his/her information.

5.4.2.2.2 Alternative Flows

❖ Account already exists

If,in the basic flow the actor enters an email id which is already associated with an account the actor is said to log in to the system or use a different email id.

5.4.2.3 Special Requirements

None.

5.4.2.4 Pre-Conditions

None.

5.4.2.5 Post-Conditions

The account is created successfully and the actor is now a registered user of the system.

5.4.2.6 Extension Points

None.

5.4.3 Use -Case Specification: Search items

5.4.3.1 Description

This use describes how a user browses the online shopping system for items. Any user can browse the system.

5.4.3.2 Flow of Events

5.4.3.2.1 Basic Flow

The use case starts when the actor wishes to browse the system for items he likes.

- 1.The system requests the actor to enter the criteria.
- 2.The actor enters the criteria.
- 3.The system searches for items matching the entered criteria.
- 4.The system displays the list of items.

5.4.3.2.2 Alternative Flows

None.

5.4.3.3 Special Requirements

None.

5.4.3.4 Pre-Conditions

None.

5.4.3.5 Post-Conditions

If the use case was successful, A list of items will be displayed for the actor, if not an “no items found” message will be displayed.

5.4.3.6 Extension Points

None.

5.4.4 Use-Case Specification: Buy Items

5.4.4.1 Description

This use case allows the registered customer to buy items from the online shopping system. A registered user can buy items of his choice.

5.4.4.2 Flow of Events

5.4.4.2.1 Basic Flow

This use case starts when the actor wishes to purchase items from the online shopping system.

- 1.The system requests the user to enter the item name.
- 2.The user enters the name of the item.
- 3.The system checks for the availability of the item.
- 4.If the item is available then the item is added to the cart.

5.4.4.2.2 Alternative flows

❖ Item is out of stock

If, in the Basic flow, the item entered by the actor is not available, then the item is saved for later.

5.4.4.3 Special Requirements

None .

5.4.4.4 Pre-Conditions

The actor must be a registered user and must be logged into the system.

5.4.4.5 Post-Conditions

If the use case was successful, the item is added to the shopping cart, otherwise the shopping cart remains unchanged.

5.4.4.6 Extension Points

None .

5.4.5 Use-Case Specifications: Validate Customer

5.4.5.1 Description

This use case is necessary for the user to checkout. This use case authenticates the credentials of the user.

5.4.5.2 Flow of Events

5.4.5.2.1 Basic Flow

This use case starts when the actor proceeds to checkout of the online shopping system.

- 1.The system checks the user id and password.
- 2.The system authenticates the user and is allowed to continue.

5.4.5.2.2 Alternative Flow

None.

5.4.5.3 Special Requirements

None.

5.4.5.4 Pre-Conditions

The actor must be a registered user and must be logged into the system.

5.4.5.5 Post-Conditions

If the use case was successful, the authenticated actor will be allowed to checkout.

5.4.5.6 Extension Points

None.

5.4.6 Use-Case Specification: Prepare Bill

5.4.6.1 Description

This use case generates the bill for checkout. It calculates the total amount to be paid.

5.4.6.2 Flow of Events

5.4.6.2.1 Basic Flow

This use case starts when the actor is authenticated and proceeds to checkout.

1.The system adds all the items in the shopping cart.

2.The total amount to be paid is displayed.

5.4.6.2.2 Alternative flows

None.

5.4.6.3 Special Requirements

None.

5.4.6.4 Pre-Conditions

The actor must be logged in and authenticated.

5.4.6.5 Post-Conditions

If the use case was successful, the bill is generated and the actor is proceeded to checkout.

5.4.6.6 Extension Points

None.

5.4.7 Use-Case Specification: Pay Bill

5.4.7.1 Description

This use case allows the user to select payment mode and pay the bill.

5.4.7.2 Flow of Events

5.4.7.2.1 Basic Flow

This use case starts when the bill has been generated and the actor proceeds to checkout.

- 1.The user selects the payment option and pays .
- 2.The system checks the payment success.
- 3.If the Payment was successful the order is complete.

5.4.7.2.2 Alternative Flows

❖ Payment Unsuccessful

If, in the Basic Flow, The payment was unsuccessful the process is repeated again.

5.4.7.3 Special Requirements

None.

5.4.7.4 Pre-Conditions

The actor must be logged in and the bill must be generated.

5.4.7.5 Post-Conditions

If the use case was successful, the order will be placed and delivered.

5.4.7.6 Extension Points

None.

5.4.8 Use-Case Specification: Feedback

5.4.8.1 Description

This use case allows the user to give feedback about the items. Based on the feedback the shop owner operates.

5.4.8.2 Flow of Events

5.4.8.2.1 Basic Flow

This use case starts when the actor finishes checkout.

- 1.The system asks the user for details.
- 2.The user enters the requested details.
- 3.The entered details are saved and the user is acknowledged.

5.4.8.2.2 Alternative Flows

None.

5.4.8.3 Special Requirements

None.

5.4.8.4 Pre-Conditions

The actor has finished checkout successfully.

5.4.8.5 Post-Conditions

If the use case is successful, The feedback will be sent to the shop owner.

5.4.8.6 Extension Points

None.

5.4.9 Use-Case Specifications: Add or Remove items

5.4.9.1 Description

This use case allows the shop owner to add or remove particular items from the online shopping system.

5.4.9.2 Flow of Events

5.4.9.2.1 Basic Flow

This use case starts when the customer gives feedback and it is recorded by the shop owner.

- 1.The shop owner selects either to add an item or remove an item.
- 2.The system asks for the item name.
- 3.The shop owner inputs the item name.
- 4.The selected item is updated.

5.4.9.2.2 Alternative Flows

None.

5.4.9.3 Special Requirements

None.

5.4.9.4 Pre-conditions

None.

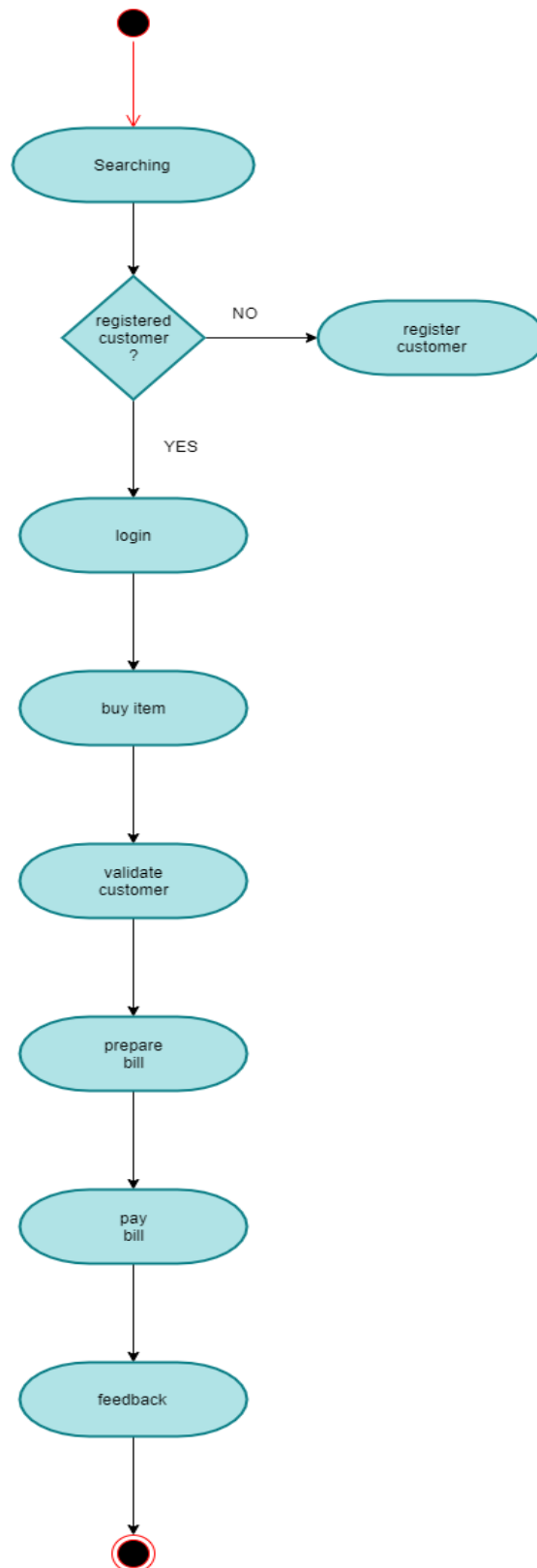
5.4.9.5 Post-Conditions

If ,the use case was successful, the particular item's stock is updated.

5.4.9.6 Extension Points

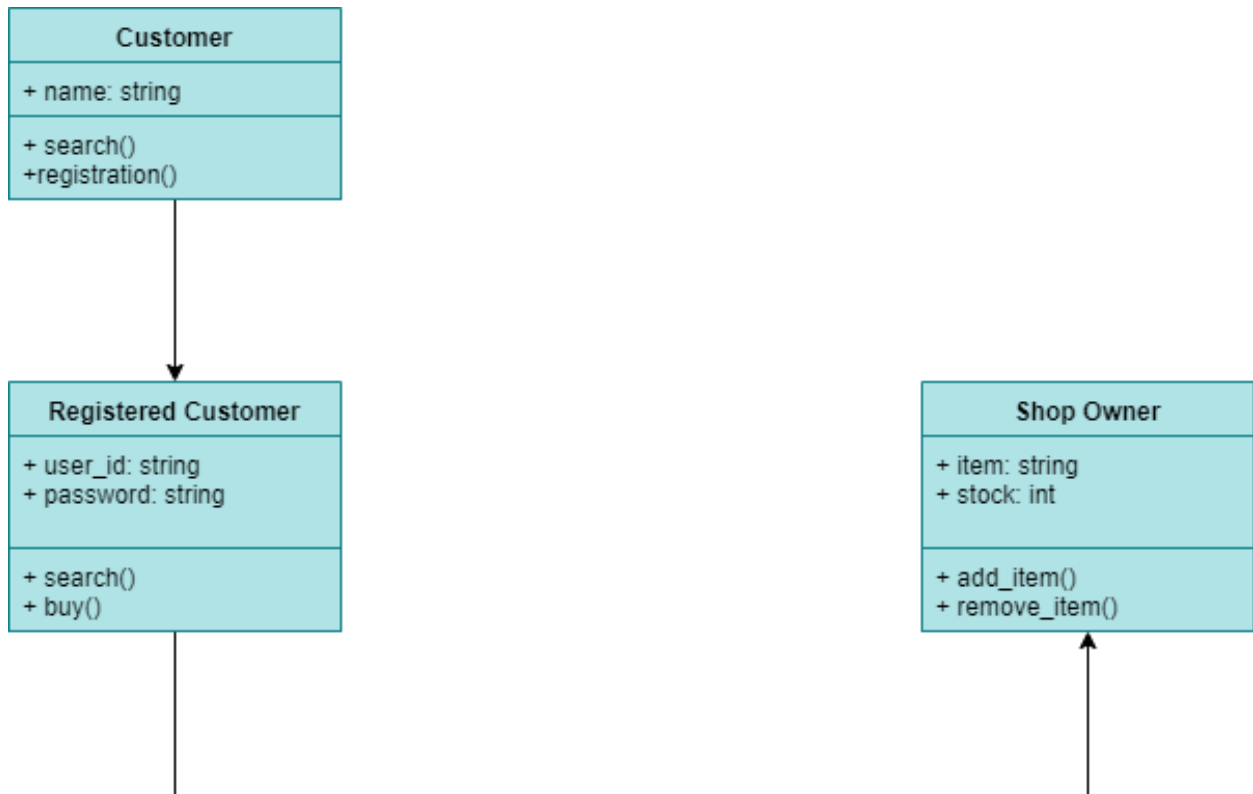
None.

5.5 Activity Diagram



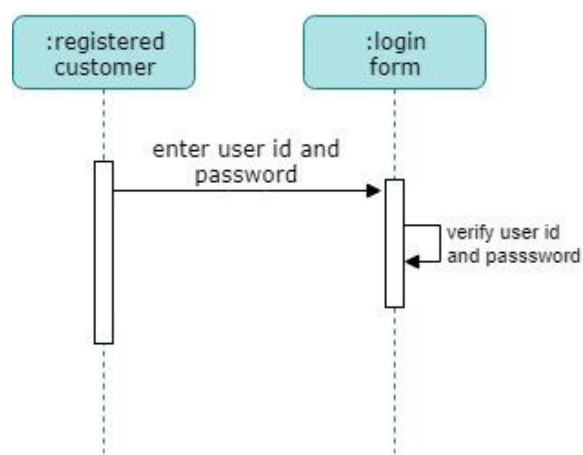
6. Design Model

6.1 Class Diagram

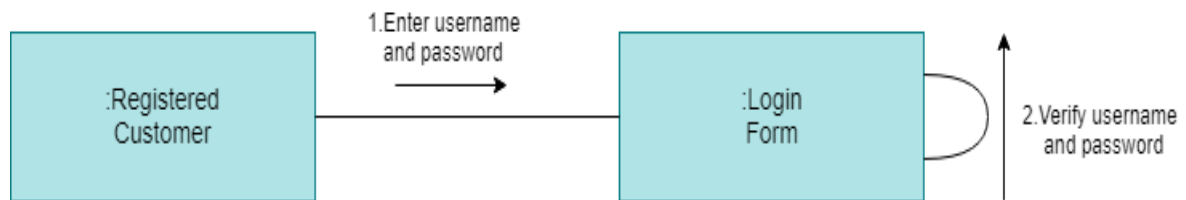


6.2 Sequence Diagram and Collaboration diagrams

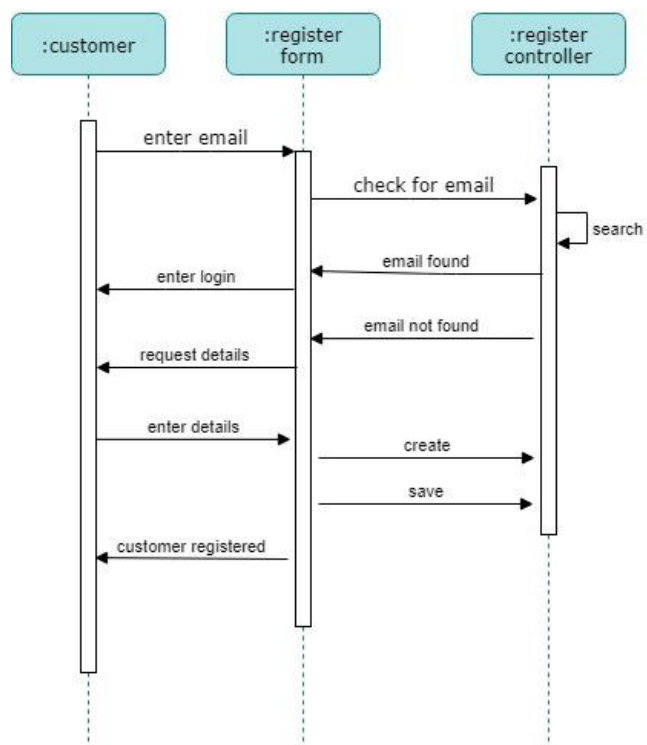
6.2.1 Sequence Diagram for Login Use-case



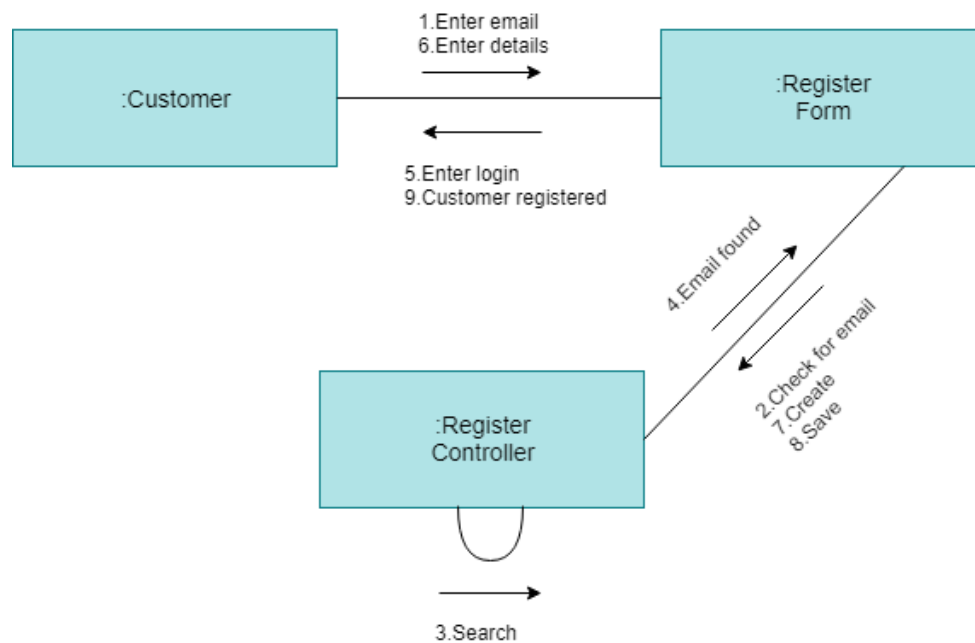
6.2.2 Collaboration Diagram for Login Use-case



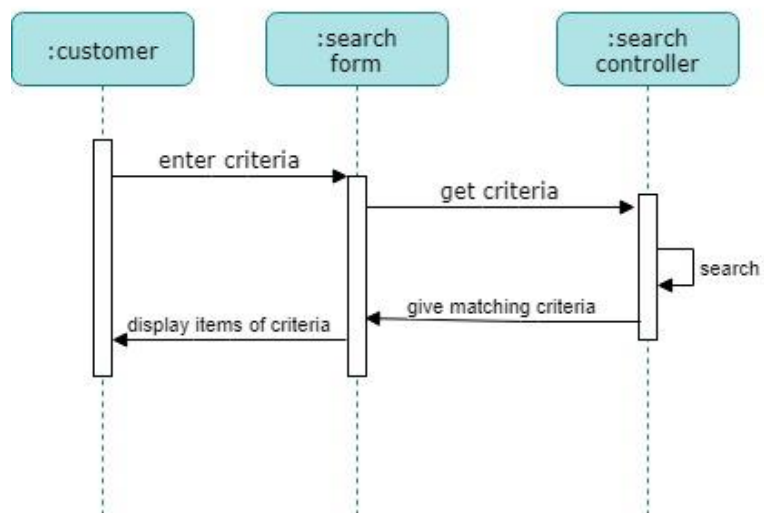
6.2.3 Sequence Diagram for Register Customer Use-case



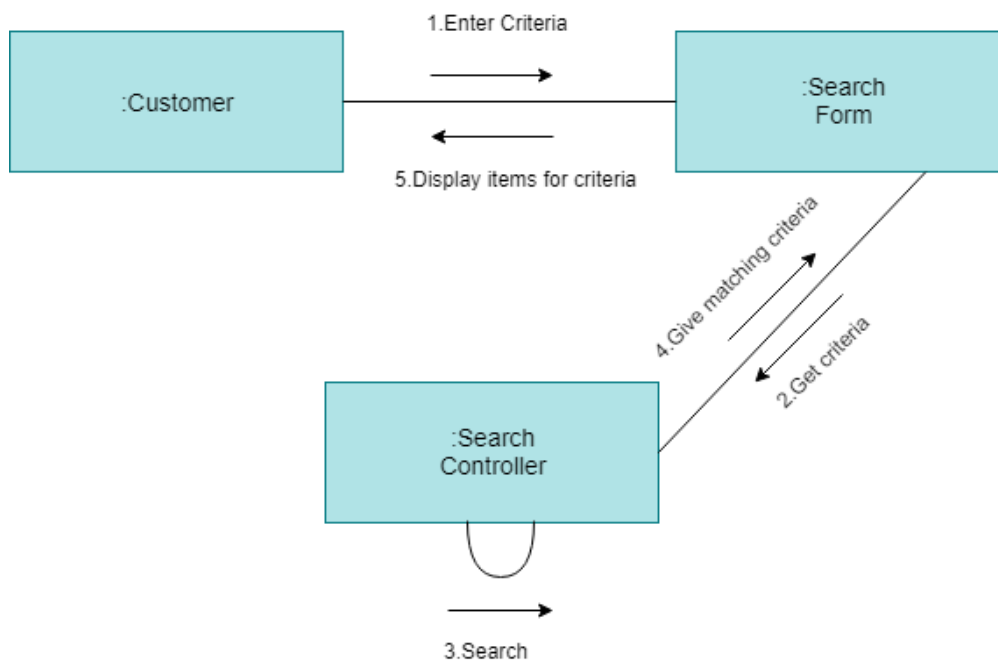
6.2.4 Collaboration Diagram for Register Customer Use-case



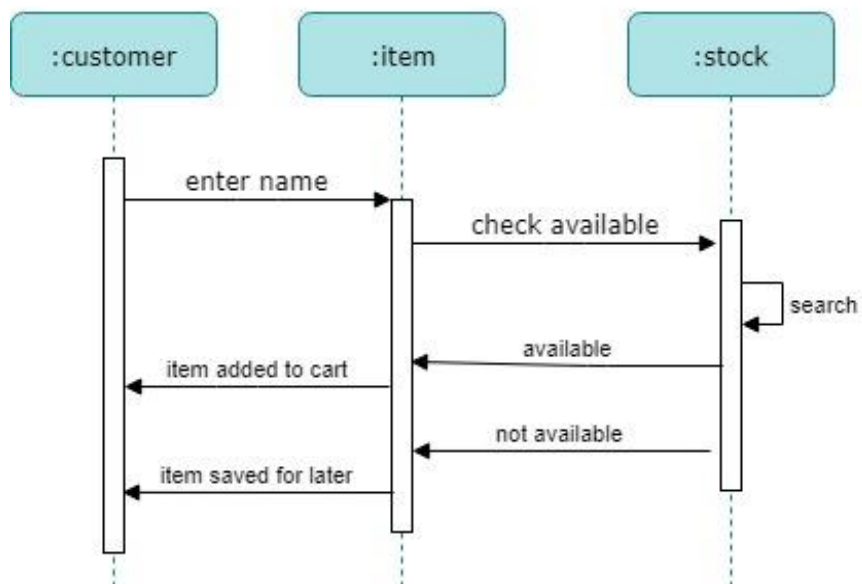
6.2.5 Sequence Diagram for Search items Use-case



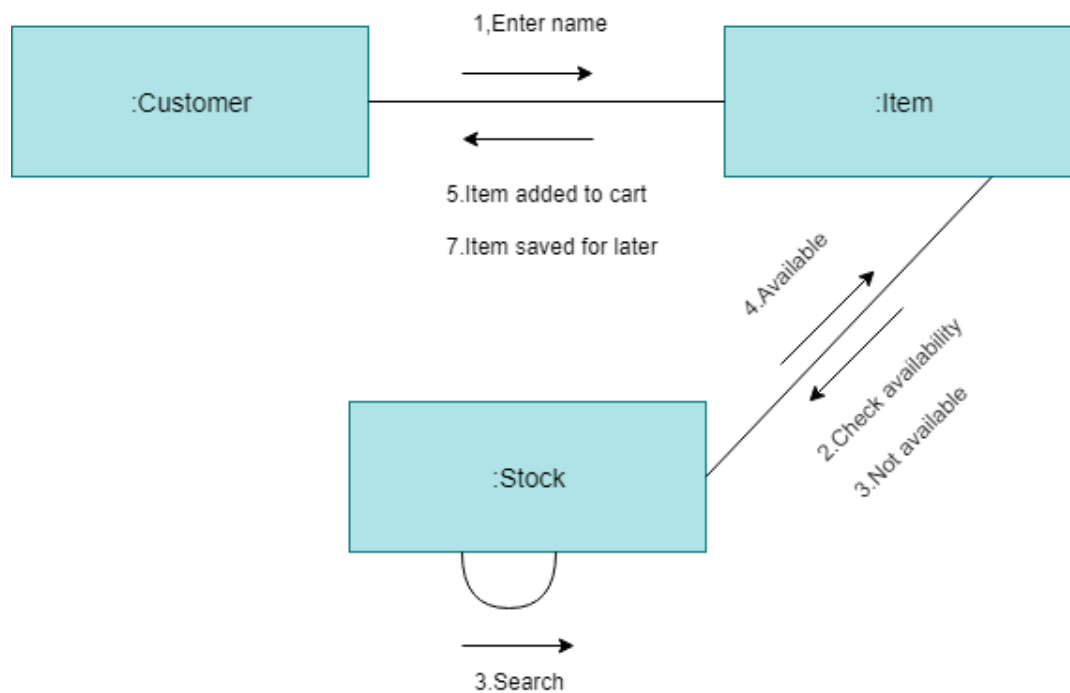
6.2.6 Collaboration Diagram for Search Items Use-case



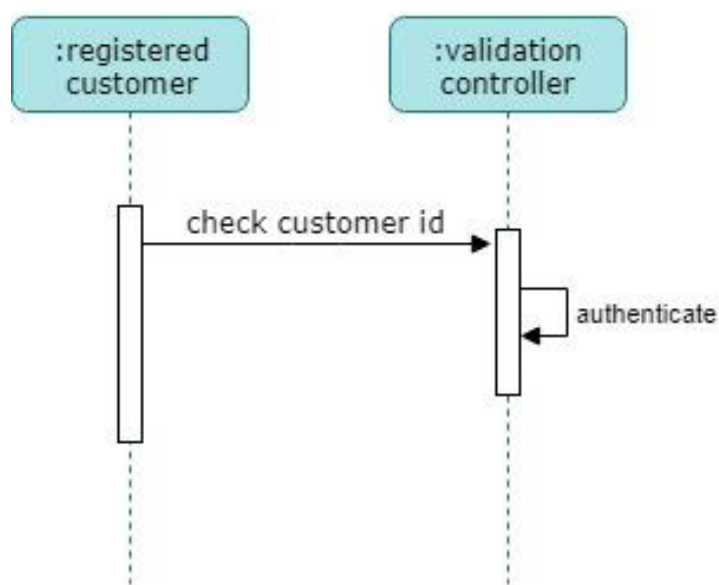
6.2.7 Sequence Diagram for Buy Items Use-case



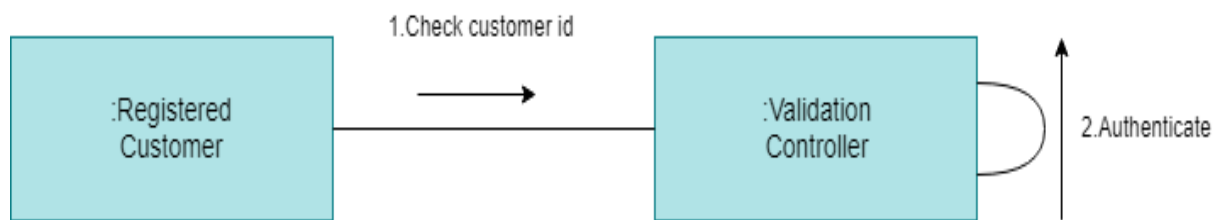
6.2.8 Collaboration Diagram for Buy Items Use-case



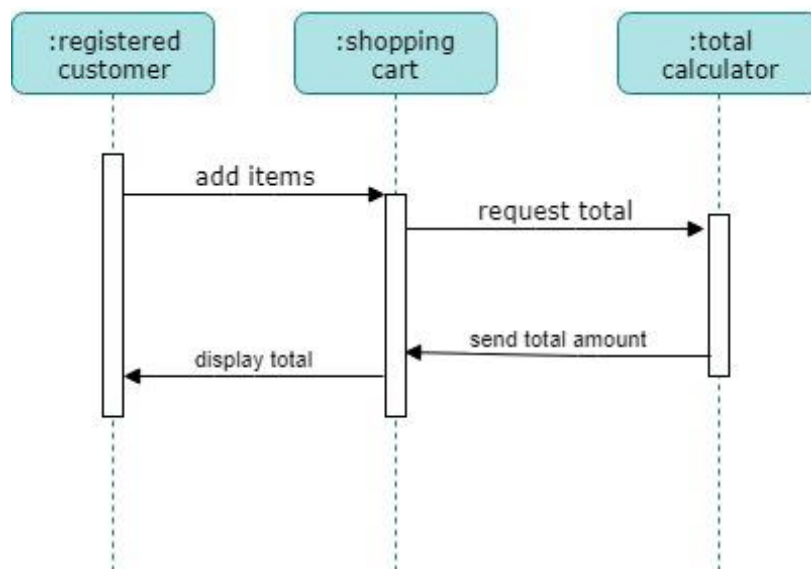
6.2.9 Sequence Diagram for Validate Customer Use-case



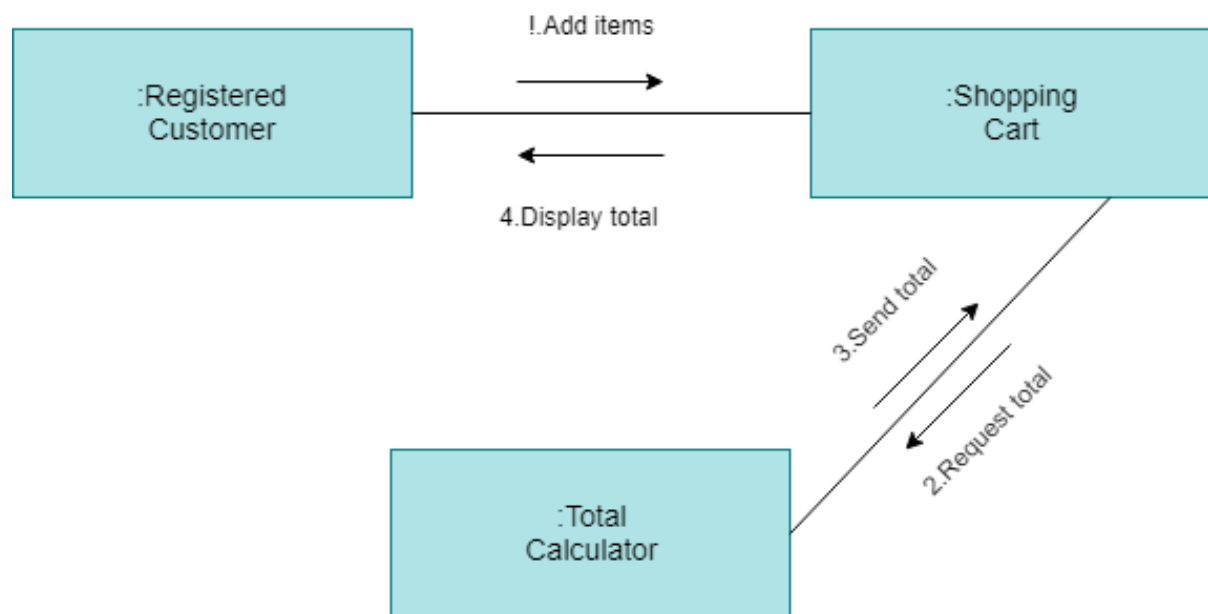
6.2.10 Collaboration Diagram for Validate Customer Use-case



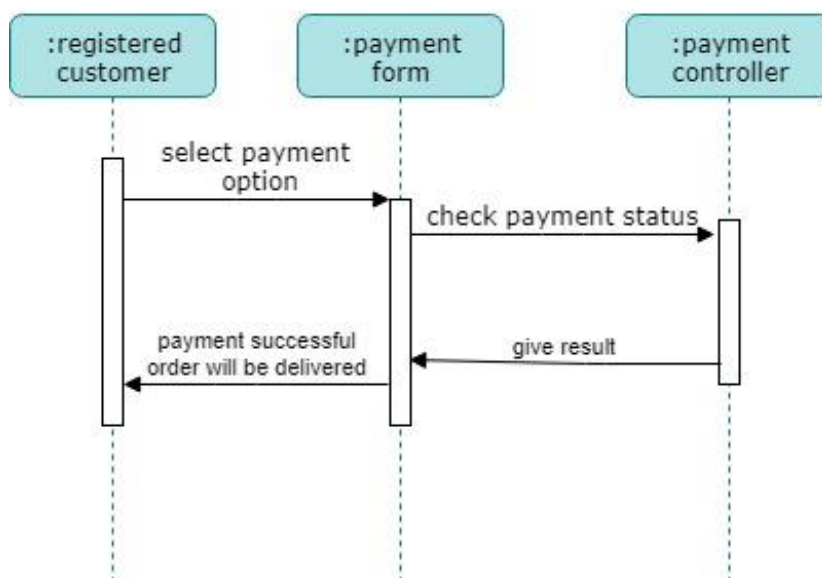
6.2.11 Sequence Diagram for Prepare Bill Use-case



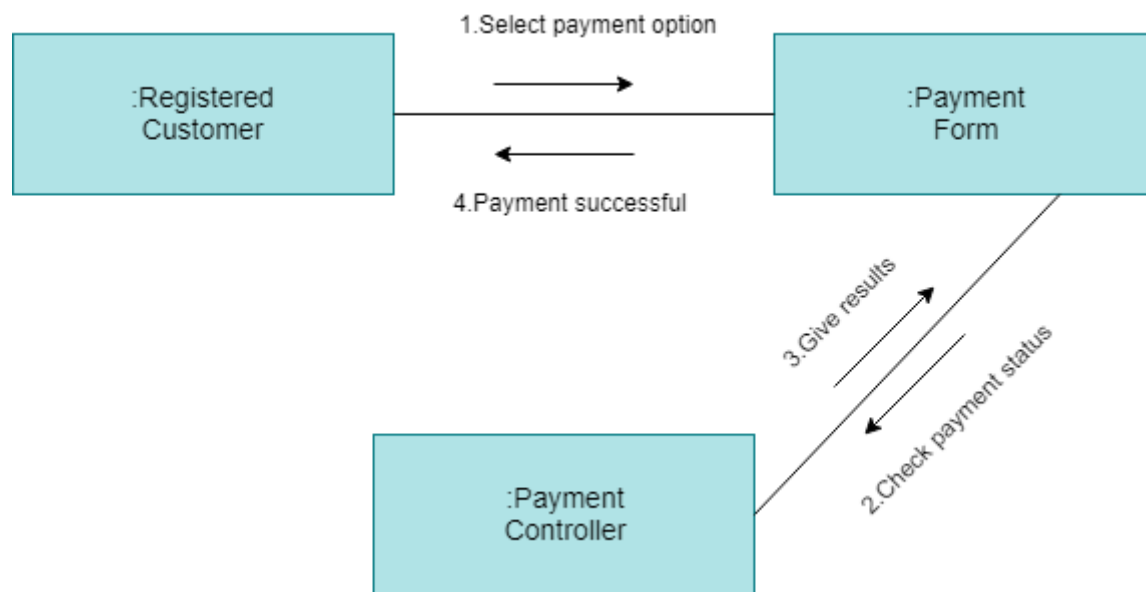
6.2.12 Collaboration Diagram for Prepare Bill Use-case



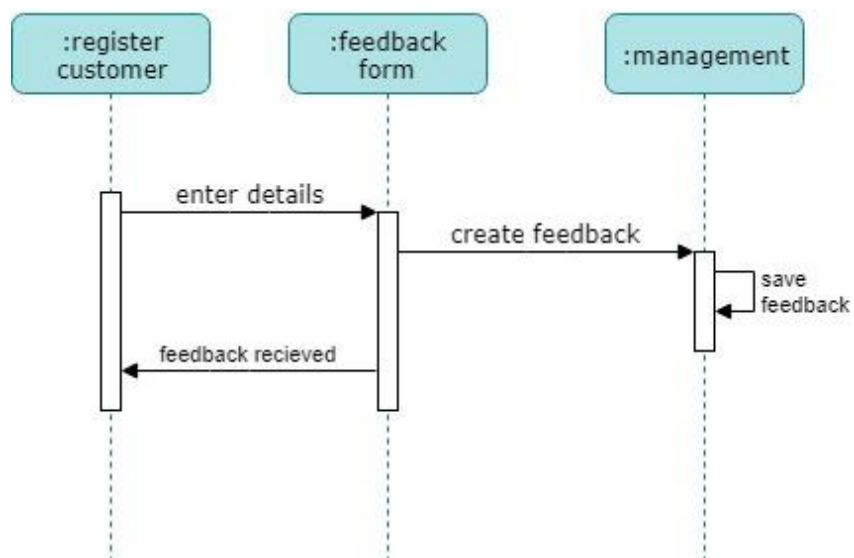
6.2.13 Sequence Diagram for Pay Bill Use-case



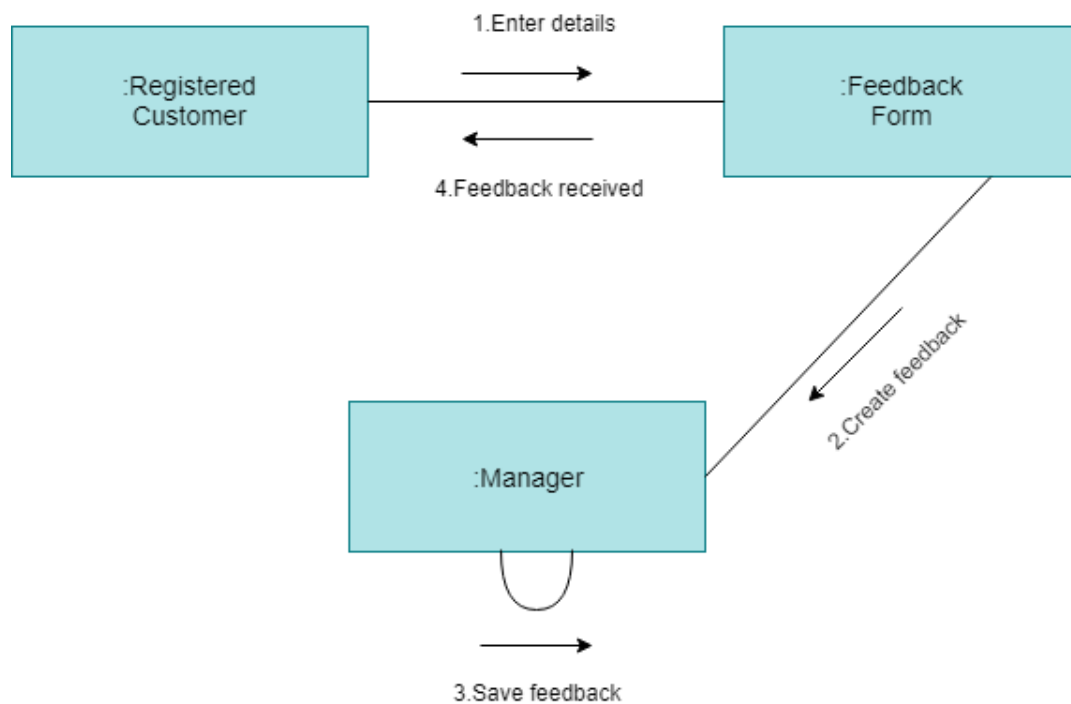
6.2.14 Collaboration Diagram for Pay Bill Use-case



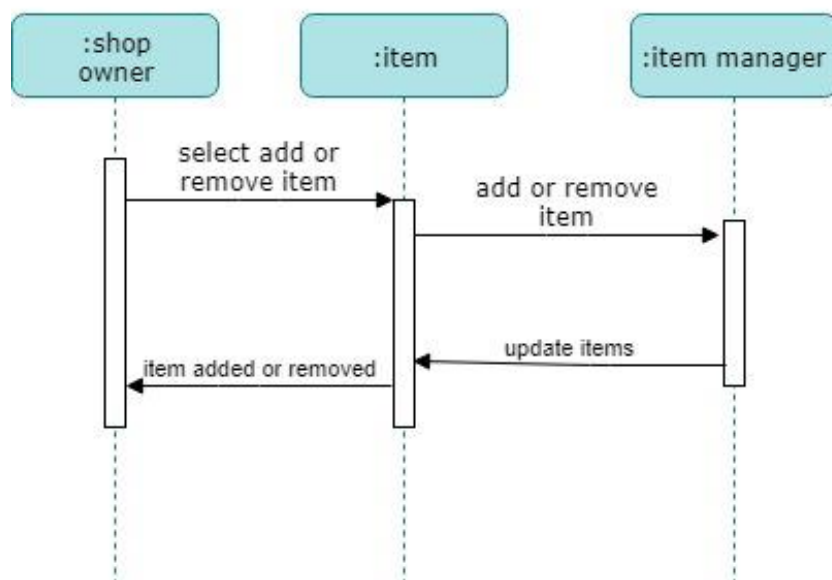
6.2.15 Sequence Diagram for Feedback Use-case



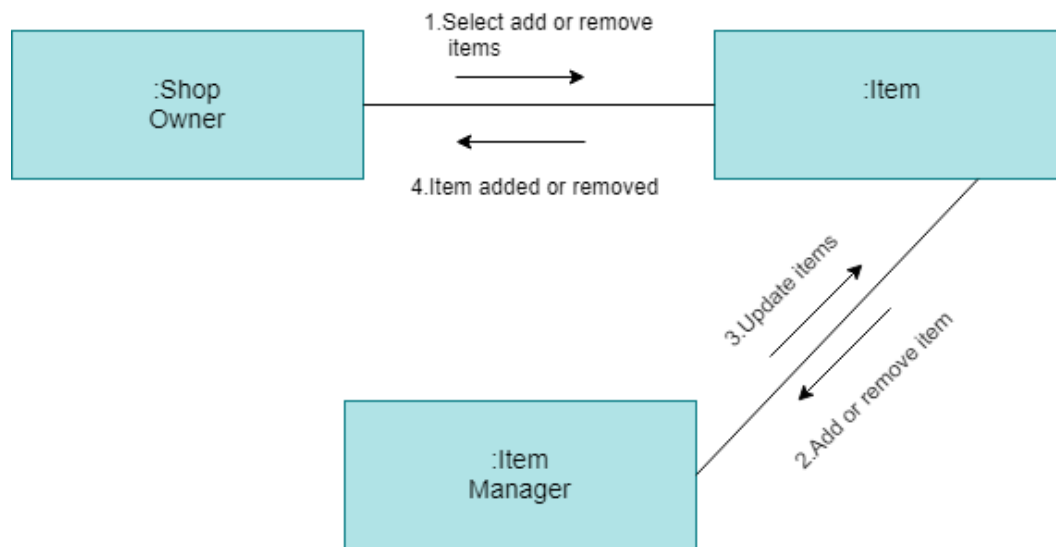
6.2.16 Collaboration Diagram for Feedback Use-case



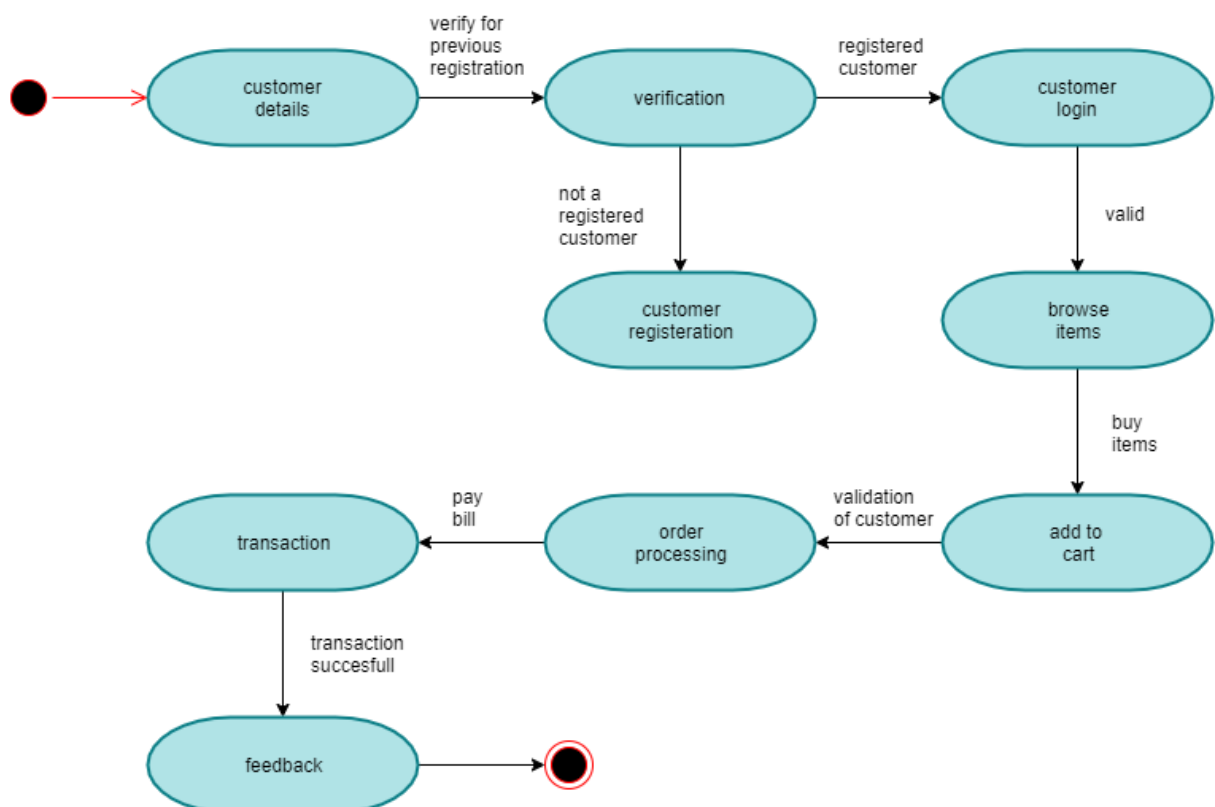
6.2.17 Sequence Diagram for Add or Replace item Use-case



6.2.18 Collaboration Diagram for Add or Replace item Use-case

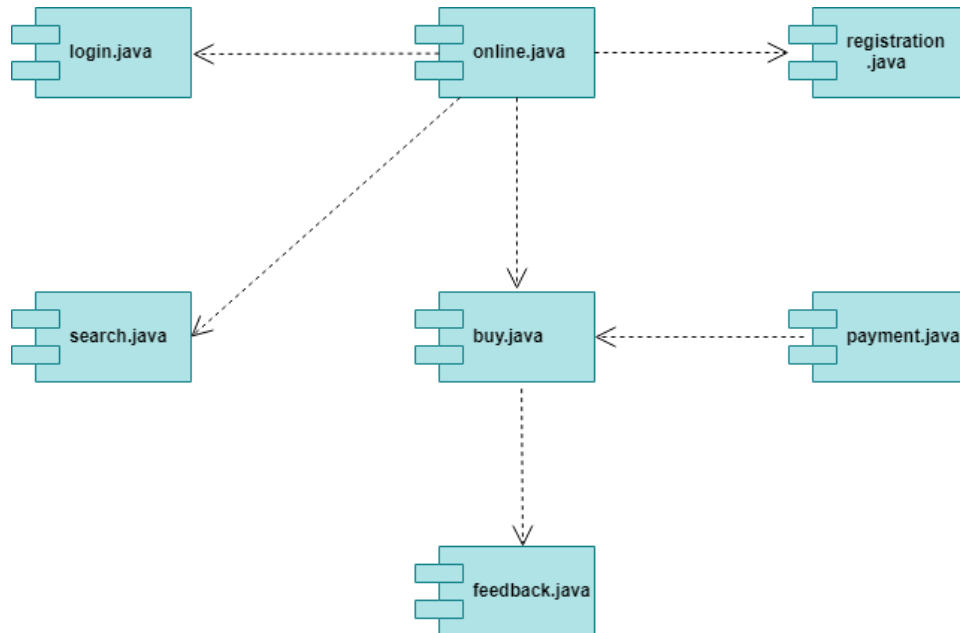


6.3 State chart Diagram for Title Class



7. Deployment Model

7.1 Component Diagram



7.2 Deployment Diagram

