

# Online Shopping System

Final Project Fall 24

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CSCI-UA-470 Object-Oriented Programming

Jerry Leung & Grace Li

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The final report of the online shopping system development provides a comprehensive overview of the project from inception to design and potential deployment. The report begins with a project description that succinctly outlines the overall setup, goals, and the multifaceted benefits it brings to various stakeholders. It includes a thorough examination of the system inputs and outputs. The report also illustrates the interactions between the system components through use case diagrams and descriptions, and further clarifies these interactions through sequence diagrams and class diagrams in the system design section. The conclusion section reflects the projected impact and efficiency improvements of the system in the field of online shopping.

## Table of Work

(Jerry works on the Seller System, and Grace works on the Buyer System)

	Student-1 Name	Student-2 Name
Project Description	Jerry Leung	Grace Li
Uses Cases Diagram(s)	Jerry Leung	Grace Li
Sequence Diagrams	Jerry Leung	Grace Li
Class diagram(s)	Jerry Leung	Grace Li
Implementation	Jerry Leung	Grace Li
Conclusion	Jerry Leung	Grace Li

## **General Description:**

The proposed online shopping system is a comprehensive digital platform designed to accommodate the functional needs of both buyers and sellers within a virtual marketplace. The platform facilitates the listing, management, and purchase of products, integrated with a straightforward accounting system to track sellers' revenue from sales.

## **Goals:**

1. **Enhanced User Experience:** Offer sellers tools for efficient inventory management, including adding, removing products and viewing financial transactions and revenue streams.
2. **Community Building:** Enable buyers to leave reviews and feedback on products, which can help sellers improve their offerings and assist other buyers in making informed decisions.

The online shopping system presents significant benefits across the board. For buyers, it offers a one-stop solution that simplifies the process of browsing, searching, and purchasing products. Supported by comprehensive reviews and a range of payment options, it ensures a confident and easy shopping experience. Sellers benefit from a robust platform that allows them to manage product listings effectively, track sales performance, and receive valuable customer feedback, which can be used to enhance product quality and service delivery. Additionally, the marketplace itself benefits from increased traffic and transaction volumes, driven by the system's efficiency, reliability, and user-friendly interface, making it an attractive destination for digital commerce.

## **System Inputs and Outputs:**

### **● Inputs:**

- User registration details (buyers and sellers).
- Product details (name, quantity, price).
- Transaction details (revenue, reviews).

### **● Outputs:**

- Updated inventory lists.
- Financial reports (revenue per seller).

- User feedback or product reviews.

## **Key Features and Functionalities:**

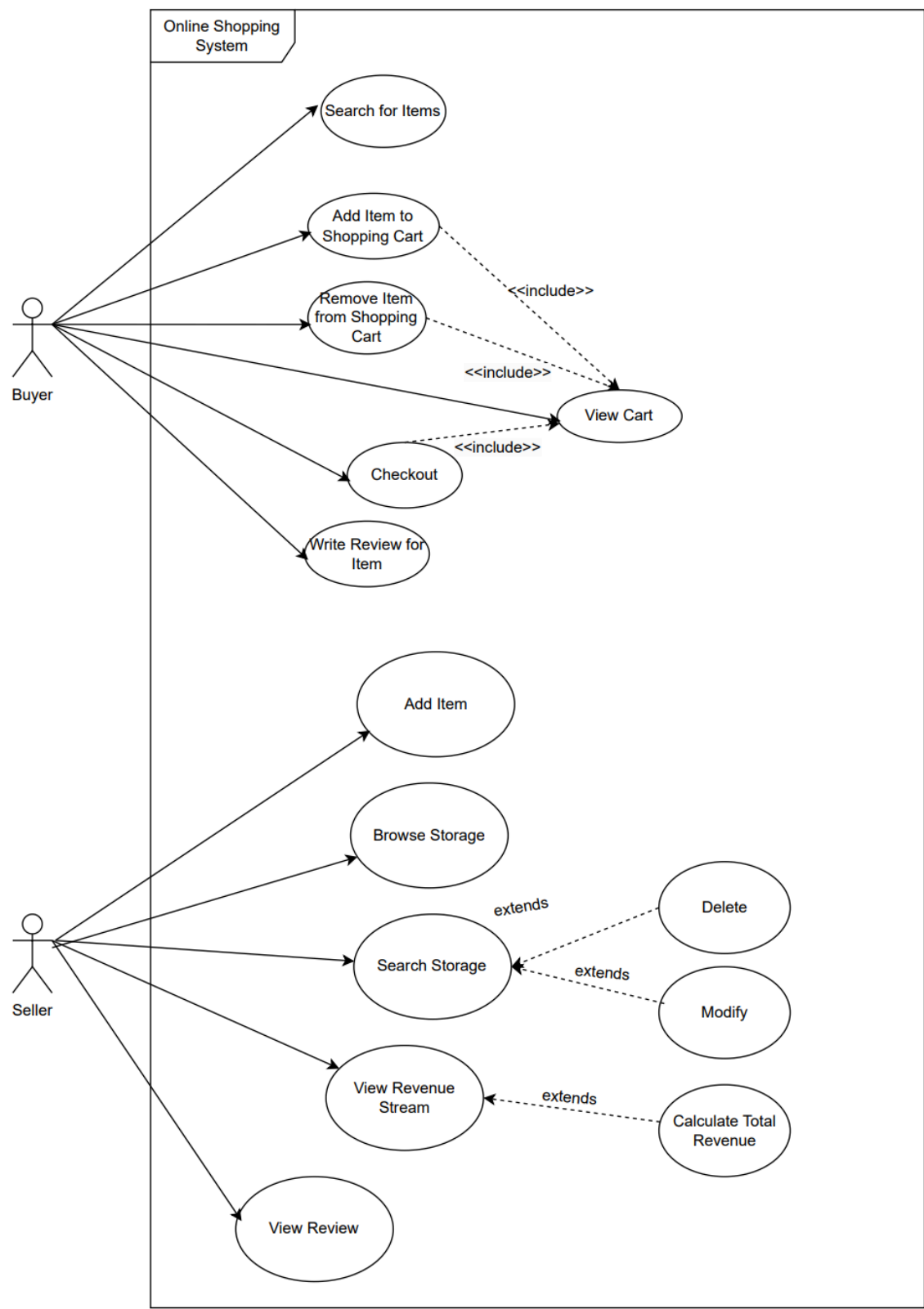
### **1) Buyer Features:**

- Browse Item: Buyers can browse items available on the platform.
- Search Item: The buyer can search for a specific item he or she is interested in (browse by item name).
- Add to Shopping Cart: The buyer can add items he or she is interested in into the shopping cart.
- View Shopping cart: buyer can view the shopping cart
- Remove items shopping cart: The buyer can remove items from the shopping cart
- Checkout: The buyer buys the items from the system. Items will be removed automatically. Buyer also has the option to buy by credit card, debit card, or gift card.
- Review the item: The buyer can write a review for the purchased item

### **2) Seller Features:**

- Search Item: The seller can also search for a specific item he or she wants to take a look at.
- Remove Item: The seller can remove a certain product from the system.
- Add item: The seller can add an item to the system.
- View Revenue: view the amount of revenue generated
- View Review: The seller can also see the review of the item

# Use Case Diagram



## Use Case Diagram Description

UC Reference Name/Number: UC001 - Search for Item	
Overview	This use case allows the user to search for specific items in the inventory using a search bar.
Related Use Cases	N/A
Actors	Buyer

UC Reference Name/Number: UC002 - Add Item to Shopping Cart	
Overview	This use case allows the user to add a selected item from the inventory to their shopping cart.
Related Use Cases	UC001 - Search Items
Actors	Buyer

UC Reference Name/Number: UC003 - Remove Item From Shopping Cart	
Overview	This use case allows the user to remove an item from their shopping cart.
Related Use Cases	UC002 - Add item to Shopping Cart
Actors	Buyer

UC Reference Name/Number: UC004 - View Cart	
Overview	This use case allows the user to view all items currently added to the shopping cart.
Related Use Cases	UC002 - Add item to Shopping Cart, UC003 - Remove From Shopping Cart
Actors	Buyer

UC Reference Name/Number: UC005 - Checkout	
Overview	This use case allows the user to calculate the total cost of the items in their cart and complete the purchase process.
Related Use Cases	UC004 - View Cart
Actors	Buyer

UC Reference Name/Number: UC006 - Review Item	
<b>Overview</b>	This use case allows the user to write and save a review for a specific item in the inventory.
<b>Related Use Cases</b>	UC001 - Search Items
<b>Actors</b>	Buyer

UC Reference Name/Number: UC007 - AddItem	
<b>Overview</b>	Seller can add items (name, price, and quantity) into storgae
<b>Related Use Cases</b>	Associate with actor seller, does not relate to any other use cases
<b>Actors</b>	Seller

UC Reference Name/Number: UC008 - Browse Storage	
<b>Overview</b>	Seller can browse items in the storage, where it can view item name, item price, and quantity
<b>Related Use Cases</b>	Associate with actor seller, does not relate to any other use cases
<b>Actors</b>	Seller

UC Reference Name/Number: UC009 - Search Storage	
<b>Overview</b>	Seller can search the item name in the storage, and will get the item name and view the price and quantity available in the storage.
<b>Related Use Cases</b>	UC010 Delete and UC011 Modify
<b>Actors</b>	Seller

UC Reference Name/Number: UC010 - Delete	
<b>Overview</b>	Seller can select an item and delete it entirely. Delete all its name, price, and quantity
<b>Related Use Cases</b>	UC009 - Search Storage
<b>Actors</b>	Seller



UC Reference Name/Number: UC011 - Modify	
<b>Overview</b>	Seller can modify the name, price, or quantity of a selected item.
<b>Related Use Cases</b>	UC009 Search Storage
<b>Actors</b>	Seller

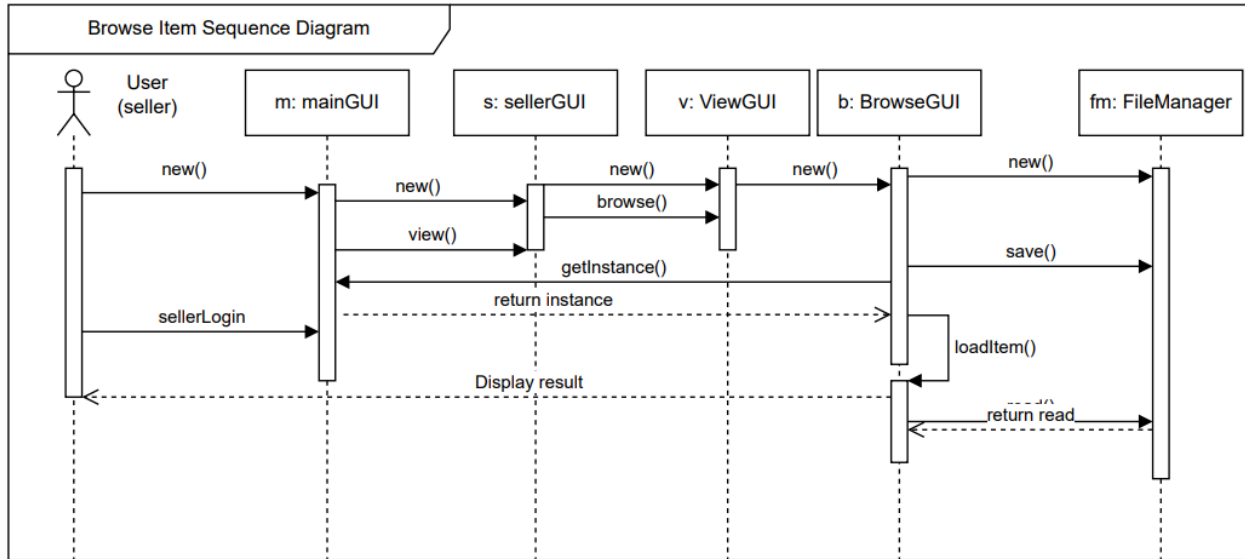
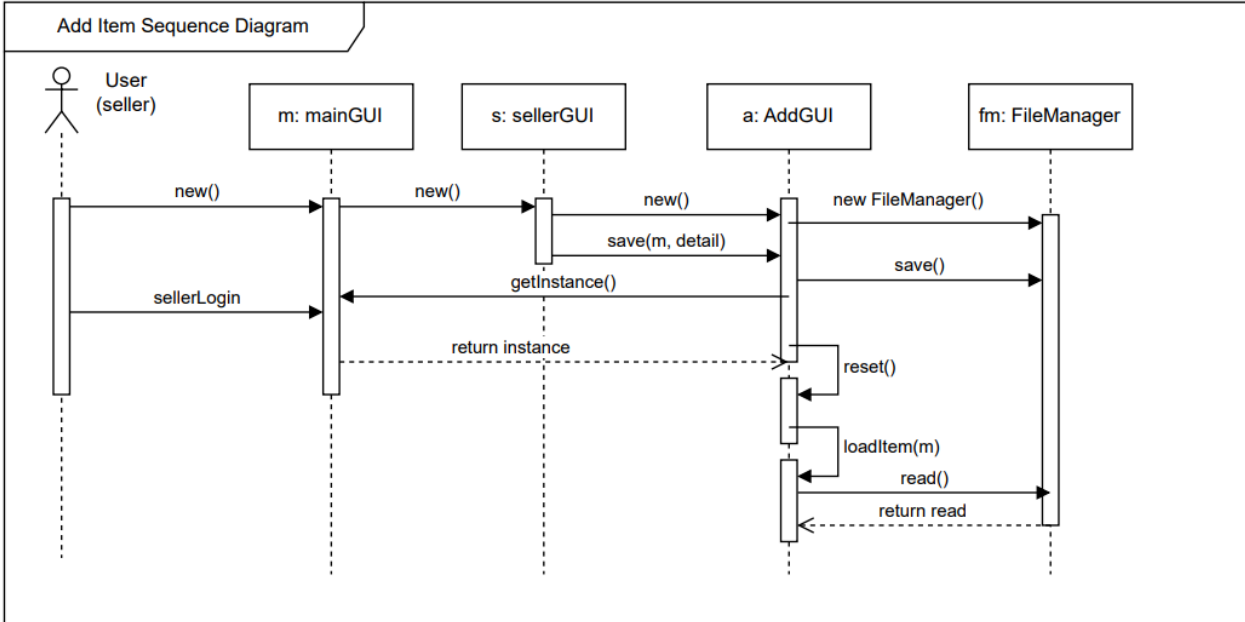
UC Reference Name/Number: UC012 - View Revenue stream	
<b>Overview</b>	Seller can view the revenue(transaction) history.
<b>Related Use Cases</b>	UC013 Calculate total revenue
<b>Actors</b>	Seller

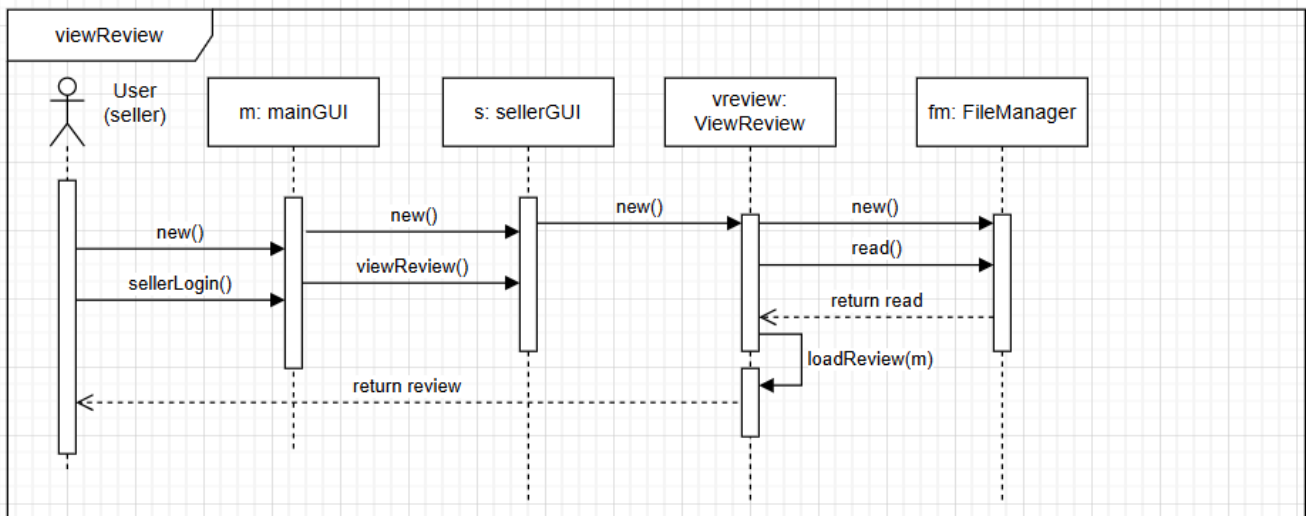
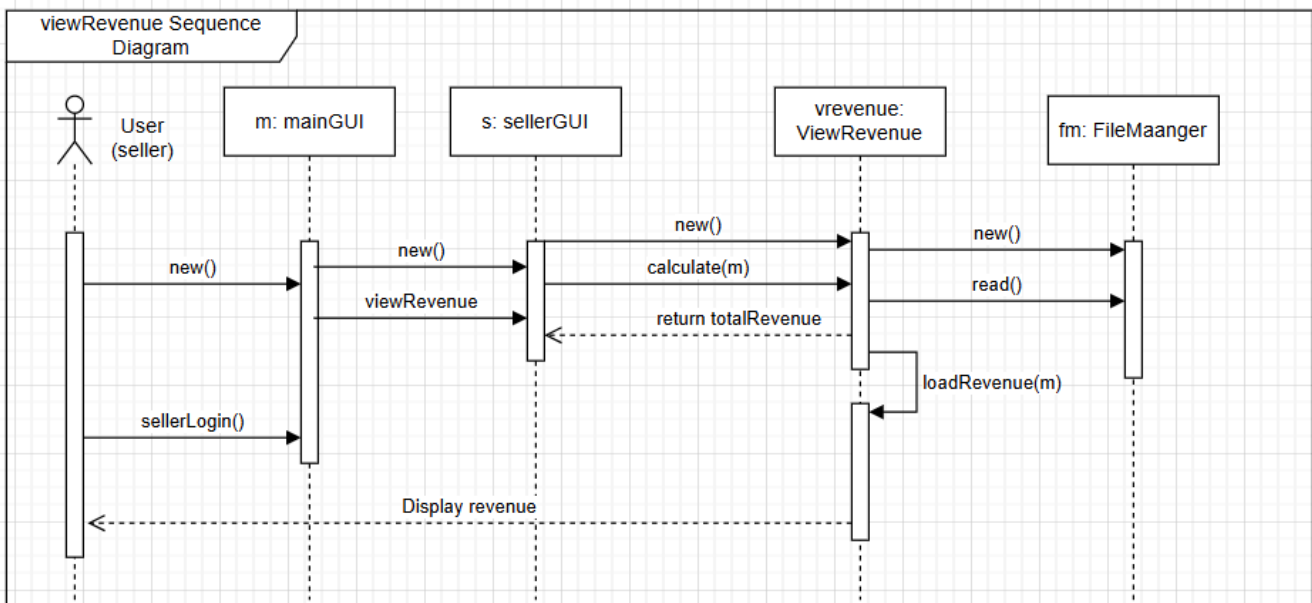
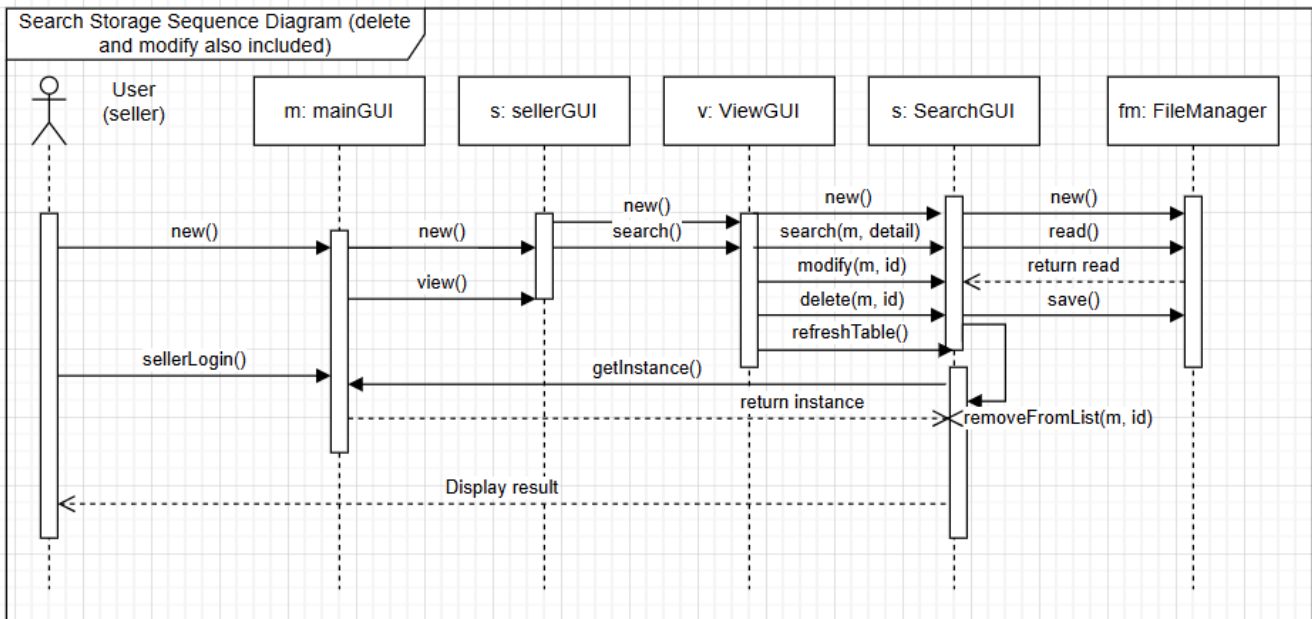
UC Reference Name/Number: UC013 - Calculate total Revenue	
<b>Overview</b>	Seller can choose to calculate the total revenue generated
<b>Related Use Cases</b>	UC012 View Revenue Stream
<b>Actors</b>	Seller

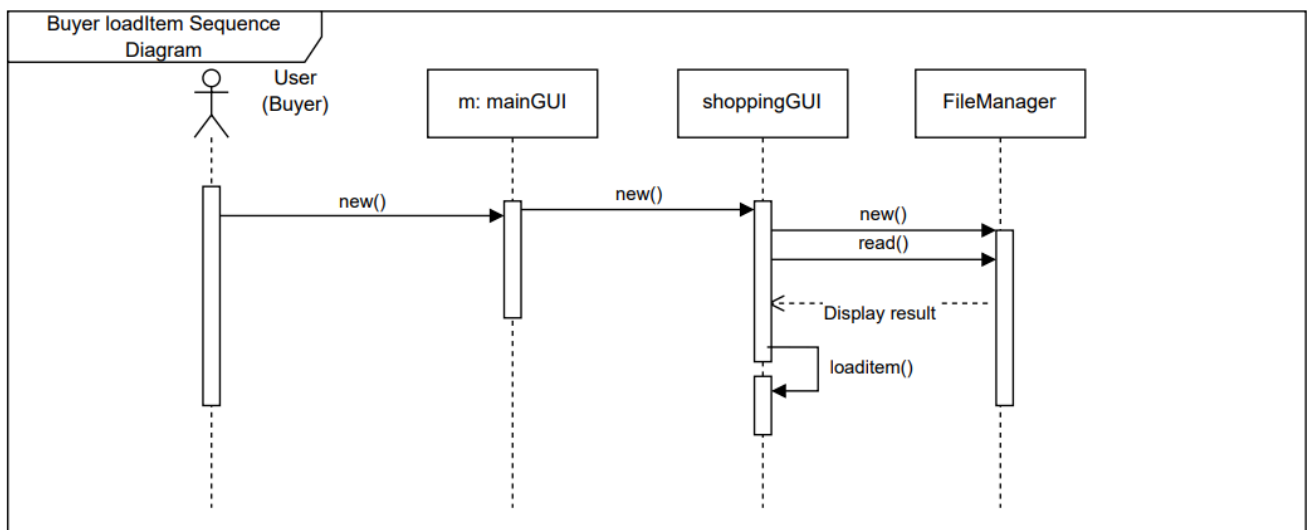
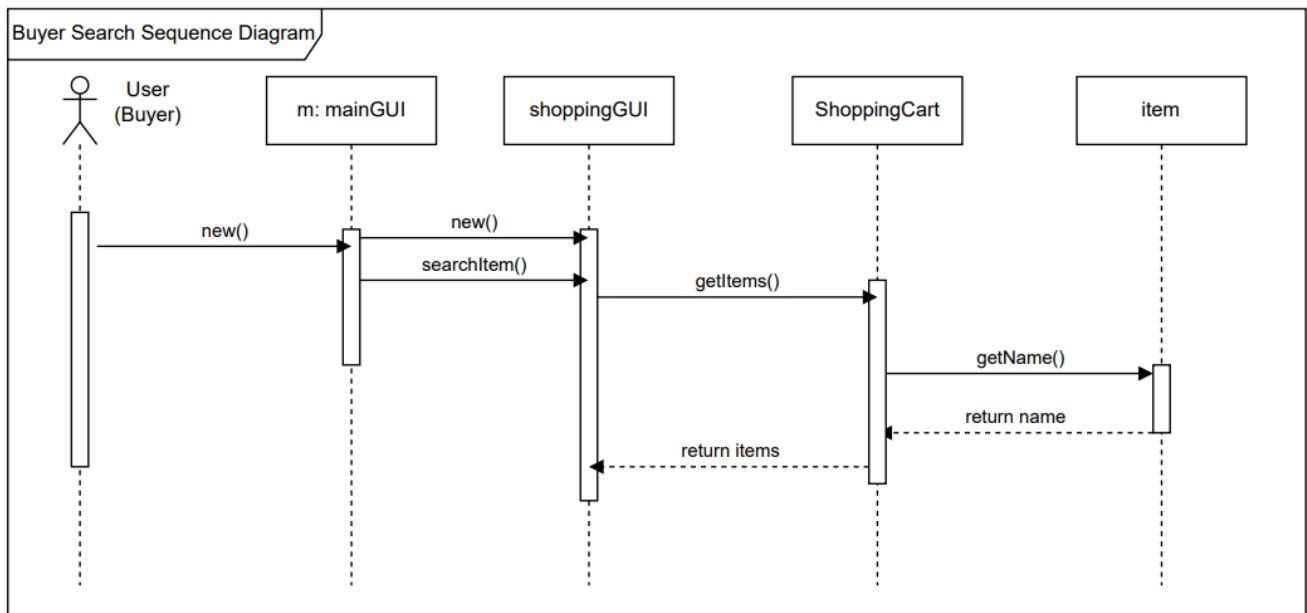
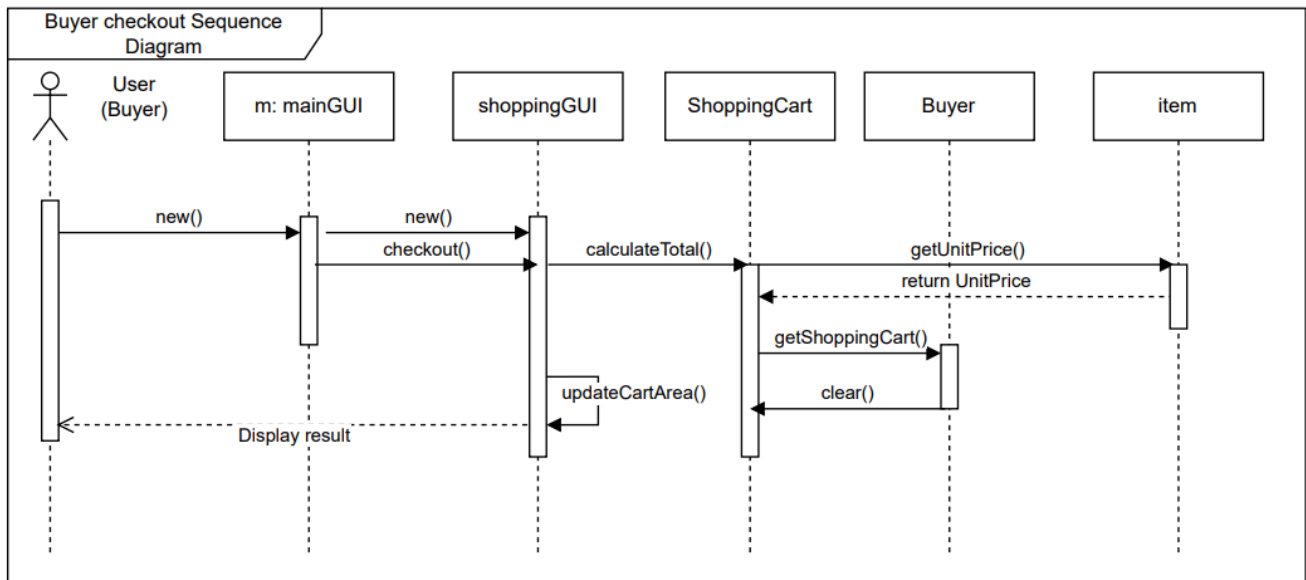
UC Reference Name/Number: UC0014 - View Review	
<b>Overview</b>	Seller can view the reviews written by buyers
<b>Related Use Cases</b>	Associates with the seller and no related use cases
<b>Actors</b>	seller

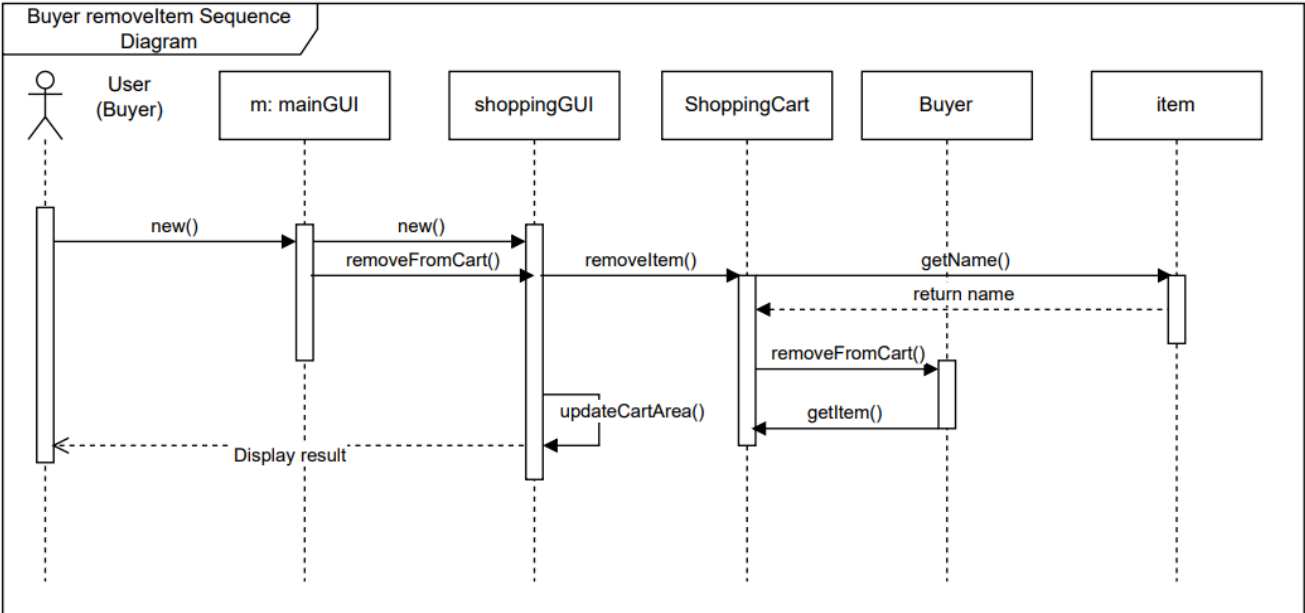
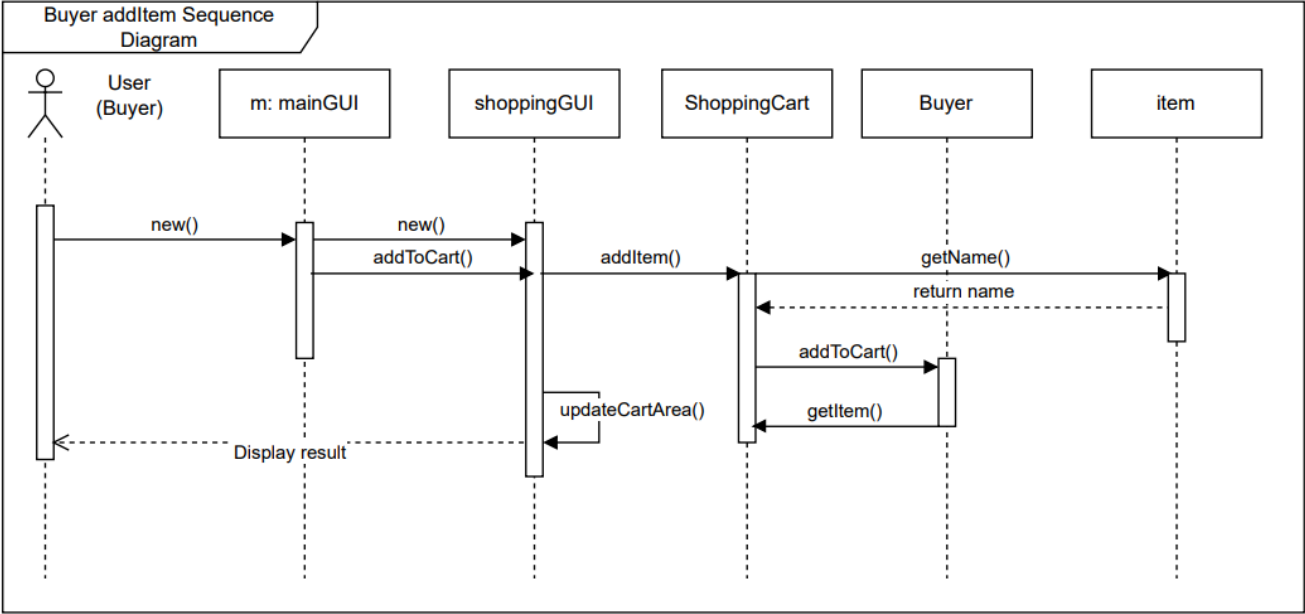
# System Design

## Sequence Diagrams

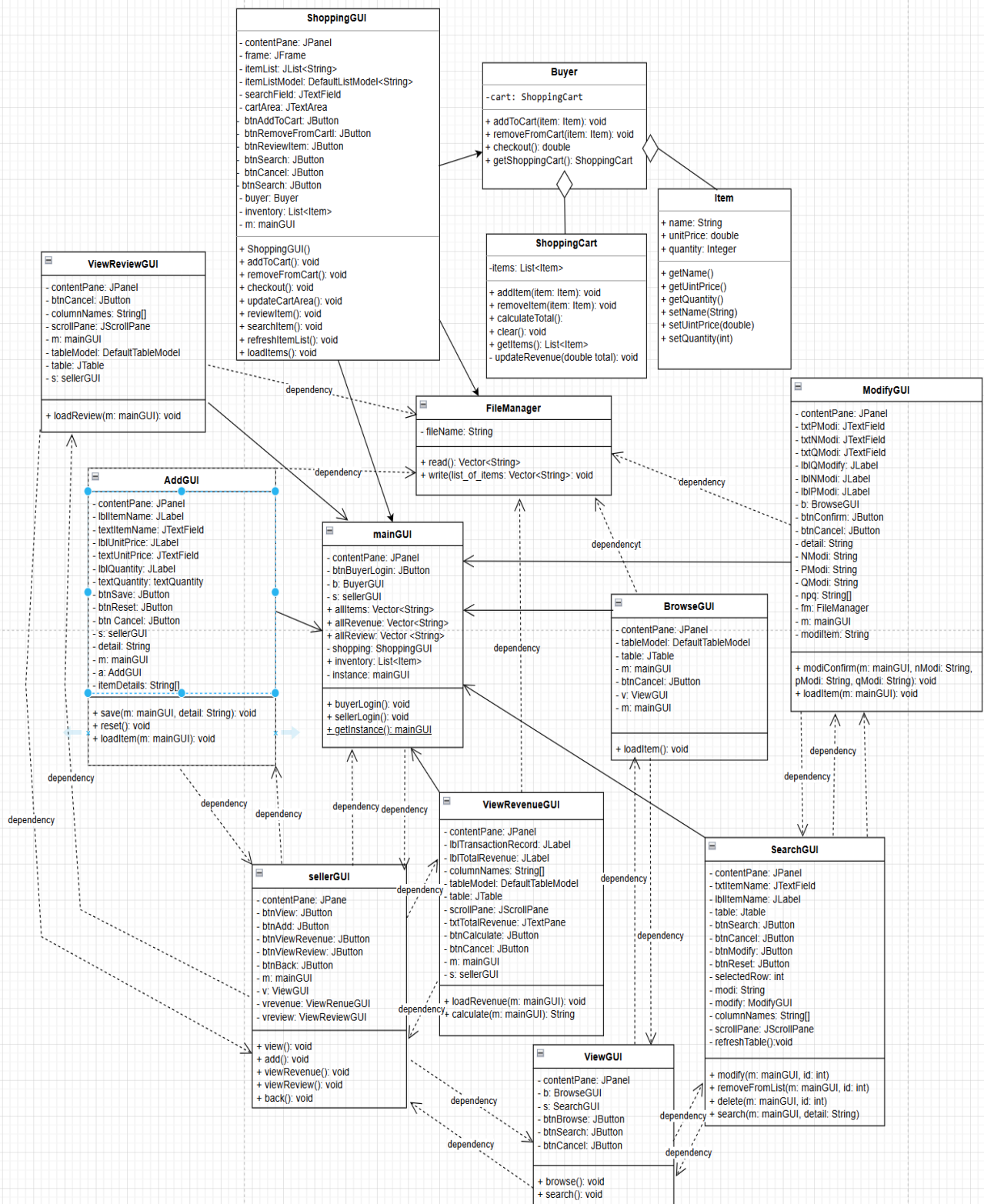








# Class diagram(s)



**Conclusion:**

The development of this online shopping system represents a significant step towards modernizing retail experiences, providing robust tools for buyers and sellers to interact efficiently in a digital marketplace. By offering comprehensive features that streamline the buying and selling processes, the platform stands to improve user engagement and satisfaction, ultimately driving business growth for sellers while enriching the shopping experience for buyers.