IT-314: Software Engineering

Lab 6

202201206 - Vatsal Patoliya

Q. 1) Develop Use Case Textual Description for "Process Sale" and "Handle Return" use cases.

➢ Process Sale:

Primary Actor: Cashier
Goal: Complete a customer's purchase.
Precondition: The customer has chosen items, and the cashier is logged in.
Main flows:

1. The cashier starts a new sale by scanning the item's barcode.
2. The POS system checks the catalog system for item details (like price and description).
3. The POS system adds the item to the sale.
4. This is done for all items the customer wants to buy.
5. The cashier chooses the payment method (cash, credit card, etc.).
6. The POS system calculates the total cost and updates the inventory.
7. The payment is processed.
8. A receipt is printed and given to the customer.

Postcondition: The sale is recorded, a receipt is printed, and stock levels are updated.

Alternative Flow: If the payment fails, the system will ask for another payment method or cancel the transaction.

➢ Handle Return:

Primary Actor: Cashier
Goal: Process the return of purchased items.
Precondition: The customer has a valid receipt, and the cashier is logged in.
Main Steps:

1. The cashier selects the return option in the POS system.
2. The POS system asks for receipt details or the original transaction number.
3. The cashier scans the items being returned.
4. The POS system checks with the inventory system to restock the items.
5. The POS system calculates the refund amount.
6. The cashier completes the return by issuing cash or processing a card refund.
7. The system updates the inventory and generates a receipt for the return.

Postcondition: The item is restocked, the customer receives a refund (or store credit), and the return is logged.

Alternative Flow: If the receipt is invalid or the item can't be returned, the system shows an error message and cancels the return.

Q. 2) Identify Entity/Boundary Control Objects

- **Entity Objects :**

  1.Cashier

  2.Customer

  3.Receipt

- **Boundary Objects:**

  1.System Interface

  2.Scanner

- **Controller Objects:**

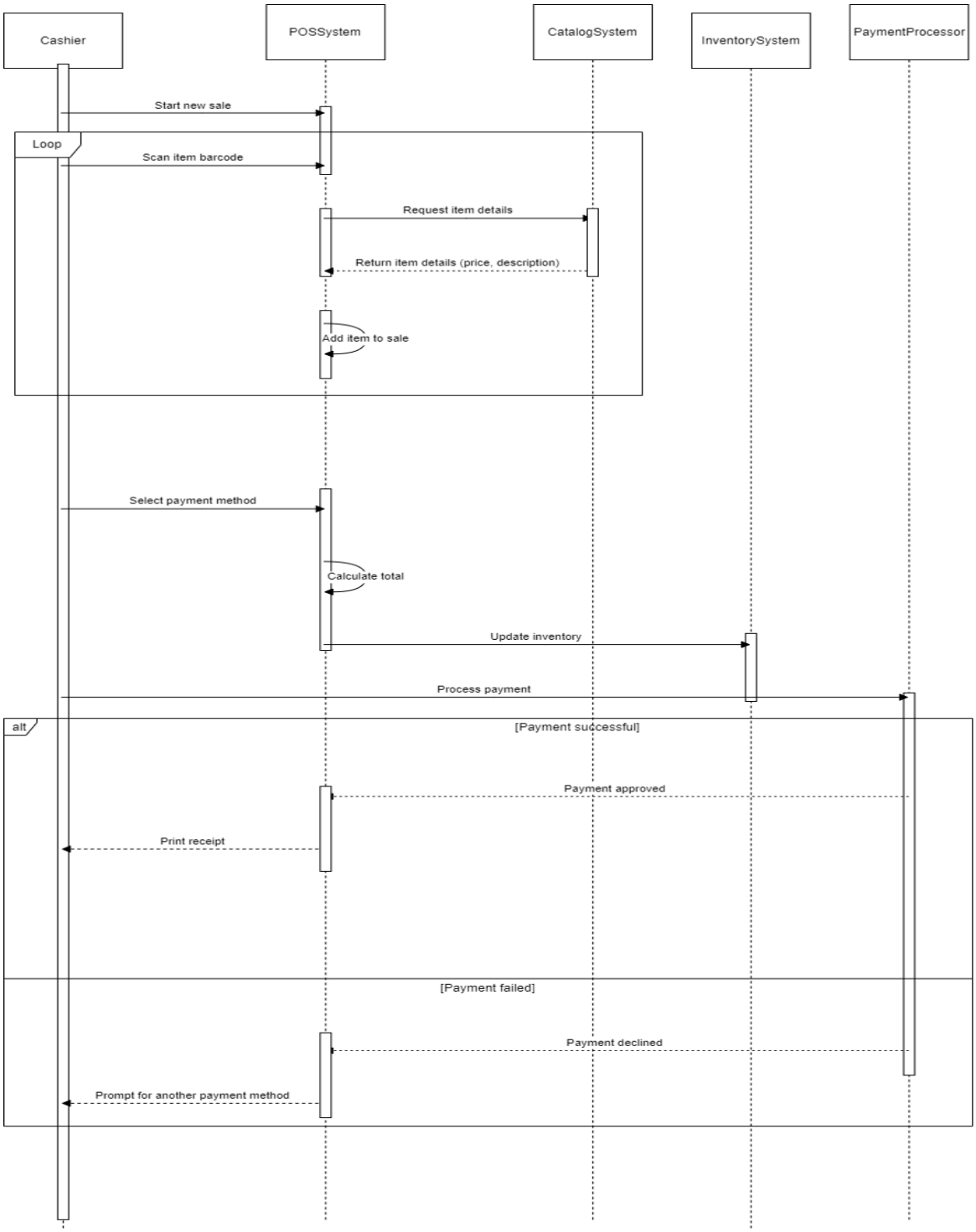
  1. Payment Processor

  2. Catalog System

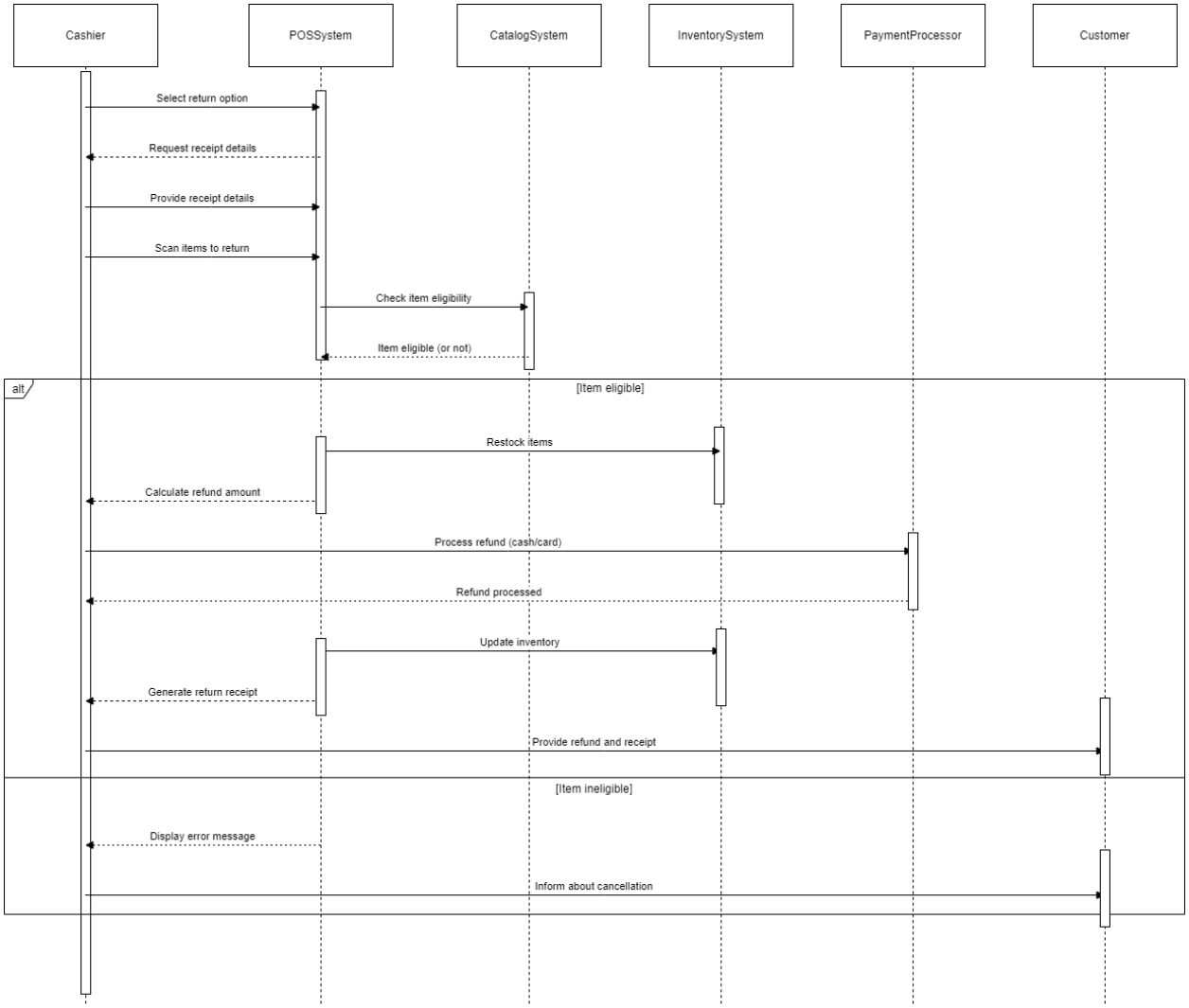
  3. Inventory System

Q. 3) Develop Sequence Diagrams:

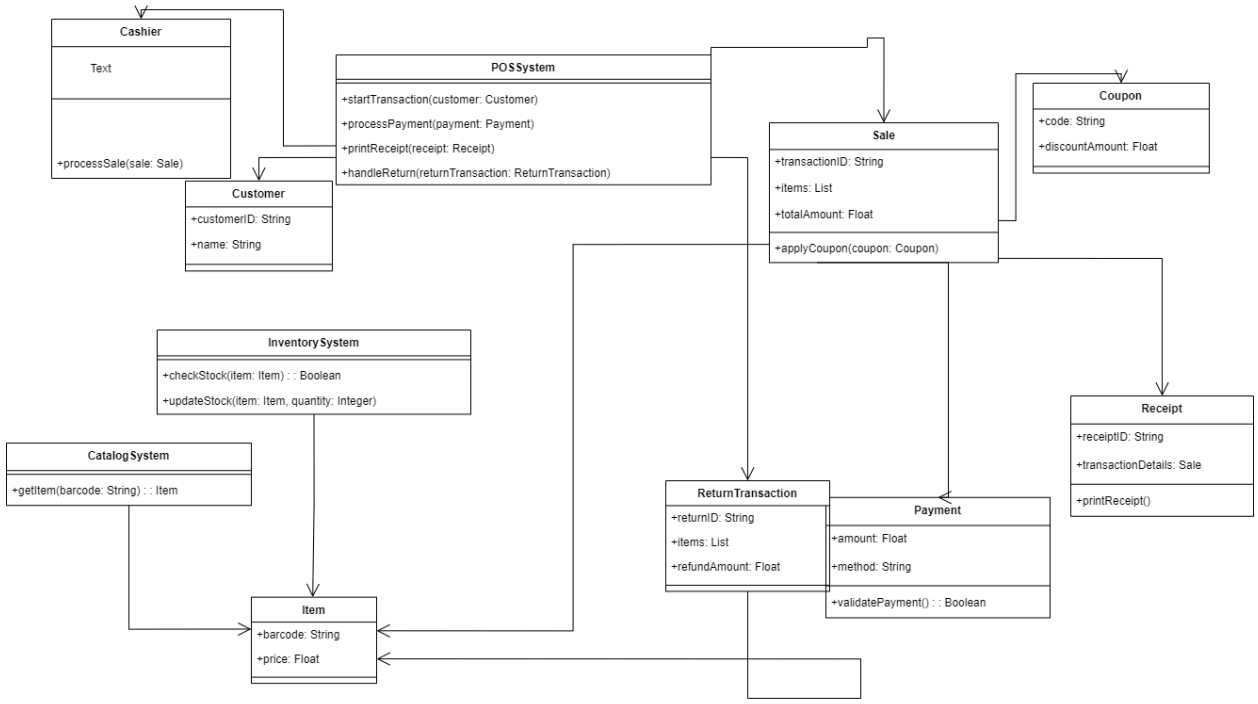
Sequence Diagram for “Process Sale” :



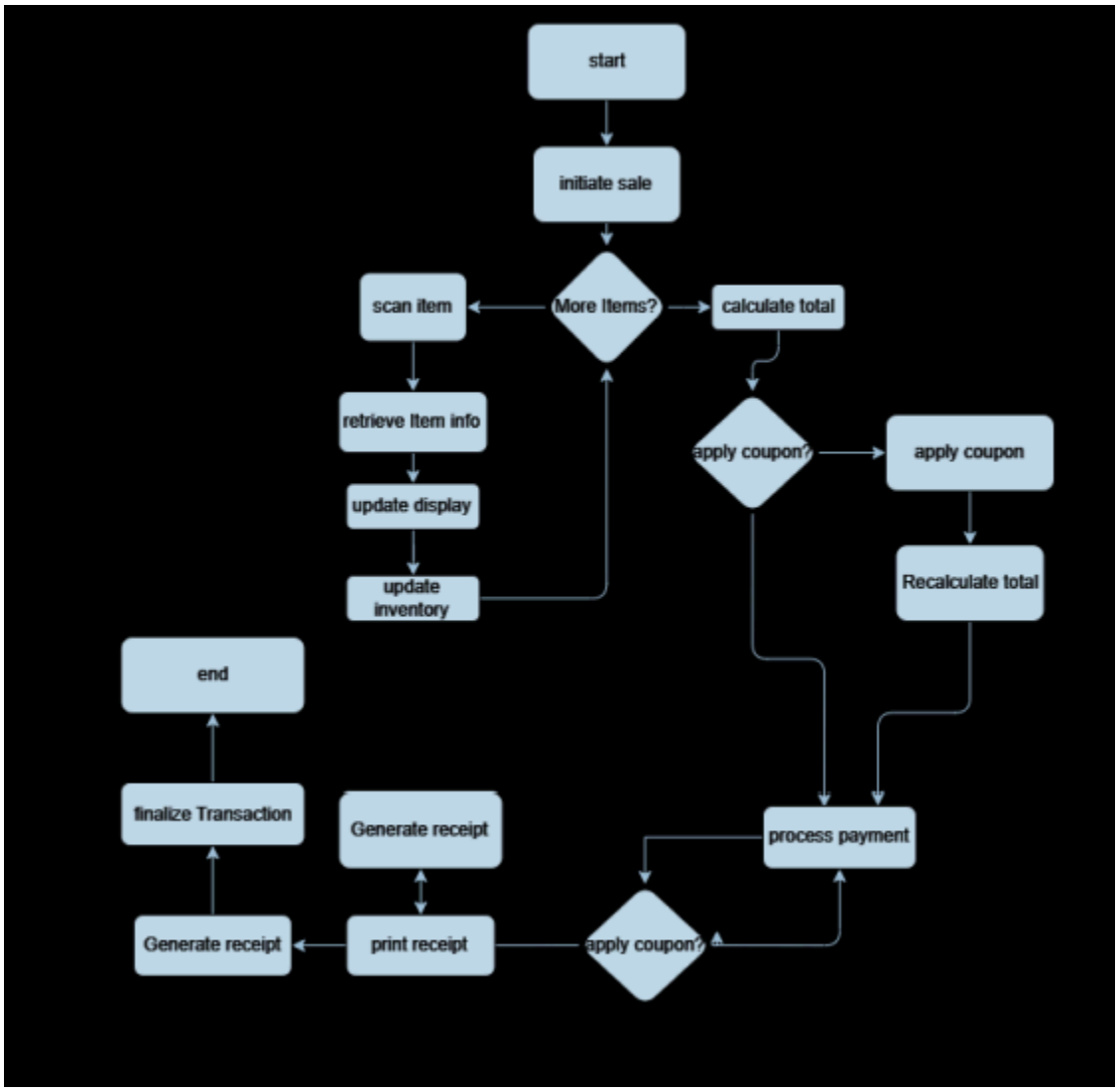
Sequence Diagram for “Handle Return” :



Q-4) Analysis Domain Model



Q-5)activity diagram for "Process Sale"



Activity diagram for "Handle Return" :