IT314

Q1 Develop Use Case Textual Description for "Process Sale" and "Handle Return" use cases.

1. Use Case: Process Sale

Actors:

- Primary: Cashier
- Secondary: Customer

Preconditions:

- The POS system is operational, and the cashier is logged in.
- The product catalog and inventory system are accessible.
- The barcode scanner, printer, and payment system are functional.

Postconditions:

- The inventory is updated to reflect the sold items.
- The receipt is printed.
- The customer has paid for the goods, and the payment is processed.

Trigger:

- The customer brings items to the cashier and requests to make a purchase.

Main Flow:

1. The cashier starts a new sale..
2. The cashier scans the barcode of each item.
3. The POS system retrieves the product information (name, price) from the product catalog.
4. The system displays the items and total price to the cashier and customer.
5. The customer chooses a payment method (cash or card).
6. The system processes the payment through the selected method.
7. The system prints a receipt after a successful transaction.
8. The transaction is complete.

Alternate Flow (Payment Fails):

- If the payment fails, the cashier informs the customer, and the customer retries with a different payment method or cancels the transaction.

2. Use Case: Handle Return

Actors:

- Primary: Cashier
- Secondary: Customer

Preconditions:

- The POS system is operational, and the cashier is logged in.
- The returned item is eligible for return.
- The customer provides a receipt for the original purchase.

Postconditions:

- The inventory is updated.
- The customer is refunded.

Trigger:

- The customer approaches the cashier with an item and requests a return, providing the original receipt.

Main Flow:

1. The customer approaches the cashier to return an item and provides the original purchase receipt.
2. The cashier opens the return function in the POS system.
3. The cashier scans the barcode or enters the item details to initiate the return.
4. The POS system checks if the item is eligible for return based on store policies.
5. The system processes the return:
    - The system updates the inventory if the item is restocked.
    - The customer is refunded based on the original payment method or issued store credit.
6. A return receipt is printed and given to the customer.

Alternate Flow (Invalid Return):

- If the item is not eligible for return (e.g., past return period, no receipt), the cashier informs the customer, and the return is canceled.

Q2. Identify Entity/Boundary Control Objects

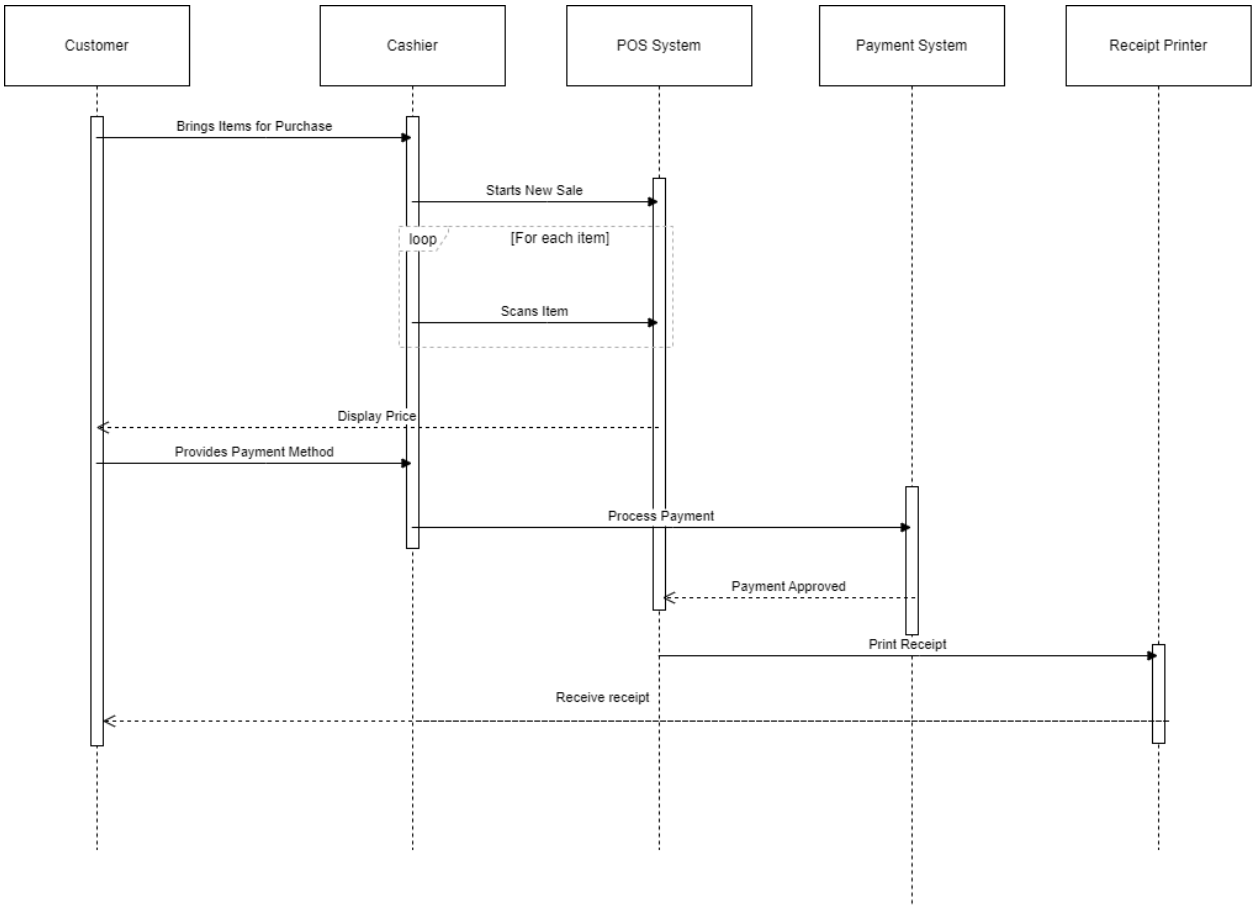
- Entity Objects:
    - Product
    - Sale
    - Receipt
    - Inventory
    - Payment
- Boundary objects:

    - Cashier Interface
    - Payment system Interface
    - Barcode scanner
    - Receipt scanner

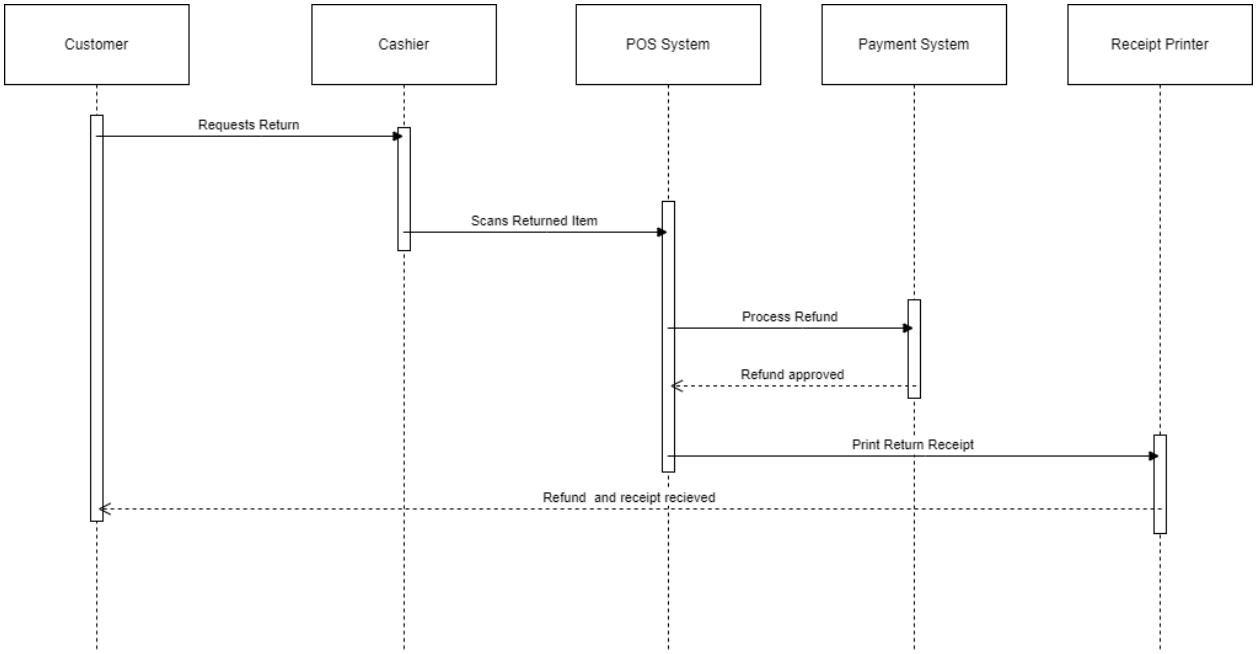
- Control Objects
    - Payment Controller
    - Inventory controller
    - Receipt Controller
    - Sale controller

Q3. Develop Sequence Diagrams

- Process Sale

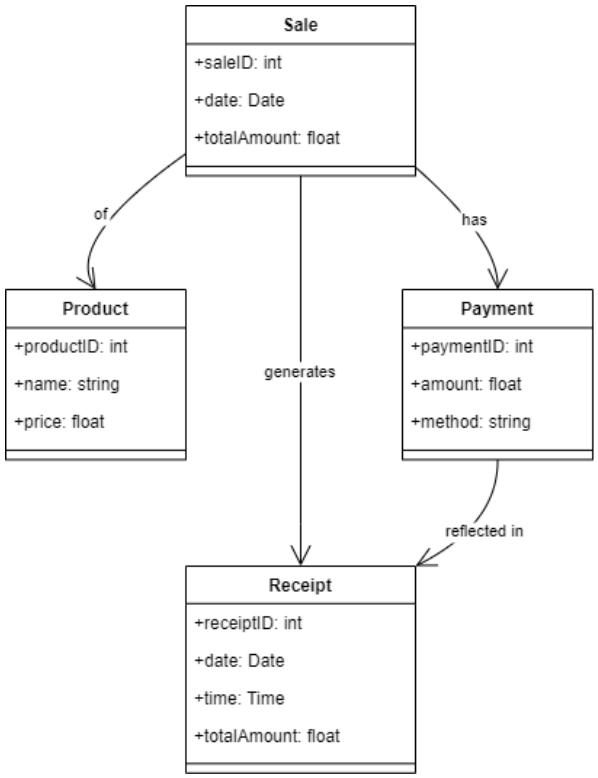


- Handle Return

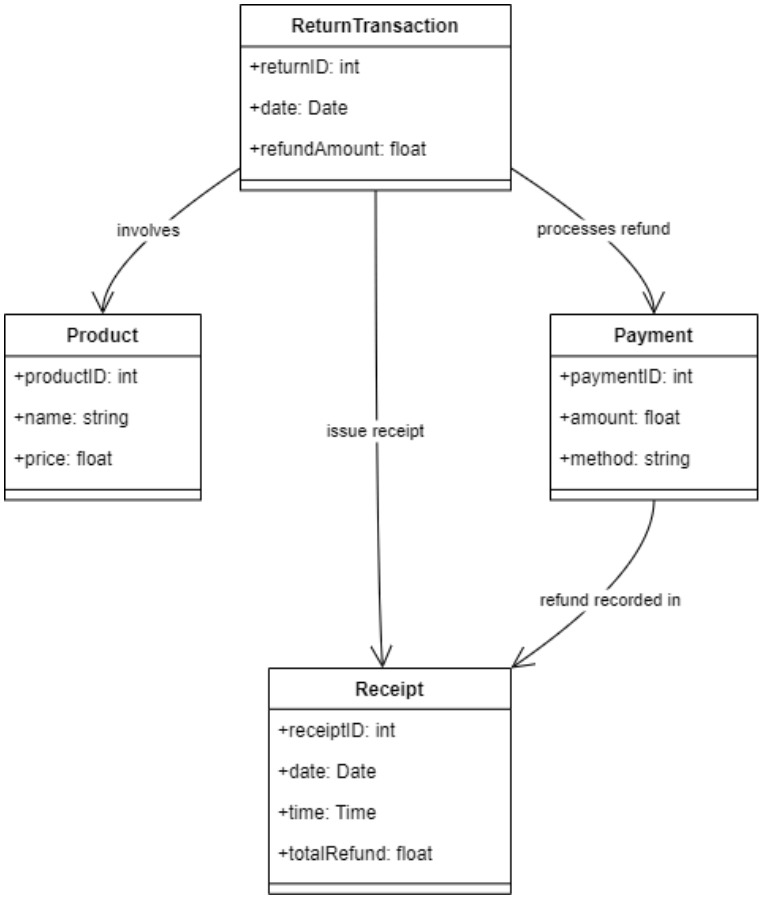


Q4. Develop Analysis Domain Models

- Process Sale

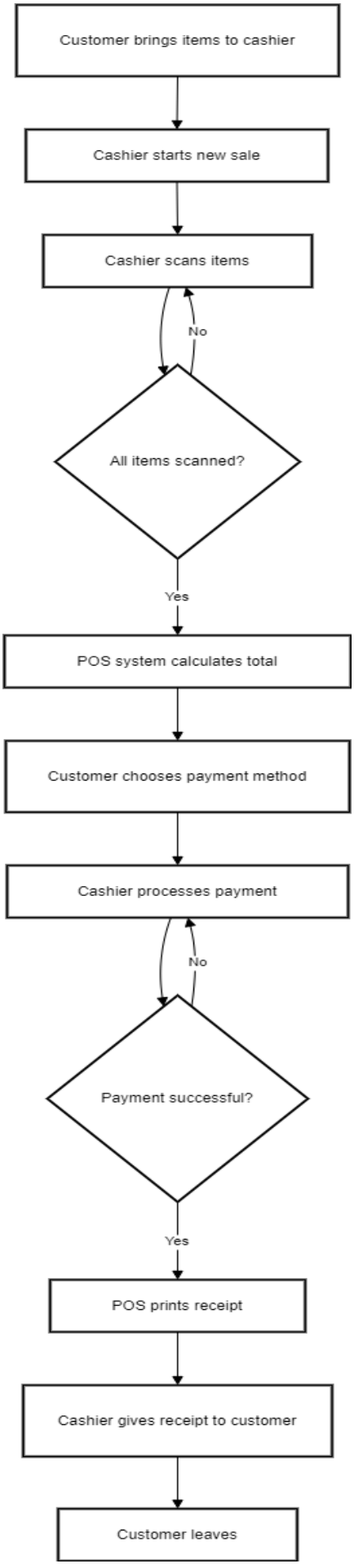


- Handle Return



Q5 Develop activity diagram for "Process Sale" and "Handle Return" use cases.

- Process Sale


Customer brings items to cashier
Cashier starts new sale
Cashier scans items
No
All items scanned?
Yes
POS system calculates total
Customer chooses payment method
Cashier processes payment
No
Payment successful?
Yes
POS prints receipt
Cashier gives receipt to customer
Customer leaves

- Handle Return