IT-314 Software Engineering

Lab6-Point of sale system

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"Process Sale"

Actor:

- Cashier

Preconditions:

- The POS system is operational and ready to use
- Cashier is logged into the system

Postconditions:

- Sale is recorded in the system
- Inventory is updated
- Receipt is printed and given to the customer

Basic Flow:

1. Customer arrives at the POS with items for purchase

2. Cashier initiates a new sale transaction

3. For each item: a. Cashier scans the item barcode b. System retrieves item details (name, price) from the catalog c. System updates inventory d. System adds the item to the current transaction

4. System calculates and displays the total amount

5. Customer chooses a payment method (cash, credit card, or check)

6. Cashier processes the payment through the Payment Processor

7. System records the sale

8. System prints the receipt

9.Cashier gives the receipt and goods to the customer

Alternative Flows:

3b. If item not found in catalog, Cashier manually enters item details

4a. Customer has a gift coupon:

    1. Cashier applies the coupon to the sale

    2. System recalculates the total

5a. Customer decides not to complete the purchase:

    1. Cashier cancels the transaction

    2. System reverts any inventory changes

6a. Payment processing fails:

    1. System notifies Cashier

    2. Cashier asks customer for an alternative payment method

"Handle Return"

Actor:

- Cashier

Preconditions:

- The POS system is operational and ready for use
- Cashier is logged into the system
- Customer has goods to return and the original receipt

Postconditions:

- Return is recorded in the system
- Inventory is updated
- Refund is processed
- Return receipt is printed and given to the customer

Basic Flow:

1.   Customer arrives at the POS with goods to return and the original receipt

2.   Cashier initiates a new return transaction

3.   Cashier scans or enters details of the items being returned

4.   System verifies return eligibility (e.g., within return period)

5.   System calculates the refund amount

6.   Cashier confirms the return reason with the customer

7.   System updates inventory

8.   Cashier processes the refund in the original payment method

9.   System records the return

10. System prints the return receipt

11. Cashier gives the return receipt to the customer

Alternative Flows:

4a. Items are not eligible for return:

1. System notifies Cashier

2. Cashier informs customer

3. Return process is terminated

7a. Items are damaged or used:

    1. Cashier assesses the condition

    2. System may adjust the refund amount or reject the return

8a. Original payment method is not available:

    1. Cashier selects an alternative refund method

    2. System processes the refund using the alternative method

❖ **Identify Entity/Boundary/Control Objects:-**

Entity Objects

1. Sale

2. Item

3. Payment

4. Customer
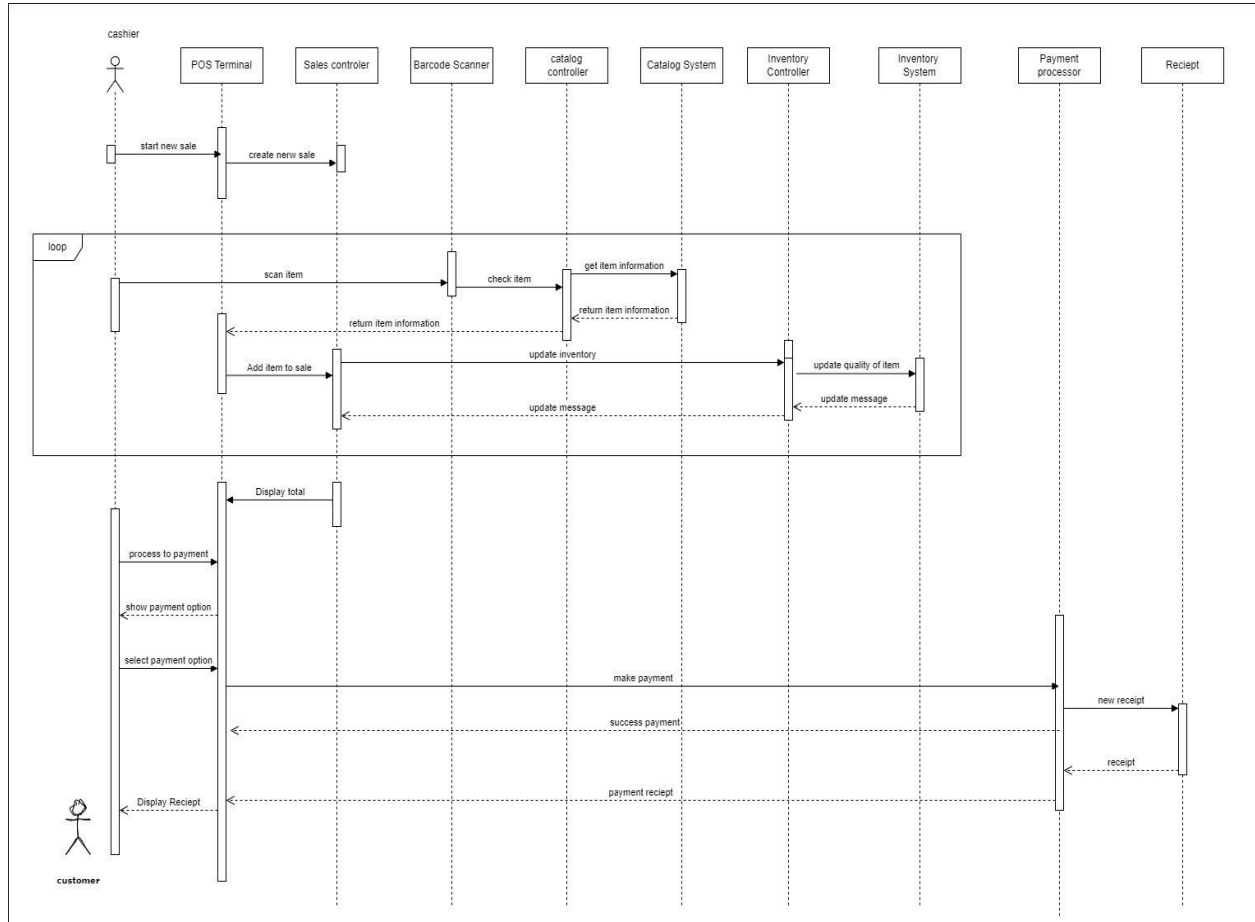
5. Cashier

6. Inventory

7. Coupon

8. Return

Boundary Objects

1. POS Terminal Interface

2. Barcode Scanner
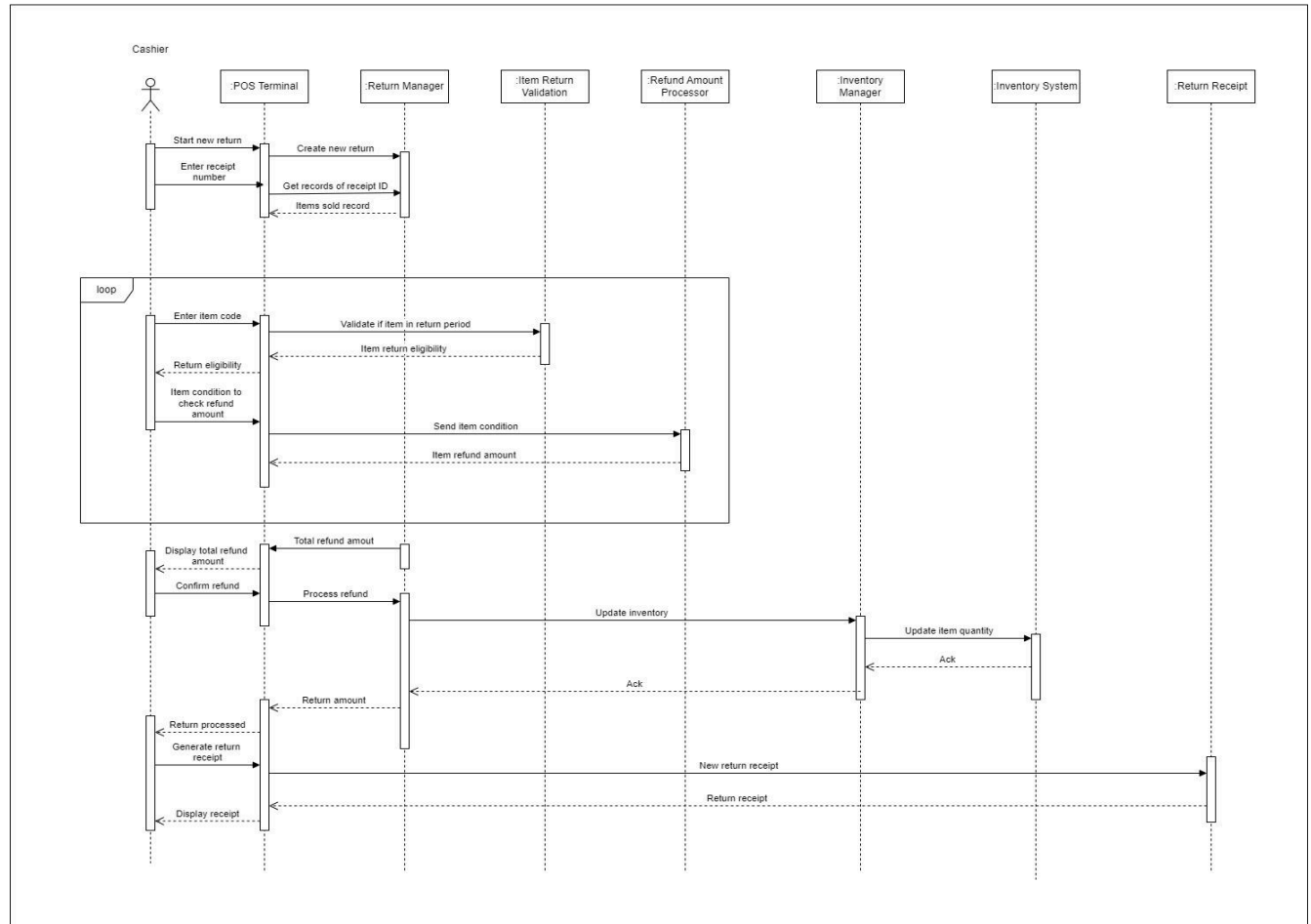
3. Receipt Printer

4.Payment Terminal

Control Objects

1. Sale Manager

2. Inventory Controller

3. Payment Processor
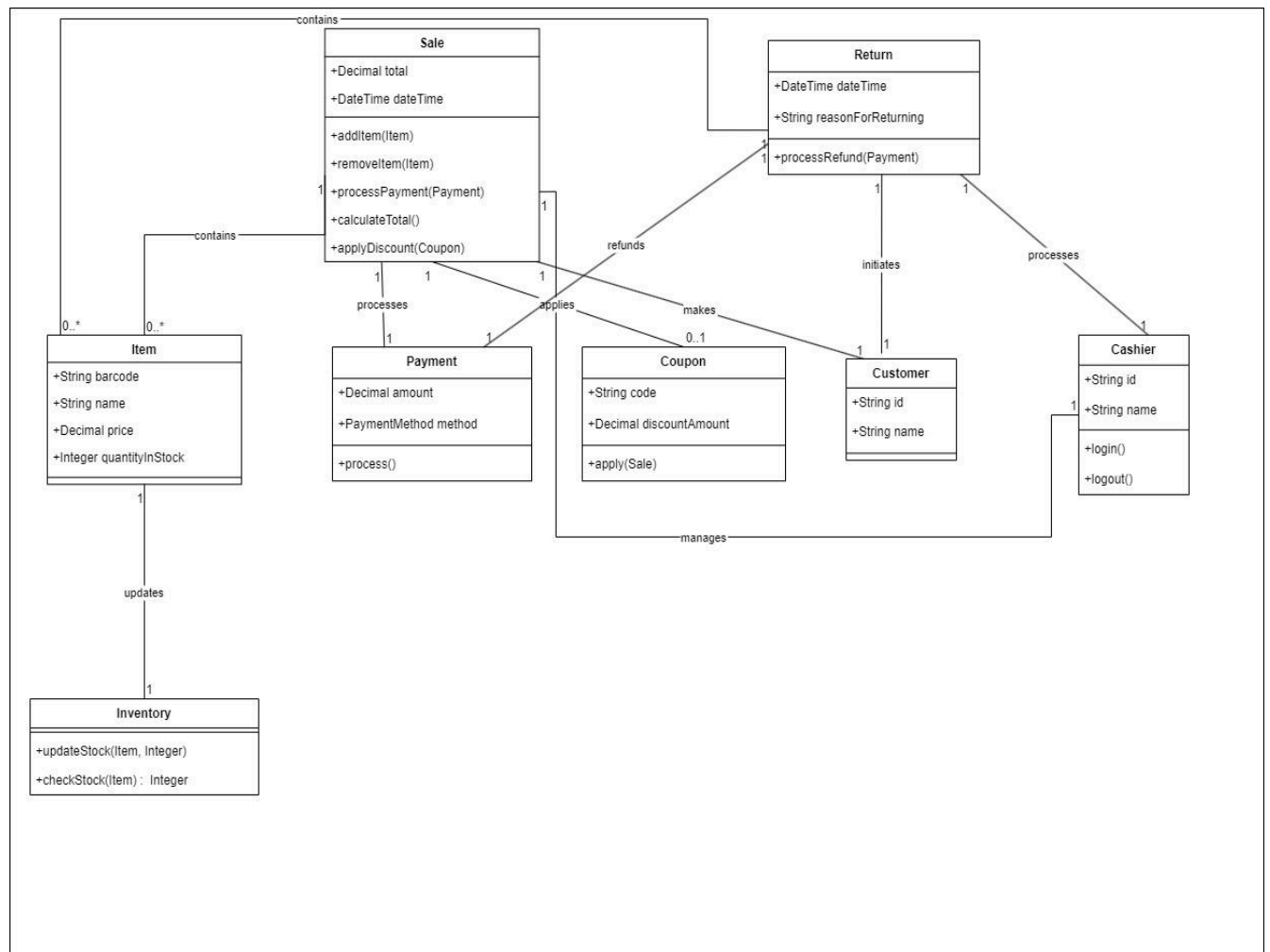
4. Catalog Manager

5. Return Manager

SEQUENCE DIAGRAM
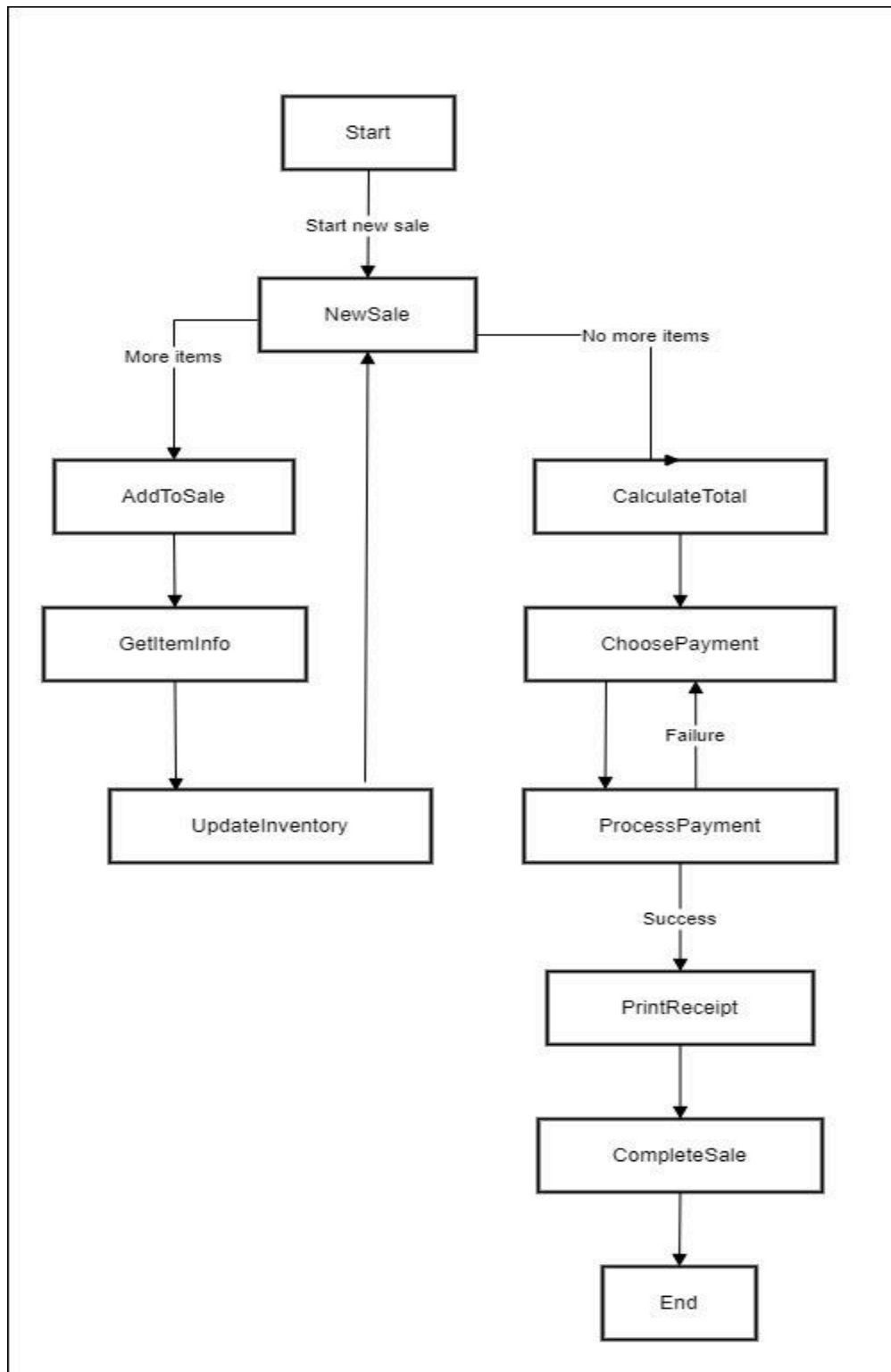
"Process Sales"

"Handle Returns"

Develop Analysis Domain Models:

Develop activity Diagram

"Process Sales"

"Handle Returns"