# SOFTWARE ENGINEERING

**IT - 314**

**LAB - 6**

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# Use Case: Process Sale

**Actor:**

- **Cashier**

**Preconditions:**

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

**Postconditions:**

- Sale is recorded in the system.
- Inventory is updated.
- Receipt is printed and provided 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. The **System** retrieves item details (name, price) from the catalog. c. The **System** updates inventory. d. The **System** adds the item to the current transaction.
4. The **System** calculates and displays the total amount.
5. **Customer** selects a payment method (cash, credit card, or check).
6. **Cashier** processes the payment through the Payment Processor.
7. The **System** records the sale.
8. The **System** prints the receipt.
9. **Cashier** provides the receipt and goods to the customer.

**Alternative Flows:**

- **3b**: If the item is not found in the catalog, the **Cashier** manually enters the item details.
- **4a**: If the **Customer** has a gift coupon:
    1. The **Cashier** applies the coupon to the sale.
    2. The **System** recalculates the total.
- **5a**: If the **Customer** decides not to complete the purchase:
    1. The **Cashier** cancels the transaction.
    2. The **System** reverts any inventory changes.
- **6a**: If the payment processing fails:
    1. The **System** notifies the **Cashier**.
    2. The **Cashier** asks the **Customer** for an alternative payment method.

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## Use Case: Handle Return

**Actor:**

- **Cashier**

**Preconditions:**

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

**Postconditions:**

- The return is recorded in the system.
- Inventory is updated.
- The refund is processed.
- A return receipt is printed and provided 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 the details of the items being returned.
4. The **System** verifies the return eligibility (e.g., within the return period).
5. The **System** calculates the refund amount.
6. **Cashier** confirms the reason for the return with the customer.
7. The **System** updates inventory.
8. **Cashier** processes the refund using the original payment method.
9. The **System** records the return.
10. The **System** prints the return receipt.
11. **Cashier** provides the return receipt to the customer.

**Alternative Flows:**

- **4a**: If the items are not eligible for return:
    1. The **System** notifies the **Cashier**.
    2. The **Cashier** informs the **Customer**.
    3. The return process is terminated.
- **7a**: If the items are damaged or used:
    1. The **Cashier** assesses the condition.
    2. The **System** may adjust the refund amount or reject the return.
- **8a**: If the original payment method is unavailable:
    1. The **Cashier** selects an alternative refund method.
    2. The **System** processes the refund using the alternative method.

# Identification of Entity, Boundary, and Control Objects:

## Entity Objects:

1. Sale
2. Item
3. Payment
4. Customer
5. Cashier
6. Inventory
7. Coupon
8. Return

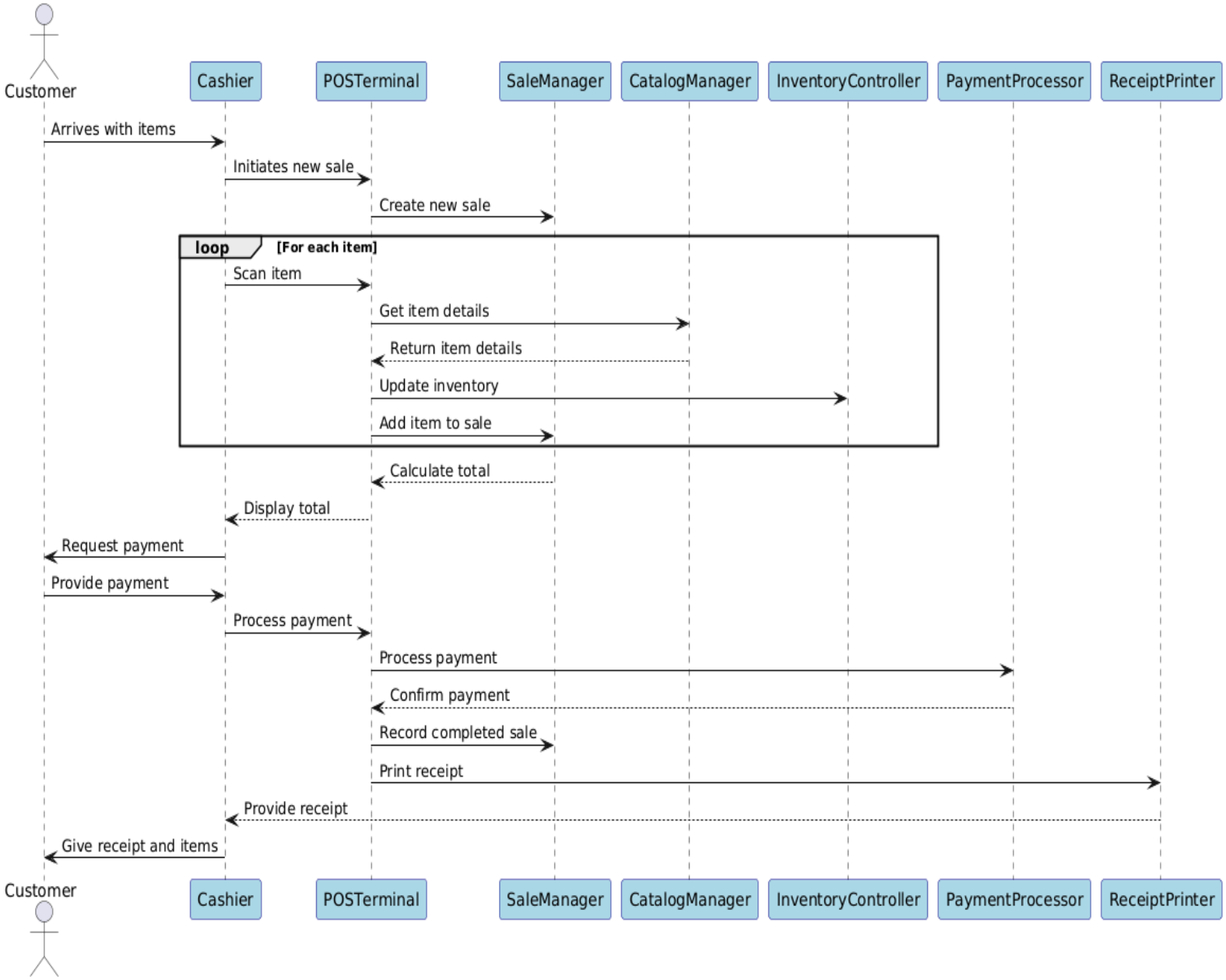
## Boundary Objects:

1. POS Terminal Interface
2. Barcode Scanner
3. Receipt Printer
4. Payment Terminal

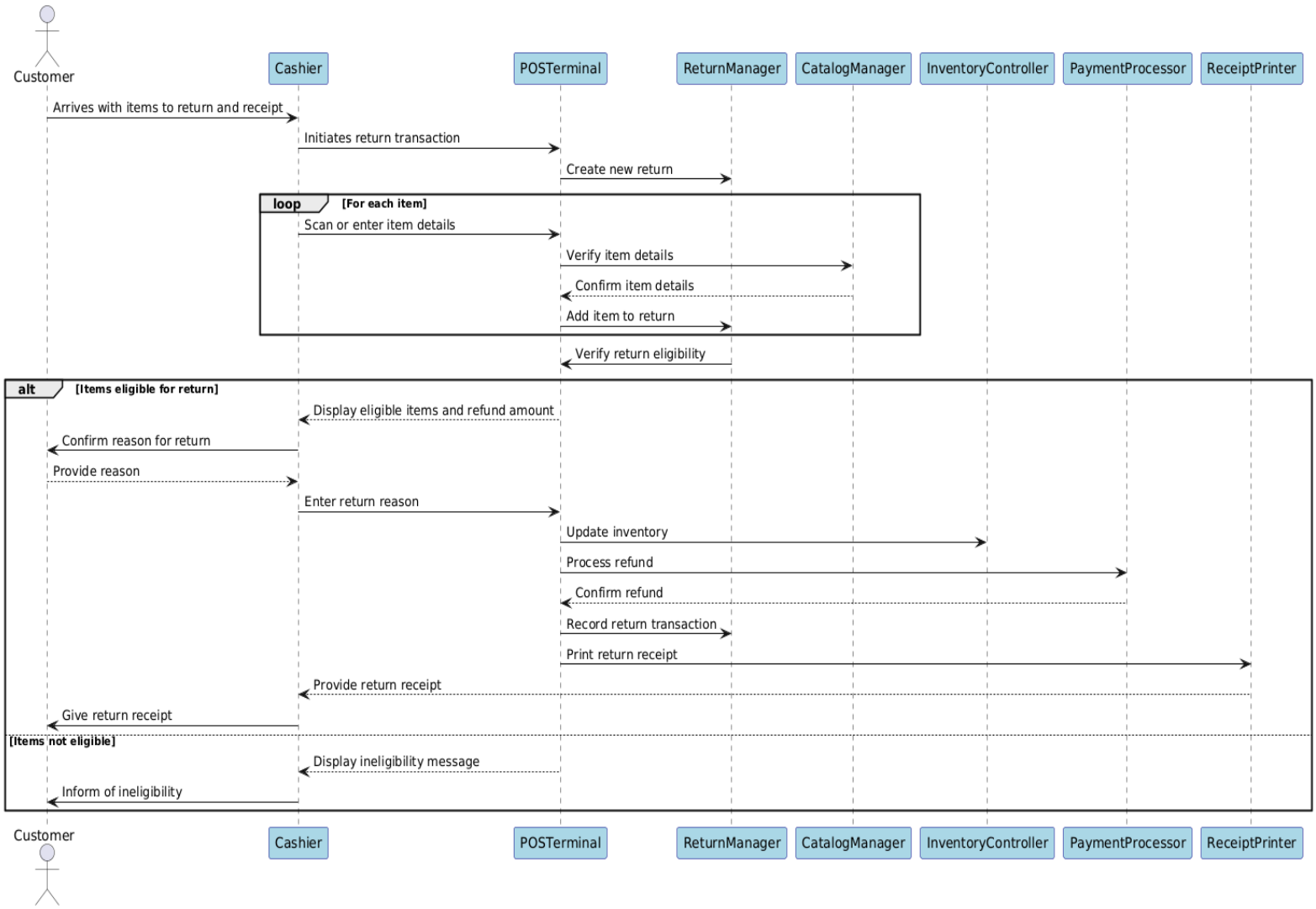
## Control Objects:

1. Sale Manager
2. Inventory Controller
3. Payment Processor
4. Catalog Manager
5. Return Manager

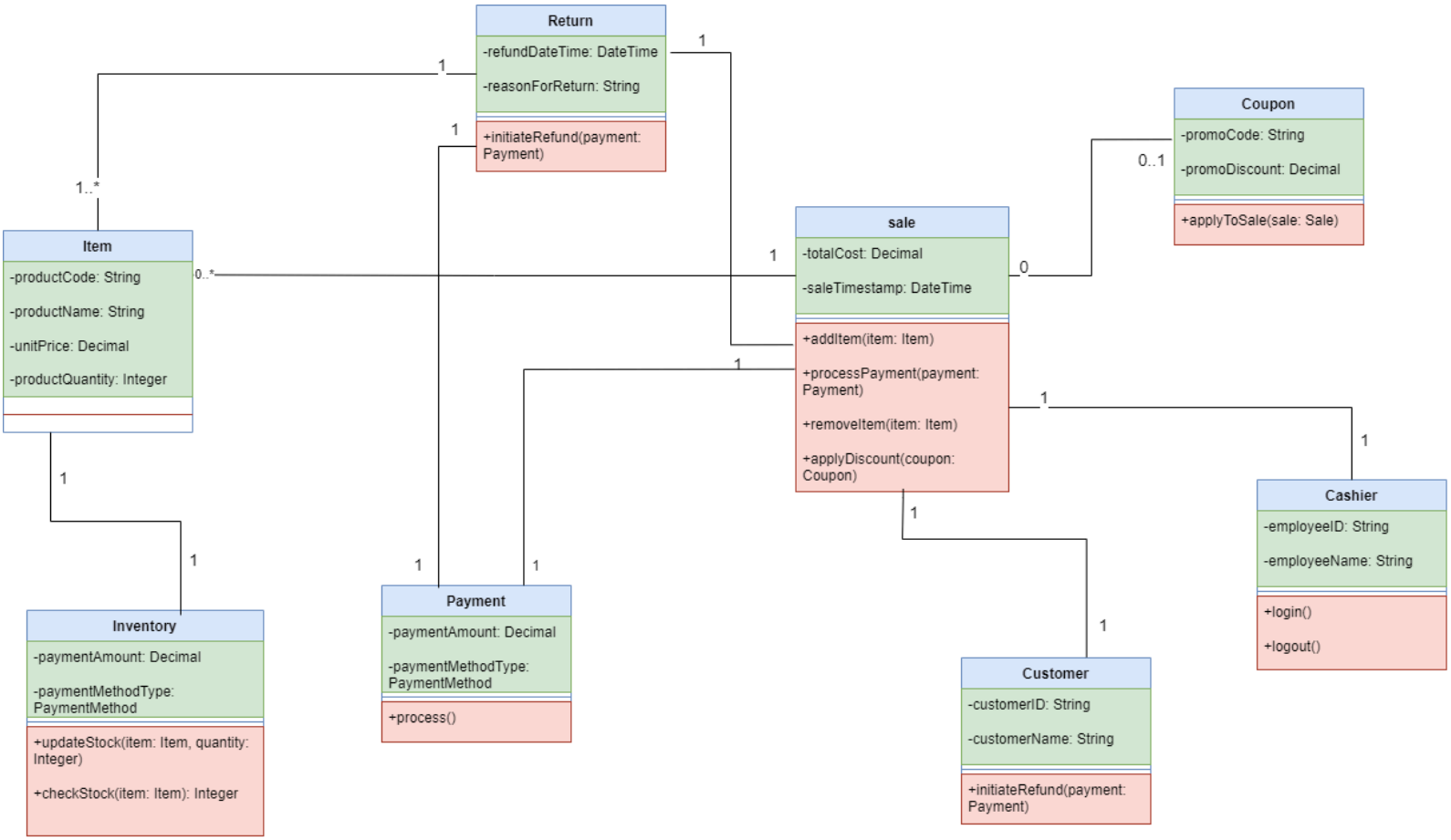
# Sequence Diagram :



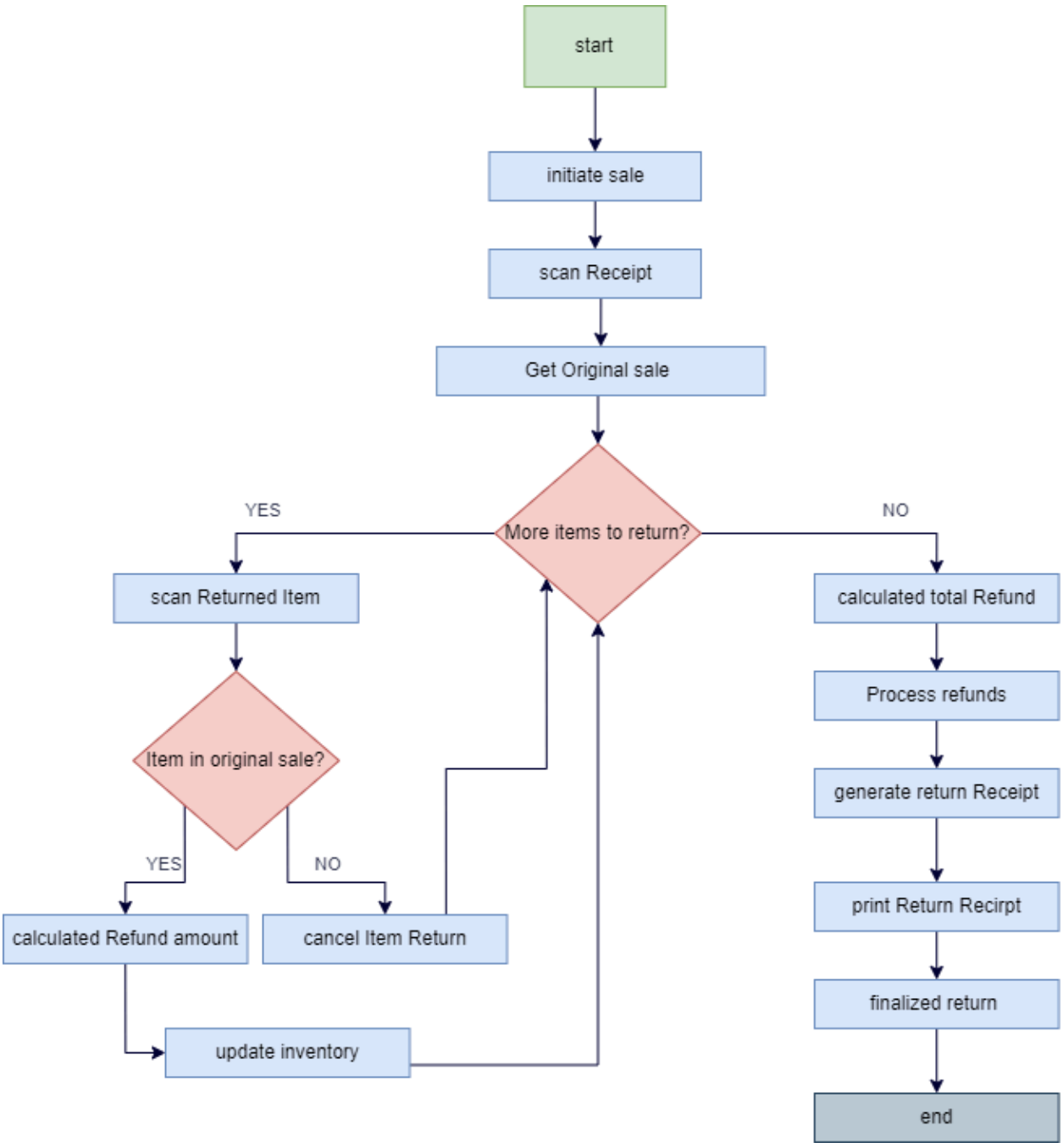
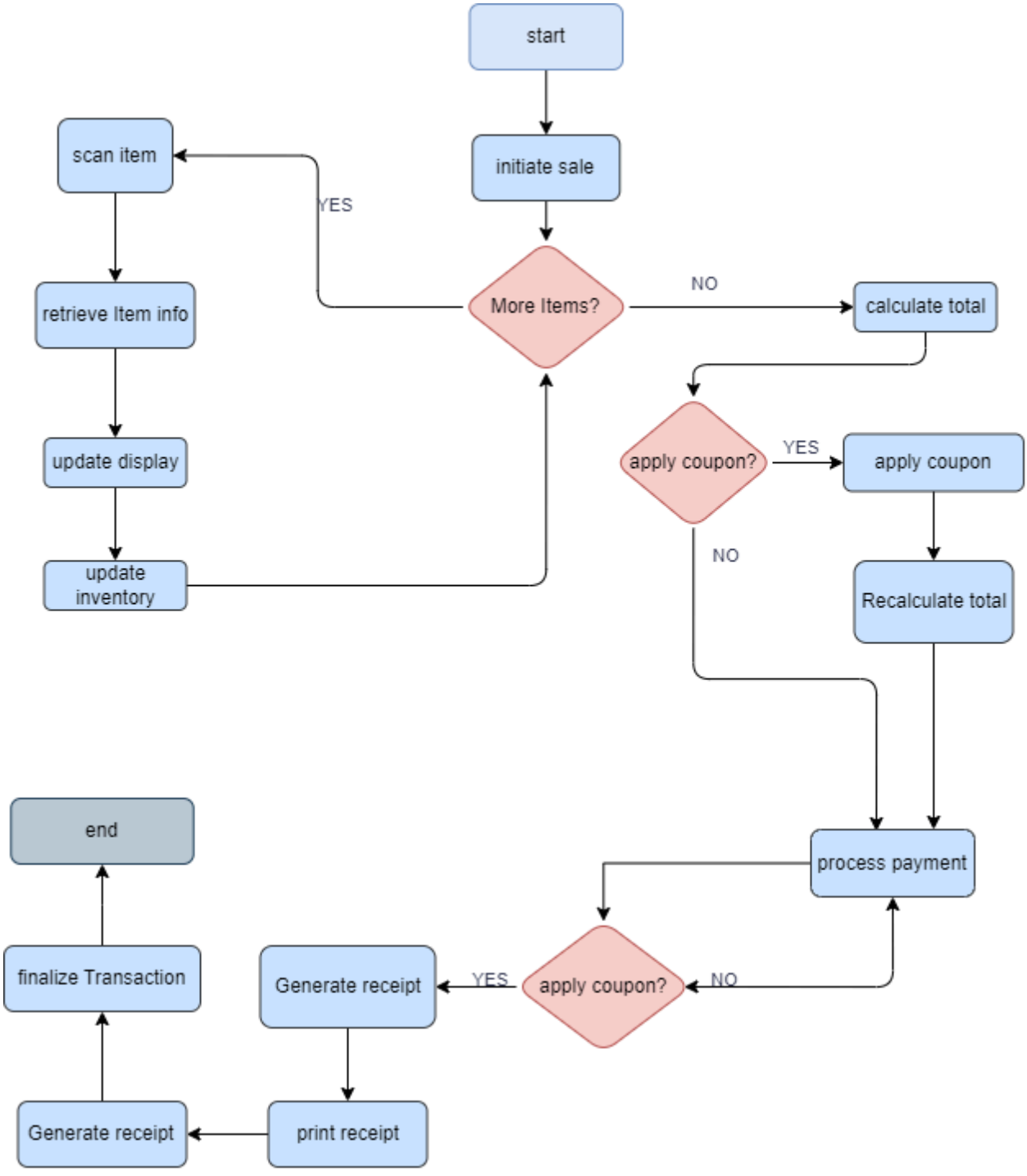
# Handle Returns :



# Develop activity diagram:-



## Process Sales :



## Handle Returns :