

# **Software Engineering Lab-6**

## **202201037**

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**Task-1:** Develop Use Case Textual Description for "Process Sale" and "Handle Return" use cases.

#### **Use Case 1: Process Sale**

##### **Actors:**

- Cashier
- Catalog System (external actor)
- Inventory System (external actor)

##### **Preconditions:**

- The cashier must be logged into the system.
- The items must be available in both the catalog and inventory systems.

##### **Main Flow:**

1. The cashier initiates a new sale.
2. The cashier scans the item.
3. The system retrieves item information from the catalog.
4. The system updates the inventory by deducting the item stock.
5. Steps 1-4 are repeated for each item.
6. The customer may apply a coupon code.

7. The customer selects a payment method (cash, credit card, or cheque).
8. The system processes the payment.
9. Once the payment is confirmed, the system generates a receipt.

**Alternate Flow:**

- In 3, If an item is not found in the catalog, the cashier receives a notification.
- In 4, If stock is insufficient, the cashier is alerted to inform the customer.
- In 8, If the payment fails, the cashier can retry the payment or cancel the sale.

**Postconditions:**

- The sale is completed and recorded in the system.
- The inventory is updated to reflect the new stock levels.
- A receipt is printed for the customer.

## **Use Case 2: Handle Return**

**Actors :**

- Cashier
- Inventory System(external actor)
- Catalog System(external actor)

**Precondition :**

- The cashier must be logged into the system.
- The item to be returned must be a part of a previous sale.

**Main Flow :**

- The cashier starts a new return transaction.
- The cashier scans the returned item(s) and verifies the original sale.
- The system retrieves the item information from the catalog.
- The cashier confirms that the return is within the return policy.
- The system updates the stock in the inventory by adding the item.
- The system issues a refund or a store credit to the customer.

**Alternate Flow :**

- If the return period has expired, the system notifies the cashier to reject the return.
- If the item is damaged or missing, the return is rejected.

**Post condition :**

- The return is processed and updated in the inventory system.
- The customer is compensated with appropriate refund or credit.

## **Task-2: Identify Entity/Boundary Control Objects**

- **Entity Objects:**

- Cashier
- Catalog System
- Inventory System
- Invoice
- Return Invoice

- **Boundary Objects:**

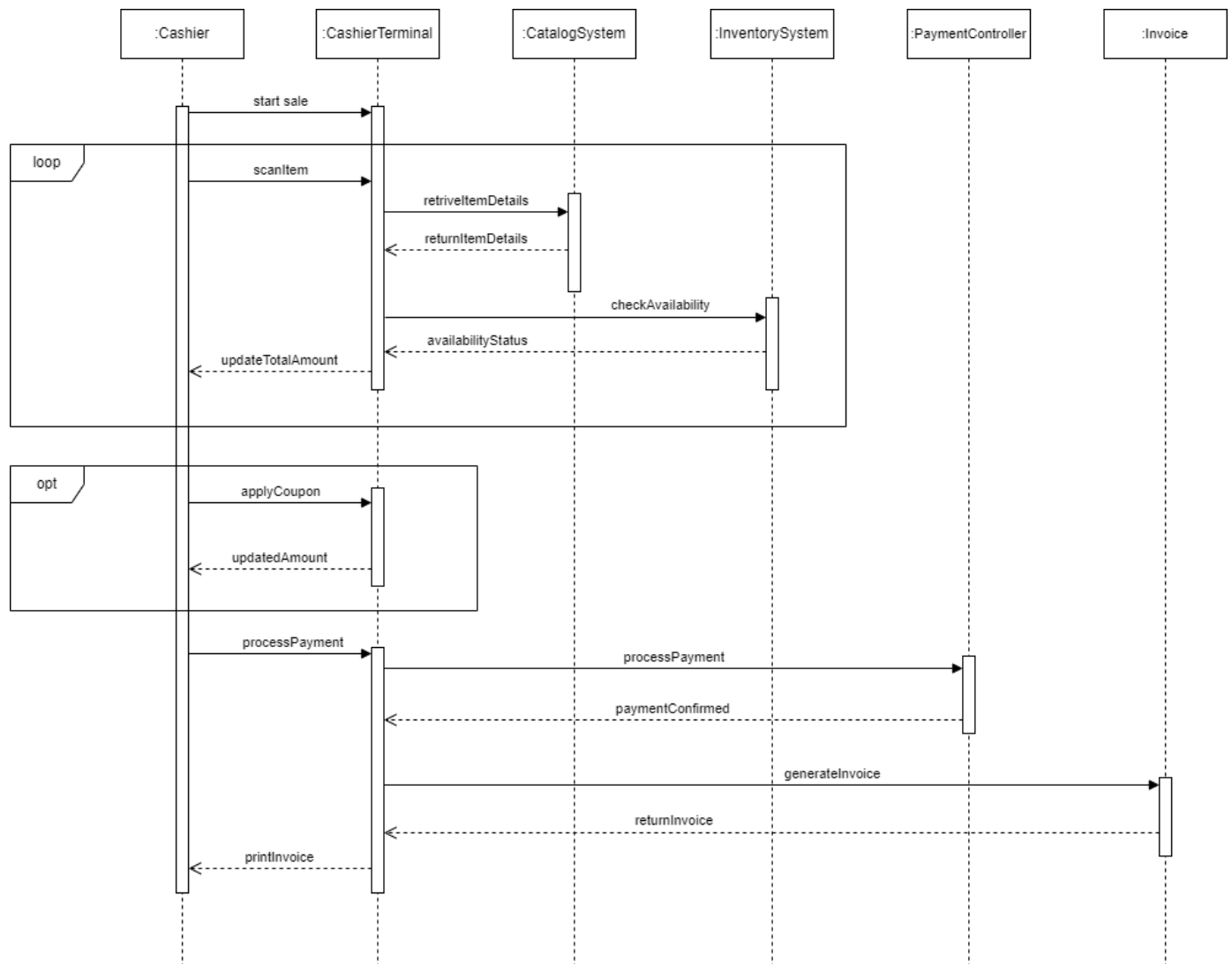
- Cashier Terminal
- Scanner

- **Control Objects:**

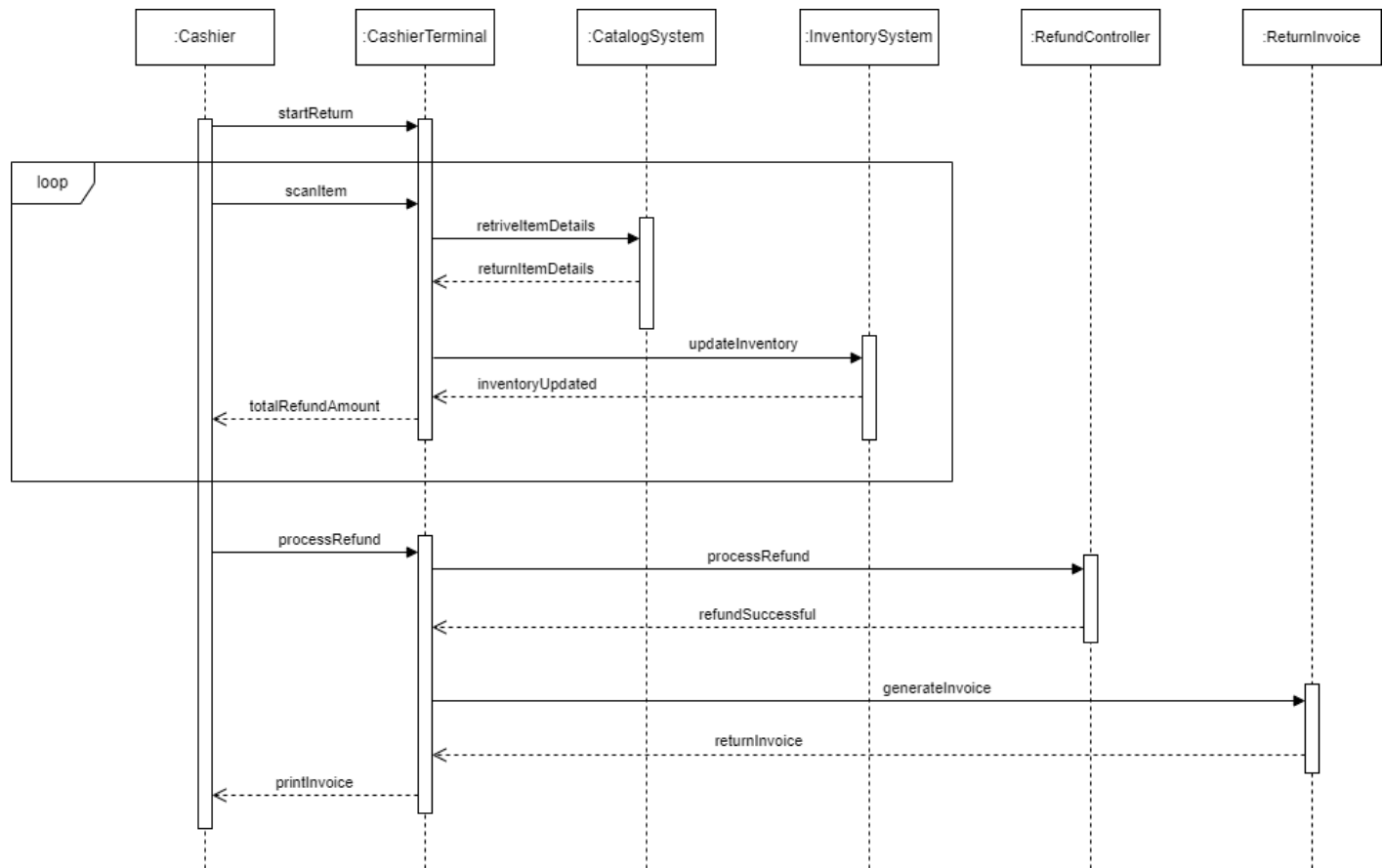
- Payment Controller
- Refund Controller

## Task-3: Develop Sequence Diagrams

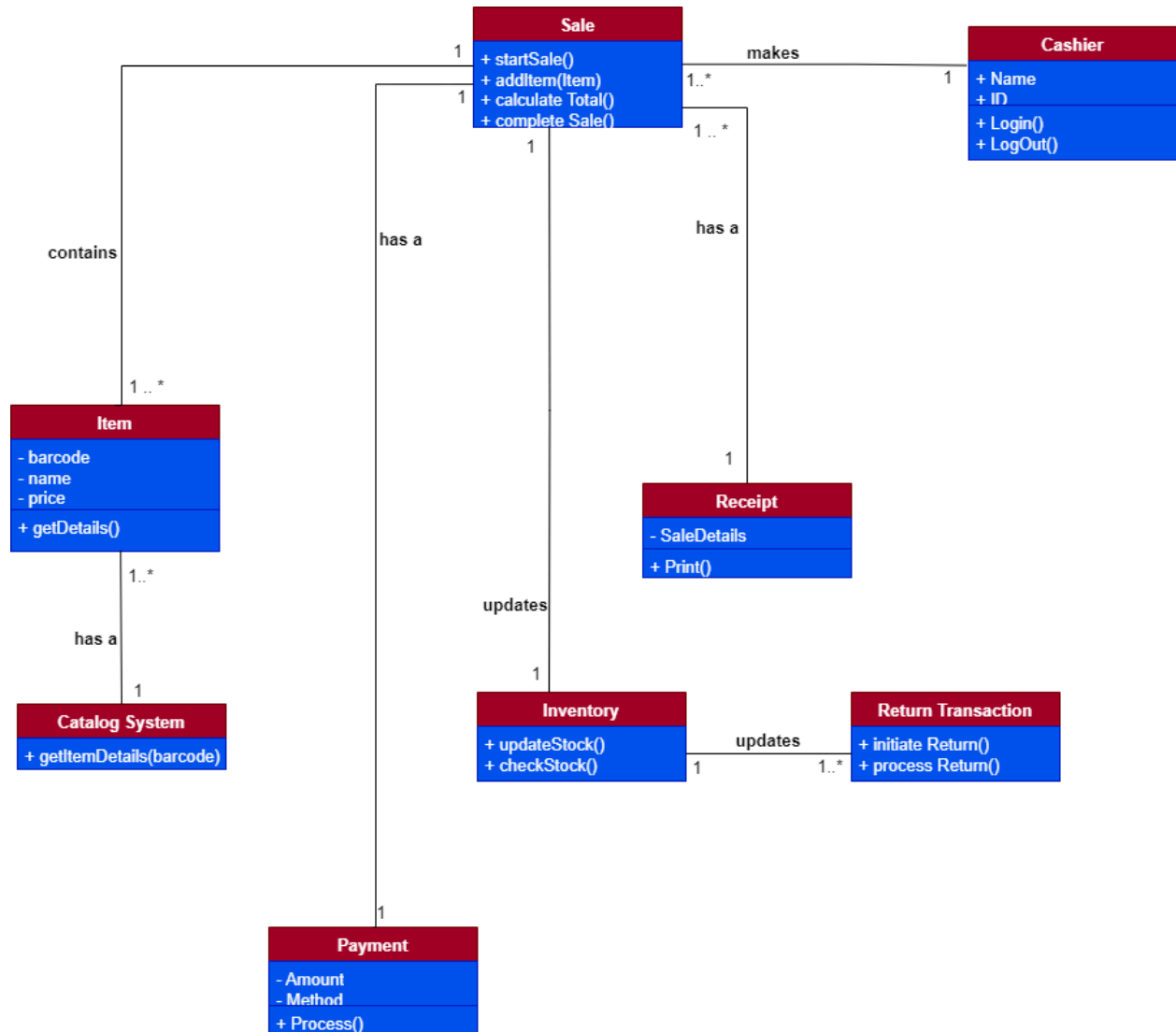
### Process Sales:-



## Handle Return:-

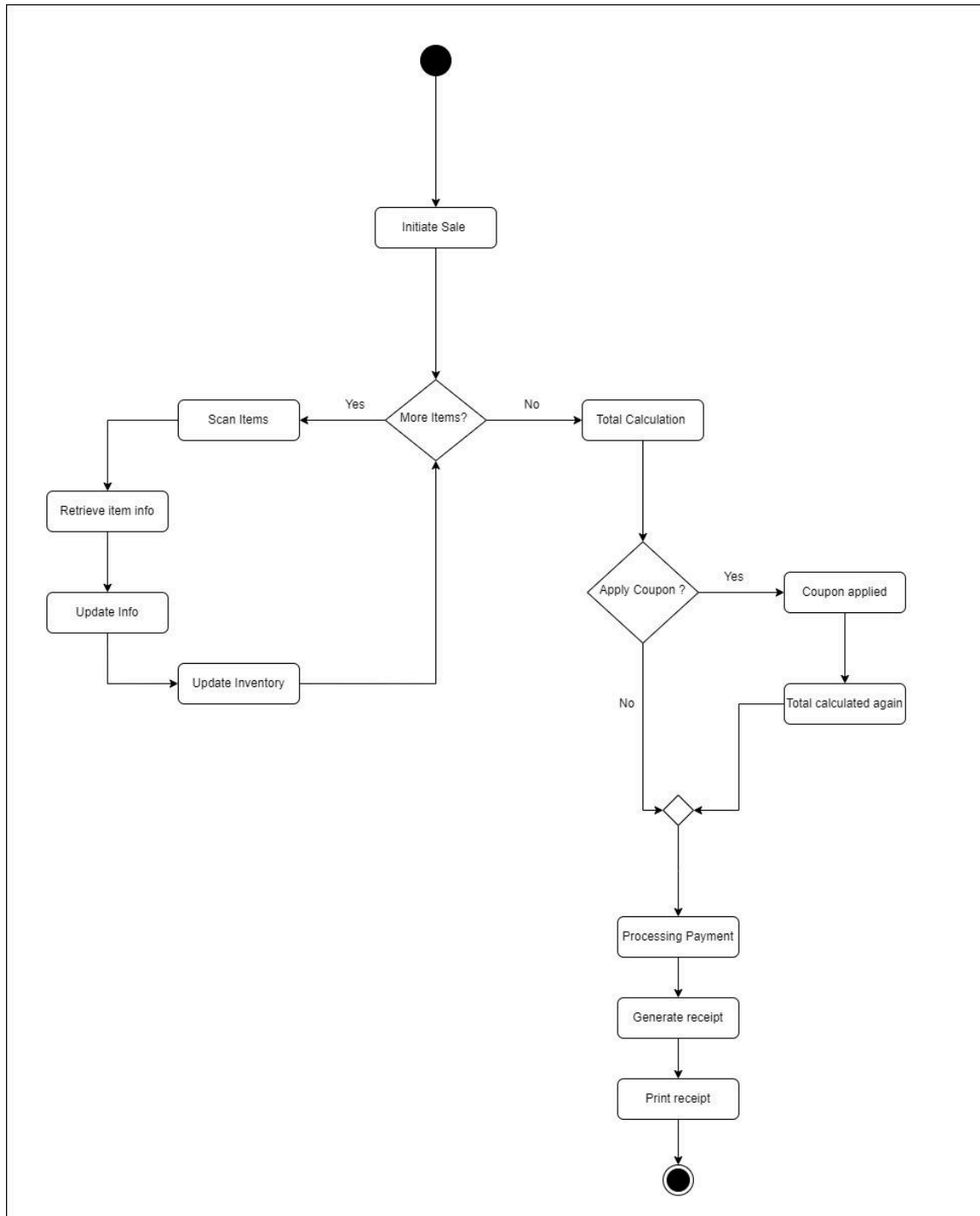


## Task-4: Develop Analysis Domain Models



**Task-5:** Develop activity diagram for "Process Sale" and "Handle Return" use cases.

### Process Sales:-





## Handle Return:-

