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# **Lab-6**

## **(Point of Sale System)**

### **IT314 - Software Engineering**

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**Task 1: Use Case Textual Descriptions for  
"Process Sale" and "Handle Return" Use  
Cases**

# Use Case 1: Sale Processing

**Use Case Name:** Sale Processing

**Actors Involved:**

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

**Preconditions:**

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

**Postconditions:**

- The sale is successfully completed and recorded in the system.
- Inventory levels are updated in the inventory system.
- A receipt is generated and printed for the customer.

**Primary Flow:**

1. The cashier initiates a new sale.
2. The cashier scans an item.
3. The system fetches the item details from the catalog.
4. The system reduces the item's quantity in the inventory.
5. Steps 2-4 are repeated for each item.
6. The customer selects a payment method.
7. The system processes the payment (cash, credit card, etc.).
8. Upon payment confirmation, the system prints a receipt.

**Alternative Flows:**

- If an item cannot be found in the catalog, the cashier is alerted.
- If stock is insufficient, the cashier is notified to inform the customer.
- If the payment is unsuccessful, the cashier may retry the payment or cancel the transaction.

## Use Case 2: Handle Return

**Use Case Name:** Handle Return

**Involved Actors:**

- Cashier
- Inventory System (external actor)

**Preconditions:**

- The cashier must be logged into the system.
- The item being returned must have been included in a previous sale.

**Postconditions:**

- The return is successfully processed, and the inventory system is updated.
- The customer receives the correct refund or store credit.

**Primary Flow:**

1. The cashier initiates a return transaction.
2. The cashier scans the returned item(s) and verifies the original sale if necessary.
3. The system fetches the item(s) details from the inventory system.
4. The cashier checks that the return complies with the return policy.
5. The system updates the inventory by adding the returned item(s).
6. The system processes a refund or issues store credit to the customer.

**Alternative Flows:**

- If the return period has lapsed, the system alerts the cashier to decline the return.
- If the item is found to be damaged or incomplete, the return may be partially refunded or denied.

## **Task 2: Identification of Entity, Boundary, and Control Objects**

### **Entity Objects:**

- Sale
- Product
- Payment
- Inventory
- Receipt
- Return

### **Boundary Objects:**

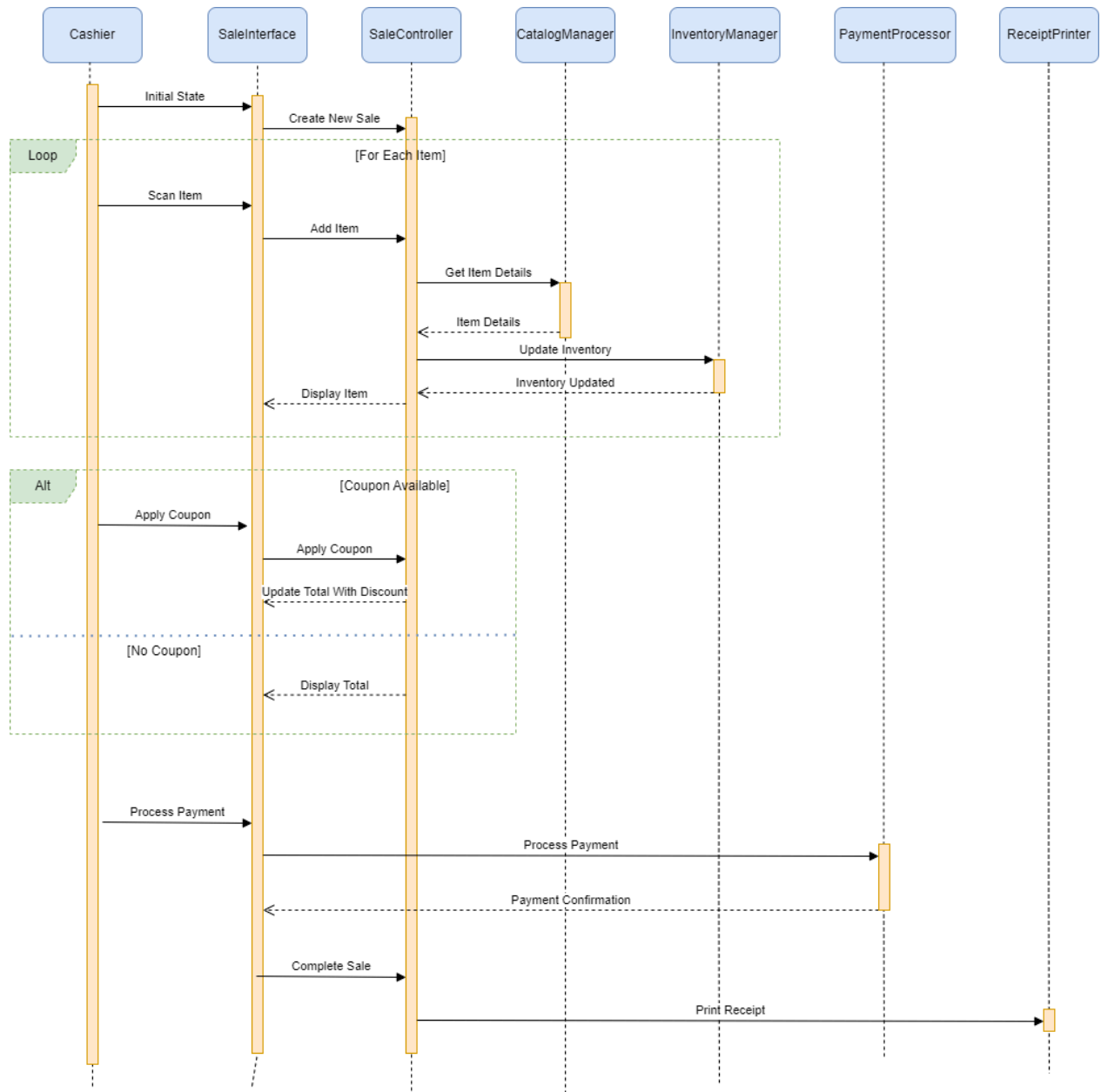
- Cashier Interface
- Catalog System
- Receipt Printer
- Inventory System

### **Control Objects:**

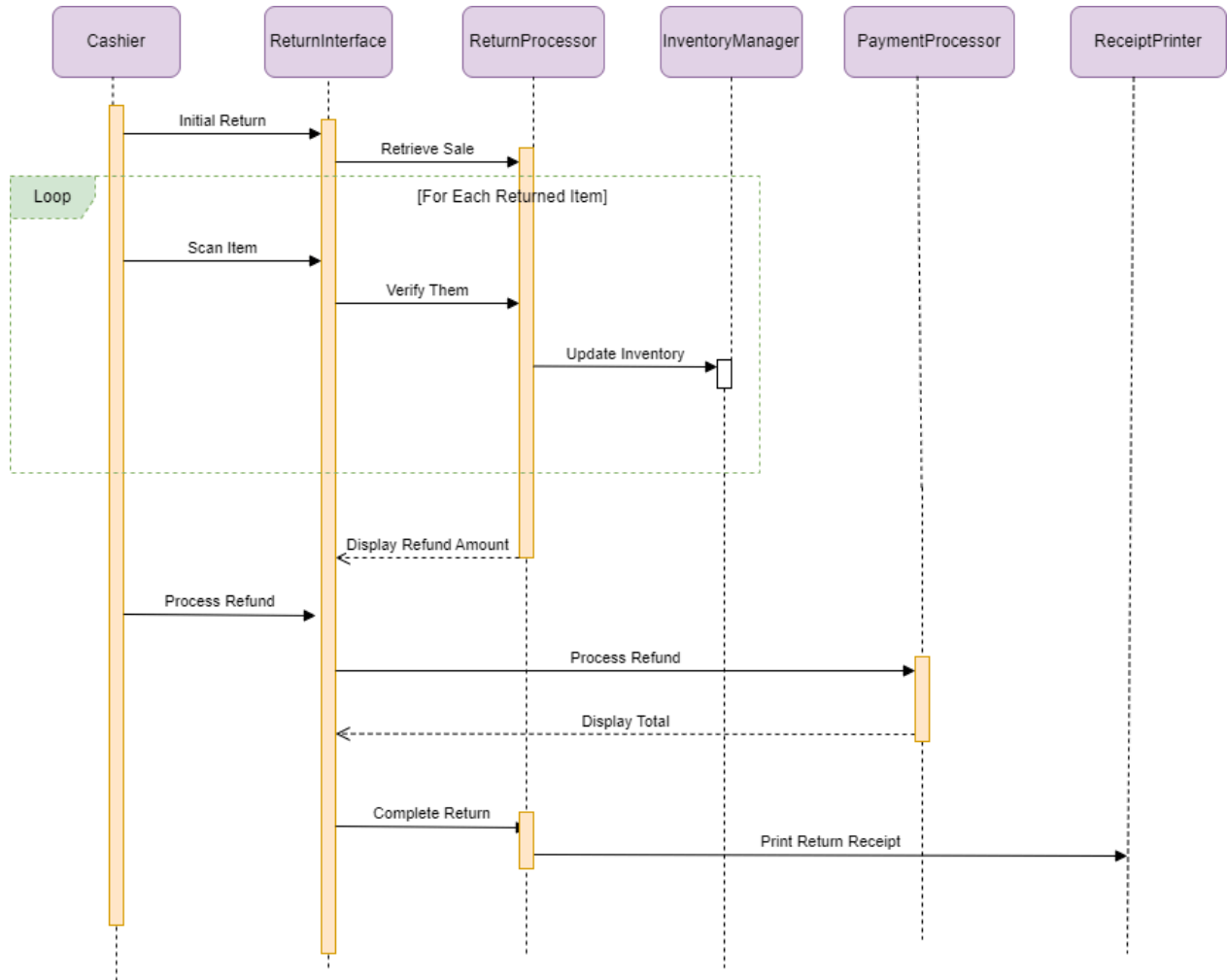
- Process Sale Controller
- Handle Payment Controller
- Handle Return Controller
- Inventory Controller

# Task 3: Develop Sequence Diagrams

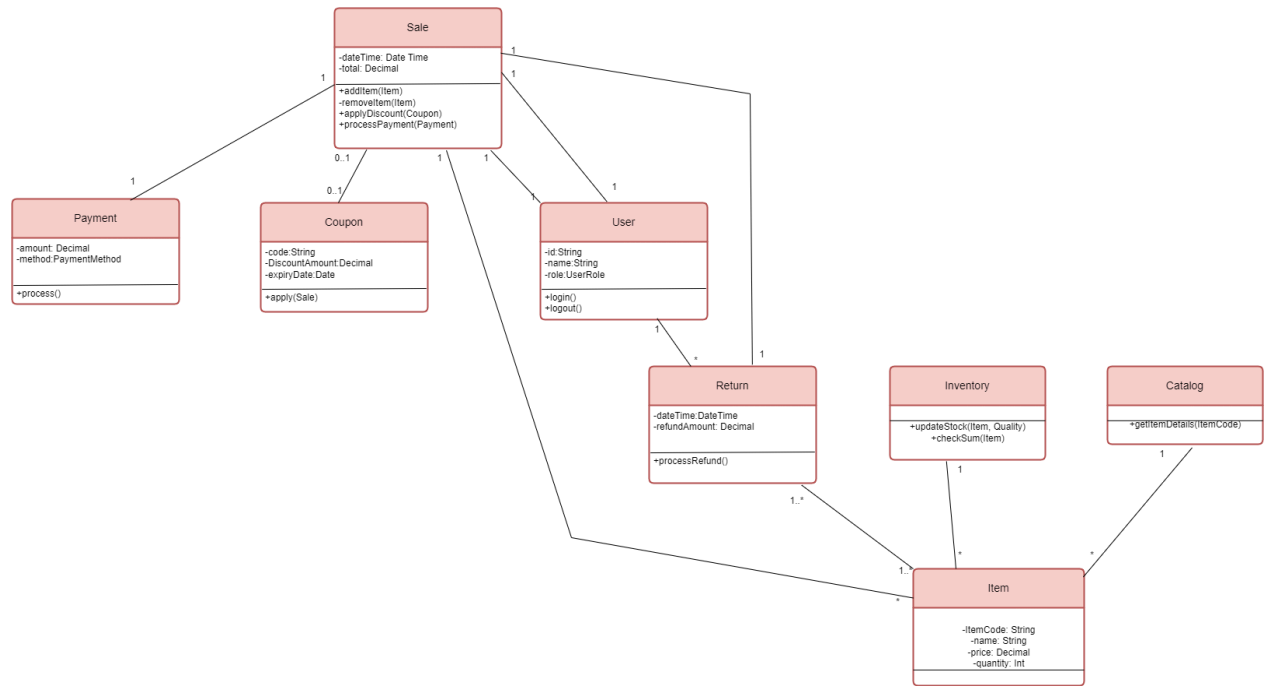
## • Process Sale



## • Handle Return

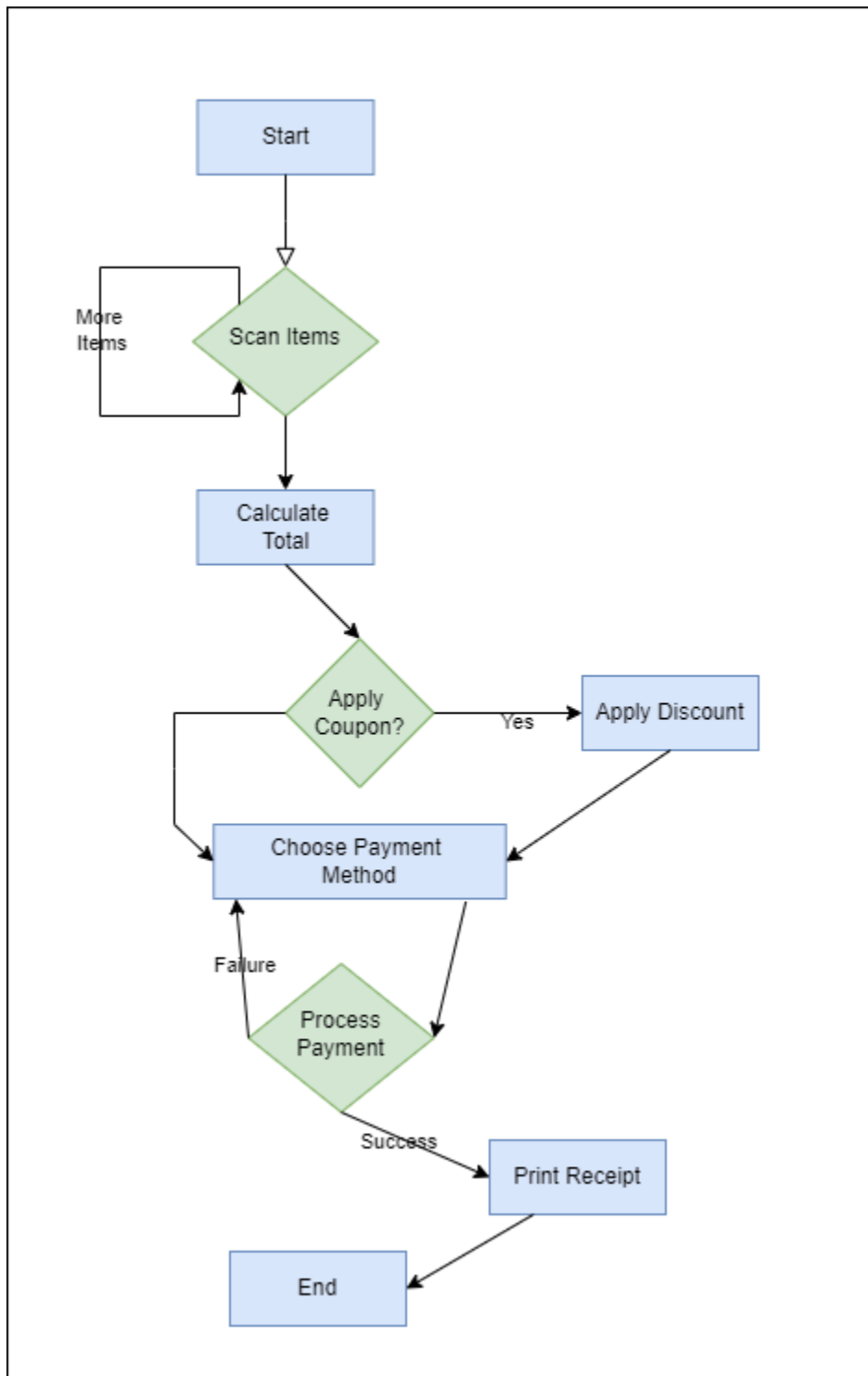


## Task 4: Develop Analysis Domain Models



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

### • Process Sale





## Handle Return

