



Dhirubhai Ambani
Institute of Information and Communication Technology

Lab 06

Modeling Class Diagram and Activity Diagram (Point of Sale System)

IT314 - Software Engineering
Rushi Makadiya
202201117
Group: 08

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

Use Case 1: Process Sale

- **Use Case Name:** Process Sale
- **Actor(s):**
 - Cashier
 - Catalog System (external actor)
- **Precondition:**
 - The cashier must be logged in.
 - The items must exist in the catalog and inventory system.
- **Main Flow:**
 - The cashier starts a new sale.
 - For each item Cashier scans the item's barcode System retrieves item details from catalog System updates inventory System adds item to current transaction.
 - System calculates total amount to be paid.
 - If customer has a coupon Cashier applies coupon and then System recalculates the total.
 - Cashier selects the payment method.
 - Customer completes payment.
 - System validates payment.
 - Once payment is confirmed, the system prints a receipt.
- **Postcondition:**
 - The sale is completed and stored in the system.
 - The stock is updated in the inventory system.
 - The receipt is printed for the customer.
- **Alternative Flow:**
 - If an item is not found in the catalog, the cashier is notified.
 - If there is insufficient stock, the cashier is notified to inform the customer.
 - If payment fails, the cashier retries payment or cancels the sale.

Use Case 2: Handle Returns

- **Use Case Name:** Handle Returns
- **Actor(s):**
 - Cashier
- **Precondition:**
 - The cashier must be logged in into the pos system.
 - Customer has items to return
- **Main Flow:**
 - The cashier initiates a return transaction.
 - They scan the items being returned and, if necessary, verify the original purchase.
 - The system accesses the inventory database to retrieve details about the items.
 - The cashier checks whether the return complies with the store's return policy.
 - The system adjusts the inventory by restocking the returned items.
 - A refund or store credit is then provided to the customer by the system.
- **Postcondition:**
 - The return is processed, and stock is updated in the inventory system.
 - The customer receives the appropriate refund or credit.
- **Alternative 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 may be partially refunded or rejected.

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

Entity Objects:

- Sale
- Product
-
- Payment
- Receipt
- Return

Boundary Objects:

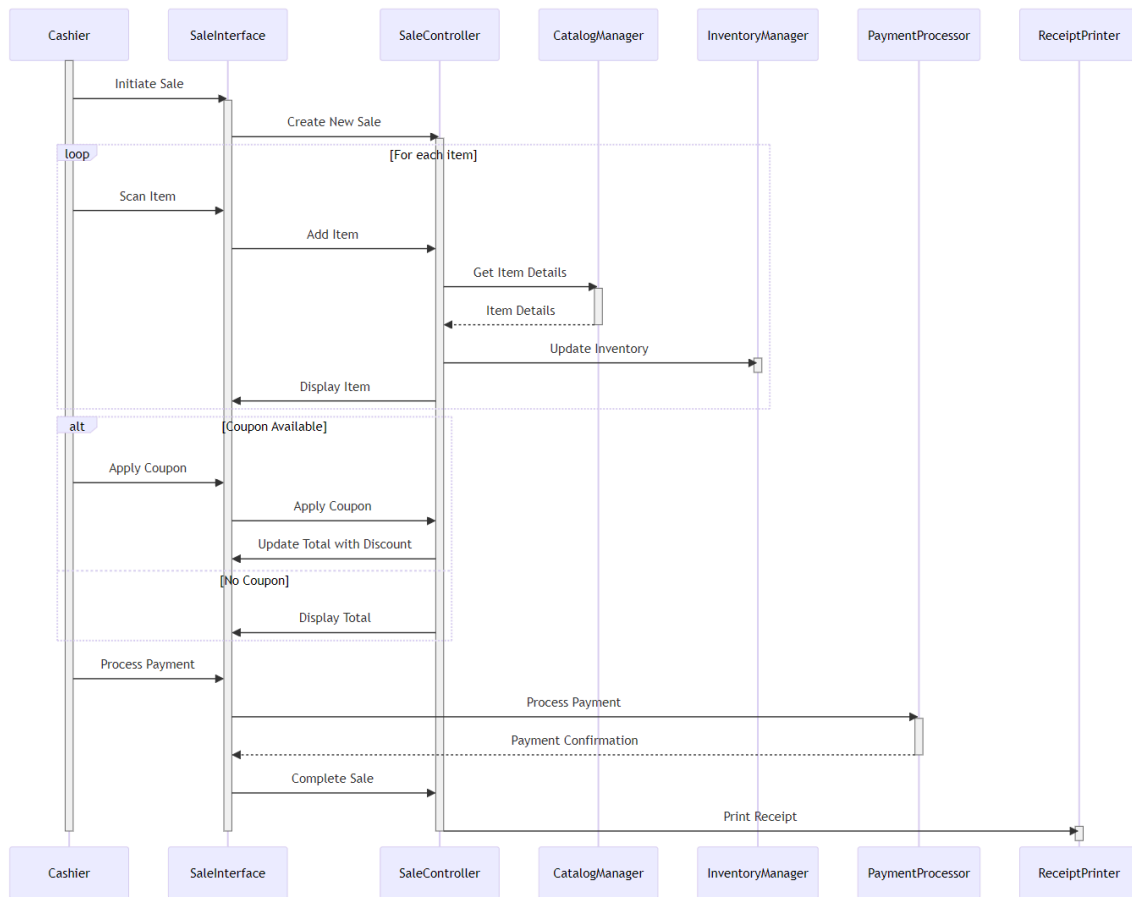
- Cashier Interface
- Catalog System
- Inventory System

Control Objects:

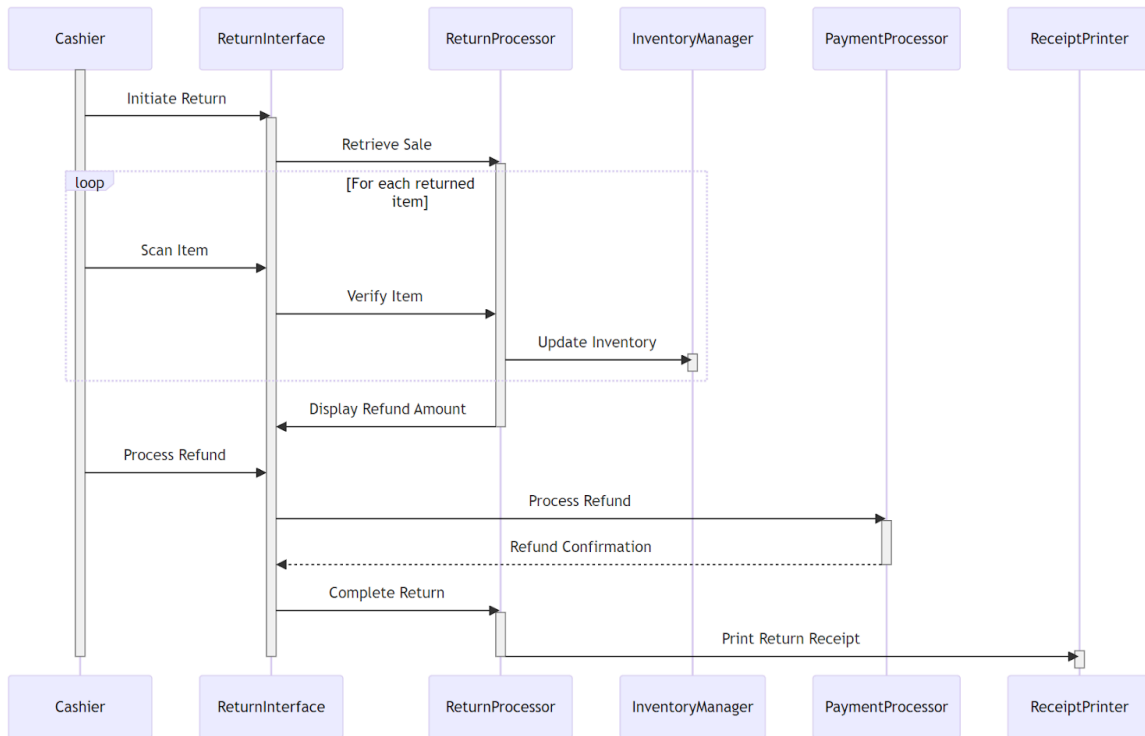
- Process Sale Controller
- Inventory Controller
- Handle Payment Controller
- Handle Return Controller

Task 3: Develop Sequence Diagrams

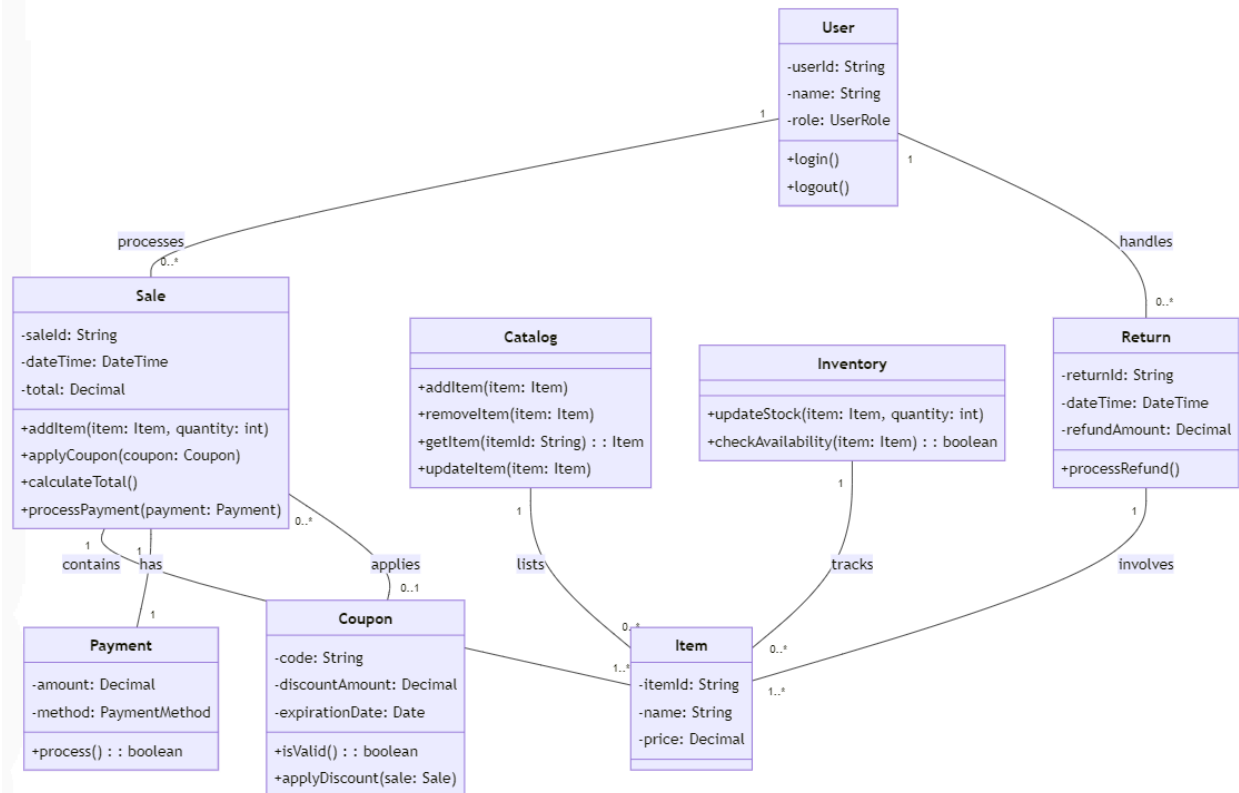
- Process Sale



● Handle Return

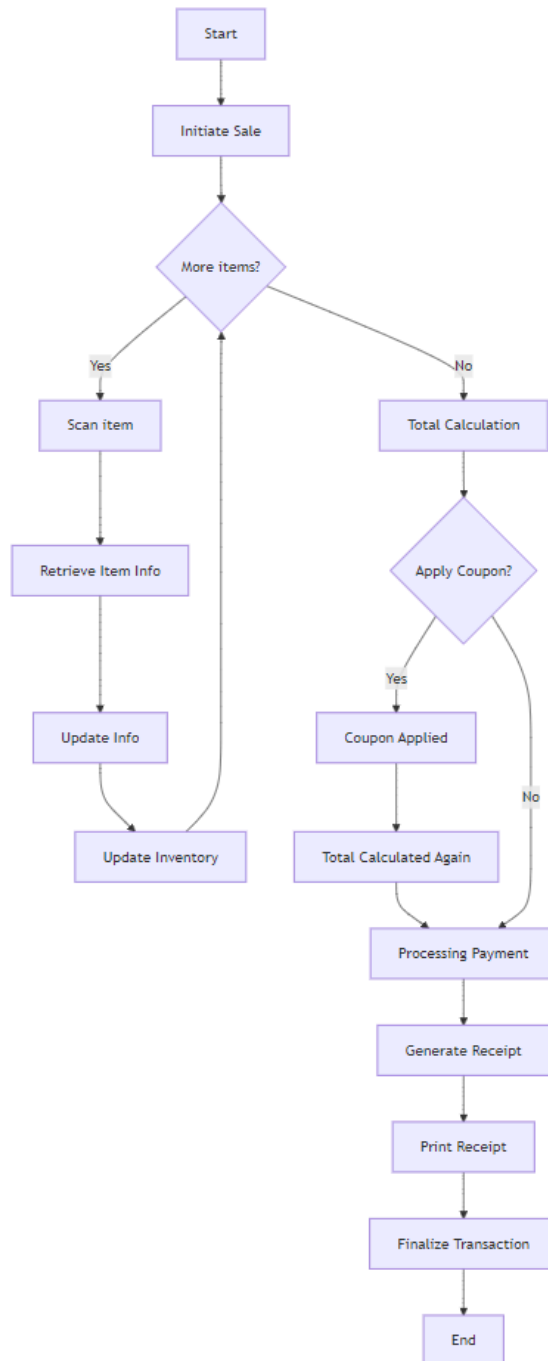


Task 4: Develop Analysis Domain Models



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

- Process Sale



- **Handle Return**

