

## **LAB-6**

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**Q1)Develop Use Case Textual Description for "Process Sale" and "Handle Return" use cases.**

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

**Actor:** Cashier

**Preconditions:**

1. Cashier is logged into the POS system
2. Customer has items to purchase

**Main Flow:**

1. Cashier starts a new sale transaction
2. For each item:
  - a. Cashier scans item barcode
  - b. System search and retrieves item details from catalog
  - c. System makes update to inventory
  - d. System adds item to current transaction
3. System calculates total If customer has coupon:
  - a. Cashier applies coupon
  - b. System recalculates total
4. Cashier selects payment method
5. Customer provides payment
6. System processes payment
7. System generates receipt
8. Cashier provides receipt to customer

**Alternate Flows:**

- 2b. If item not found in catalog, cashier manually enters item details
- 3a. Coupons may be used and this deduction in amount fails. System respond
- 6a. If payment is declined, return to step 5
- 7a. If system fails to process payment, cashier cancels transaction

**Postconditions:**

Sale is recorded in system Inventory is updated Payment is processed Receipt is generated.Cashier handover receipt and item to Customer

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

**Actor:** Cashier

**Preconditions:**

- Cashier is logged into the POS system
- Customer has item(s) to return and original receipt

**Main Flow:**

1. Cashier starts return process method
2. Cashier enters receipt number manually
3. System retrieves original transaction
4. For each item to be returned:
  - a. Cashier searches for item in original transaction
  - b. System verifies item was in original transaction
  - c. System makes appropriate updates in inventory
5. System calculates amount to be given to customer
6. Cashier selects refund method
7. System processes refund
8. System generates return receipt
9. Cashier provides return receipt to customer

**Alternate Flows:**

- 2a. If receipt is not available, manually searches for product to find receipt number
- 4b. If item not in original transaction, return for that item is aborted
- 6a. If original payment was by credit card/online payment, refund must be to the same card/ bank account from which payment was initially made

**Postconditions:**

- Return is recorded in system
- Inventory is updated
- Refund is processed
- Return receipt is generated

## **Q2)Identify Entity/Boundary Control Objects**

**Entity Objects:**

- Sale
- Item
- Inventory

- Catalog
- Payment
- Coupon
- User (Cashier/Administrator)
- Receipt
- Return

### Boundary Objects:

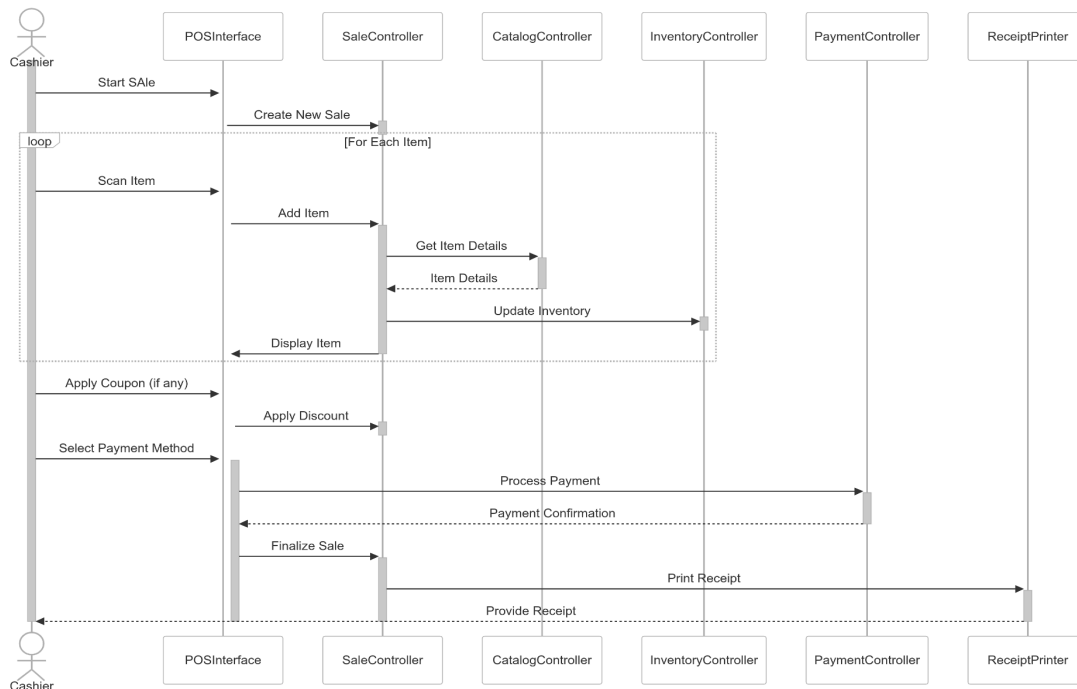
- POS Terminal Interface
- Scanner Interface
- Payment Device Interface
- Receipt Printer Interface

### Control Objects:

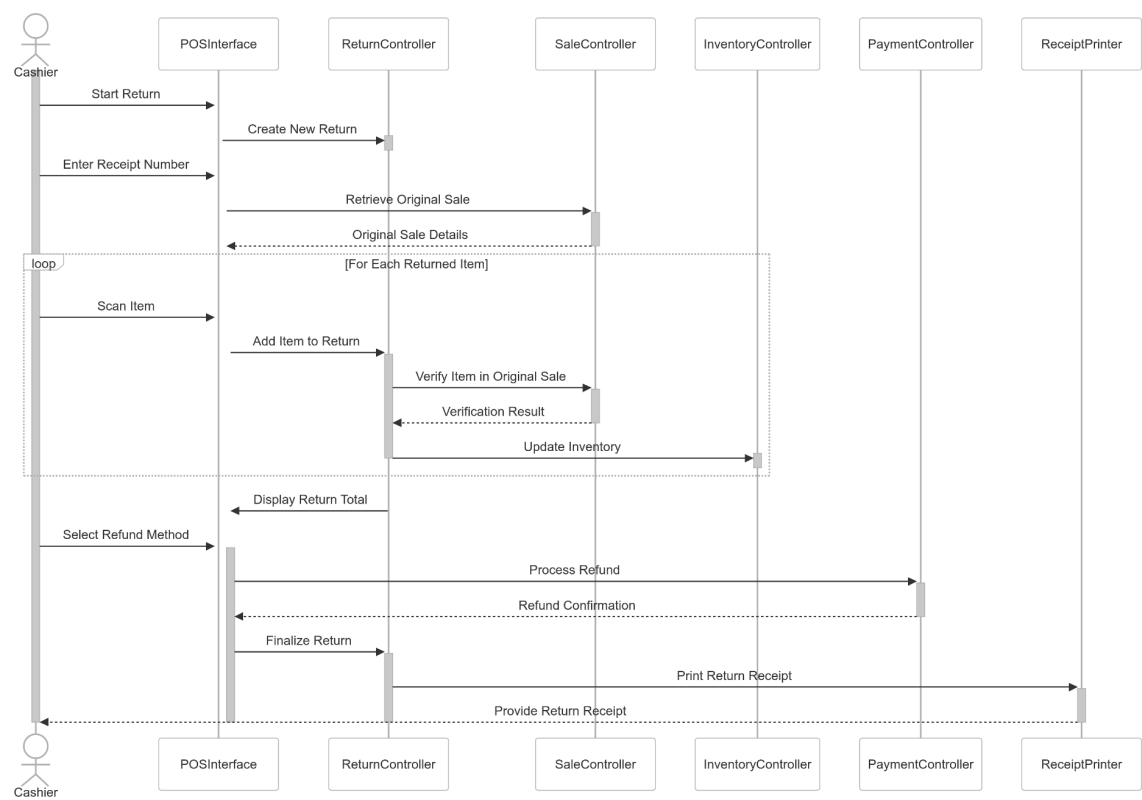
- Sale Controller
- Inventory Controller
- Catalog Controller
- Payment Controller
- User Authentication Controller
- Return Controller

## Q3)Develop Sequence Diagrams

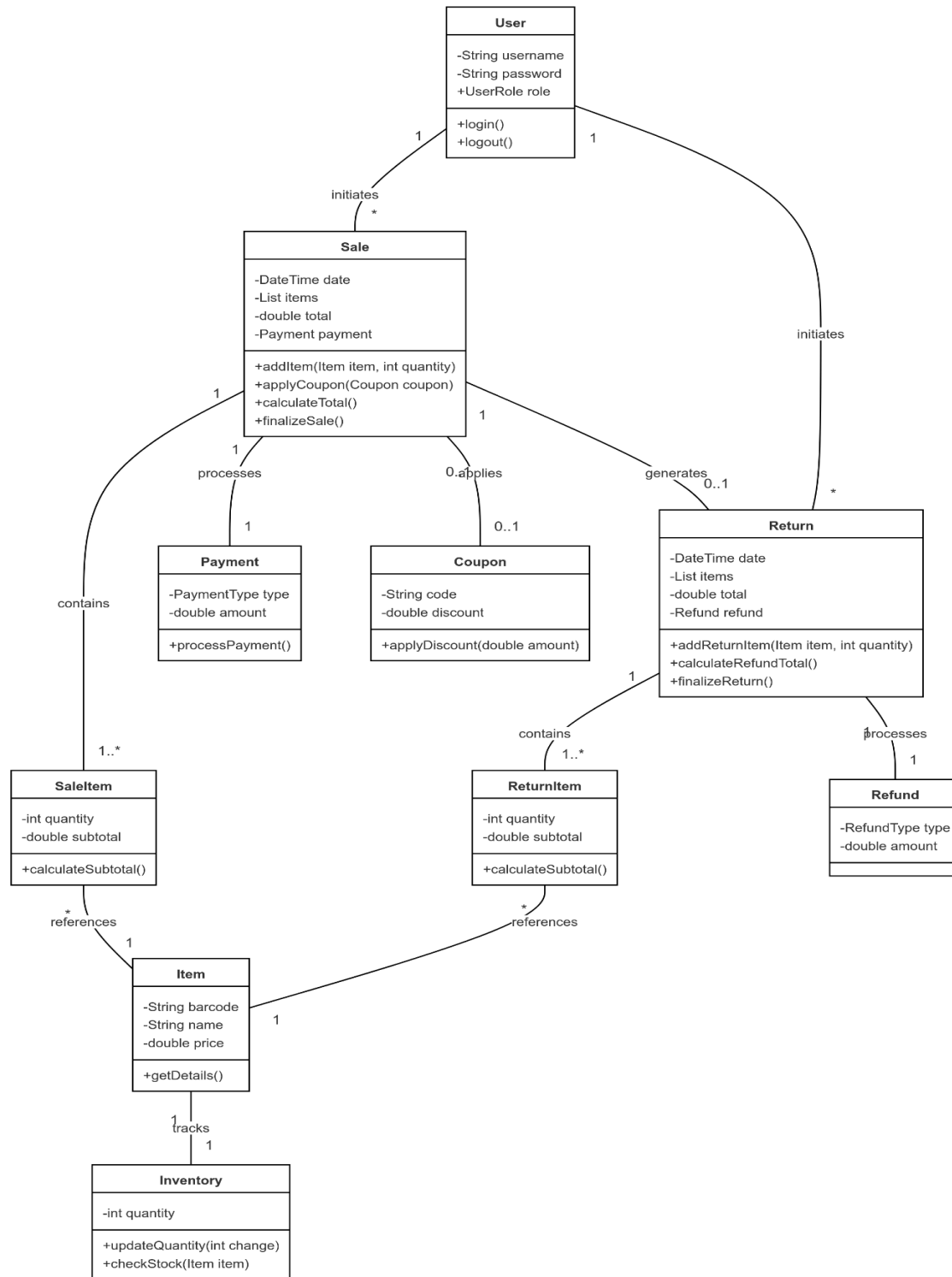
### Sequence Diagram for Process Sale



Sequence Diagram for Handle Return



## Q4)Develop Analysis Domain Models



**Q5)Develop activity diagram for "Process Sale" and "Handle Return" use cases.**

