

Q1-Develop Use Case Textual Description for "Process Sale" and "Handle Return" use cases:

Use Case: Process Sale:

Actors: Cashier, Customer

Trigger: The customer presents items for purchase.

Preconditions:

- Cashier is logged into the POS system
- Customer has items to purchase

Main Success Scenario:

1. Cashier initiates a new sale transaction
2. For each item: a. Cashier scans the item's barcode b. System retrieves item details (name and price) from the catalog c. System updates inventory count d. System adds item to the current transaction
3. System calculates the total amount
4. If customer has a coupon: a. Cashier applies the coupon b. System recalculates the total amount
5. Cashier selects payment method (cash, credit card, or check)
6. Customer provides payment
7. Cashier processes the payment
8. System records the transaction
9. System prints a receipt

Postconditions:

- Sale is recorded in the system
- Inventory is updated
- Receipt is printed

Use Case: Handle Return:

Actors: Cashier, Customer

Trigger: The customer presents items for purchase.

Preconditions:

- Cashier is logged into the POS system
- Customer has items to return

Main Success Scenario:

1. Cashier initiates a new return transaction
2. Cashier scans or enters the receipt number
3. System retrieves the original transaction details
4. For each item to be returned: a. Cashier scans the item's barcode b. System verifies the item against the original transaction c. System updates inventory count d. System adds item to the current return transaction
5. System calculates the refund amount
6. Cashier selects refund method (cash, credit to card, or store credit)
7. Cashier processes the refund
8. System records the return transaction
9. System prints a return receipt

Postconditions:

- Return is recorded in the system
- Inventory is updated
- Return receipt is printed

Q2-Identify Entity/Boundary Control Objects**Entity:**

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

Boundary:

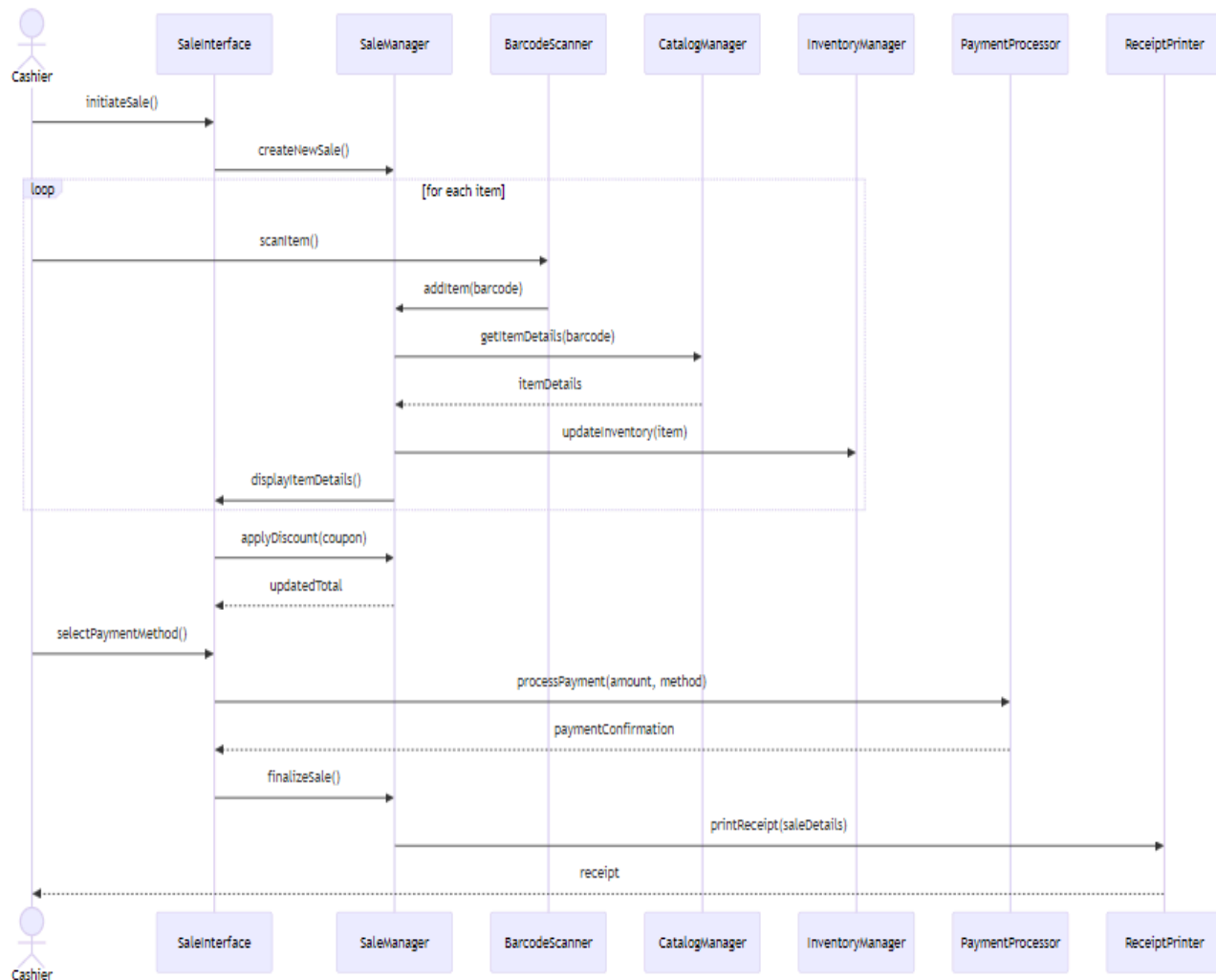
- LoginInterface
- SaleInterface
- ReturnInterface
- PaymentInterface
- ReceiptPrinter
- BarcodeScanner

Control:

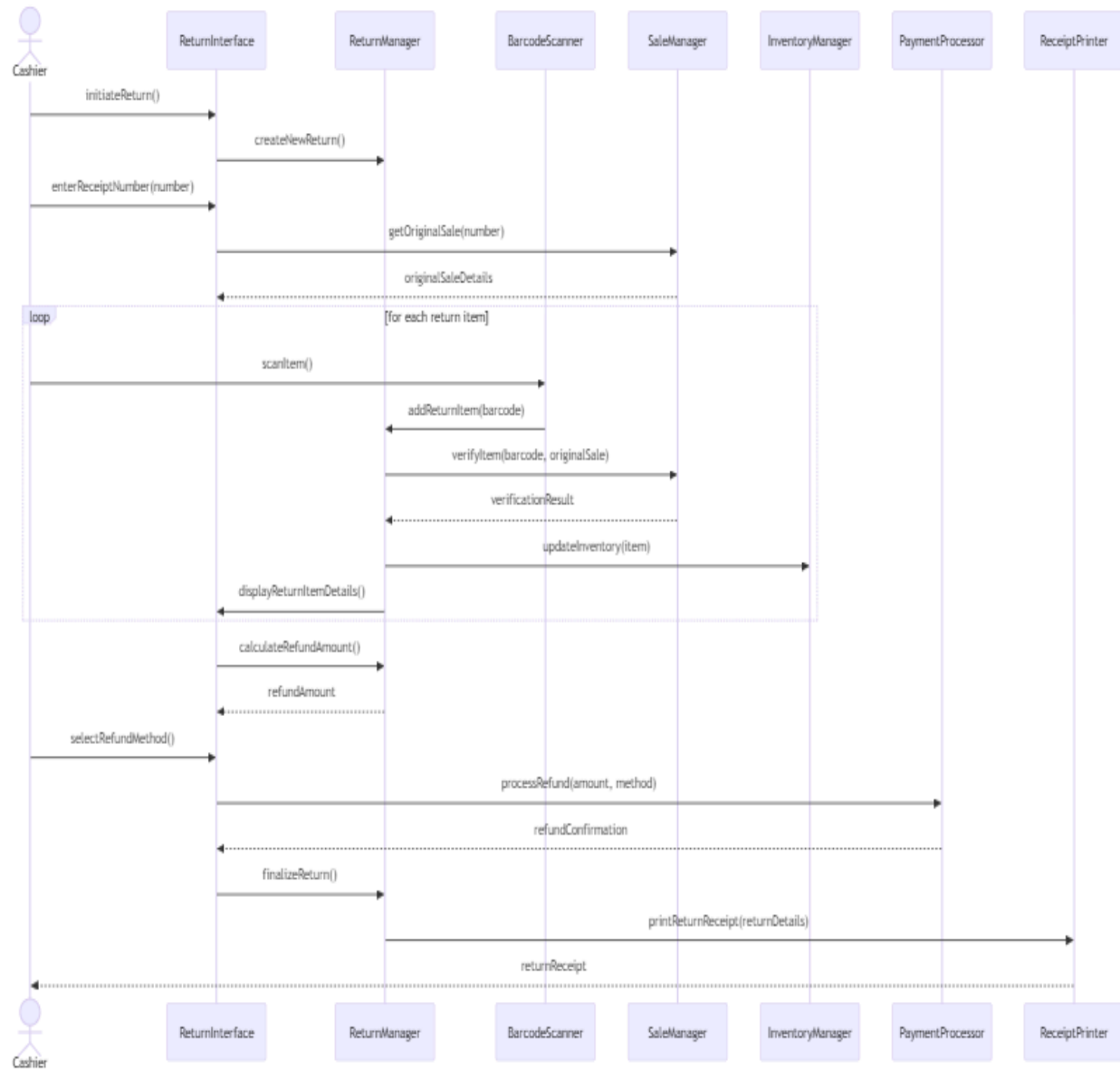
- SaleManager
- InventoryManager
- CatalogManager
- PaymentProcessor
- UserManager
- CouponManager
- ReturnManager

Q3-Sequence Diagrams

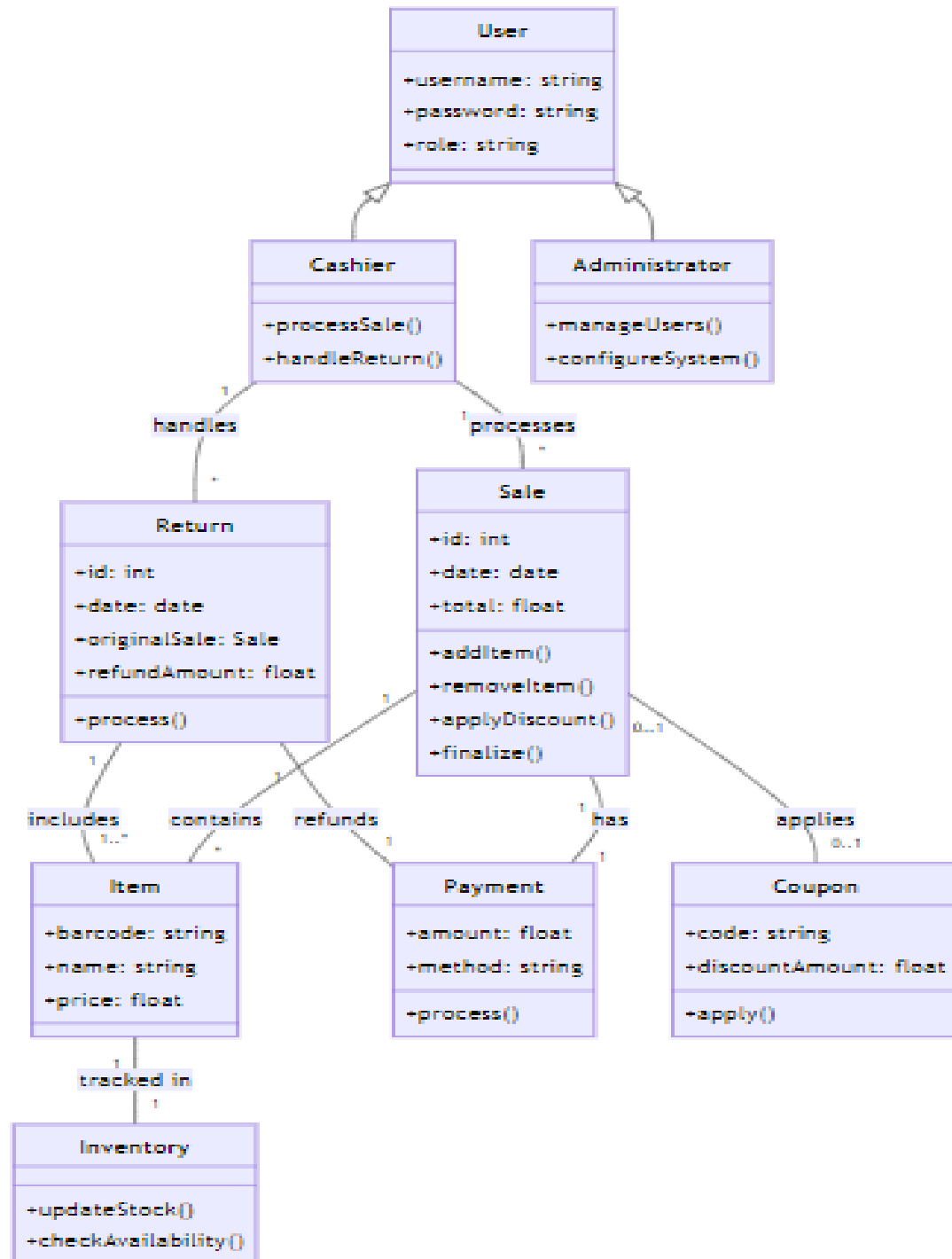
- Sequence Diagram for Process Sale



- Sequence Diagram for Handle Return

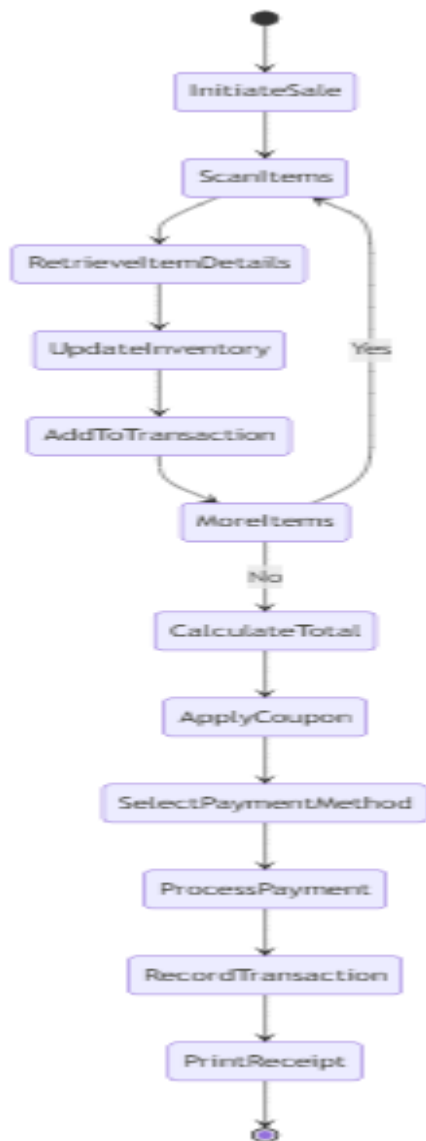


Q4-Analysis Domain Model



Q5-Activity Diagrams

- Activity Diagram for Process Sale



- Activity Diagram for Handle Return

