

IT314 SOFTWARE ENGINEERING



LAB 6 REPORT

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LAB-6 : Modeling Class Diagram and Activity Diagram

Q1) USE CASE :

Use Case: Process Sale

Actor

- Cashier

Preconditions

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

Main Flow

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

Postconditions

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

Alternate Flows

- If payment is declined, return to step 5
- If item barcode doesn't scan, cashier can manually enter item code

Use Case: Handle Return

Actor

- Cashier

Preconditions

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

Basic Flow:

1. Cashier initiates a new return transaction
2. Customer provides receipt (if available)
3. For each item to be returned:
 - a. Cashier scans the item's barcode
 - b. System retrieves item details (name, price) from catalog
 - c. System verifies item eligibility for return
 - d. System adds item to current return transaction
4. System calculates total refund amount
5. Cashier confirms return reason
6. System updates inventory
7. Cashier processes refund using original payment method
8. System finalizes return transaction

9. System prints return receipt

Postconditions

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

Alternate Flows

- If item is not eligible for return, cashier informs customer and removes item from return transaction
- If original receipt is not available, additional verification may be required

Q2) Entity/Boundary/Control Objects :

Entity Objects:

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

Boundary Objects:

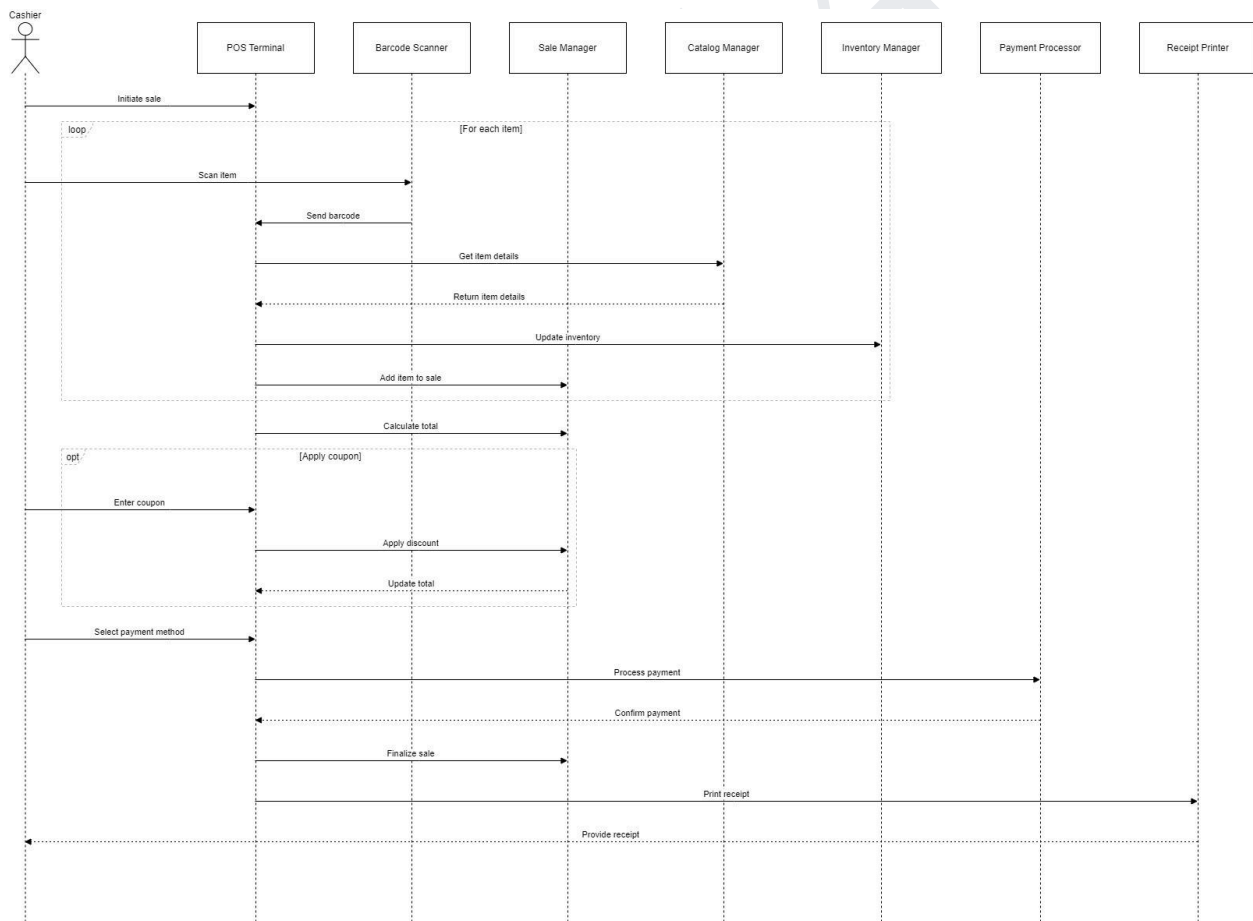
- POS Terminal Interface
- Barcode Scanner
- Payment Terminal
- Receipt Printer

Control Objects:

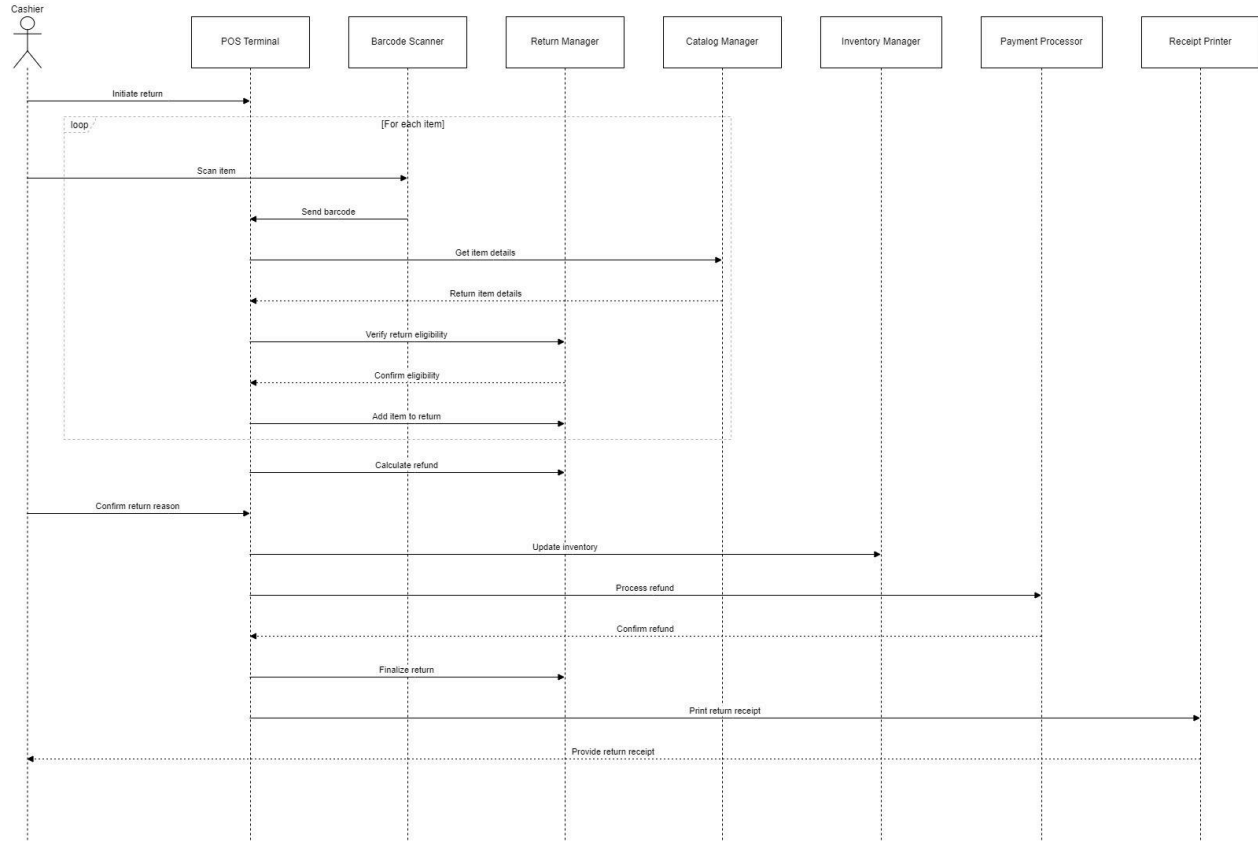
- Sale Manager
- Inventory Manager
- Payment Processor
- Catalog Manager
- User Authentication Controller
- Return Manager

Q3) SEQUENCE DIAGRAMS :

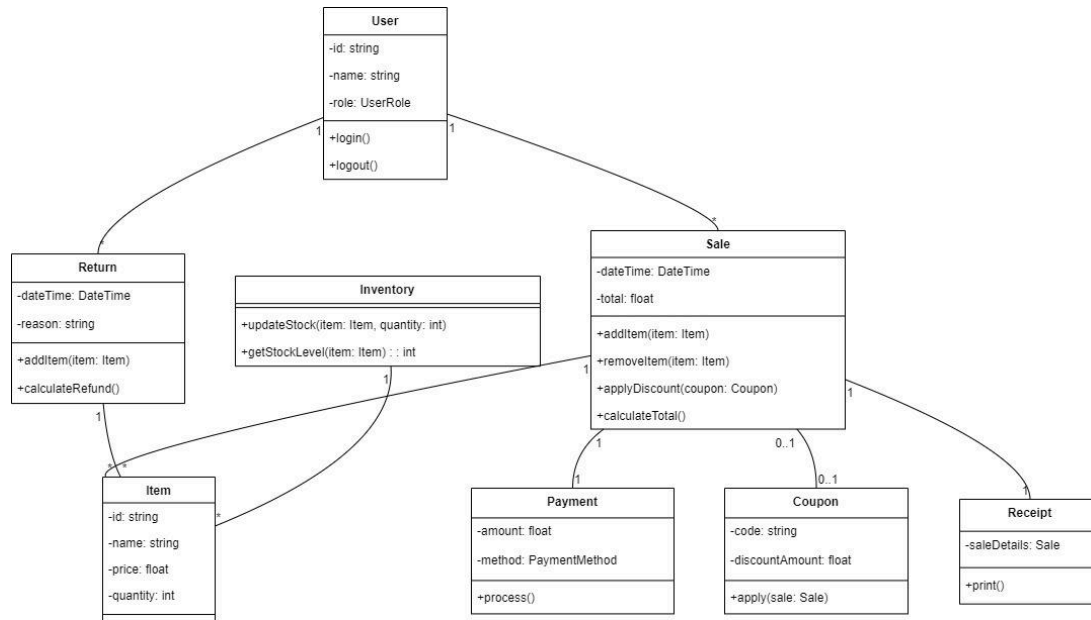
POS SYSTEM :



HANDLE RETURN :

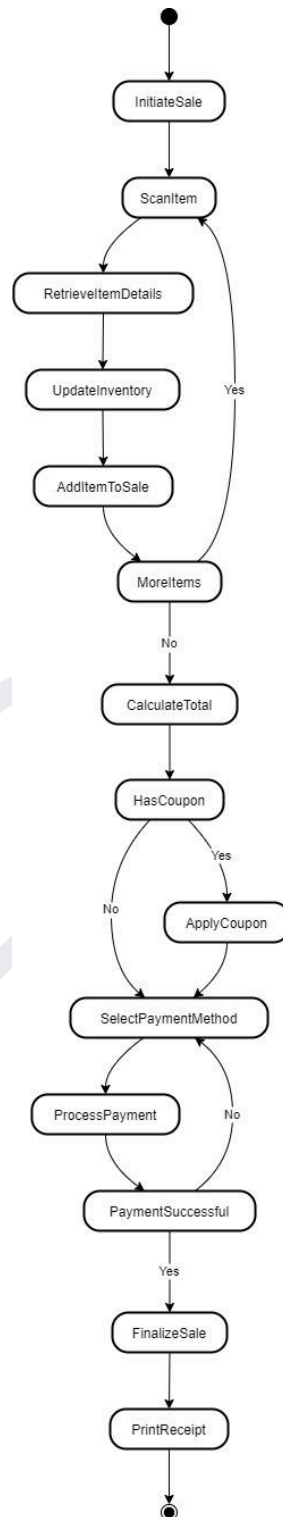


Q4) DOMAIN MODEL :



Q5) ACTIVITY DIAGRAMS :

POS SYSTEM :



HANDLE RETURN :

