

Point Of Sale System

IT314

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Answer-1:

1)For Process Sale:-

Actor:Cashier, Catalog system, Inventory system.

Preconditions:

1. Cashier must be logged into the POS system.
2. Customers should be present with goods for purchase.

Trigger:The barcode of the product to be purchased is scanned by the POS system.

Flow:

1. Cashier initiates a new sale transaction in the system.
2. Cashier scans the product with the help of a barcode scanner.
3. System retrieves the item's name and price from the backend catalog.
4. POS checks the inventory system to make sure that product stock is available.
5. The scanned item is added to the sale transaction queue.
6. Cashier continues to scan additional items brought by the customer.
7. Cashier asks if the customer has any gift coupons and applies valid ones to the transaction.
8. The POS system displays the total amount due for the sale.
9. Cashier asks the customer for the mode of payment and processes payment (cash, credit card, or check).
10. POS generates and prints a receipt of the transaction.
11. POS updates the inventory of the product.
12. Cashier thanks the customer, and the transaction is concluded.

Alternative Flows:

2A:If the barcode scanner is unable to scan the barcode then manually add the item in the queue.

9A:If payment is successful, proceed to the next step.

9B:If payment fails, try another mode of payment.

Postconditions:

1. Sale transaction is completed.
2. Inventory is updated.
3. Receipt is printed.

2)For Handle Return:-

Actor:Cashier, Catalog system, Inventory system.

Preconditions:

1. Cashier must be logged into the POS system.
2. Customer gives the item(s) for return, along with a receipt..

Trigger:The barcode of the product to be returned is scanned by the POS system.

Flow:

1. Cashier initiates a new return transaction in the POS system.
2. Cashier uses the barcode scanner to scan the item being returned.
3. POS retrieves the original sale details (item, price, date of sale) from the database and from the receipt.
4. POS verifies the return policy to ensure the item is eligible for return.
5. The cashier confirms the return and updates the transaction total (including any refund amount).
6. Cashier processes the refund (cash, credit to card, or store credit).
7. POS generates and prints a return receipt for the customer.
8. POS updates the inventory to reflect the returned item.
9. Cashier thanks the customer, and the transaction is concluded.

Alternative Flows:

3A:If the item cannot be found in the system, the cashier informs the customer and suggests possible solutions.

4A:If the item is not eligible for return, the cashier explains the policy and may offer alternatives such as an exchange or store credit.

Postconditions:

1. Return transaction is completed.
2. Inventory is updated.
3. Refunds are processed(if applicable).

Answer-2:

Entity object:

- Product
- Customer
- Transaction
- Receipt
- Coupon
- Cashier
- Inventory
- Catalog
- scanner

Boundary Objects:

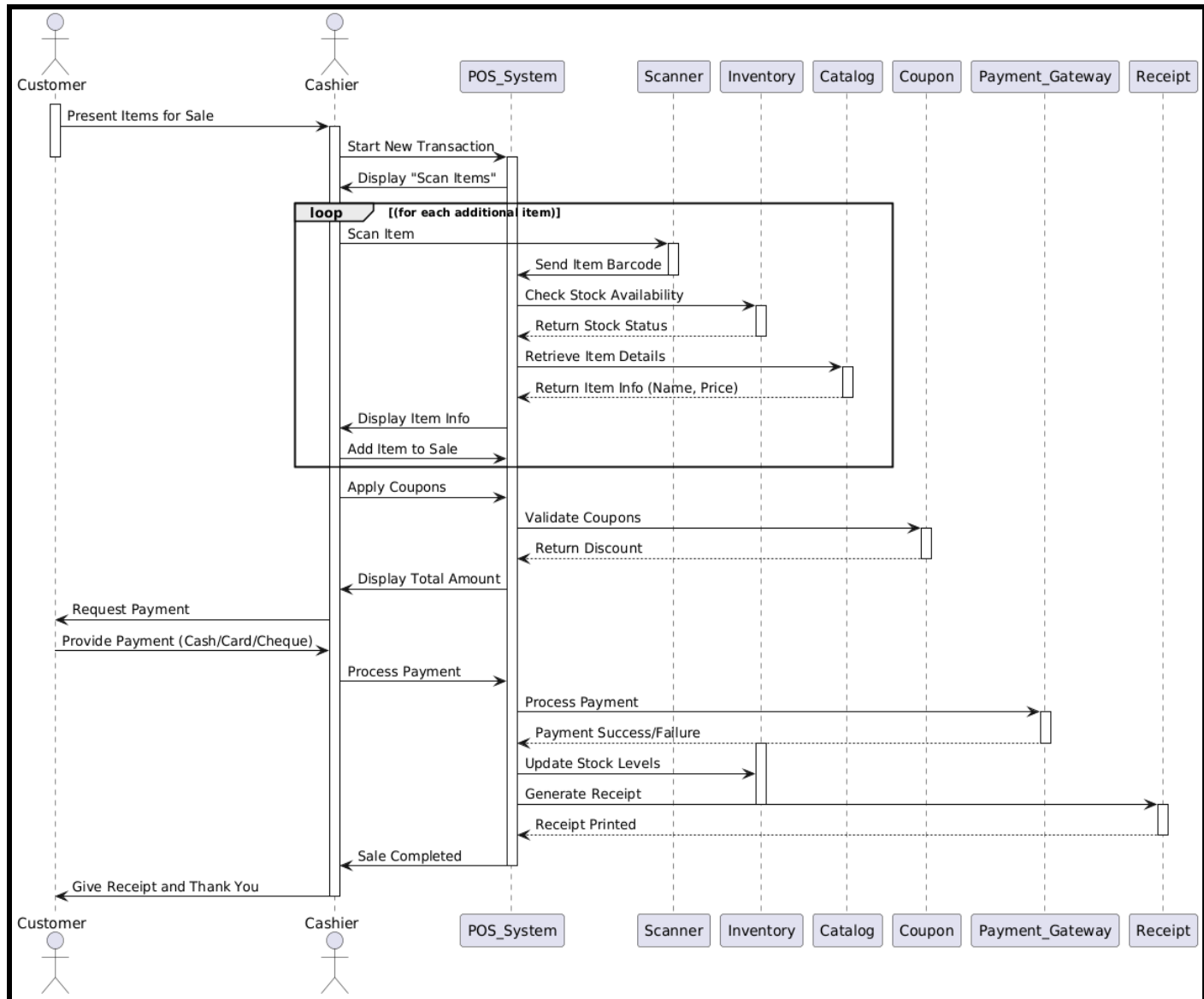
- User Interface (UI)
- Payment Gateway Interface
- Inventory Display
- Catalog System
- Scanner
- Receipt Printer

Control Objects:

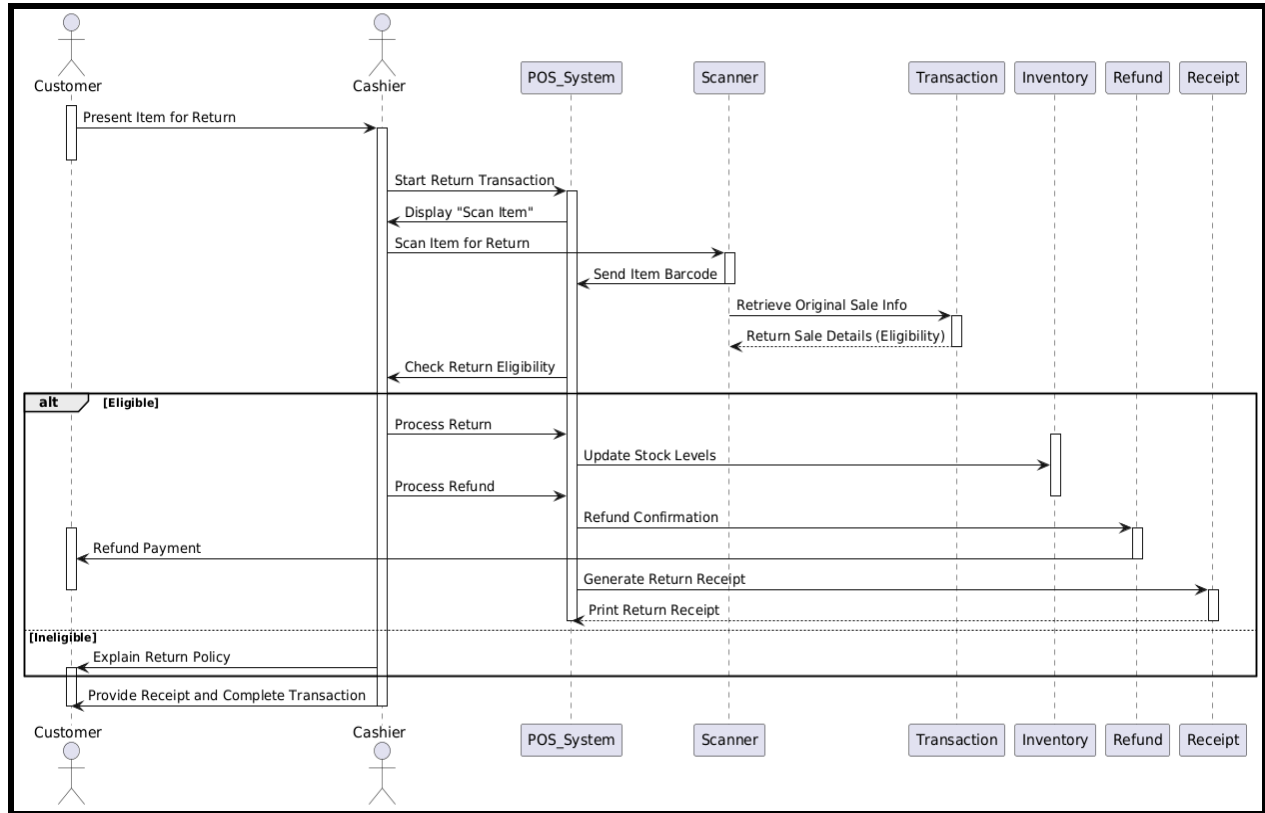
- SaleController
- ReturnController
- InventoryController
- UserController
- CouponController
- LoginController

Answer-3:

1)Sequence Diagrams for Process Sale:

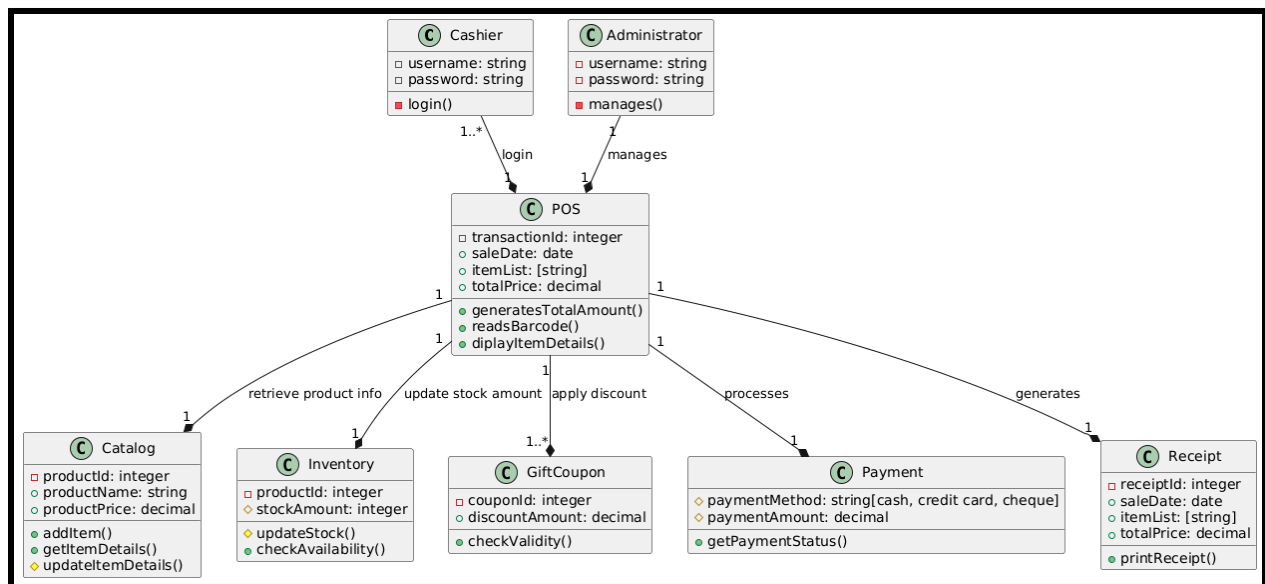


2)Sequence Diagrams for Handle Return:

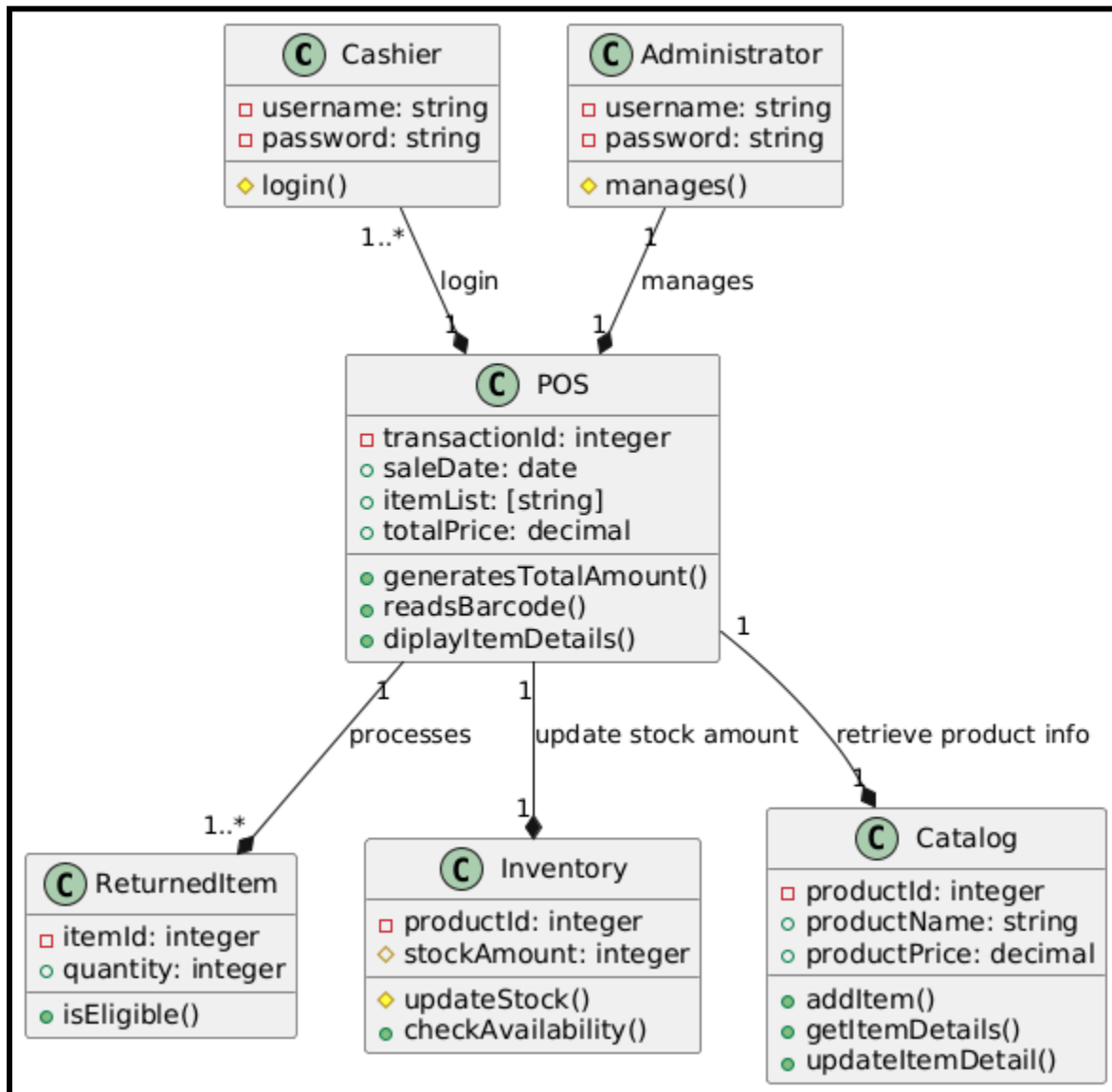


Answer-4:-

Analysis Domain Model(Class Diagram) for process sale:-



Analysis Domain Model(Class Diagram) for Handle Return:-



Answer-5:-

Activity diagrams for "Process Sale" and "Handle Return" use cases.

(Added in repository due to space constraint).

