



Lab 6

Modeling Class Diagram

Activity Diagram

Name : Rhythm Panchal

Student Id : 202201230

Use Case: Process Sale

Primary Actor: Cashier

Preconditions:

- Cashier must logged into the POS system.
- Customer should items to purchase.

Main Flow:

- The cashier initiates a new sales transaction.
- For each item:
 - The cashier scans the barcode.
 - The system pulls up the item's information from the catalog.
 - The system updates the inventory count.
 - The item is added to the ongoing transaction.
 - Amount is update by adding new cost
- The system calculates the total cost of all items.
- If the customer has gift coupons:
 - The cashier applies any valid gift coupons.
 - The system adjusts the total amount accordingly.
- The cashier selects the payment option (cash, credit card, or check).
- The customer completes the payment using the chosen method.
- The cashier finalizes the payment.
- The system verifies the payment.
- A receipt is generated by the system.
- The cashier hands the receipt to the customer.

Alternative Flows:

- If the barcode of an item cannot be scanned, the cashier may manually input the item code.
- If a payment is declined, the cashier can opt for an alternative payment method or cancel the transaction.

Postconditions:

- Sale is recorded in the system

- Inventory is updated
- Payment is processed
- Receipt is printed

Use Case: Handle Return

Primary Actor: Cashier

Preconditions:

- Cashier must logged into the POS system.
- Customers have items to return.

Main Flow:

- The cashier begins the return process.
- The cashier scans or manually inputs the details of the items to be returned.
- The system checks if the return is eligible.
- The system determines the refund amount.
- The cashier reviews and confirms the return with the customer.
- The system updates the inventory accordingly.
- The refund is processed by the system.
- A return receipt is generated by the system.
- The cashier provides the return receipt to the customer.

Alternative Flows:

- If the item is damaged or not eligible for return, the cashier can deny the return.
- If the original payment method is not available, an alternative refund method can be used.

Postconditions:

- Return is recorded in the system.
- Inventory is updated.
- Refunds are processed.
- Return receipt is printed.

Identification of Entity / Boundary / Control Objects:

Entity Objects:

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

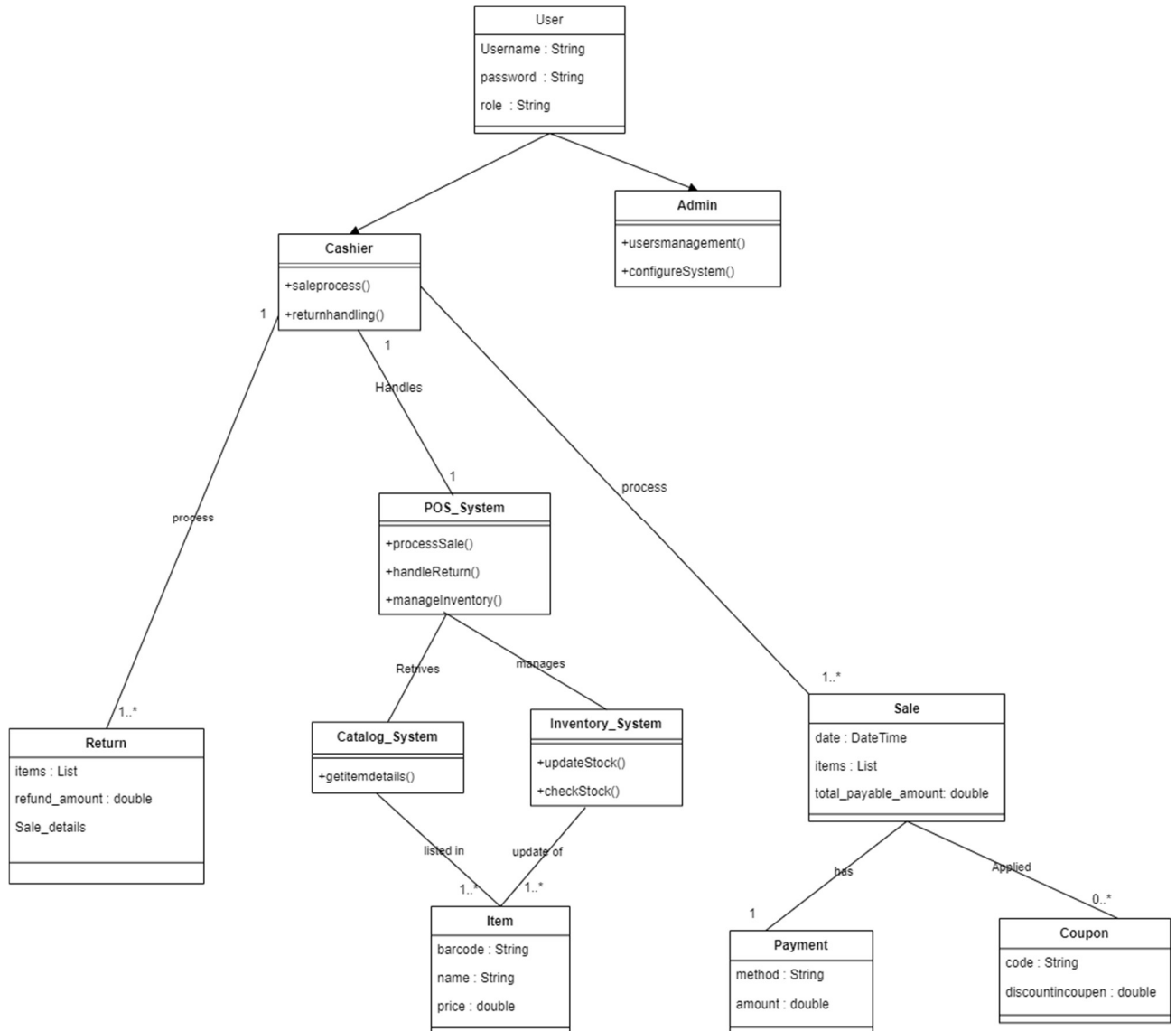
Boundary Objects:

- Login Screen
- Sale Transaction Screen
- Payment Screen
- Return Screen
- User Management Screen (for Admin)
- Security Configuration Screen (for Admin)

Controller Objects:

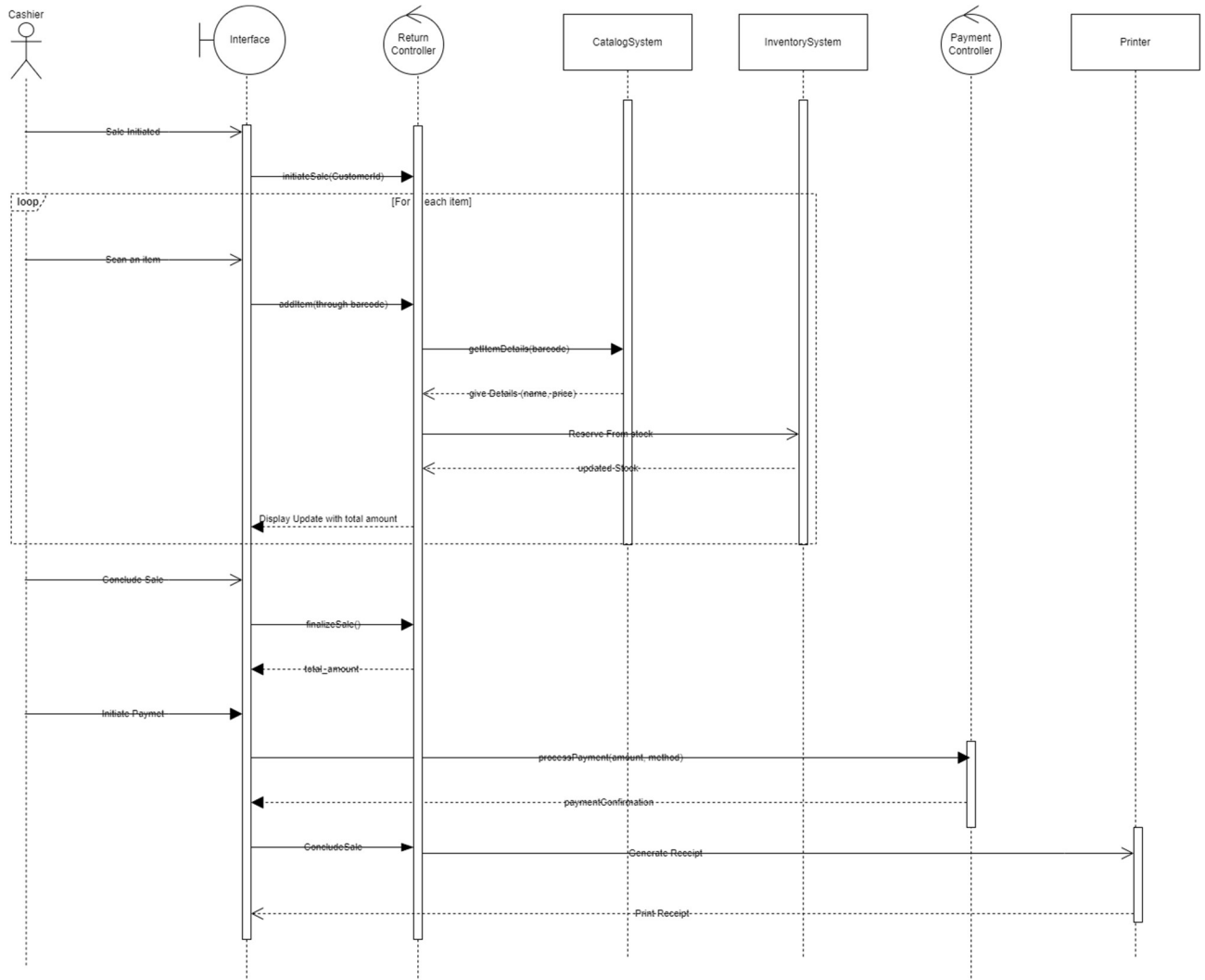
- Sale Controller
- Inventory Controller
- Payment Controller
- Return Controller
- Catalog Controller

Analysis Domain Model:

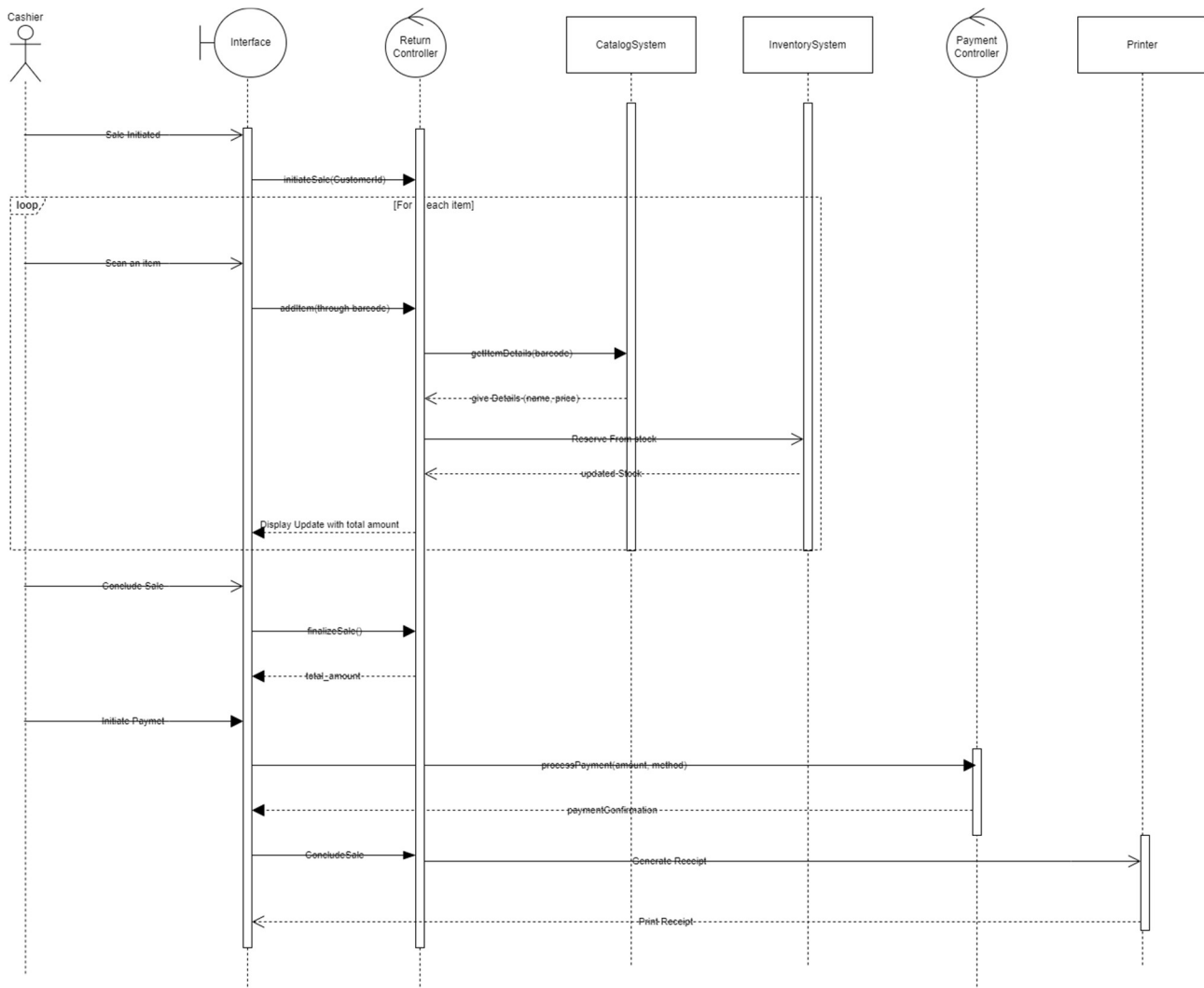


Sequence Diagrams:

1. Process Sell:

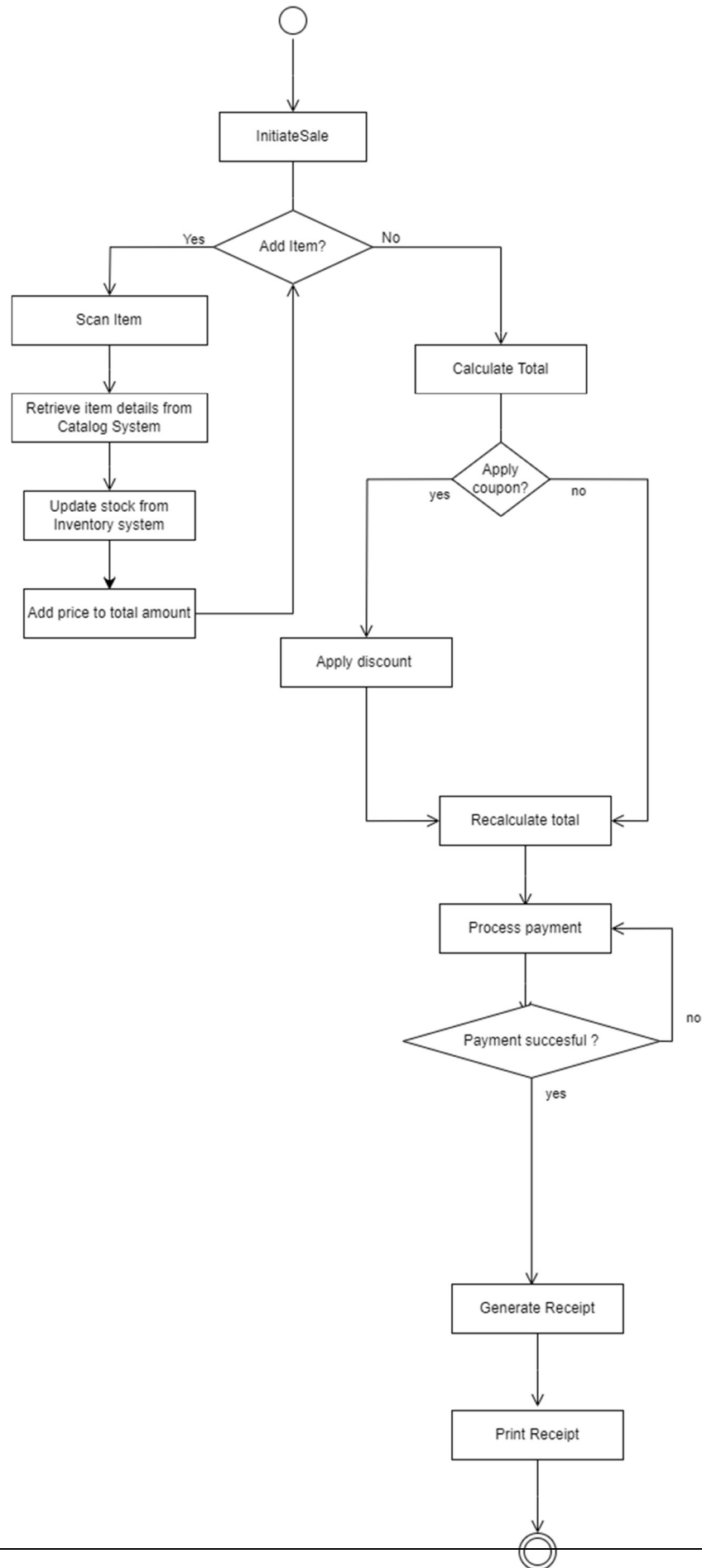


2. Handle Return



Activity Diagram:

Process Sale:



Handle Return:

