LAB6-SE-202201477:

Task1:

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

1.Process Sale:

Use Case Name: Process Sale
Actors: Cashier, Customer
Preconditions:

- The cashier is logged into the POS system and the customer arrives at the counter.

Main Flow:

1.The cashier initiates a new sale transaction in the POS system.

2.The cashier scans the barcode of each good presented by the customer.

3.The POS retrieves the product name and price from the product catalog.

4.The system displays the item details and updates the total sale amount.

5.The cashier continues scanning items until all goods are processed.

6.The customer selects a payment method (cash, credit card, check).

7.The cashier processes the payment.

8**.** The system confirms payment success or failure.

9.Upon successful payment, the system generates and prints a receipt for the customer.

10.The system updates the inventory to reflect the items sold.

Postconditions:

- A sale transaction is completed, and a receipt is printed.
- Inventory is updated to reflect the sale.

2.Handle Returns

Use Case Name: Handle Return
Actors: Cashier, Customer
Preconditions:

- The cashier is logged into the POS system.
- The customer is present with the item and receipt for the items being returned .

Main Flow:

1. The cashier initiates a return transaction in the POS system.
2. The cashier requests the customer to present the receipt for the returned items.

3. The cashier scans the barcode of each item being returned.

4.The POS verifies the item against the receipt.

5.The system displays the item details and refund amount.

6.The system processes the refund.

7.Upon successful refund, the system updates the inventory to reflect the returned items.

8.The system generates and prints a return receipt for the customer.

Postconditions:

- The return transaction is completed, and the customer is issued a refund or store credit.
- Inventory is updated to reflect the returned items.

Task2:

Identify BO/EO/CO:

Entity objects :

1.Cashier
2.invoice
3.Catalog System
4.Inventory System
5.Item
6.Gift coupons

Boundary Objects:

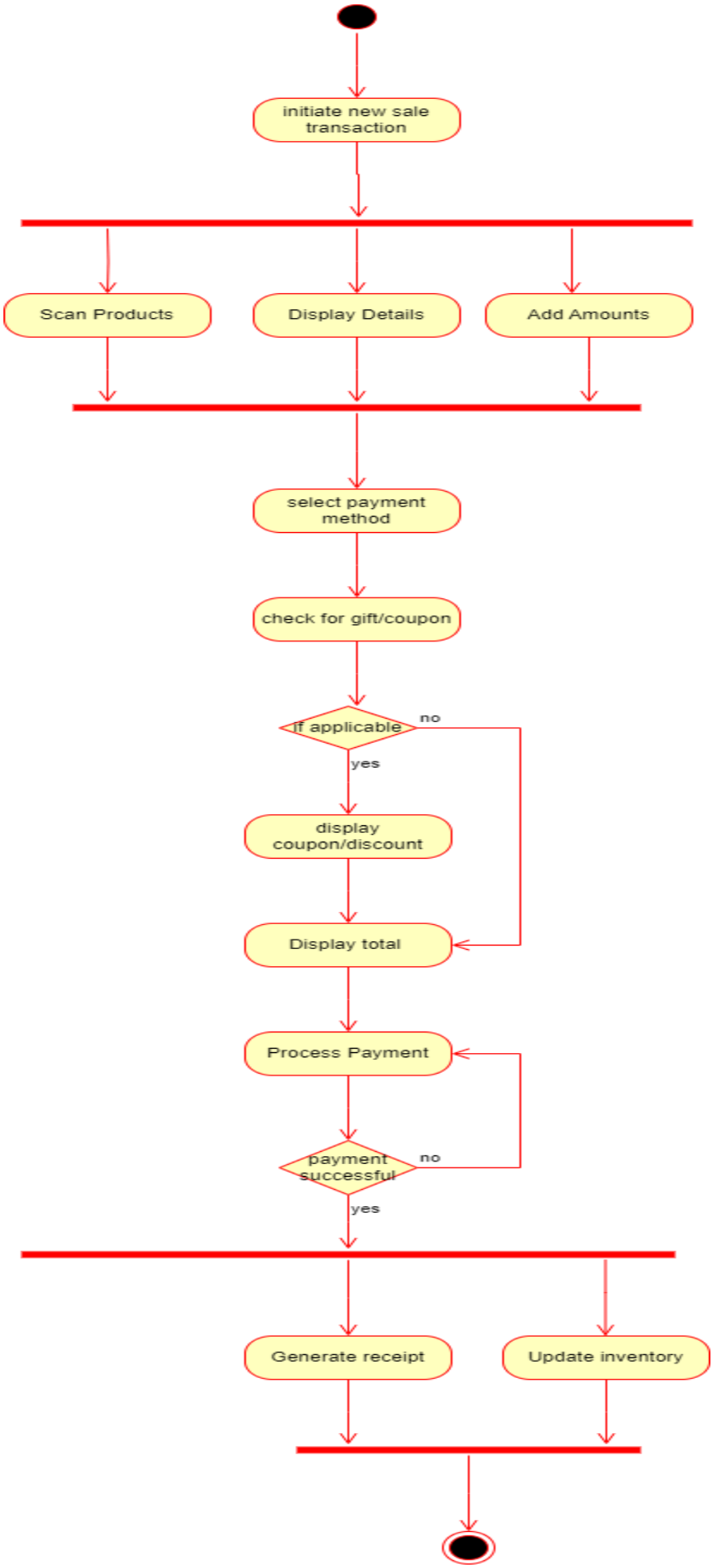
1.POS interface
2.Barcode scanner
3.printer
4.computer

Controller Objects:

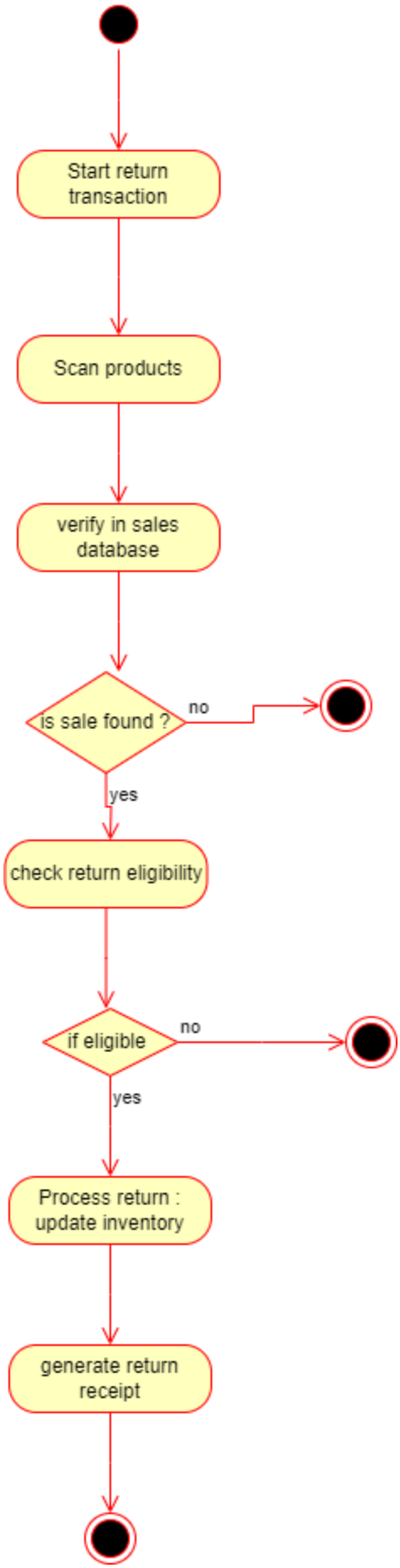
1.Transaction System
2.User managements System
3. Security management System

Task3:Activity Diagram

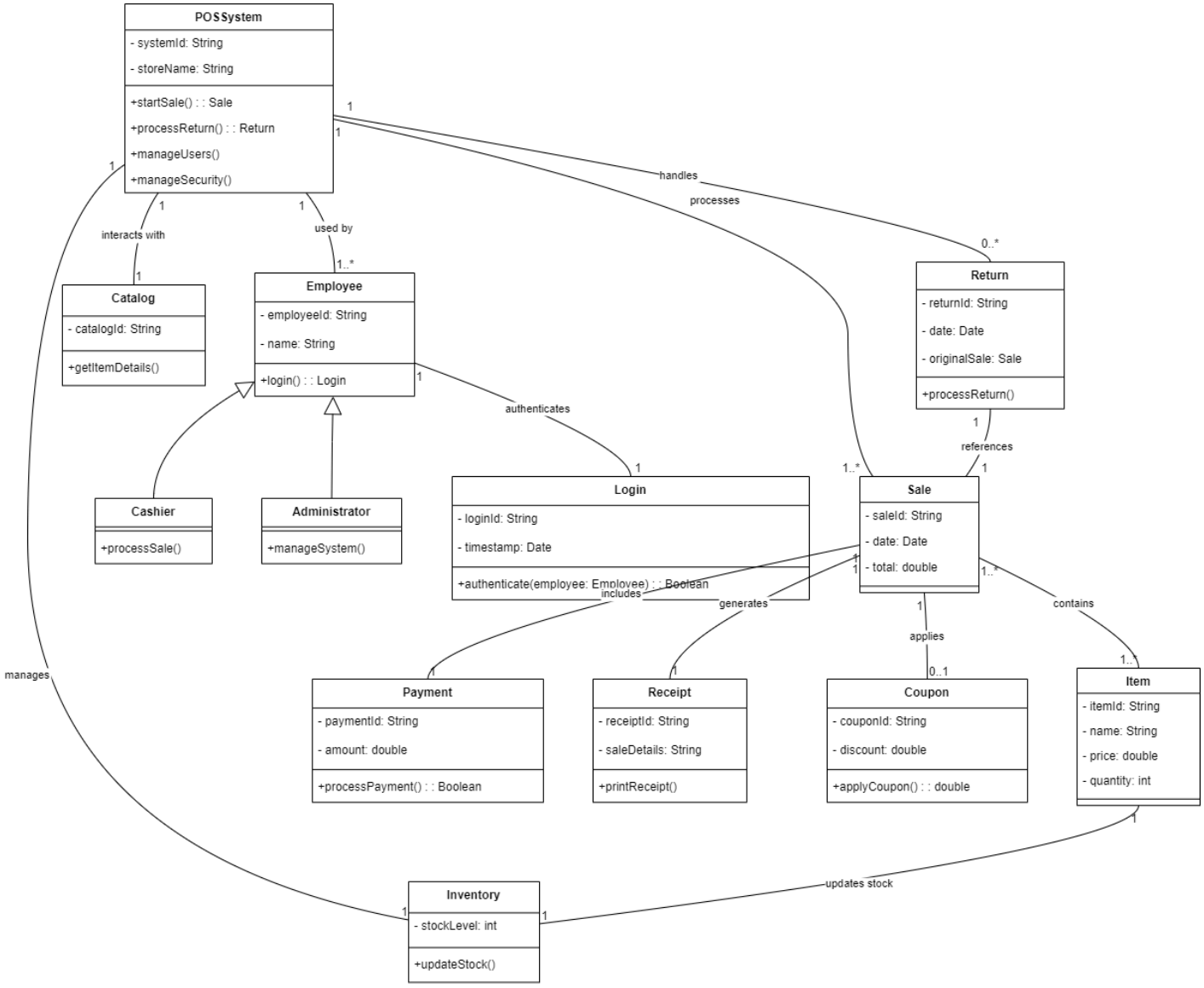
1.Process Sale:


initiate new sale transaction
Scan Products
Display Details
Add Amounts
select payment method
check for gift/coupon
If applicable
no
yes
display coupon/discount
Display total
Process Payment
payment successful
no
yes
Generate receipt
Update inventory

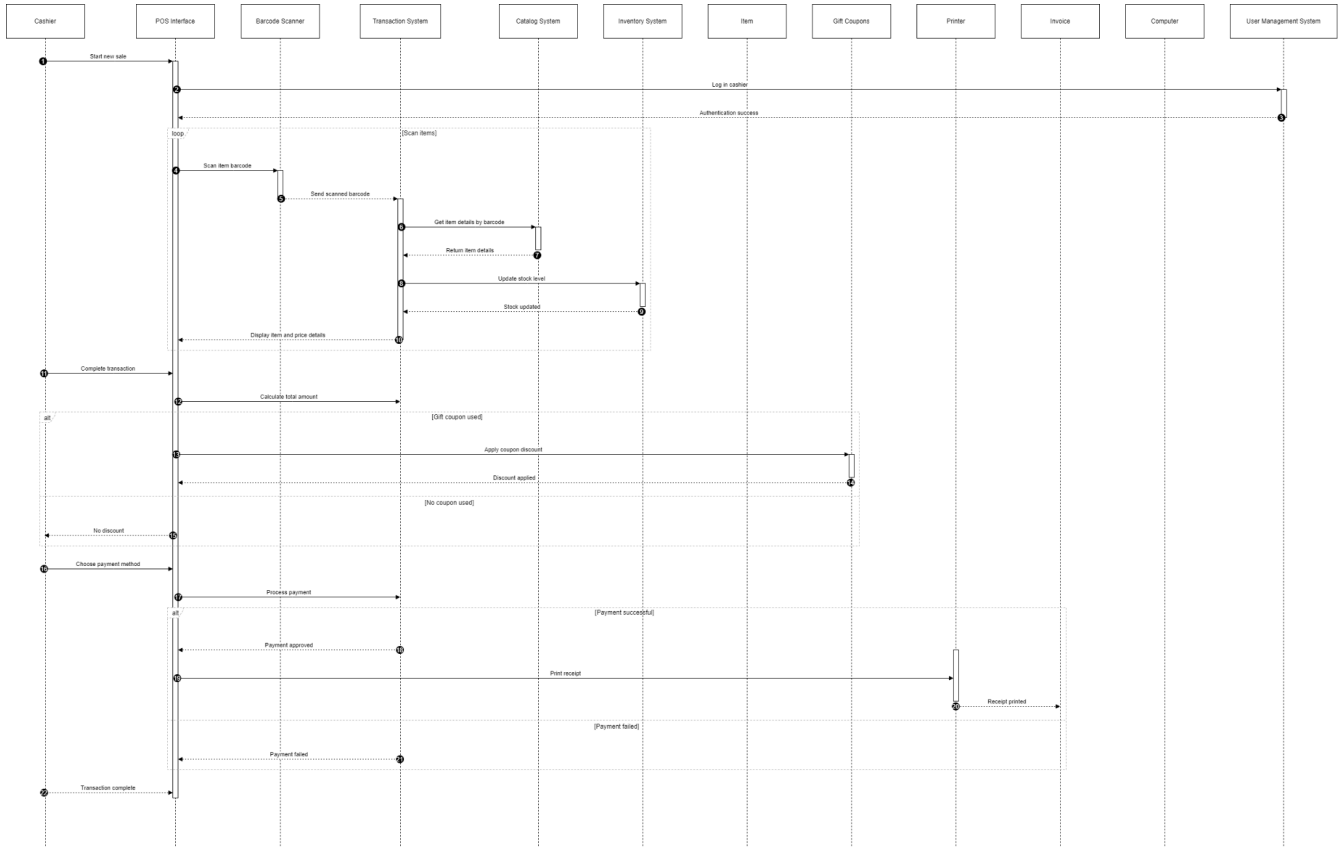
2. Handle returns:


Start return transaction
Scan products
verify in sales database
is sale found ?
no
yes
check return eligibility
if eligible
no
yes
Process return : update inventory
generate return receipt

Task 4: Class Diagram



Task 5 :Sequence Diagram:


Cashier
POS Interface
Barcode Scanner
Transaction System
Catalog System
Inventory System
Item
Gift Coupons
Printer
Invoice
Computer
User Management System
1 Start new sale
2 Log in cashier
3 Authentication success
loop
[Scan items]
4 Scan item barcode
5 Send scanned barcode
6 Get item details by barcode
7 Return item details
8 Update stock level
9 Stock updated
10 Display item and price details
11 Complete transaction
12 Calculate total amount
alt
[Gift coupon used]
13 Apply coupon discount
14 Discount applied
[No coupon used]
15 No discount
16 Choose payment method
17 Process payment
alt
[Payment successful]
18 Payment approved
19 Print receipt
20 Receipt printed
[Payment failed]
21 Payment failed
22 Transaction complete