IT-314 Software Engineering

Lab Assignment-6

(Point of Sale System)

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Use Cases Textual Description

1. Process Sale

Actors: Cashier

Preconditions :

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

Main Flow :

1. The cashier initiates a new sale transaction.
2. For each item, the cashier scans its barcode. The system retrieves the item details from the catalog, updates the inventory, and adds the item to the ongoing transaction.
3. The system calculates the total amount due.
4. If the customer has a coupon, the cashier applies it, and the system recalculates the total.
5. The cashier selects the payment method.
6. The customer completes the payment.
7. The system verifies the payment.

Post Conditions :

- Inventory is updated.
- Receipt is Printed.
- Sale is Recorded into System.

Alternate Flow :

2a) If Item not Found in catalog then Cashier Manually enters Item details.

7a) If Payment is invalid ,System Prompts For Alternative Payment Method.

2. **Handle Return**

Actors : Cashier

Preconditions :

- Cashier is Logged into POS System.
- Customer has item to Return.

Main Flow :

1. The cashier initiates the return process.
2. If the customer provides a receipt, the cashier scans or enters the receipt details, and the system retrieves the original transaction.
3. For each item being returned, the cashier scans the item's barcode. The system verifies the item and checks whether it complies with the return policy.
4. The system calculates the refund amount.
5. The cashier confirms the return with the customer.
6. The system updates the inventory.
7. The cashier processes the refund.
8. The system logs the return transaction.

Postconditions :

- The return is Recorded in the system.
- The inventory is updated accordingly.
- The refund is issued.
- A return receipt is printed.

Alternate Flows:

2b) If Customer has no Receipt then , Cashier enters item details Manually.

3c) If Item does not match with Return Policy, System Alerts Cashier and item is not added to Return.

Identifying Objects

Entity Objects:

1. Sale
2. Item
3. Inventory
4. Payment
5. Receipt
6. Return Manager
7. Catalog
8. Refund
9. Discount/Coupon

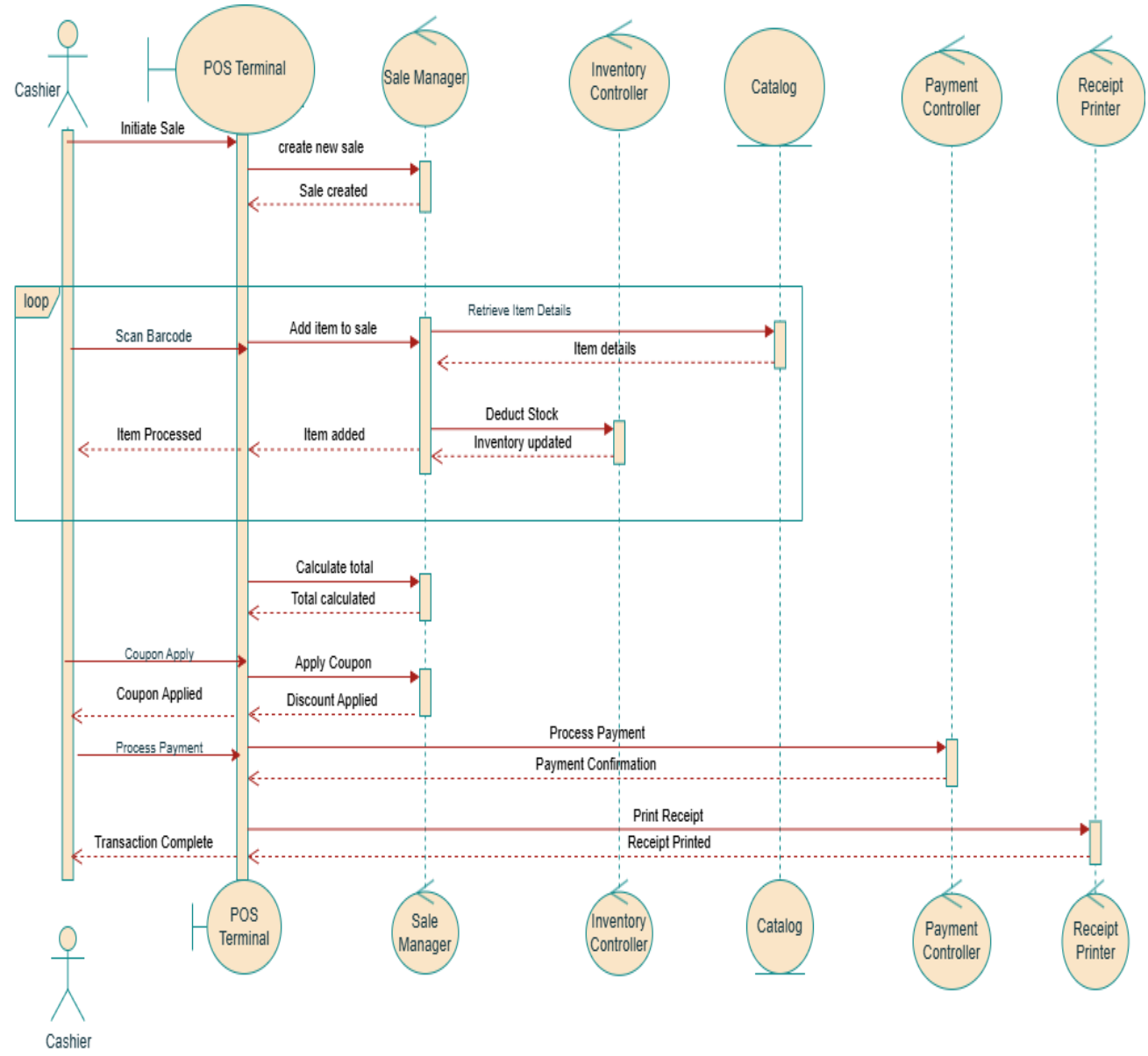
Boundary Objects:

1. POS Terminal Interface
2. Barcode Scanner Interface

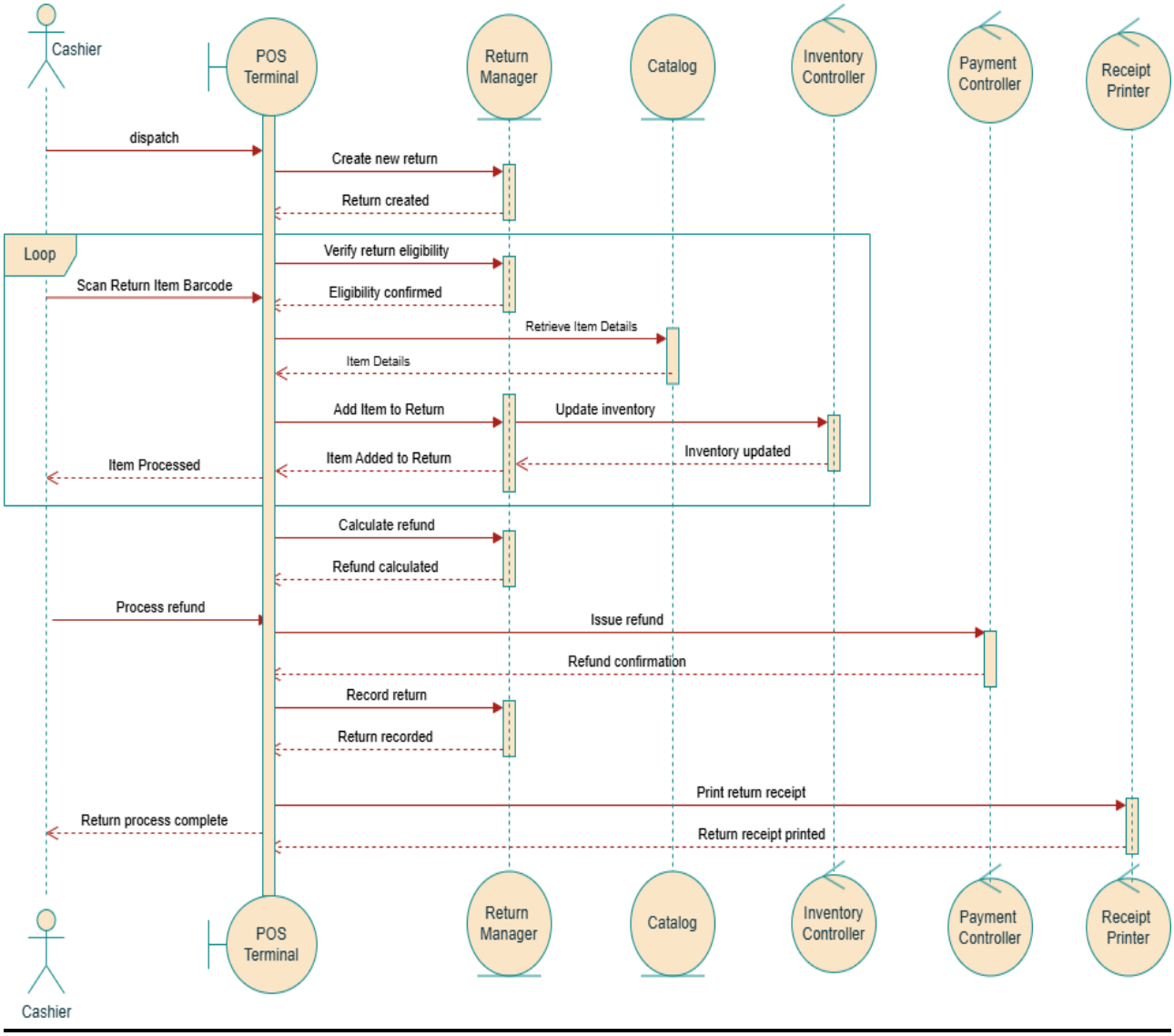
Control Objects:

1. Sale Manager
2. Inventory Manager
3. Payment Controller
4. Receipt Printer

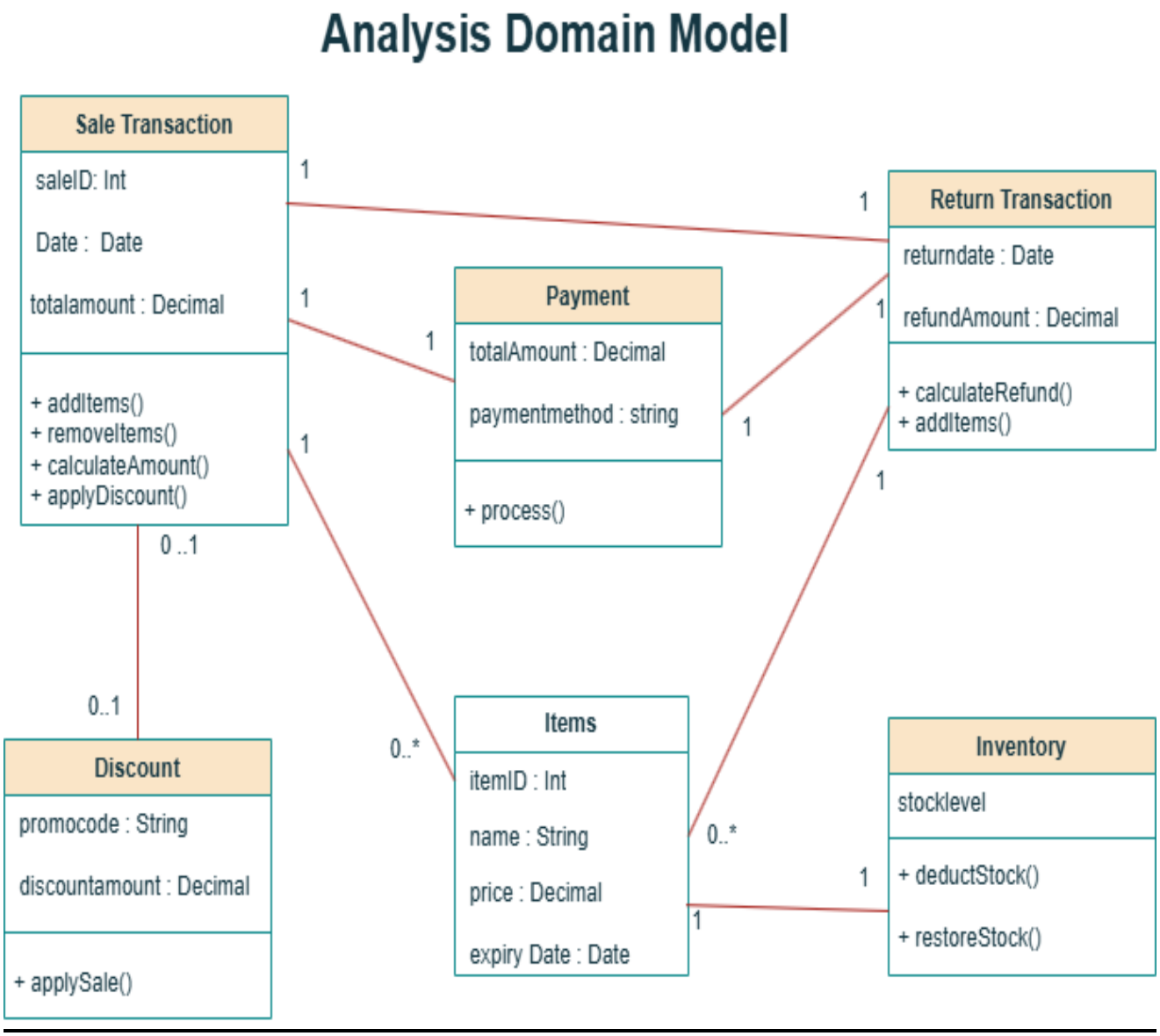
Process Sale Sequence Diagram



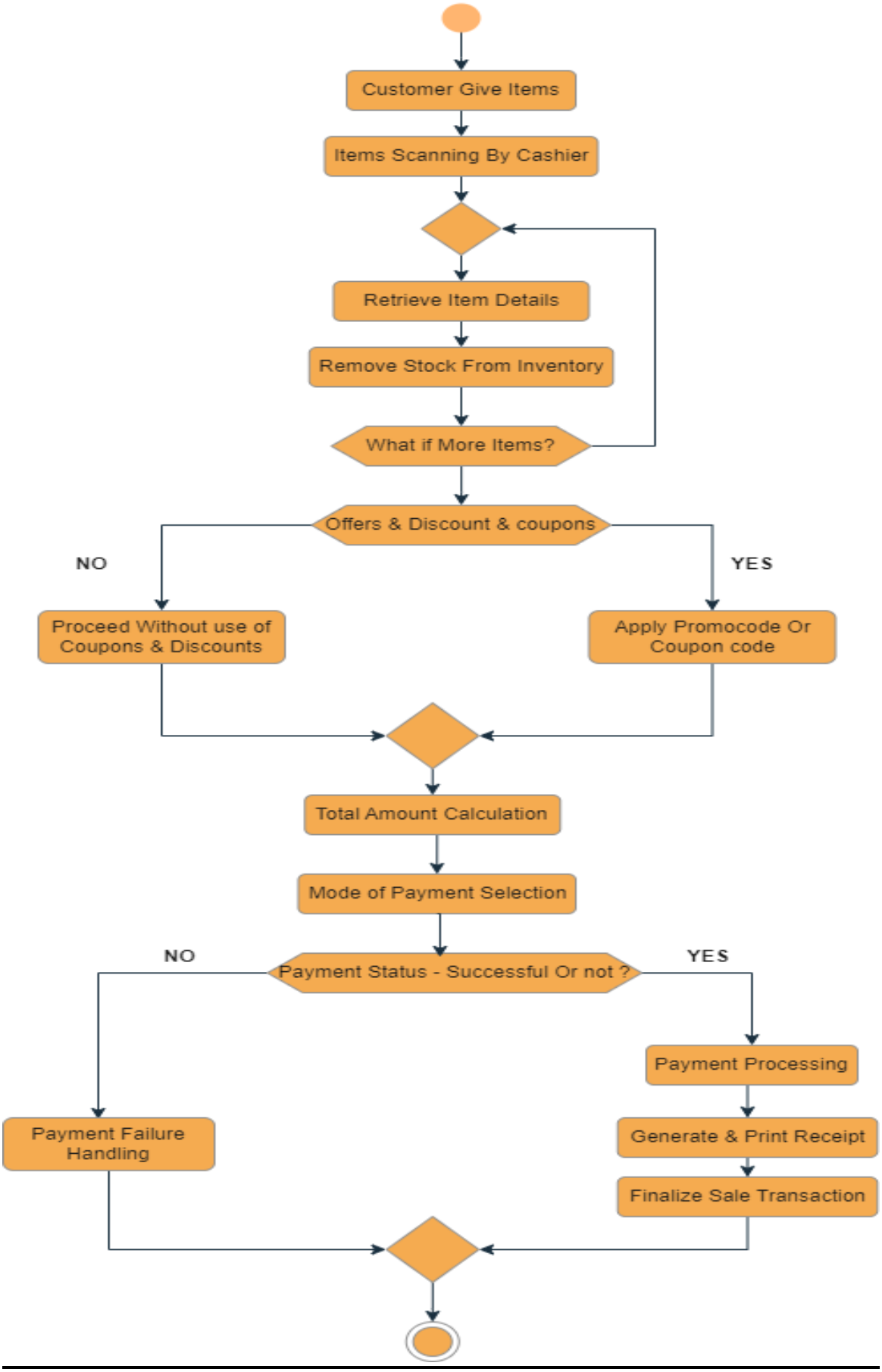
Handle Return Sequence Diagram



Analysis Domain Model



Process Sale Activity Diagram



Handle Return Activity Diagram