

Use Case: Process Sale

Actor: Cashier

Preconditions:

- The cashier has already logged into the POS system.
- The POS system is successfully connected to both the catalog and inventory systems.

Main Flow:

1. The cashier initiates a new sales transaction.
 2. For each item in the transaction:
 - a. The cashier scans the barcode.
 - b. The system retrieves the item's name and price from the catalog.
 - c. The inventory count is updated.
 - d. The item is added to the transaction.
 3. The system calculates the total amount.
 4. If the customer has a gift coupon:
 - a. The cashier applies the coupon.
 - b. The system adjusts the total.
 5. The cashier informs the customer of the total amount.
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6. The customer selects a payment method (cash, credit card, check).
7. The cashier processes the payment.
8. The system verifies the payment details.
9. A receipt is generated and printed.
10. The transaction is closed and finalized.

Alternative Flows:

- Invalid coupon scenario:
 - The system notifies the cashier that the coupon is invalid.
 - The cashier informs the customer and continues from step 5.
- Payment validation failure:
 - The system alerts the cashier that the payment has failed.
 - The cashier requests a different payment method.
 - If provided, return to step 7; otherwise, cancel the transaction.

Postconditions:

- The transaction is logged in the system.
- Inventory is updated.
- The payment is processed successfully.
- A receipt is printed.

Use Case: Processing a Return

Actor: Cashier

Preconditions:

- The cashier is logged into the POS system.
 - The customer has a valid receipt for the items being returned.
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Main Flow:

1. The cashier begins a new return transaction.
2. The cashier scans or manually enters the receipt details.
3. The system retrieves the original transaction.
4. For each returned item:
 - a. The cashier scans the item's barcode.
 - b. The system verifies that the item matches the original transaction.
 - c. Inventory is updated to reflect the return.
 - d. The item is added to the return transaction.
5. The system calculates the refund amount.
6. The cashier confirms the details with the customer.
7. The system processes the refund using the original payment method.
8. A return receipt is printed.
9. The return transaction is completed.

Alternative Flows:

- Receipt not found:
 - The system alerts the cashier that the receipt is invalid.
 - The cashier informs the customer and terminates the process.
- Item verification fails:
 - The system flags the item as not matching the original purchase.
 - The cashier informs the customer and either proceeds with the next item or stops the return.
- Original payment method unavailable:
 - The cashier selects a different refund method (store credit or cash).
 - The system processes the refund using the chosen method.

Postconditions:

- The return is logged in the system.
 - Inventory is updated.
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- The refund is processed.

- A return receipt is printed.



Identify Entity/Boundary/Control Objects

Entity Objects:

- Item
- Inventory
- Catalog
- Payment
- Receipt
- Coupon
- User (Cashier/Administrator)
- Return

Boundary Objects:

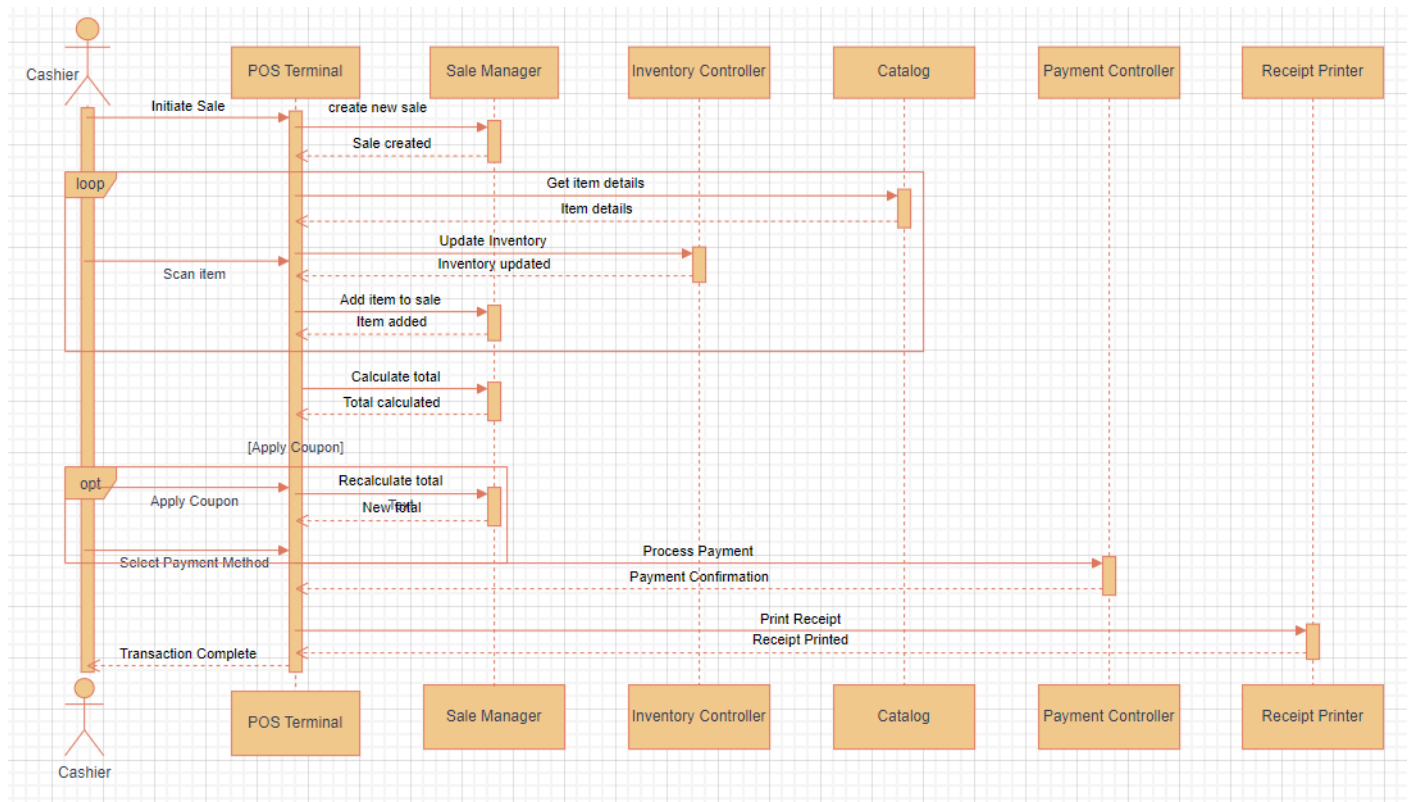
- POS Terminal Interface
- Scanner Interface
- Payment Processing Interface
- Receipt Printer Interface

Control Objects:

- Sale Manager
 - Inventory Manager
 - Catalog Manager
 - Payment Manager
 - User Authentication Manager
 - Return Manager
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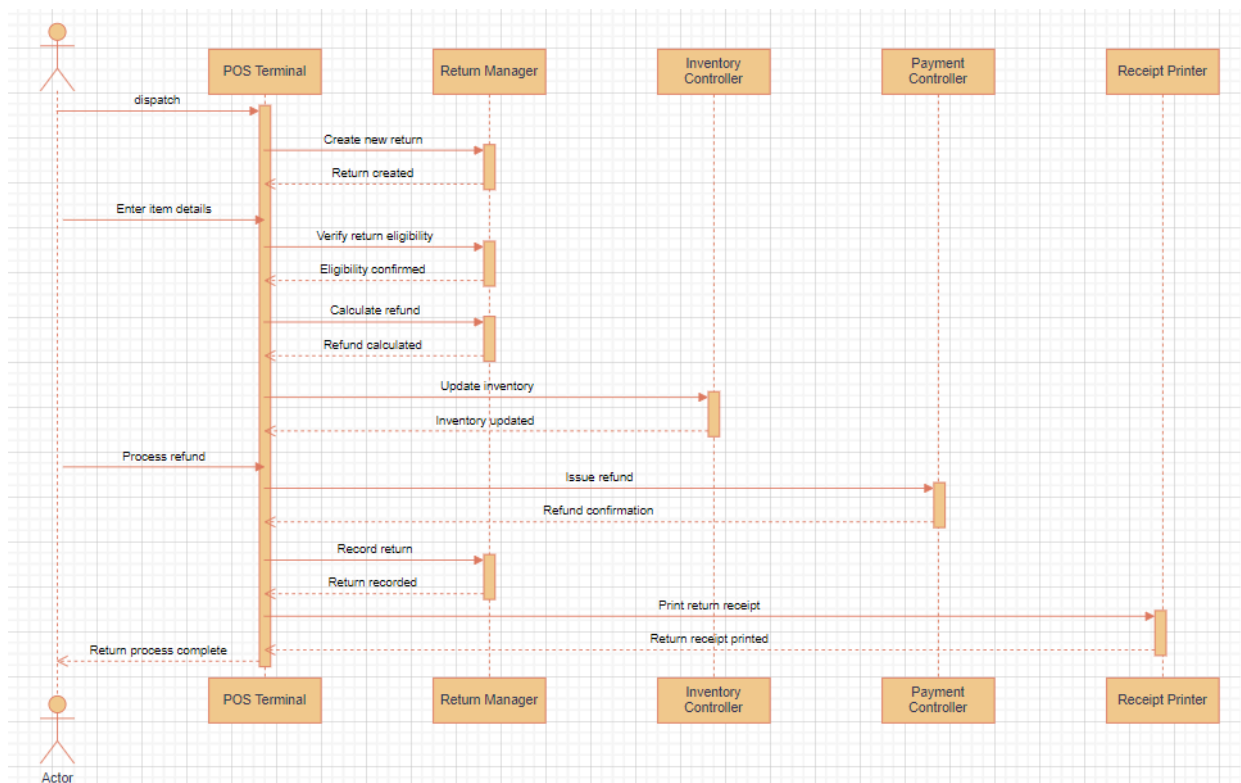
Sequence Diagram:

Process Sale Sequence Diagram

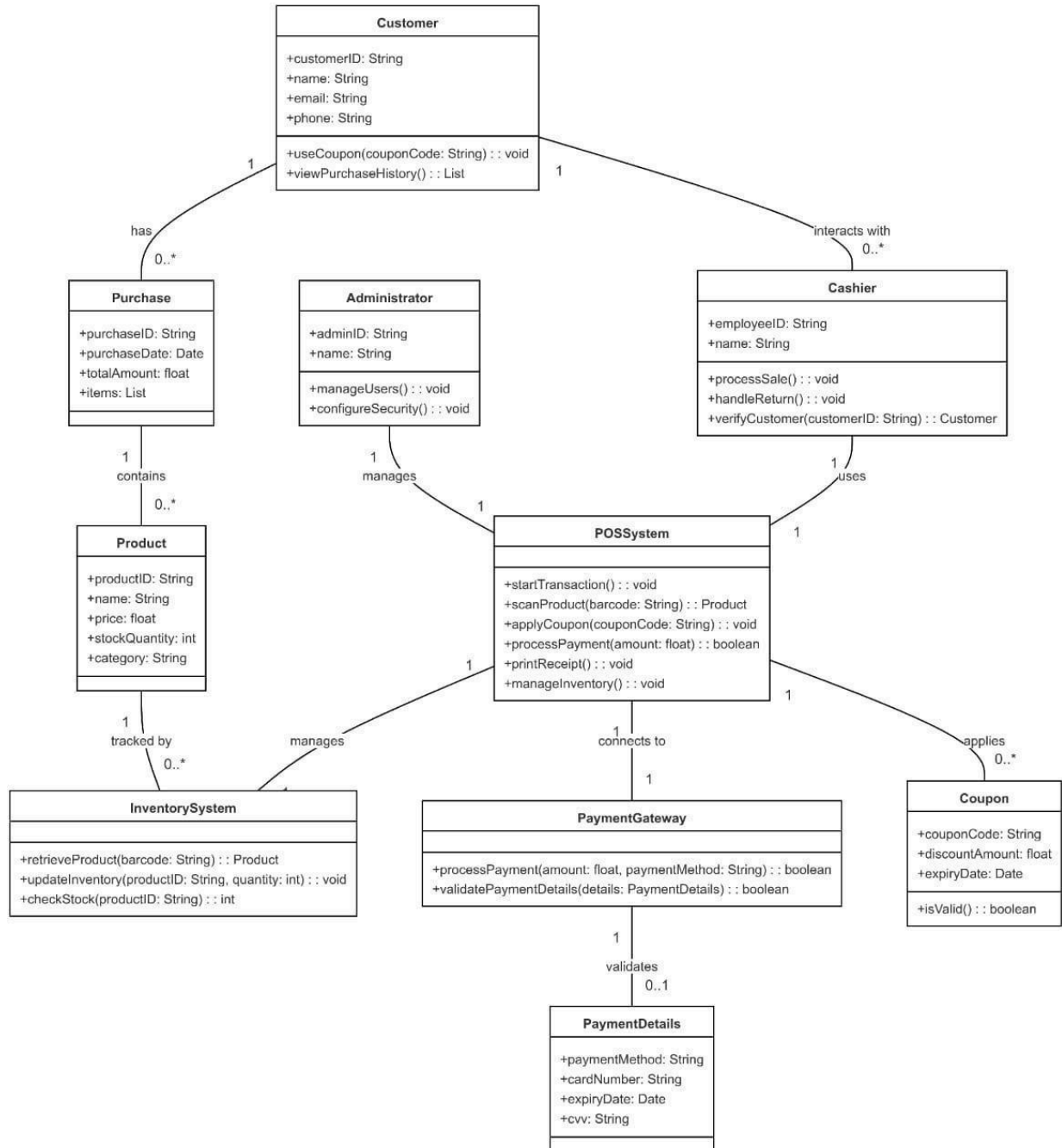


Sequence Diagram:

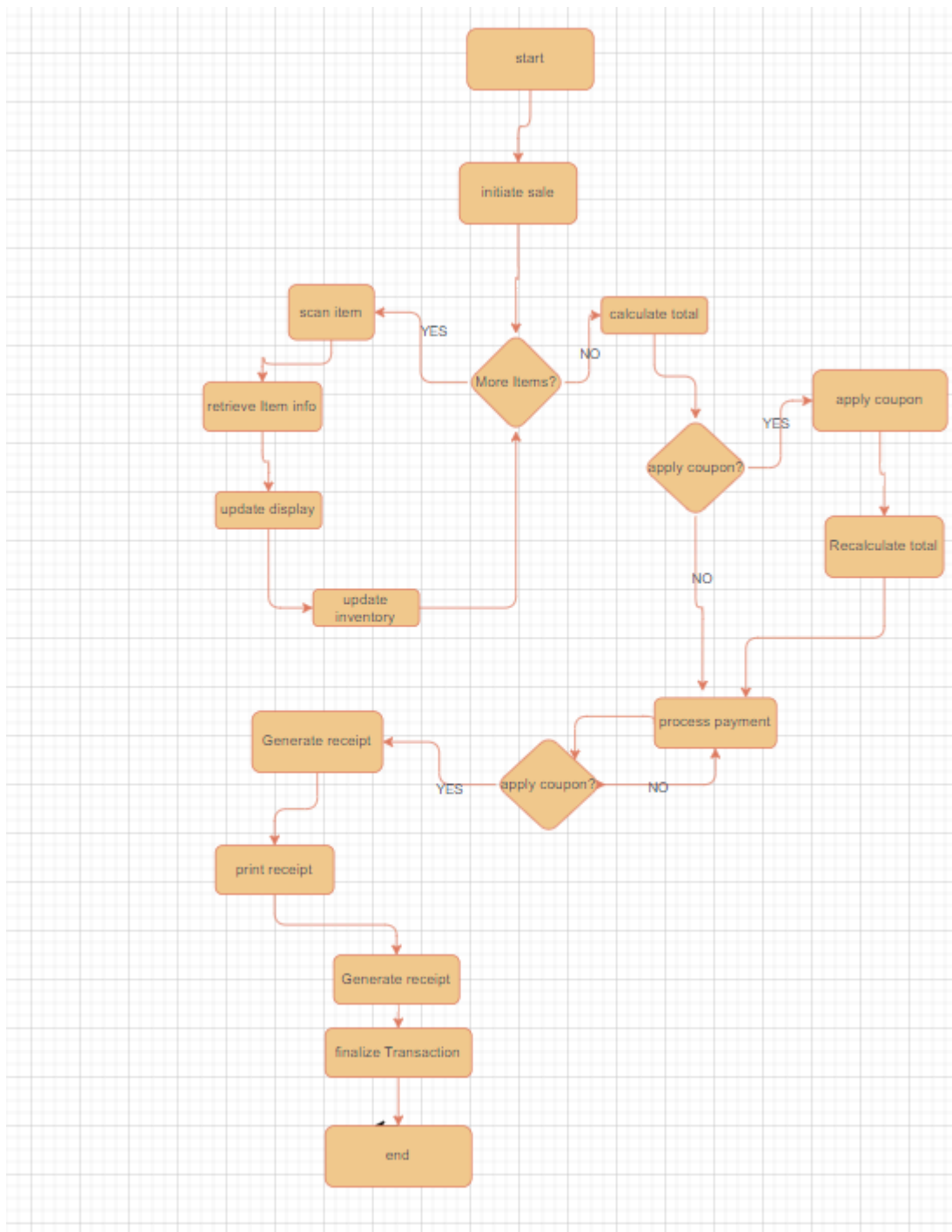
Handle Return Sequence Diagram



Analysis Domain Model



Process Sale Activity Diagram



Handle Return Activity Diagram

