Lab-06

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Use Case: Process Sale

Actor: Cashier

Preconditions:

1. The cashier is logged into the POS system.
2. The customer is ready to purchase items.

Main Flow:

1. The cashier begins a new sale transaction.
2. For each item: a. The cashier scans the barcode. The system retrieves the item details from the catalog. The system updates the inventory. The item is added to the ongoing transaction.
3. The system calculates the total. If the customer has a coupon. The cashier applies the coupon. The system updates the total amount.
4. The cashier selects the method of payment.
5. The customer makes the payment.
6. The system processes the payment.
7. A receipt is generated by the system.
8. The cashier gives the receipt to the customer.

Alternate Flows:

- 2b. If an item is not found in the catalog, the cashier enters the details manually.
- 3a. If the coupon application fails, the system alerts the cashier.
- 6a. If the payment is declined, the cashier returns to step 5.
- 7a. If the payment processing fails, the cashier cancels the transaction.

Postconditions:

- The sale is recorded in the system.
- The inventory is updated.

- The payment is completed.
- A receipt is generated.
- The cashier hands over the receipt and items to the customer.

Use Case: Handle Return

Actor: Cashier

Preconditions:

1. The cashier is logged into the POS system.
2. The customer has items they wish to return.

Main Flow:

1. The cashier initiates a return transaction.
2. For each item being returned: a. The cashier scans the item's barcode. b. The system verifies the item against the original sale. c. The inventory is updated to reflect the return. d. The system calculates any refund amount due.
3. The cashier processes the return: a. If a refund is necessary, the cashier chooses the refund method. b. The customer provides any needed payment information. c. The system processes the refund.
4. A return receipt is generated by the system.
5. The cashier provides the return receipt to the customer.

Alternate Flows:

- 2b. If the item is not recognized, the cashier manually inputs the details.
- 3a. If there’s a problem processing the refund, the system notifies the cashier.
- 4a. If an error occurs while generating the receipt, the cashier resolves it before completing the transaction.

Postconditions:

- The return is recorded in the system.
- The inventory is updated.
- The refund is processed.
- A return receipt is created.
- The cashier gives the return receipt to the customer.

Entity and Boundary Control Objects

Entity Objects:

- Transaction
- Product
- Stock
- Product List
- Transaction Payment
- Discount Voucher
- User (Cashier/Admin)
- Invoice
- Product Return

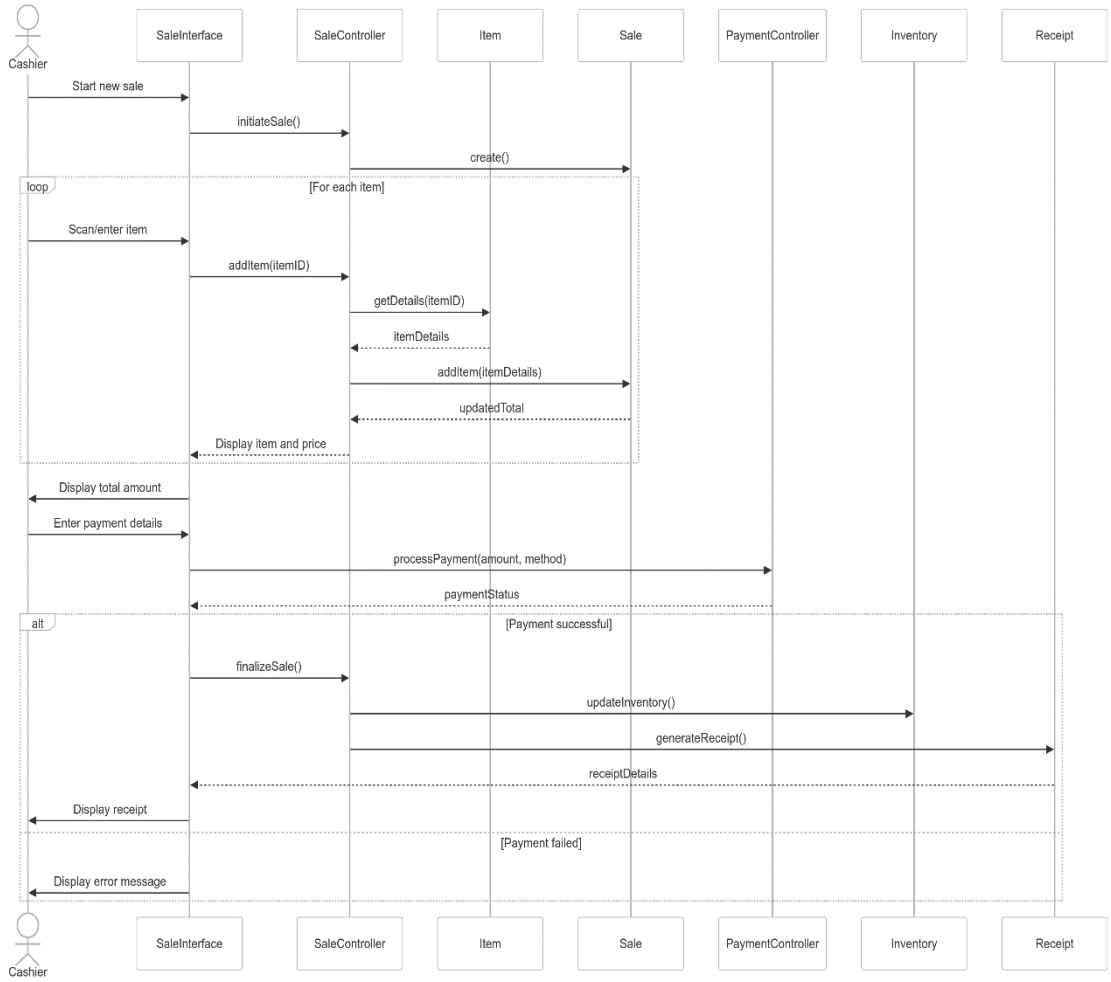
Boundary Objects:

- Point of Sale Interface
- Barcode Scanner Interface
- Payment Terminal Interface
- Printer for Receipts

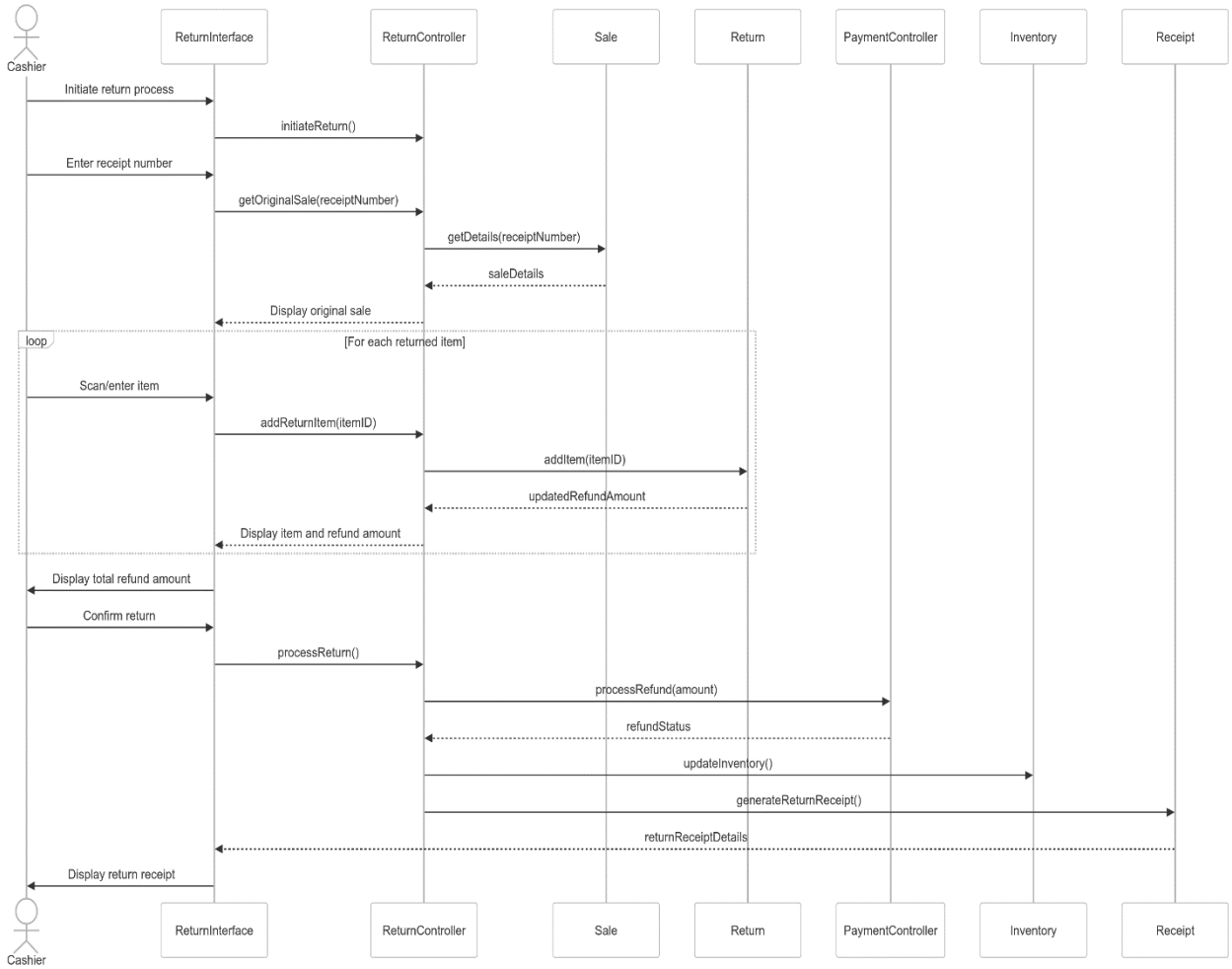
Control Objects:

- Transaction Controller
- Stock Management Controller
- Product List Controller
- Payment Processing Controller
- User Login Controller
- Return Processing Controller

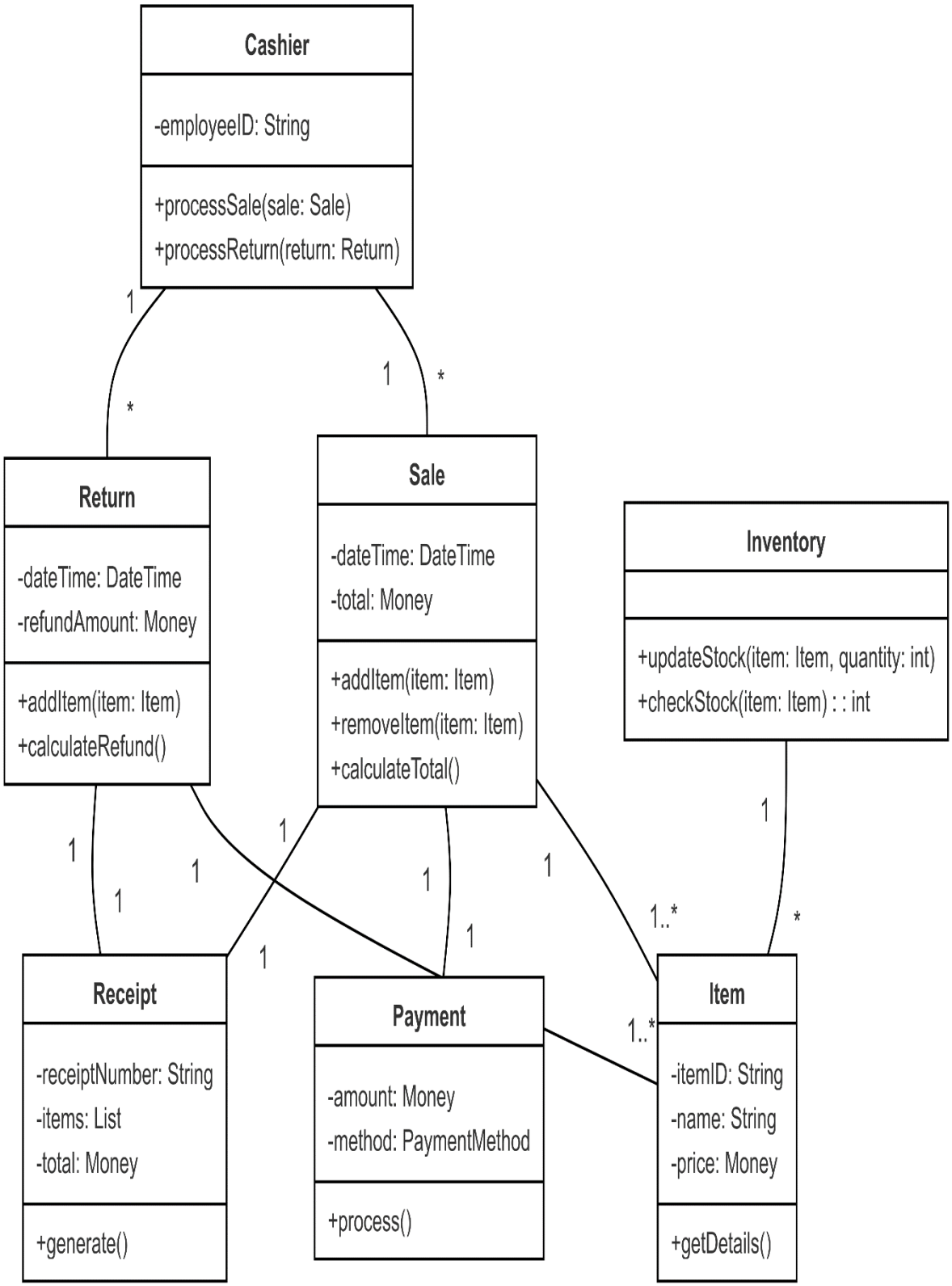
Sequence Diagram for Process Sale



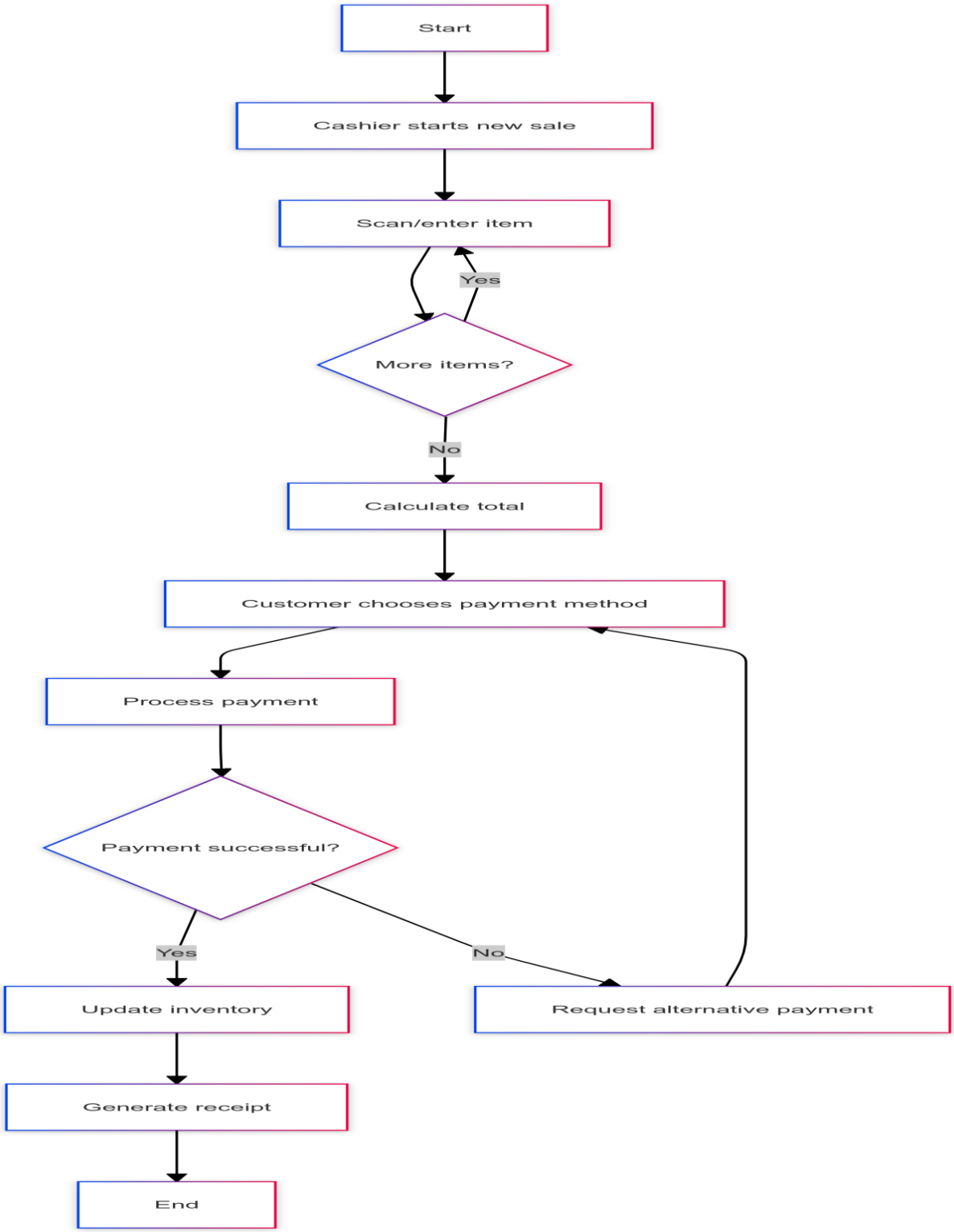
Sequence Diagram for Handle Return

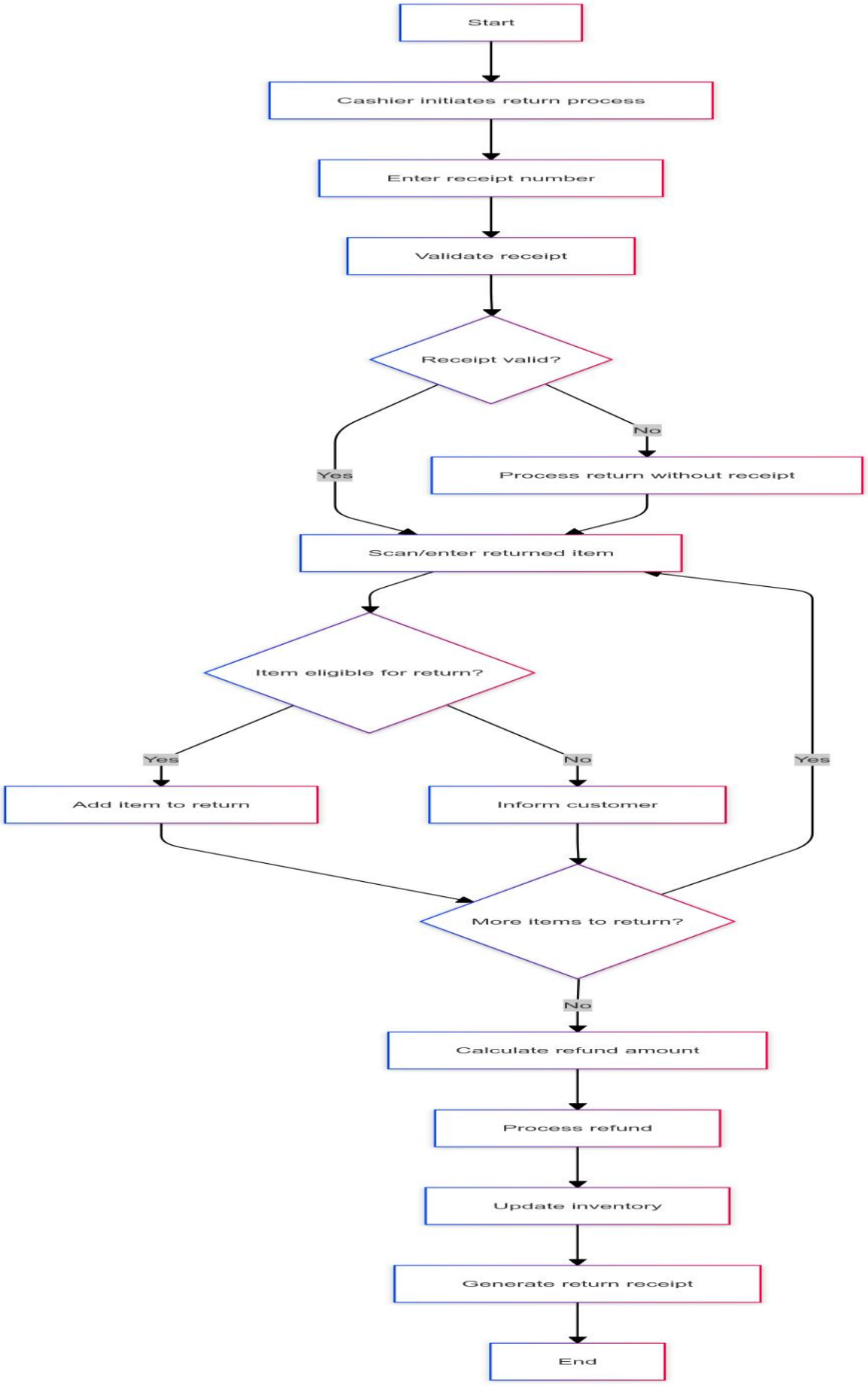


Analysis Domain Models



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




Start
Cashier initiates return process
Enter receipt number
Validate receipt
Receipt valid?
No
Yes
Process return without receipt
Scan/enter returned item
Item eligible for return?
Yes
No
Yes
Add item to return
Inform customer
More items to return?
No
Calculate refund amount
Process refund
Update inventory
Generate return receipt
End