



IT-314
Software Engineering
LAB - 06

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

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- **Use Case:** Process Sale
 - **Actors:** Cashier
 - **Stakeholder:** Cashier, Customer.
 - **Preconditions:**
 - The cashier is logged into the POS system.
 - **Postconditions:**
 - Payment and sales transaction is completed.
 - Item quantity is updated.
 - An invoice is printed.
 - **Main Flow:**

- The cashier initiates a new sale transaction in the POS system.
- The cashier scans the barcode of the first item.
- The POS system retrieves the item details (name and price) from the backend catalog.
- The system checks the inventory for stock availability.
- If the item is in stock, it is added to the sale transaction.
- Steps 2-5 are repeated for each item the customer wishes to purchase.
- Once all items are scanned, the cashier reviews the transaction total with the customer.
- The customer chooses a payment method (cash, credit card, or check).
- The POS system processes the payment:
 - For cash: the system calculates change and updates the cash drawer.
 - For credit card: the system verifies the transaction and completes the payment.
 - For check: the system verifies and completes the transaction as per store policy.
- Upon successful payment, the system prints a receipt.
- The cashier hands the receipt to the customer and concludes the transaction.
- **Alternative Flows:**
 - **Item Not in Stock:**
If an item is out of stock, the system informs the cashier, who can then remove the item from the sale or offer an alternative.
 - **Payment Failure:**
If the payment fails, the system prompts the cashier to retry or select an alternative payment method.

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- **Use Case Name:** Handle Return
 - **Actors:** Cashier
 - **Stakeholder:** Cashier, Customer
 - **Preconditions:**
 - The cashier is logged into the POS system.

- The customer has goods to return, along with the original receipt.
 - **Postconditions:**
 - The return transaction is completed.
 - Inventory is updated to reflect returned items.
 - A receipt for the return is printed, if applicable.
 - **Main Flow:**
 - The cashier initiates a return transaction in the POS system.
 - The cashier scans the barcode of the item being returned.
 - The POS system retrieves the item details (name, price) and checks the original sale.
 - The system verifies that the item is eligible for return based on store policies (timeframe, condition).
 - If eligible, the system processes the return:
 - Updates inventory to reflect the returned item.
 - If applicable, refunds the customer (cash, credit card, or store credit).
 - The cashier informs the customer of the successful return and the refund amount.
 - The system prints a return receipt for the customer.
 - The cashier hands the return receipt to the customer and concludes the transaction.
 - **Alternative Flows:**
 - **Item Not Eligible for Return:**

If the item is not eligible for return, the system informs the cashier, who communicates this to the customer.
 - **Refund Processing Issue:**

If there is an issue processing the refund, the system alerts the cashier, who can then provide alternative options (store credit, future purchase).
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2. Identify Entity,Boundary,Control Objects

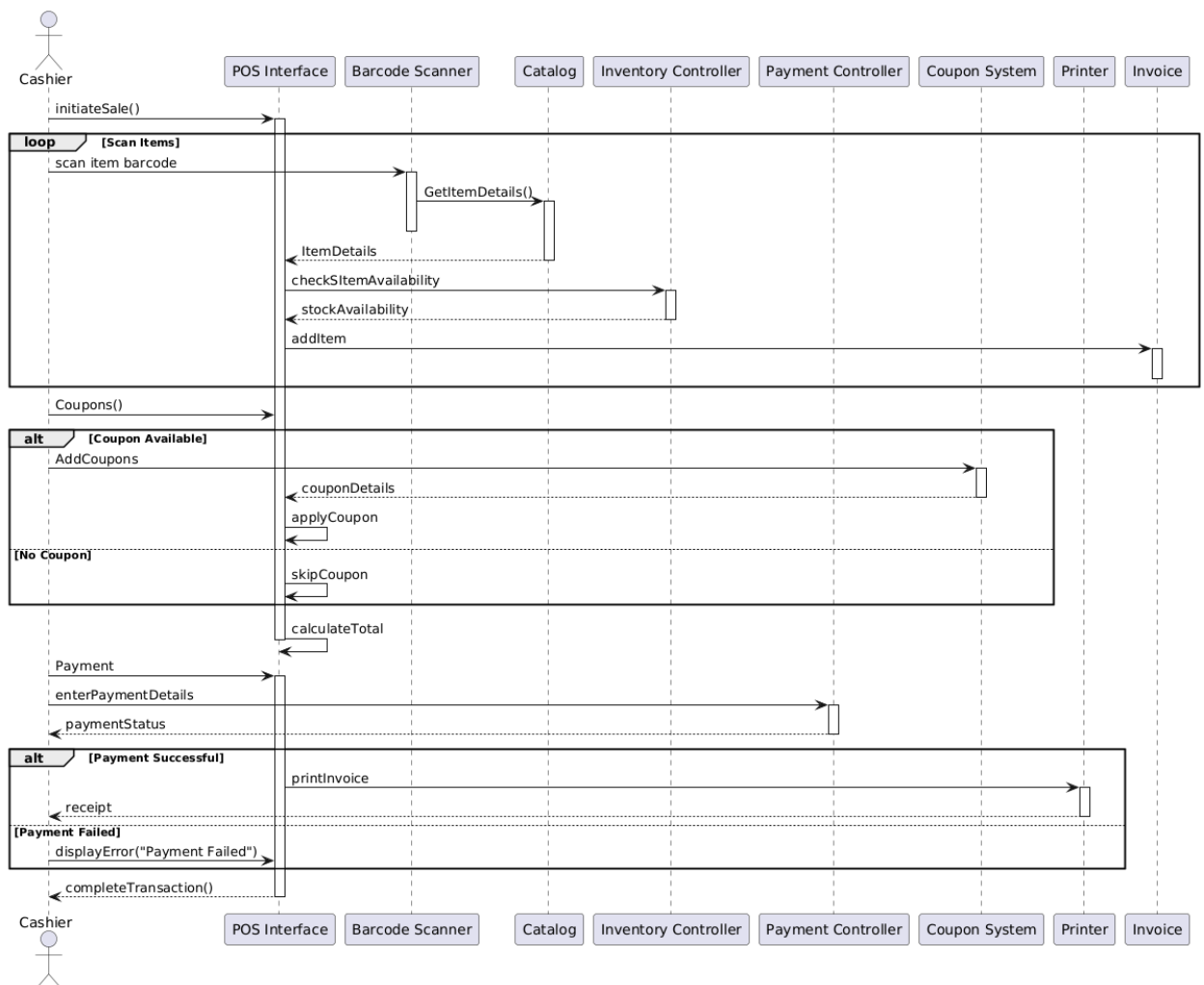
Entity Object: Item,Inventory,Catalog,User(Cashier),Payment,Invoice,Coupons.

Control Object: Inventory Controller,Payment Controller

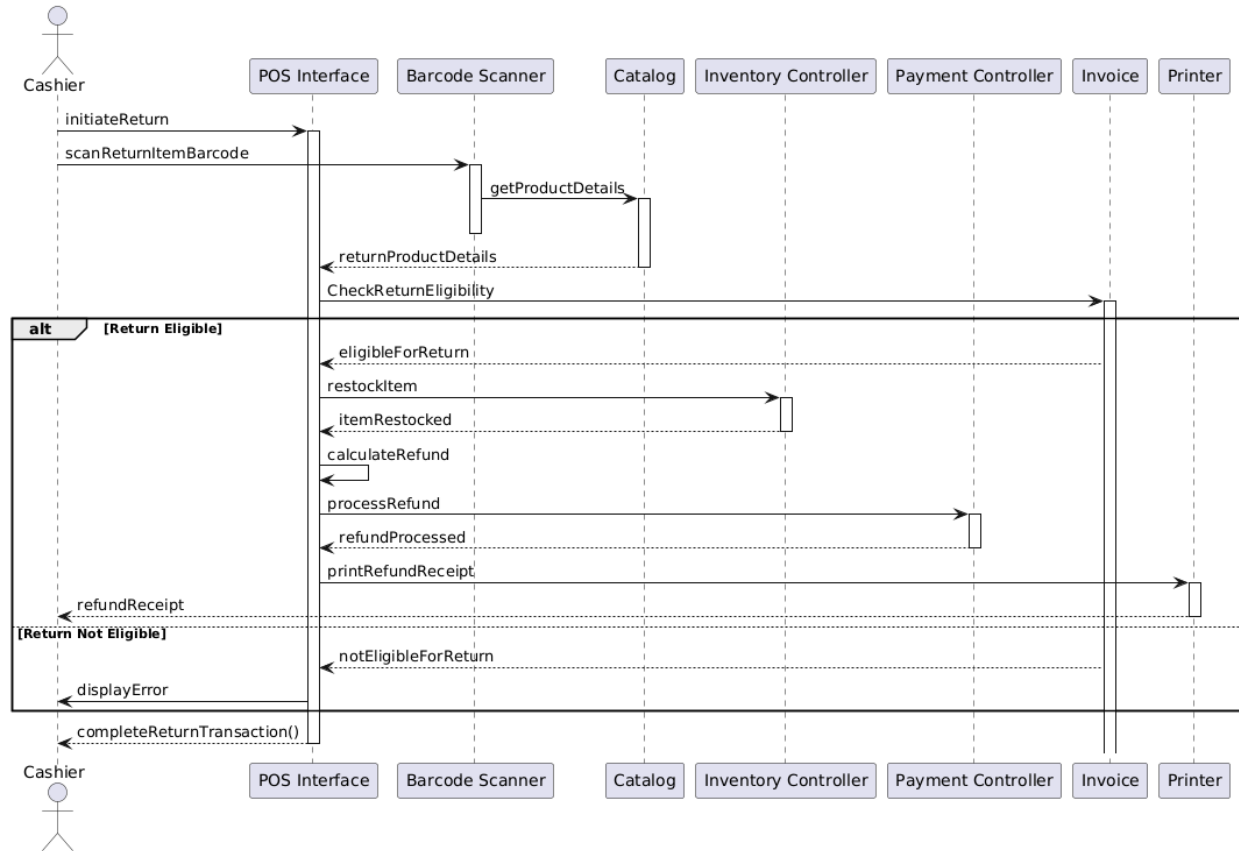
Boundary Object: POS Interface,Barcode scanner,Payment Interface,Printer

3. Develop Sequence Diagrams:

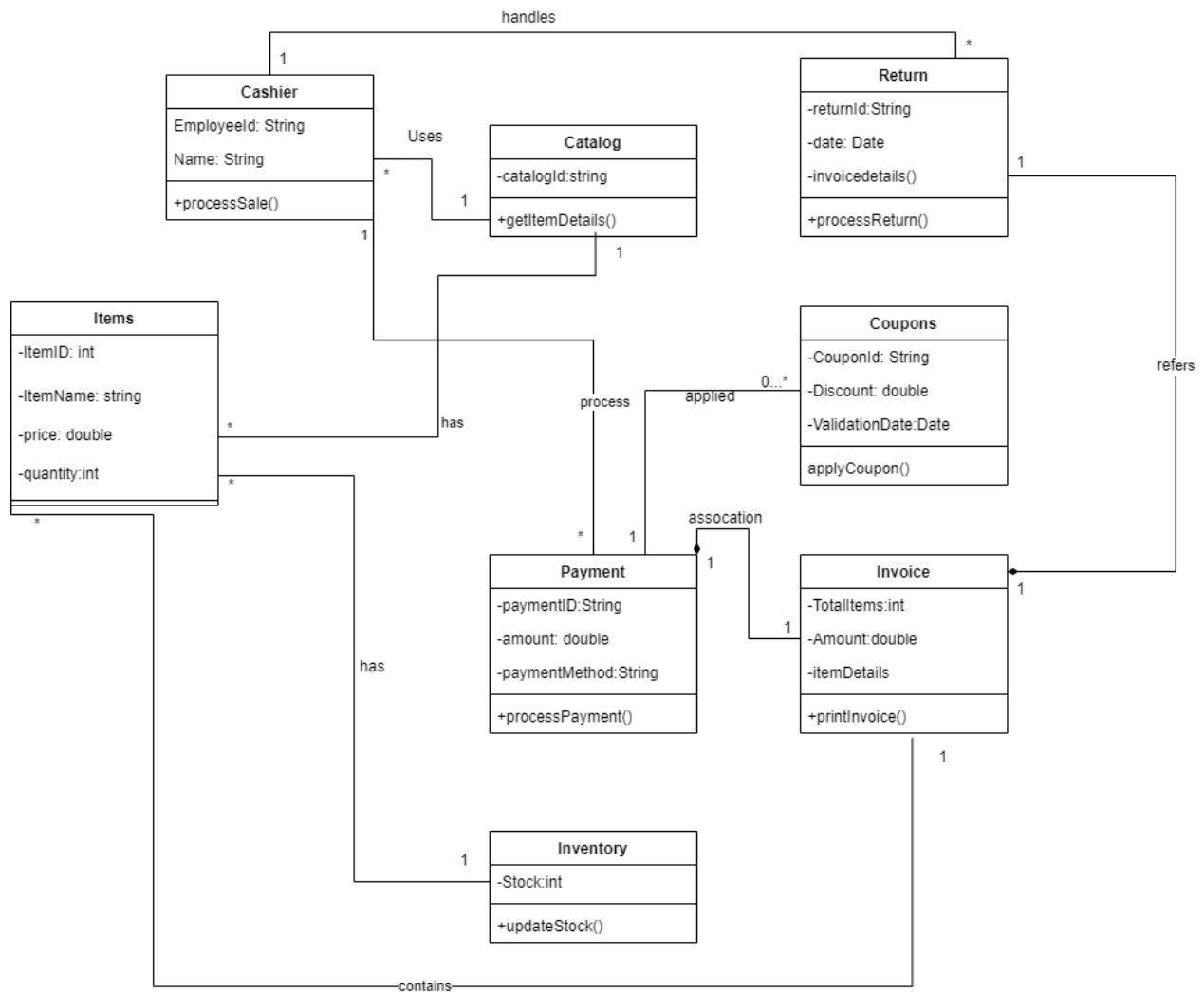
- For Process Sale:



- For Handle Return:

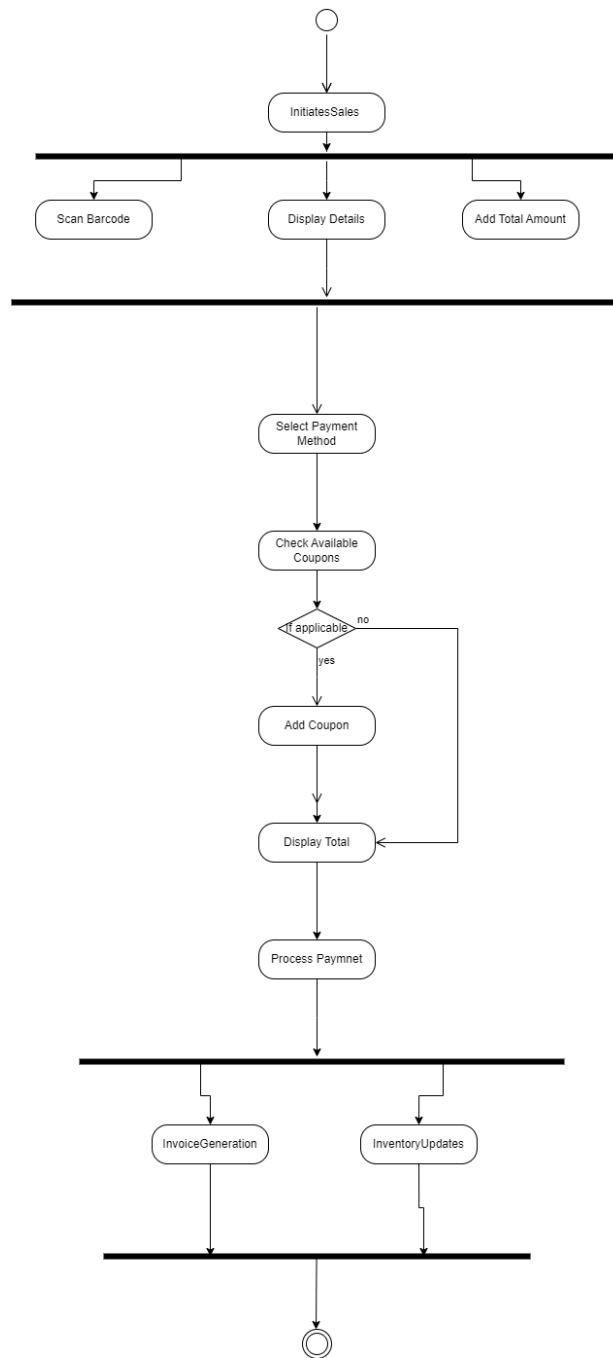


4. Develop Analysis Domain Models



5. Develop activity diagrams:

- For "Process Sale"



- For "Handle Return"

