Software Engineering

Lab - 6

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

Use Case: Process Sale

- Actors: Cashier

- Stakeholders: Customer

- Preconditions: Cashier is logged into the POS system.

- Postconditions:

- Payment and sales transaction is completed.
- Item quantity is updated.
- Invoice is printed.

- Main Flow:

1. Cashier initiates a new sale.
2. Cashier scans items.
3. POS system retrieves details and checks stock.
4. If in stock, the item is added to the transaction.
5. Steps 2-4 are repeated for all items.
6. Cashier reviews total with the customer.
7. Customer selects a payment method.
8. POS system processes payment based on the method chosen.
9. Upon successful payment, receipt is printed and handed to the customer.

- Alternative Flows:

- Item Not in Stock: System notifies the cashier; cashier can remove the item or suggest alternatives.

- Payment Failure: System prompts to retry payment or choose a different method.

Use Case: Handle Return

- Actors: Cashier

- Stakeholders: Cashier, Customer

- Preconditions:

- Cashier is logged into the POS system.
- Customer has the goods to be returned with the original receipt.

- Postconditions:

- Return transaction is completed.
- Inventory is updated.

- Return receipt is printed, if applicable.

- Main Flow:

1. Cashier initiates a return.
2. Cashier scans the item for return.
3. POS retrieves details and checks original sale.
4. System verifies return eligibility.
5. If eligible, the system processes the return and updates inventory.
6. Refund is processed (cash, credit, or store credit).
7. Cashier informs the customer of successful return.
8. System prints a return receipt, and cashier hands it over to the customer.

- Alternative Flows:

- Item Not Eligible for Return: System informs the cashier, who notifies the customer.

- Refund Processing Issue: System alerts the cashier to suggest alternatives (store credit, future purchase).

2. Identify Entity,Boundary,Control Objects

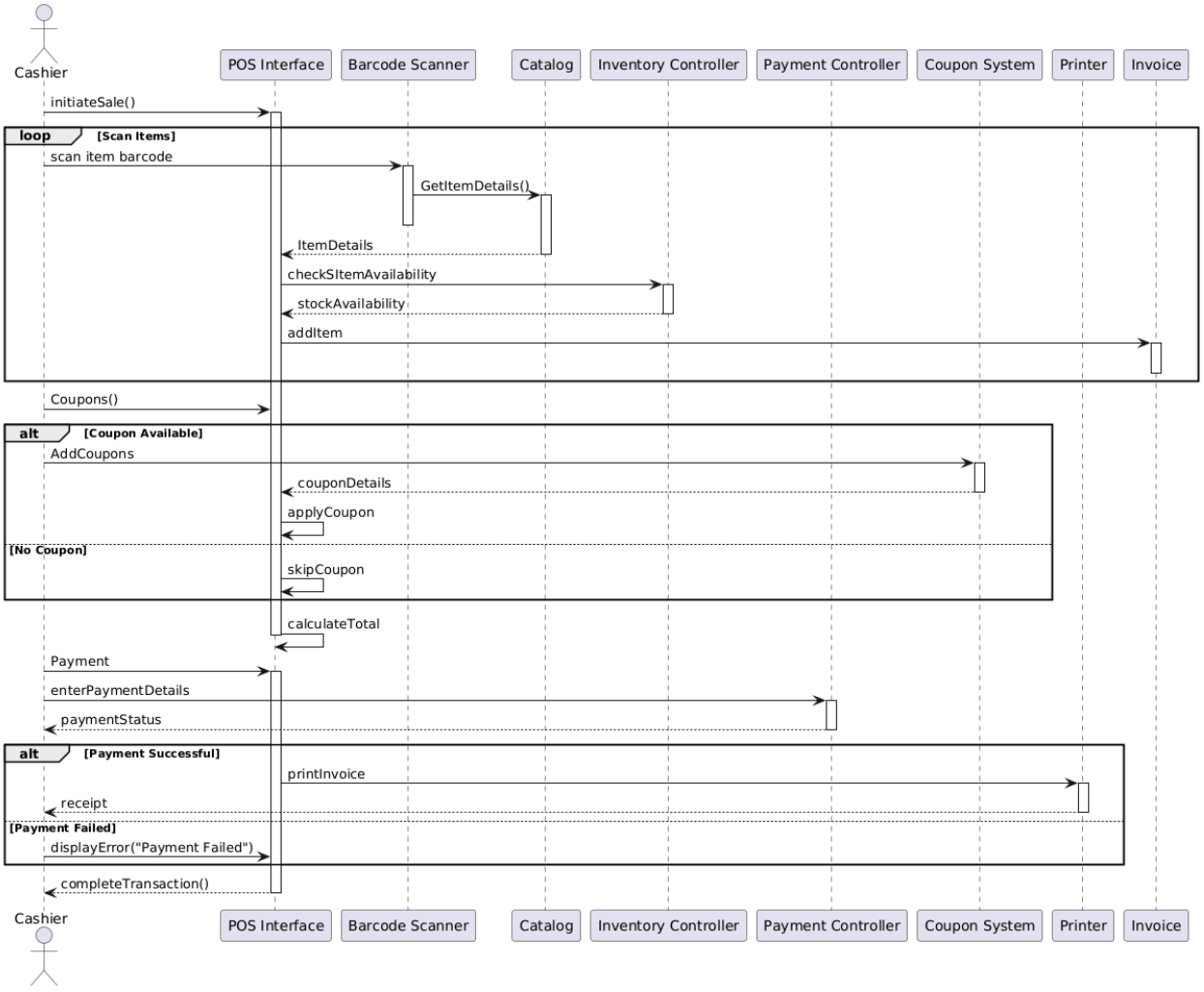
Entity Object: Item,Inventory,Catalog,Cashier,Payment,Invoice,Coupons.

Control Object: Inventory Controller,Payment Controller

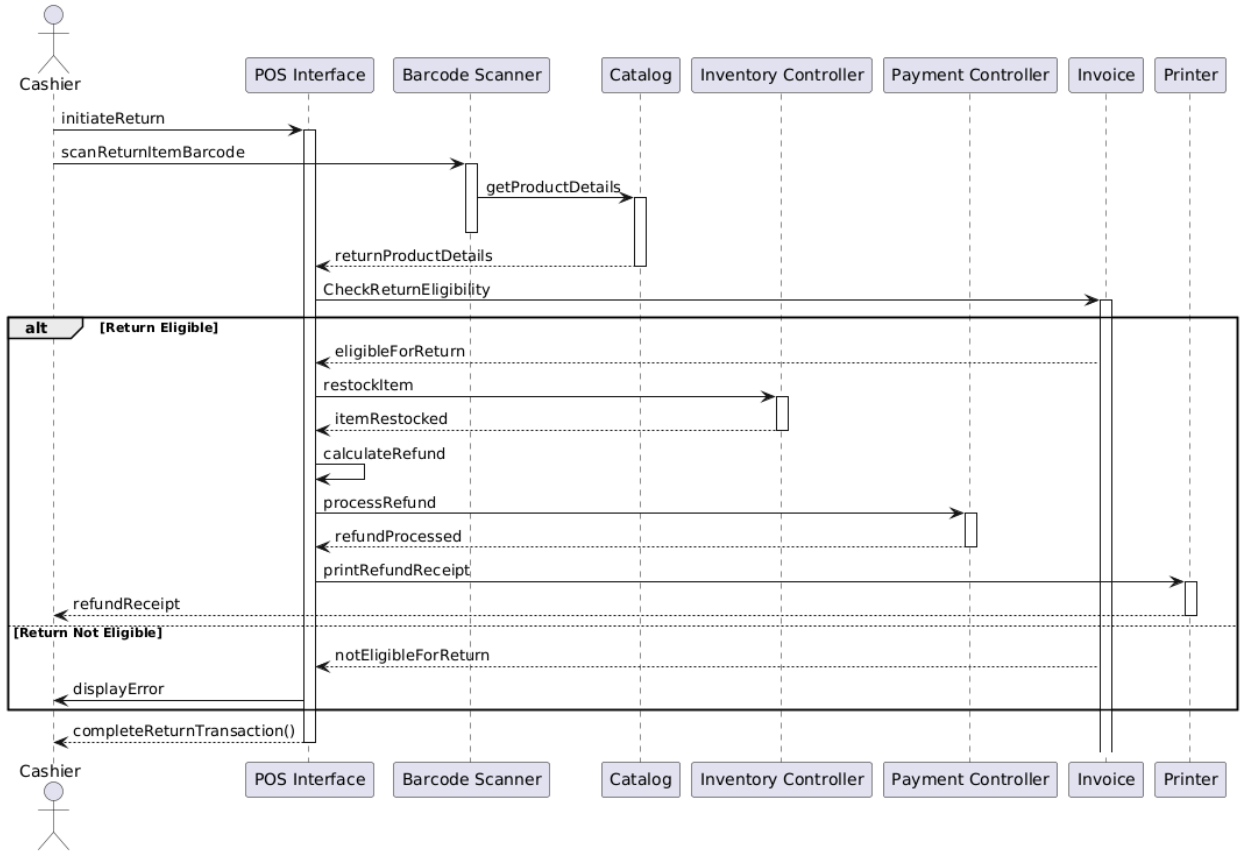
Boundary Object: POS Interface,Barcode scanner,Payment Interface,Printer

3. Develop Sequence Diagrams:

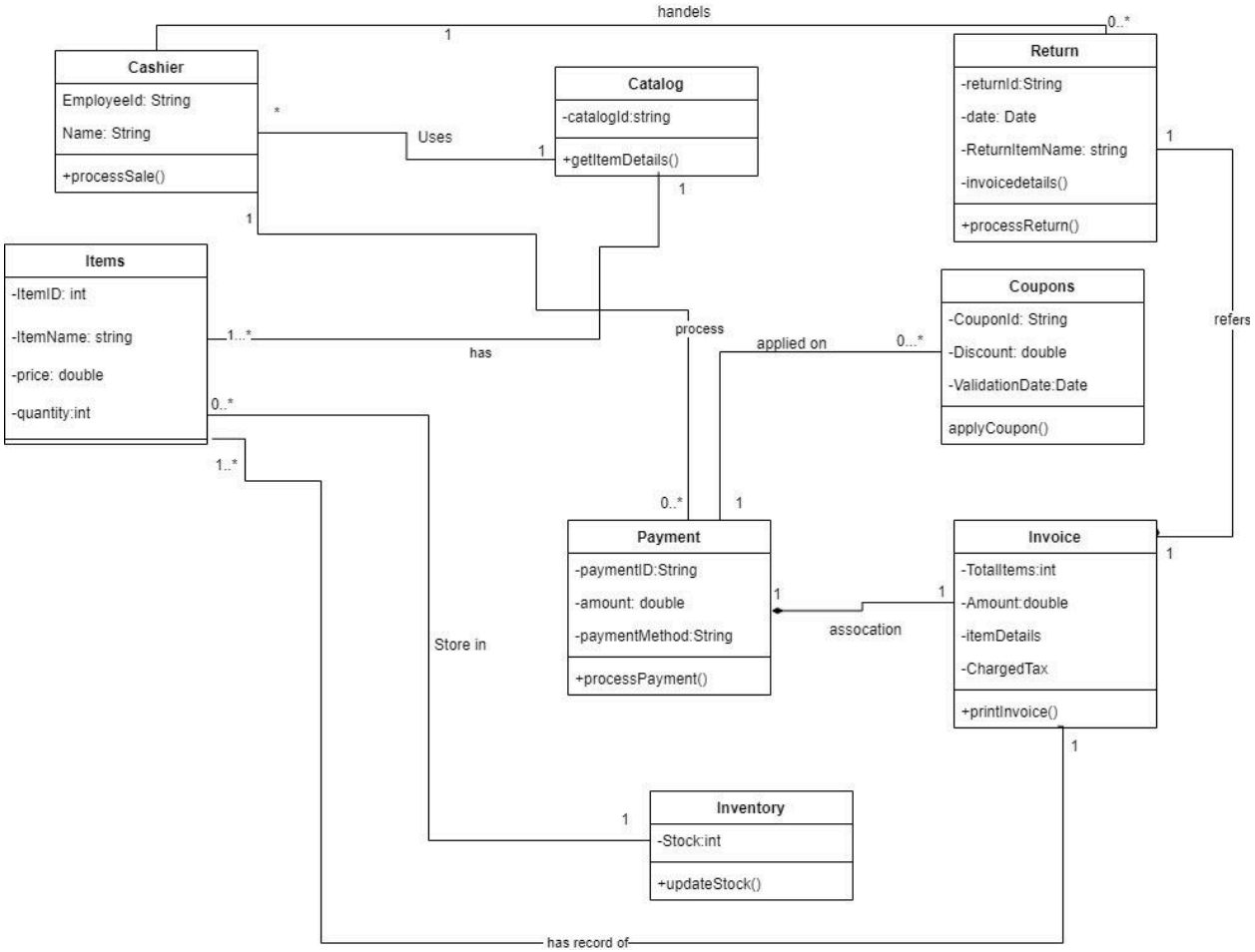
- For Process Sale:



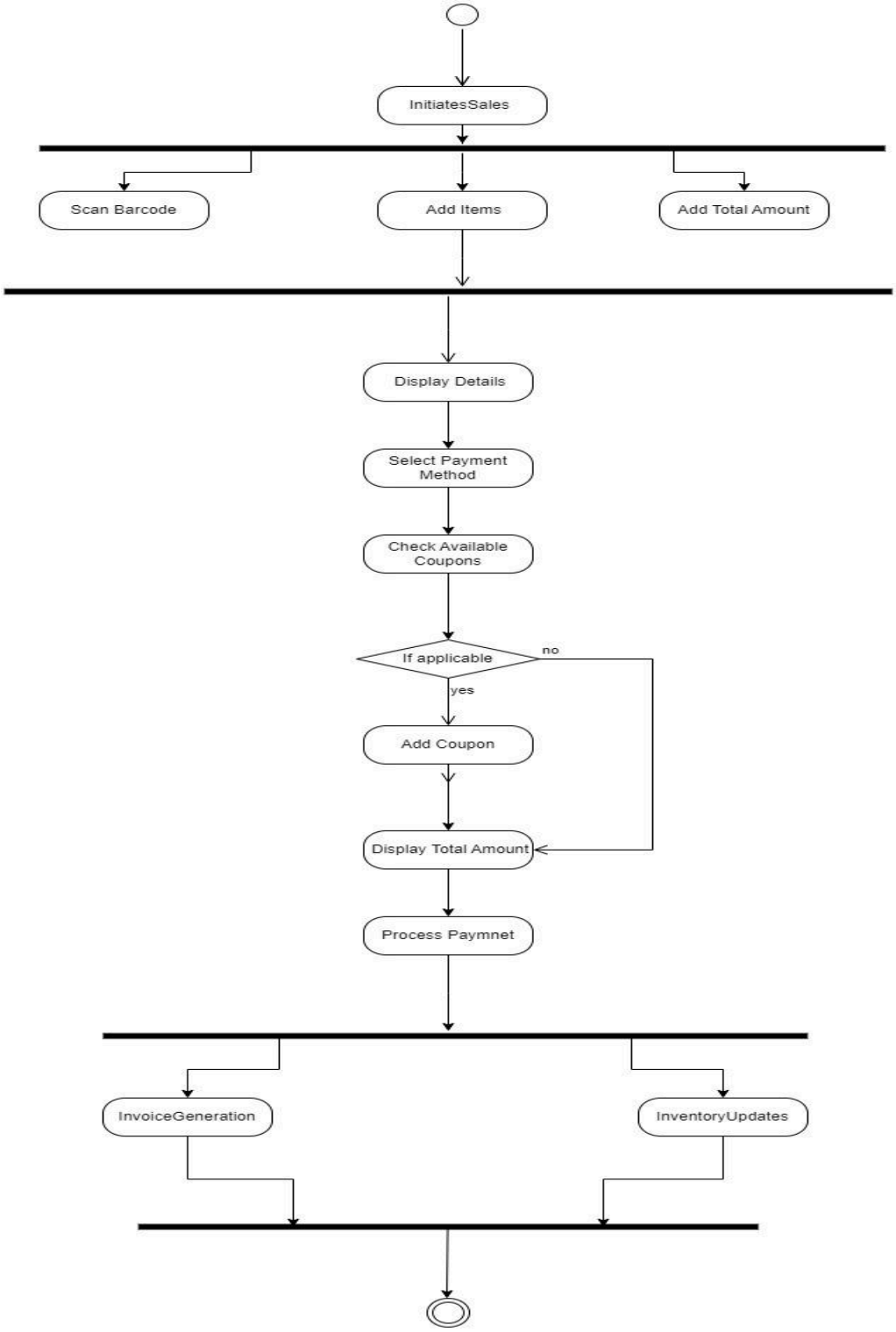
- For Return Handle:

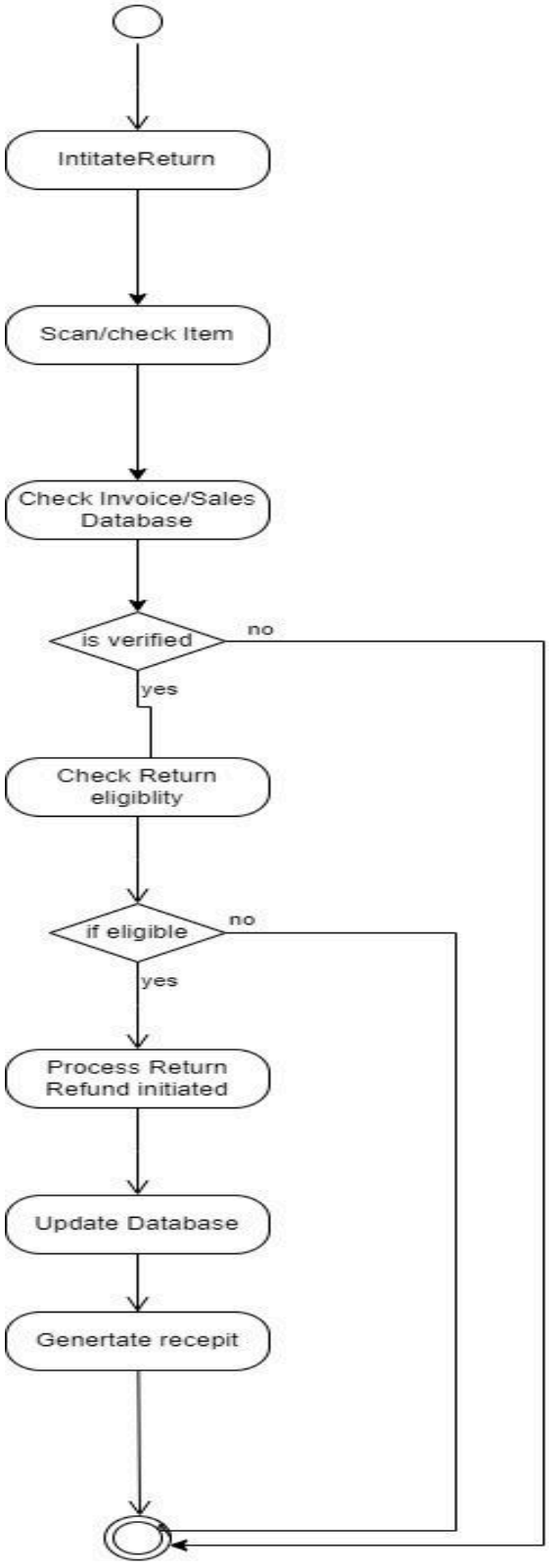


4. Develop Analysis Domain Models



5. Develop activity diagrams:




IntitateReturn
Scan/check Item
Check Invoice/Sales Database
is verified
no
yes
Check Return eligiblity
if eligible
no
yes
Process Return Refund initiated
Update Database
Genertate recepit