IT-314

Lab-06

Modeling Class Diagram and Activity Diagram

(Point of Sale System)

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Task 1: Use Case Textual Descriptions for "Process Sale" and "Handle Return" Use Cases

Use Case 1: Process Sale

Actor(s):

- Cashier
- Catalog System (external actor)
- Inventory System (external actor)

Precondition:

- The cashier must be logged in.
- The items must be available in the catalog and inventory system.

Postcondition:

- The sale is completed and recorded in the system.
- Inventory levels are updated in the inventory system.
- A receipt is printed for the customer.

Main Flow:

1. The cashier initiates a new sale.
2. The cashier scans an item.
3. The system retrieves the item details from the catalog.
4. The system deducts the item's quantity from the inventory.
5. The cashier repeats steps 2-4 for all items.
6. The customer selects a payment method.
7. The system processes the payment (cash, credit card, etc.).
8. After payment confirmation, the system prints a receipt.

Alternative Flow:

- If an item is not found in the catalog, the cashier is alerted.
- If there is insufficient stock, the cashier is notified to inform the customer.
- If payment fails, the cashier can attempt the payment again or cancel the sale.

Use Case 2: Handle Returns

Actor(s):

- Cashier
- Inventory System (external actor)

Precondition:

- The cashier must be logged in.
- The returned item must have been part of a previous sale.

Postcondition:

- The return is processed, and stock is updated in the inventory system.
- The customer receives the appropriate refund or store credit.

Main Flow:

1. The cashier initiates a return transaction.
2. The cashier scans the returned item(s) and verifies the original sale if necessary.
3. The system retrieves the item(s) information from the inventory system.
4. The cashier confirms that the return complies with the return policy.

5. The system updates the inventory by adding the returned item(s).
6. The system issues a refund or store credit to the customer.

Alternative Flow:

- If the return period has lapsed, the system alerts the cashier to decline the return.
- If the item is damaged or missing, the return may be partially refunded or denied.

Task 2: Identification of Entity, Boundary, and Control Objects

Entity Objects:

- Sale
- Product
- Payment:
- Receipt
- Return

Boundary Objects:

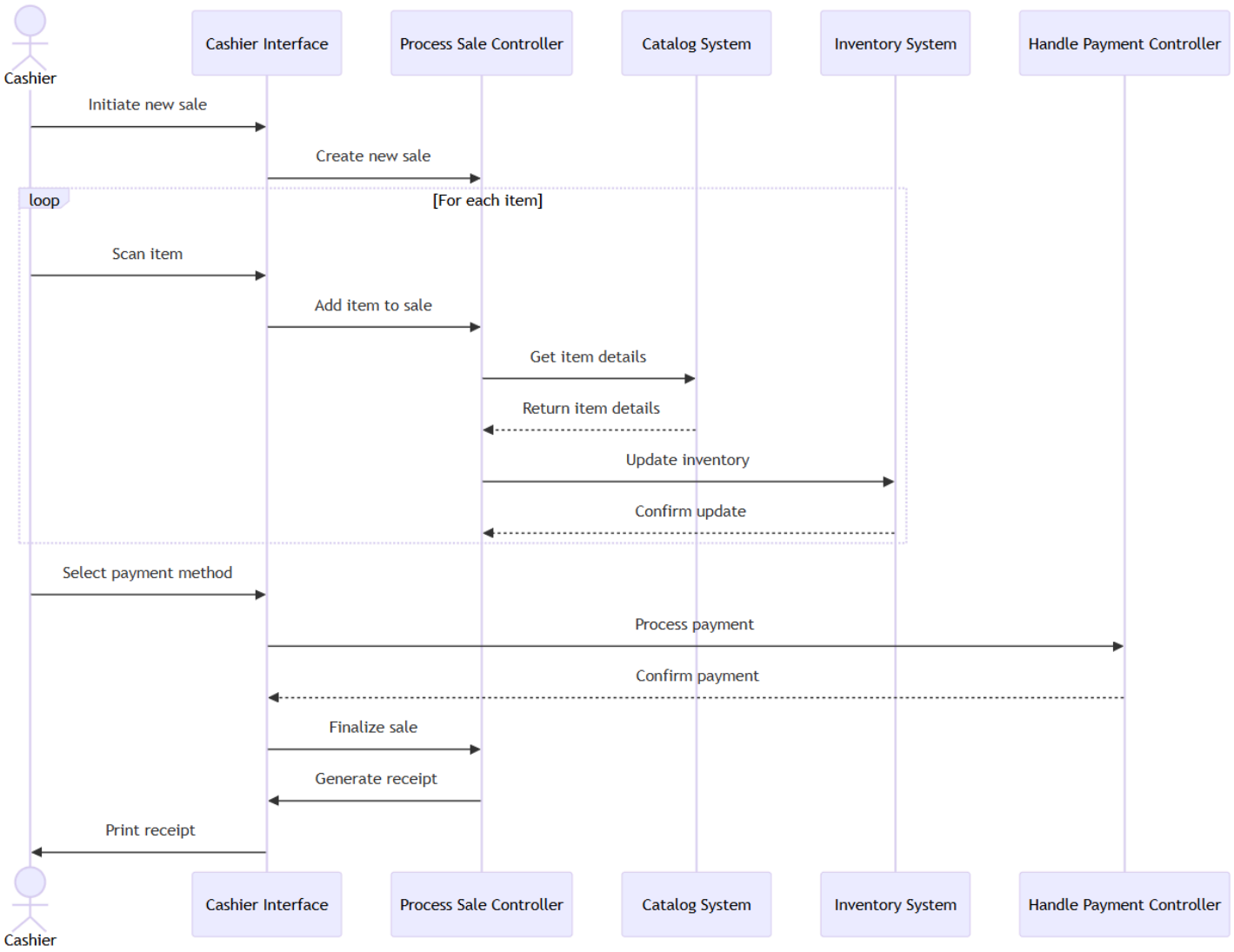
- Cashier Interface
- Catalog System
- Inventory System

Control Objects:

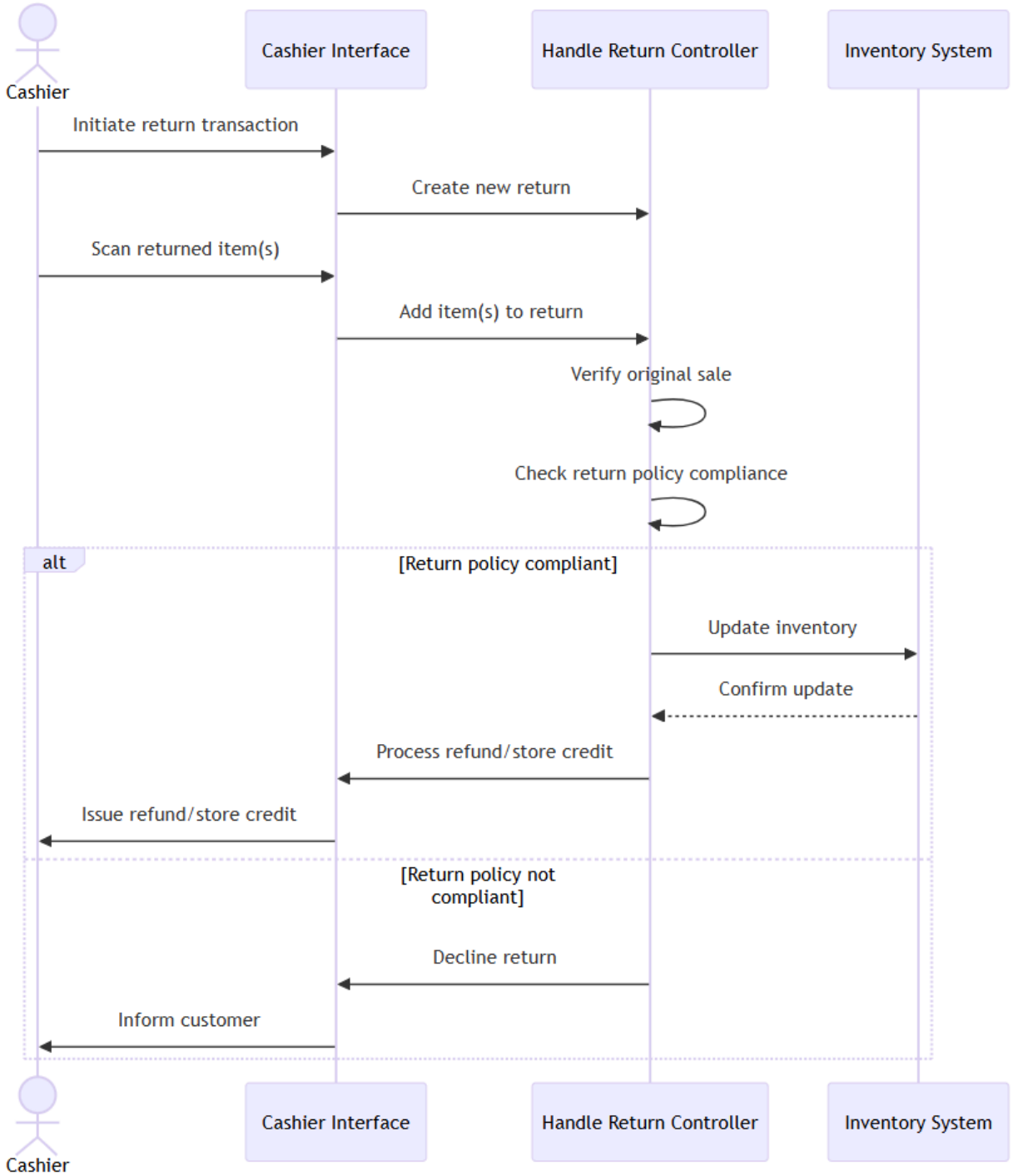
- Process Sale Controller
- Handle Payment Controller
- Handle Return Controller

Task 3: Develop Sequence Diagrams

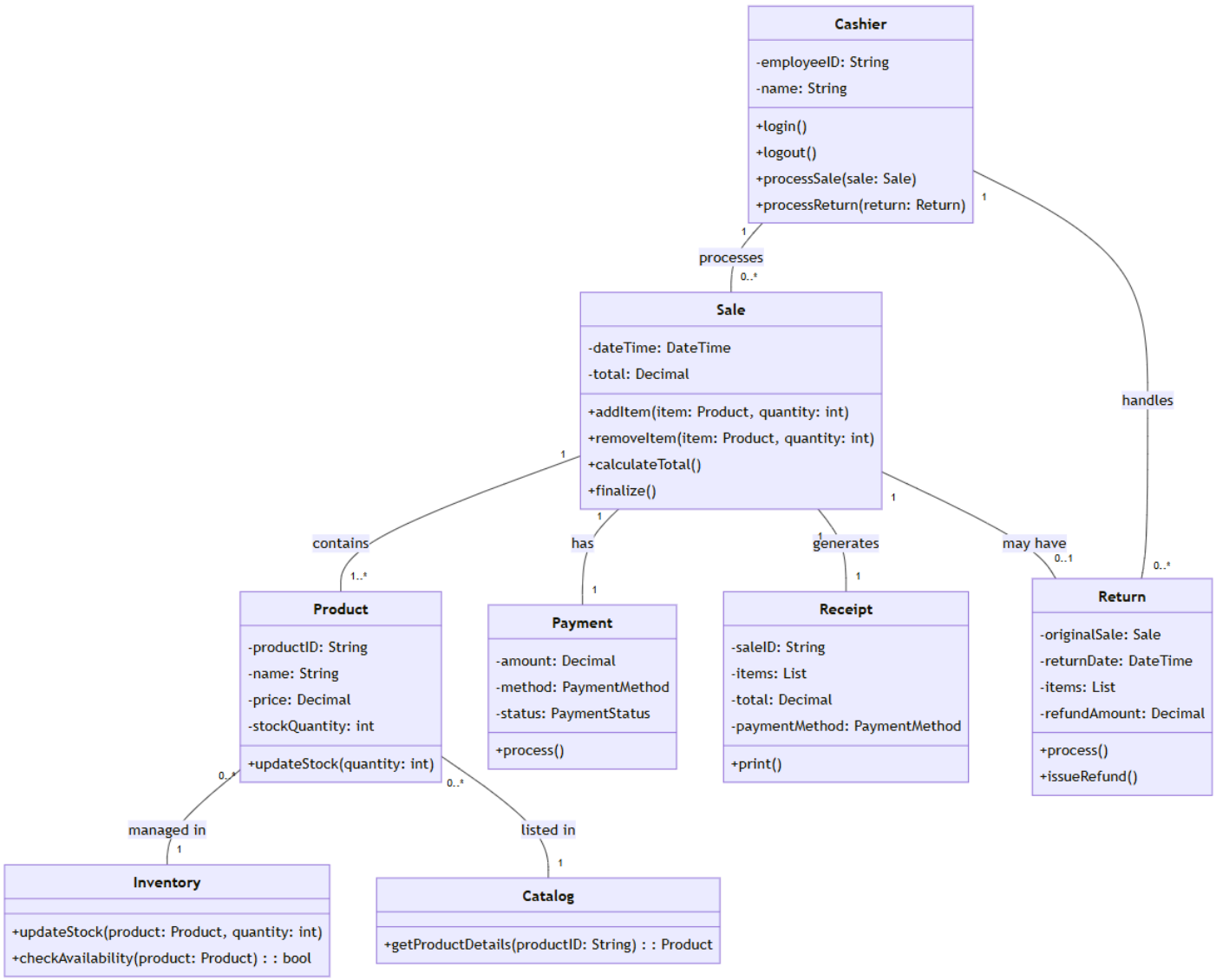
- **Process Sale**



- **Handle Return**

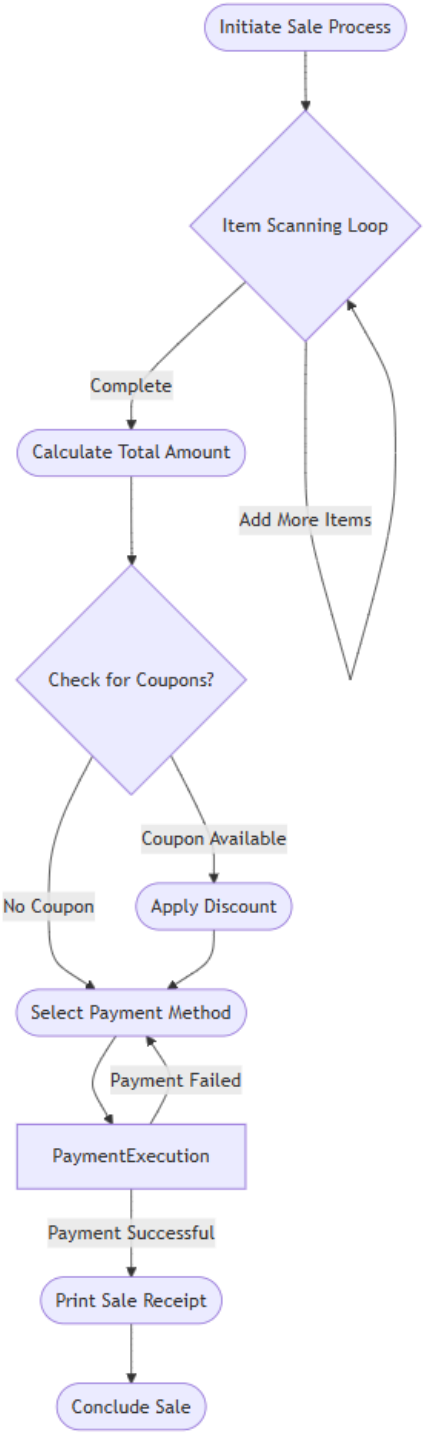
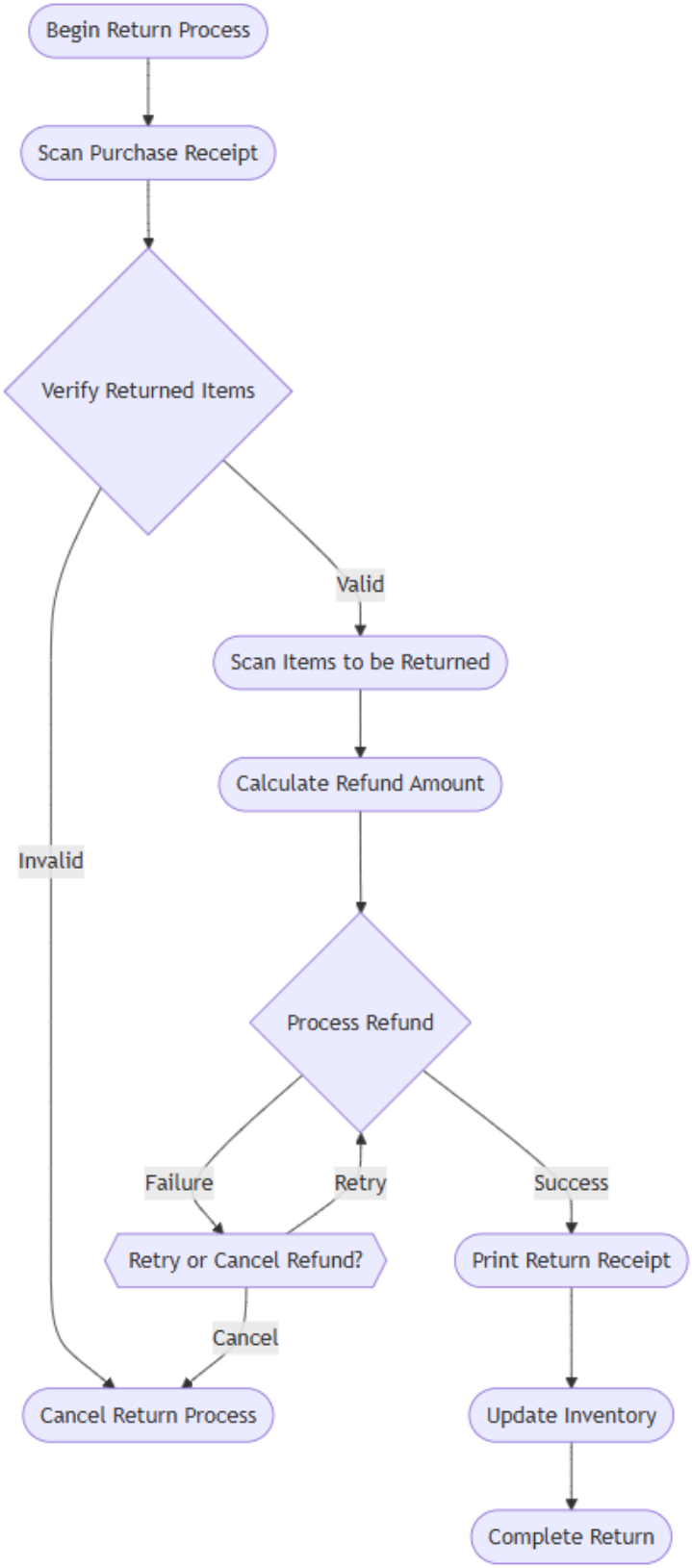


Task 4: Develop Analysis Domain Models



Task 5: Develop activity diagram for "Process Sale" and "Handle Return" use cases.

- **Process Sale**



- **Handle Return**