Dhirubhai Ambani
Institute of Information & Communication Technology

Lab 06: IT314

Software Engineering

Divyarajsinh Chundavat - 202201155

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

   Use-Case 1: Process Sale

   Use case name: Process sale

   Actors:

   - Cashier
   - External actor: Catalog System & Inventory System

   Preconditions:

   - The cashier must be logged into the system.
   - All items must be available in both the catalog and inventory systems.

   Postconditions:

   - The sale is finalized and recorded in the system.
   - Inventory is updated accordingly.
   - A receipt is generated and 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 updates the inventory by changing the item's quantity.
   5. Steps 2-4 are repeated for all items being purchased.
   6. The customer selects a payment method.
   7. The system processes the payment option (cash, credit card, etc.).
   8. After payment confirmation, the system produces a receipt.

   Alternative Flow:

   1. If an item cannot be located in the catalog, the cashier receives an alert.
   2. If stock levels are insufficient, the cashier is informed to update the customer.
   3. If payment is unsuccessful, the cashier has the option to retry the payment or cancel the transaction.

Use Case 2: Process Returns

Use case name: Process Returns

Actors:

- Cashier
- External actor: Inventory system

Preconditions:

- The cashier must be logged into the system.
- The item being returned must have been purchased in a previous sale.

Postconditions:

- The return is completed, and inventory levels are updated.
- The customer receives the appropriate refund or store credit.

Main Flow:

1. The cashier initiates a new return process.
2. The cashier scans the returned item(s) and, if necessary, verifies the original transaction.
3. The system retrieves the item(s) data from the inventory system.
4. The cashier checks that the return complies with the store's return policy.
5. The system updates the inventory by adding the returned item(s) back in.
6. The system processes the refund or issues store credit to the customer.

Alternative Flow:

1. If the return window has closed, the system alerts the cashier to deny the return.
2. If the item is found to be damaged or incomplete, the return may be partially refunded or denied.

2. Identify Entity/Boundary Control Objects

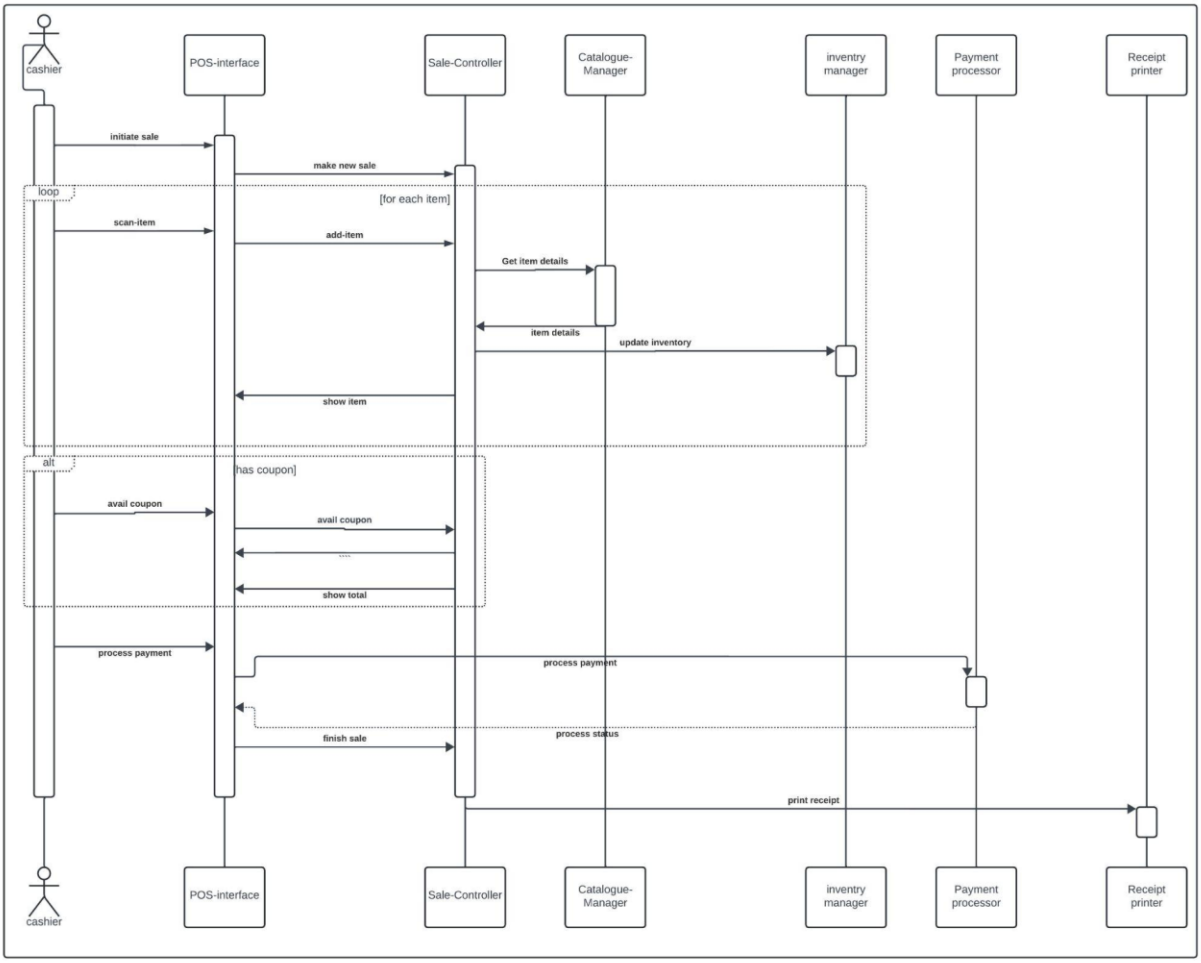
Entity objects: Product, Payment and Receipt

Boundary Objects: Inventory system, Catalog system and Cashier interface

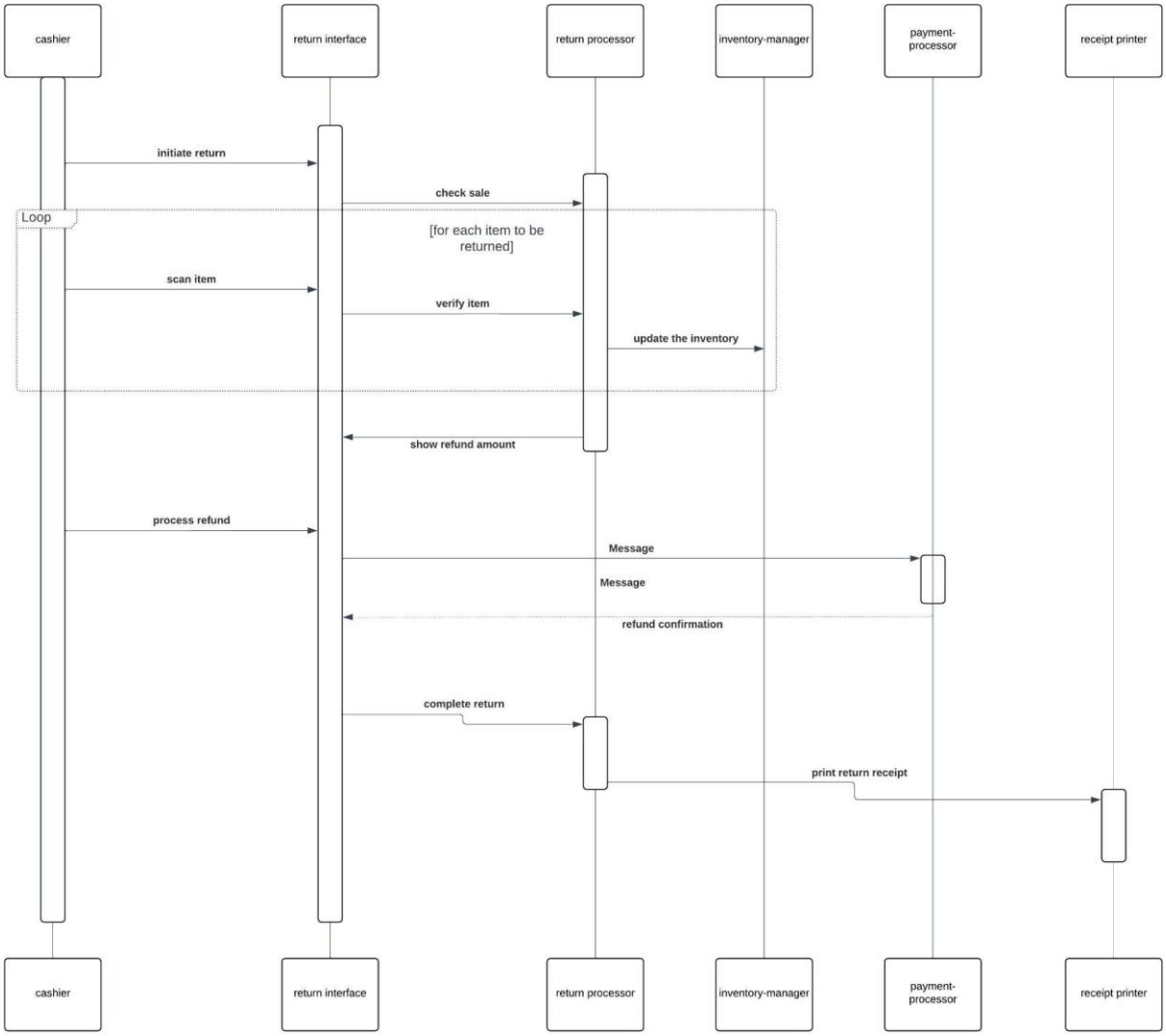
Control Objects: Process Sale Controller, Handle Payment Controller and Handle Return Controller

3. Develop Sequence Diagrams

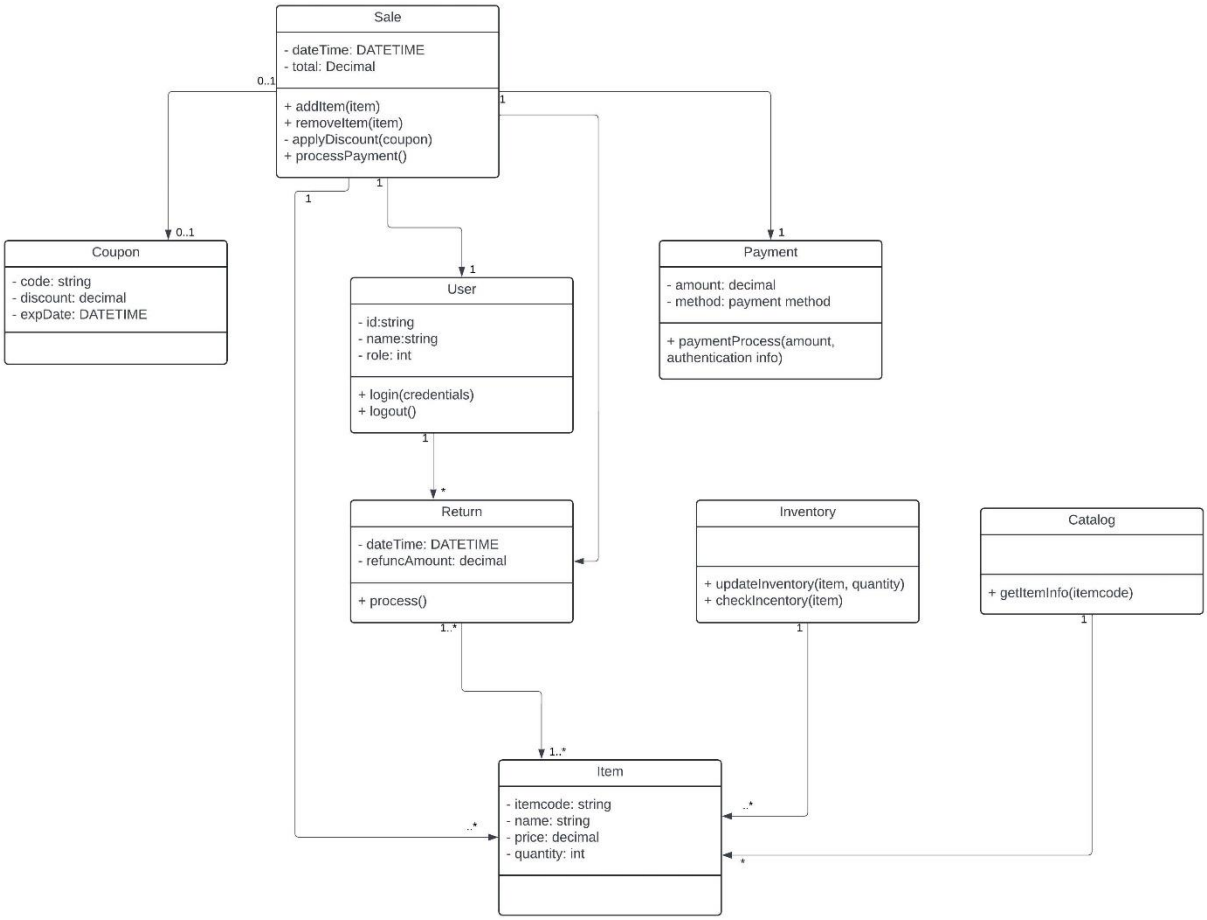
Process sale



Handle return

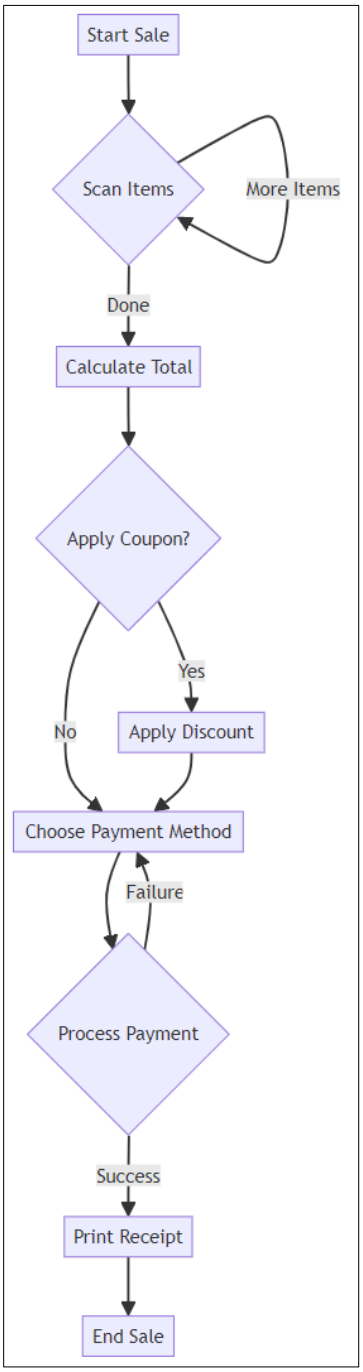


4. Develop Analysis Domain Models



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

Process sale:



Handle return: