

IT313: Software Engineering

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

Use Case 1: Process Sale

Primary Actor: Cashier

Preconditions:

- The cashier is logged into the POS system.
- Goods are available in the inventory, and product details are stored in the catalog system.

Main Flow:

- The cashier scans the barcode of each product the customer wants to purchase.
- The POS system retrieves the product name and price from the catalog system.
- The system interacts with the inventory system to update stock levels by deducting the number of sold items.
- The cashier initiates the payment process.
 - The customer can choose to pay with cash, credit card, or check.
 - If the customer has a gift coupon, the cashier processes the coupon.
- Once the payment is confirmed, a receipt is printed, and the sale transaction is completed.

Postconditions:

- The transaction is stored in the system.
- Inventory stock levels are updated.
- The customer receives the printed receipt.

Alternative Flow:

- If the barcode scan fails, the cashier enters the product details manually.
- If payment fails, the cashier is notified, and the transaction can be retried or canceled.

Use Case 2: Handle Return

Primary Actor: Cashier

Preconditions:

- The cashier is logged into the POS system.
- The customer has the item to return, possibly with the receipt.

Main Flow:

- The customer presents the item for return, and the cashier scans the item or receipt.
- The POS system verifies the purchase by checking previous sale records.
- The system updates the inventory, adding the returned item back to stock.
- The cashier processes the refund. The refund can be issued via cash, store credit, or returned to the credit card.
- A return receipt is printed for the customer.

Postconditions:

- The transaction is logged, and the inventory is updated.
- The customer receives a return receipt.

Alternative Flow:

- If the item does not match any previous transaction, the cashier is notified, and the return is rejected.

Identify Entity/Boundary Control Objects

Entity Objects:

- SaleTransaction
- Product
- Payment
- ReturnTransaction

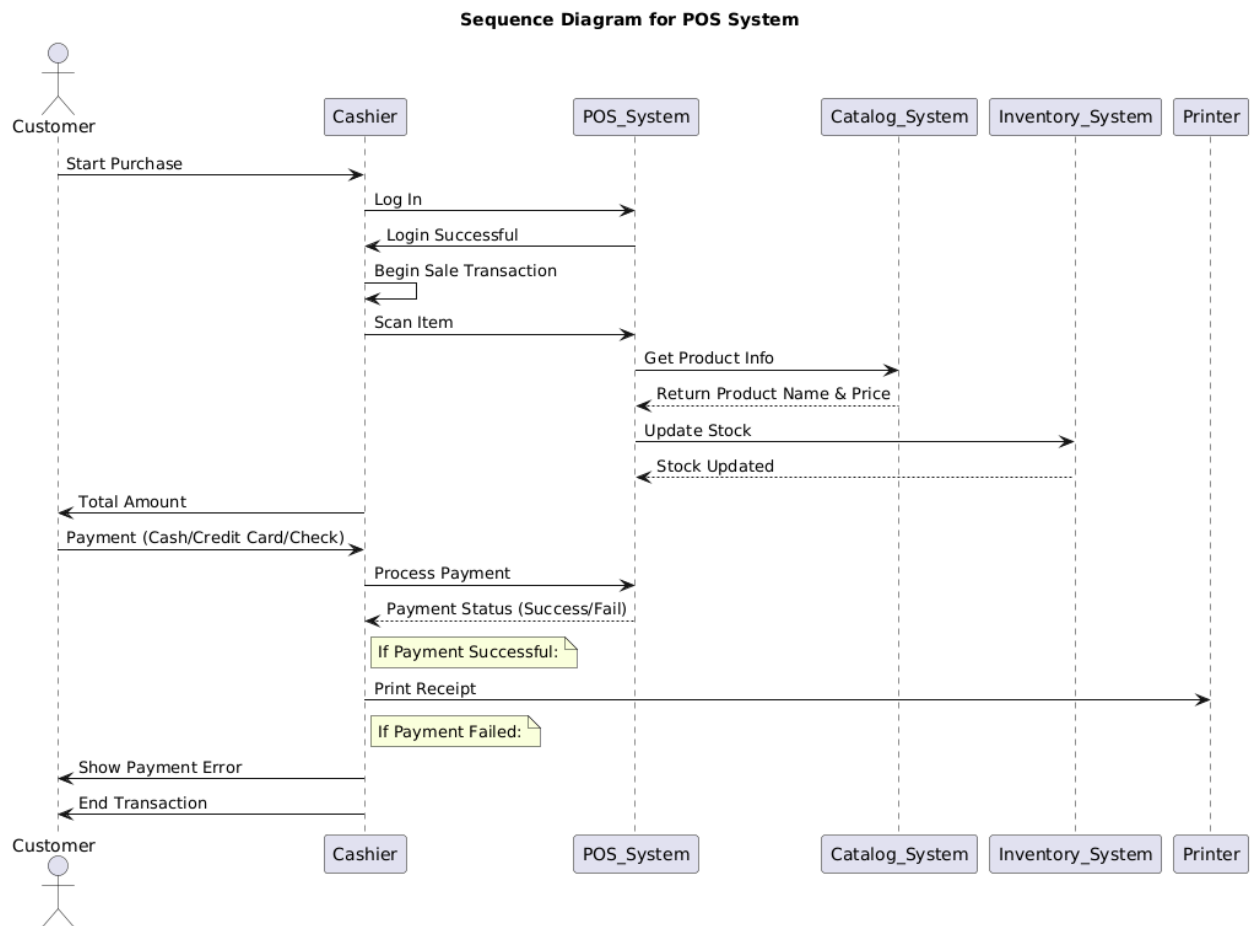
Boundary Objects:

- POSInterface
- ReceiptPrinter
- CatalogSystem
- InventorySystem

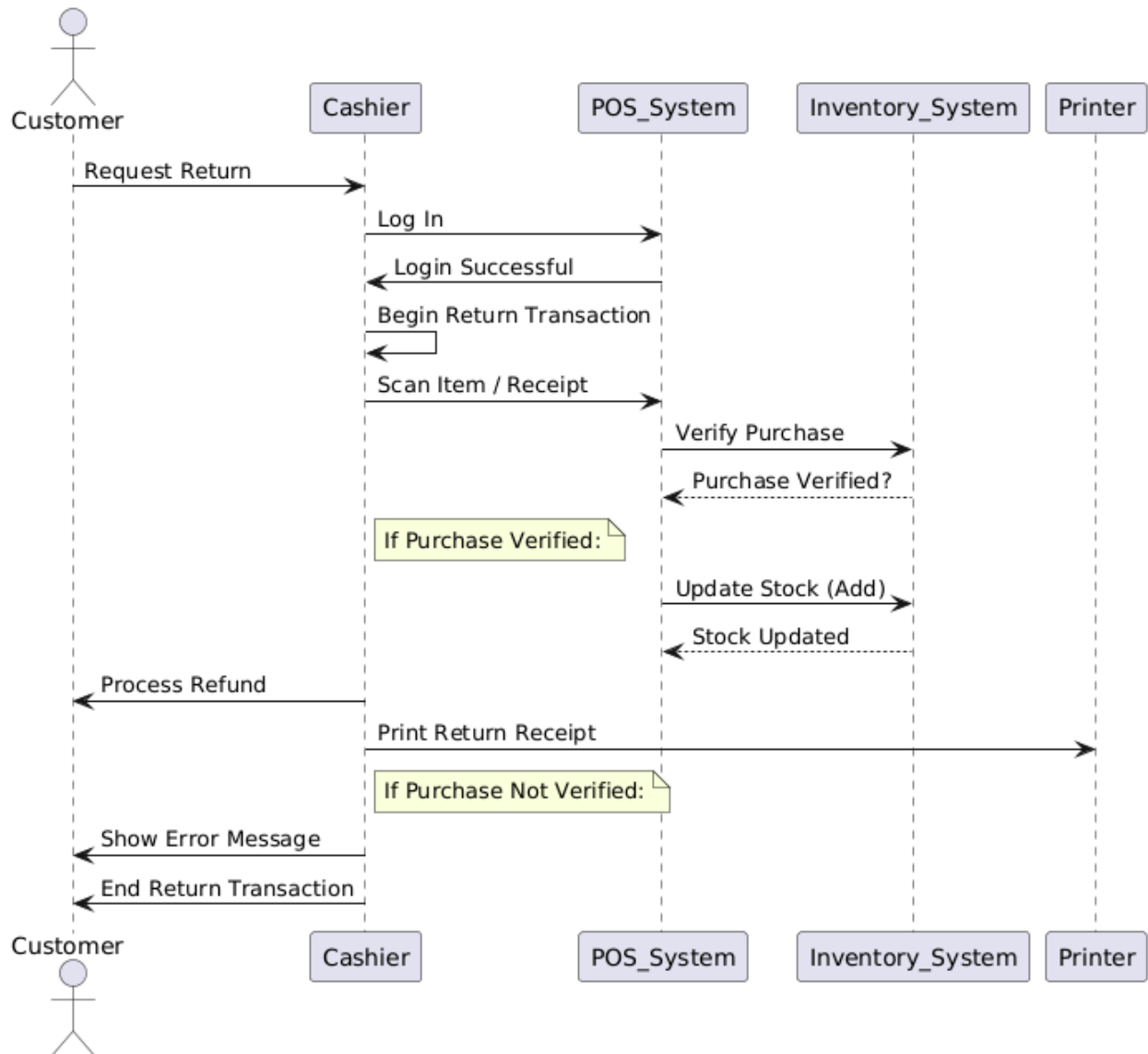
Control Objects:

- SaleController
- ReturnController

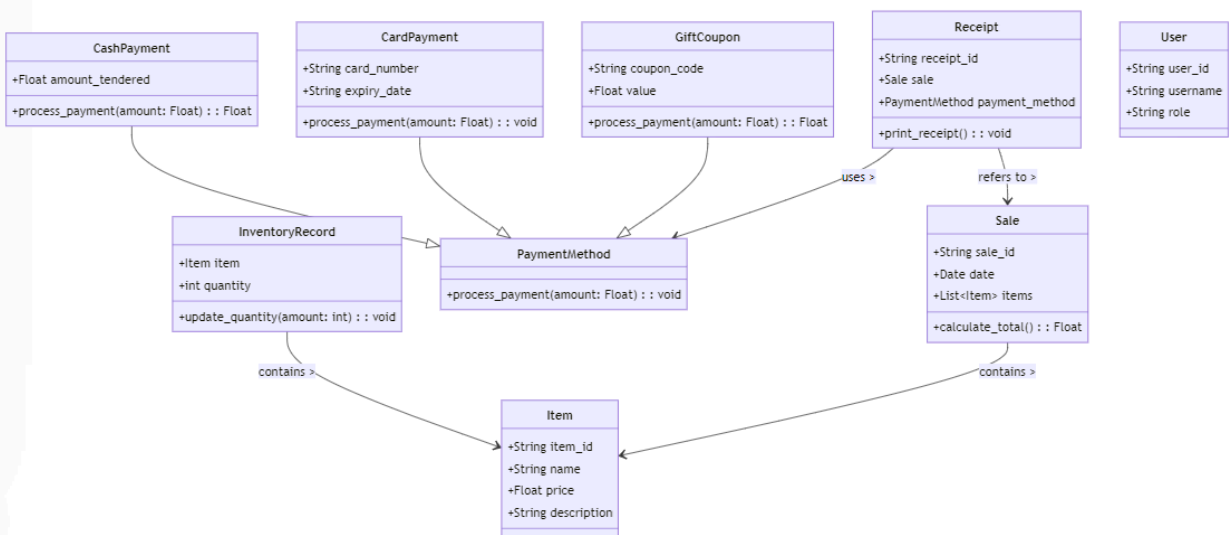
Develop Sequence Diagrams



Sequence Diagram for Handle Return

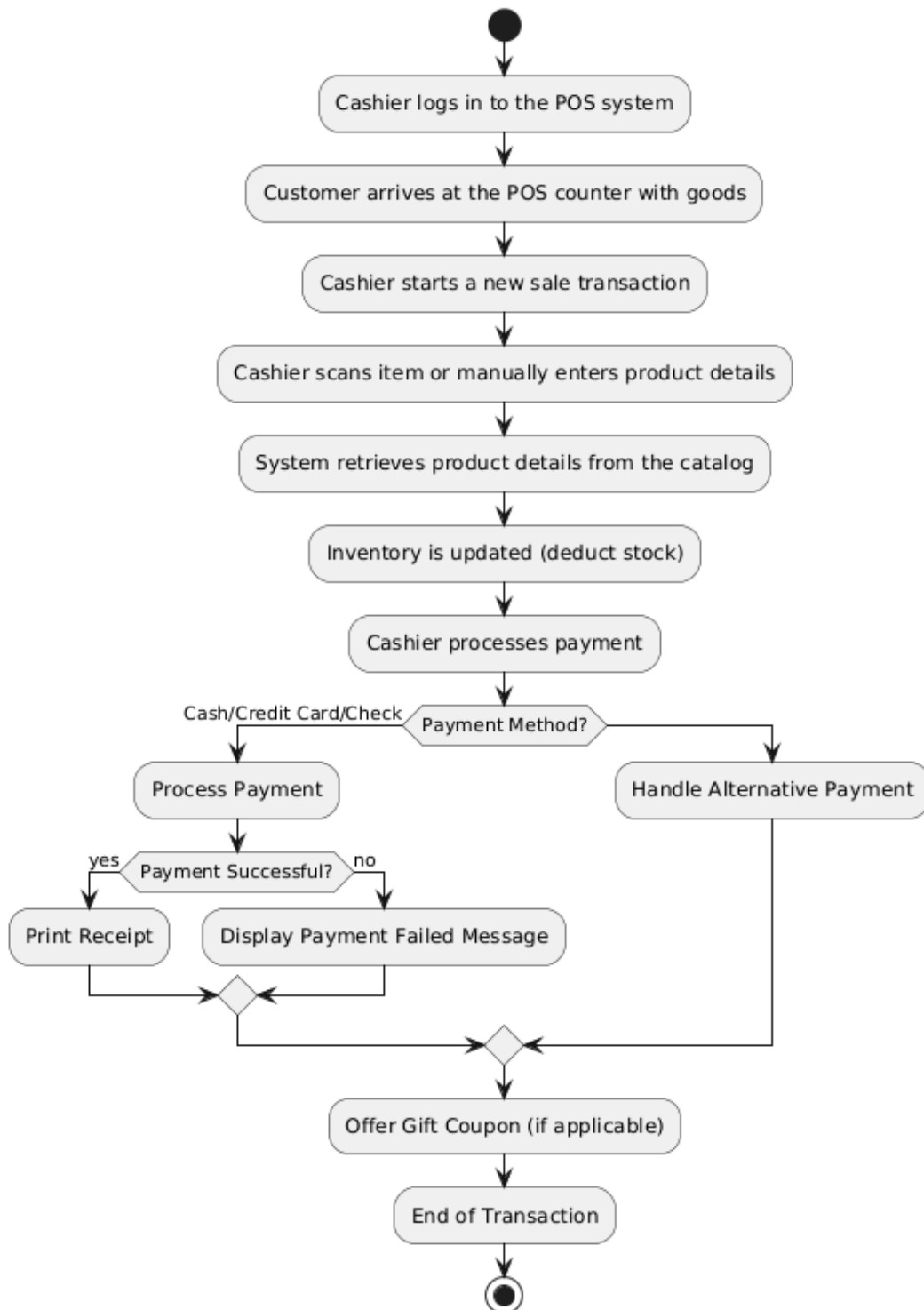


Develop Analysis Domain Models



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

Activity Diagram for Process Sale



Activity Diagram for Handle Return

