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LAB - 6

COURSE - IT314 Software engineering

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Use Case: Process Sale

Actors: Cashier, Customer

Preconditions:

- The cashier is logged into the POS system.
- The customer has goods ready for purchase.

Postconditions:

- The sale transaction is completed.
- Inventory is updated.
- A receipt is printed for the customer.

Main Flow:

1. The cashier starts a new sale transaction.
2. The cashier scans the barcode of the first item.
3. The POS system retrieves the name and price of the item from the backend catalog.
4. The system checks inventory and updates stock levels accordingly.
5. The cashier repeats steps 2-4 for each item.
6. The cashier asks the customer for payment method.
7. The customer pays using cash, credit card, or check.
8. The POS system processes the payment.
9. The system prints a receipt.
10. The cashier completes the transaction and thanks the customer.

Alternate Flow:

- **If the item is not found in the catalog:**
 - The system notifies the cashier that the item is not available.
 - The cashier can either remove the item from the transaction or ask the customer for assistance.

- **If payment is unsuccessful:**
 - The system notifies the cashier of the payment failure.
 - The cashier can ask the customer to try a different payment method.
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Use Case: Handle Return

Actors: Cashier, Customer

Preconditions:

- The cashier is logged into the POS system.
- The customer has goods to return.

Postconditions:

- The return transaction is completed.
- Inventory is updated to reflect returned items.
- A return receipt is printed if applicable.

Main Flow:

1. The cashier starts a new return transaction.
2. The cashier scans the barcode of the returned item.
3. The POS system verifies the item against the sales record.
4. If the item is eligible for return, the system updates the inventory.
5. The cashier processes the refund to the customer via the original payment method.
6. The system prints a return receipt.
7. The cashier thanks the customer for their return.

Alternate Flow:

- **If the item is not eligible for return:**
 - The system informs the cashier that the return cannot be processed.

- The cashier explains the return policy to the customer.
 - **If the item cannot be found in the sales record:**
 - The system notifies the cashier that the item was not purchased through the POS.
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Identified Entity/Boundary Control Objects

1. Entities:

- **Customer:** Represents the person making the purchase or return.
- **Product:** Represents items in the inventory, including name, price, and barcode.
- **Transaction:** Represents the sale or return transaction details.
- **Receipt:** Represents the printed proof of transaction.

2. Boundary Objects:

- **POS User Interface:** The interface through which cashiers interact with the system.
- **Payment Gateway:** Interface for processing payment transactions.
- **Inventory Management System:** Interface for checking and updating inventory levels.

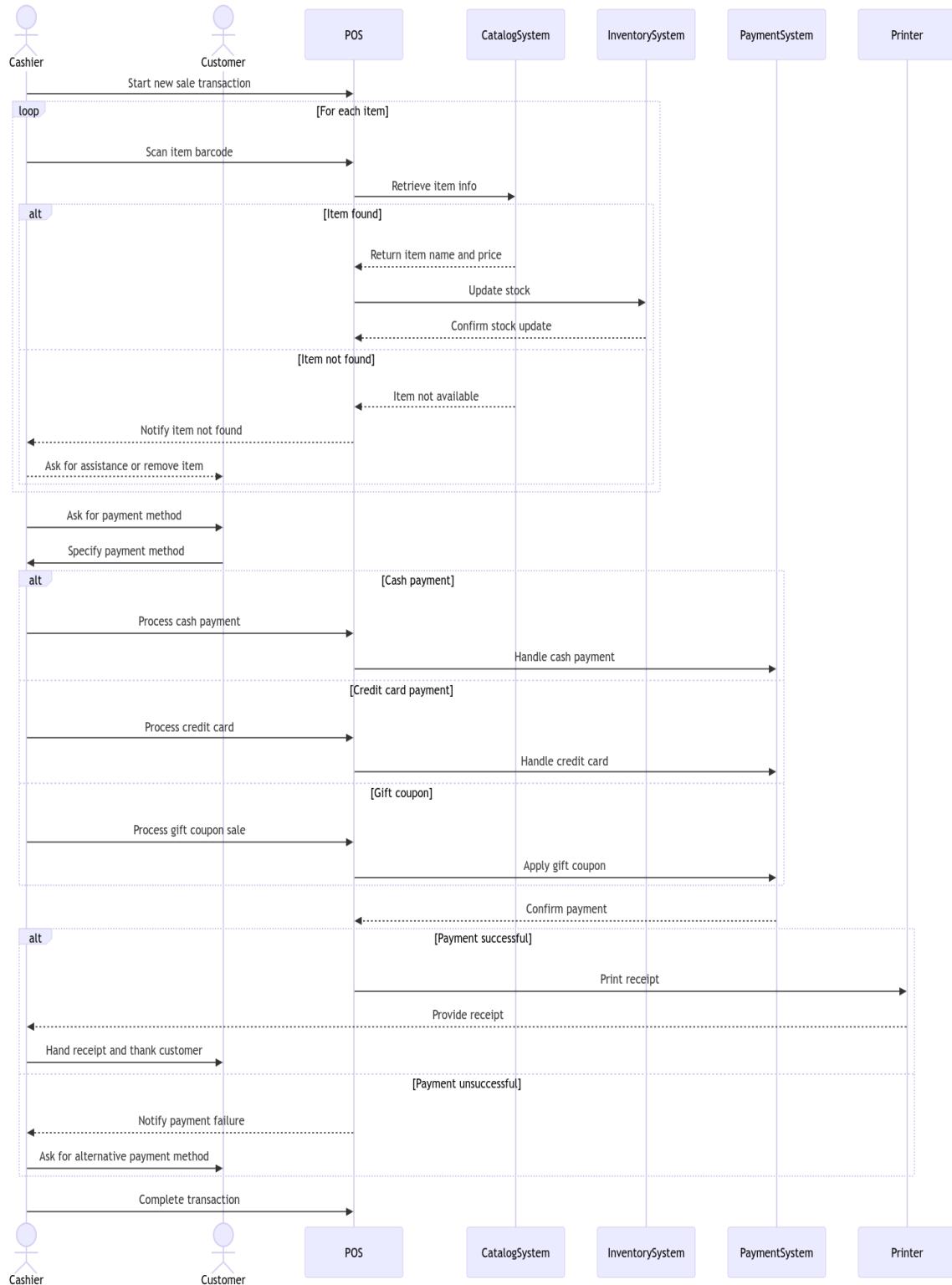
3. Control Objects:

- **SaleController:** Manages the process of completing a sale.
- **ReturnController:** Manages the process of handling returns.
- **CatalogController:** Retrieves product information from the backend catalog.
- **InventoryController:** Updates inventory levels during sales and returns.

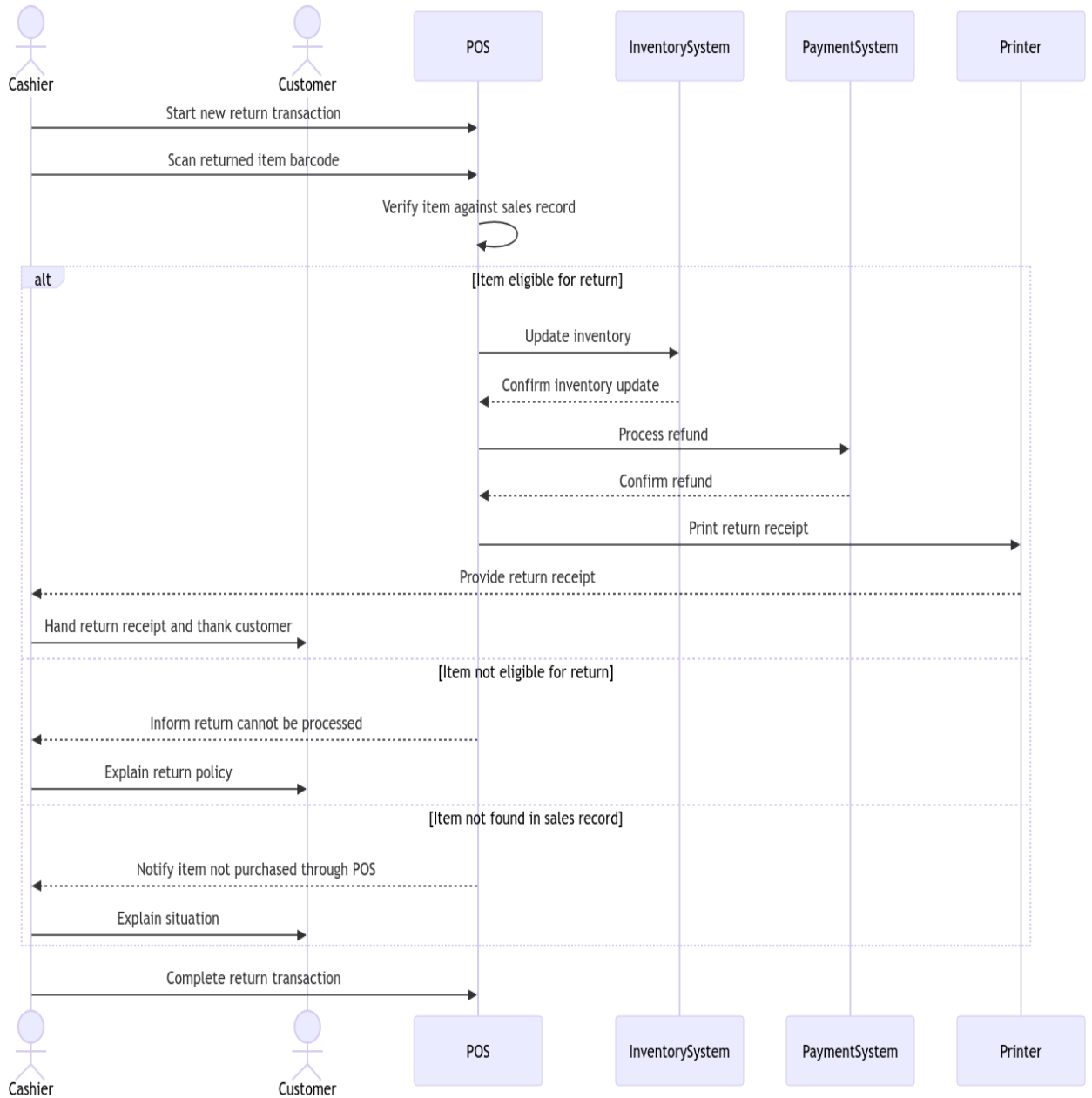
These use cases and object identifications will help streamline the implementation and understanding of the POS system's functionality.

Sequence Diagrams

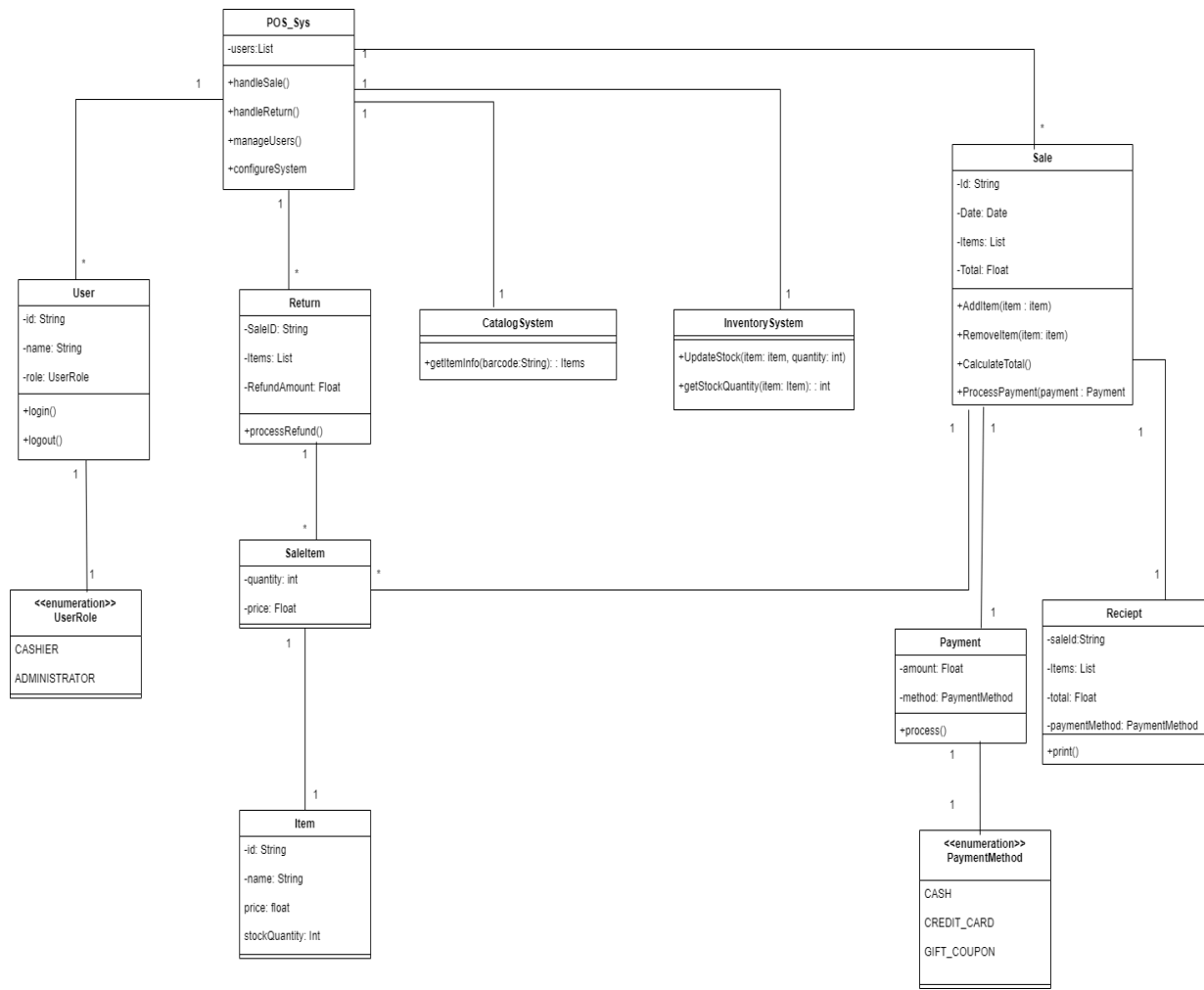
Process Sale



Handle Return

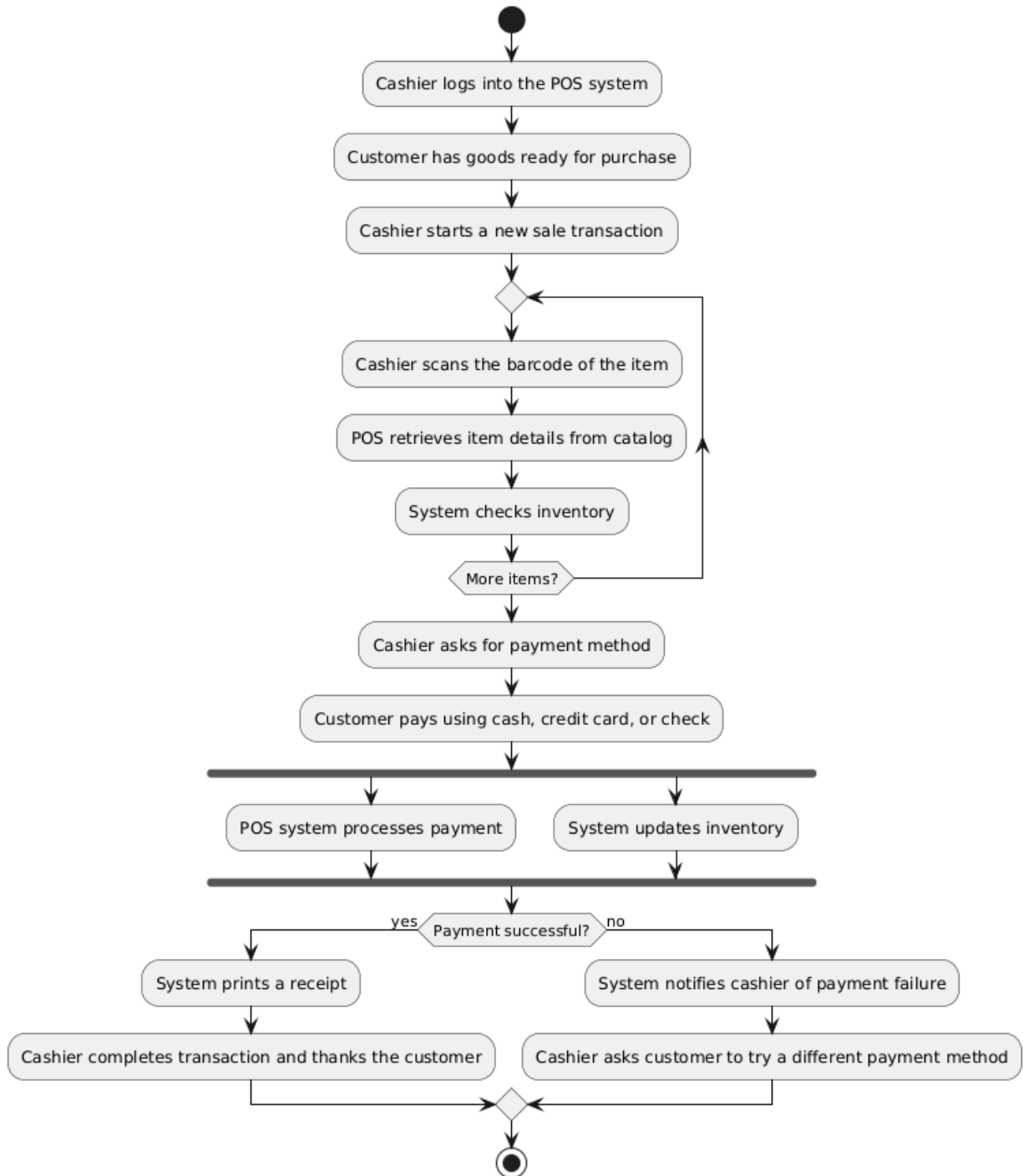


Analysis Domain Models



Activity Diagrams

Process Sale



Handle Return

