

LAB-6

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Use Case: Process Sale

Actor : Cashier

Preconditions:

1. The cashier is signed into the POS system.
2. The customer is prepared to make a purchase.

Main Flow:

1. The cashier initiates a new sale.
2. For each item: a. The cashier scans the barcode, and the system fetches the item details from the catalog. The inventory is updated, and the item is added to the current transaction.
3. The system calculates the total amount. If the customer has a coupon, the cashier applies it, and the system adjusts the total.
4. The cashier selects the payment method.
5. The customer completes the payment.
6. The system processes the payment.
7. The system generates a receipt.
8. The cashier provides the receipt to the customer.

Alternate Flows:

- 2b. If an item is not in the catalog, the cashier manually enters the details.
- 3a. If the coupon application fails, the system alerts the cashier.
- 6a. If the payment is declined, the cashier repeats step 5.
- 7a. If the payment processing fails, the cashier cancels the transaction.

Postconditions:

- The sale is logged in the system.
- The inventory is updated.
- The payment is completed.
- A receipt is generated.
- The cashier hands the receipt and items to the customer.

Use Case: Handle Return

Actor: Cashier

Preconditions:

1. The cashier is signed into the POS system.
2. The customer has items they wish to return.

Main Flow:

1. The cashier starts a return transaction.
2. For each item being returned:
 - a. The cashier scans the item's barcode.
 - b. The system verifies the item against the original purchase.
 - c. The inventory is updated to reflect the return.
 - d. The system calculates any refund due.
3. The cashier processes the return:
 - a. If a refund is needed, the cashier selects the refund method.
 - b. The customer provides any necessary payment information.
 - c. The system processes the refund.
4. The system generates a return receipt.
5. The cashier gives the return receipt to the customer.

Alternate Flows:

- 2b. If the item is not recognized, the cashier manually enters the details.
- 3a. If there's an issue processing the refund, the system notifies the cashier.
- 4a. If an error occurs during receipt generation, the cashier resolves it before finalizing the transaction.

Postconditions:

- The return is recorded in the system.
- The inventory is updated.
- The refund is processed.
- A return receipt is created.
- The cashier hands the return receipt to the customer.

Entity and Boundary Control Objects

Entity Objects:

- Transaction
- Product
- Stock
- Product List
- Transaction Payment
- Discount Voucher
- User (Cashier/Admin)
- Invoice
- Product Return

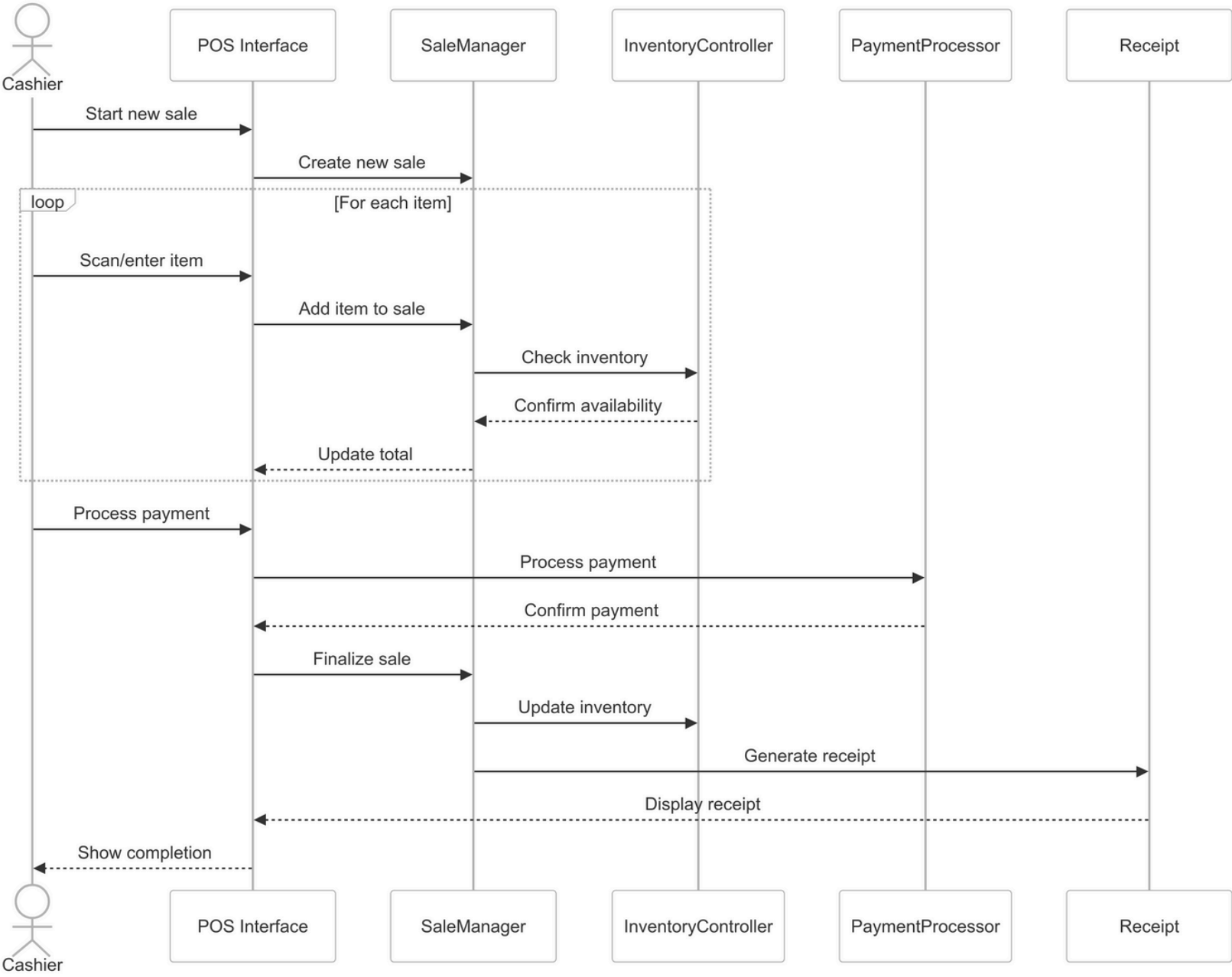
Boundary Objects:

- POS Interface
- Barcode Scanner Interface
- Payment Terminal Interface
- Receipt Printer

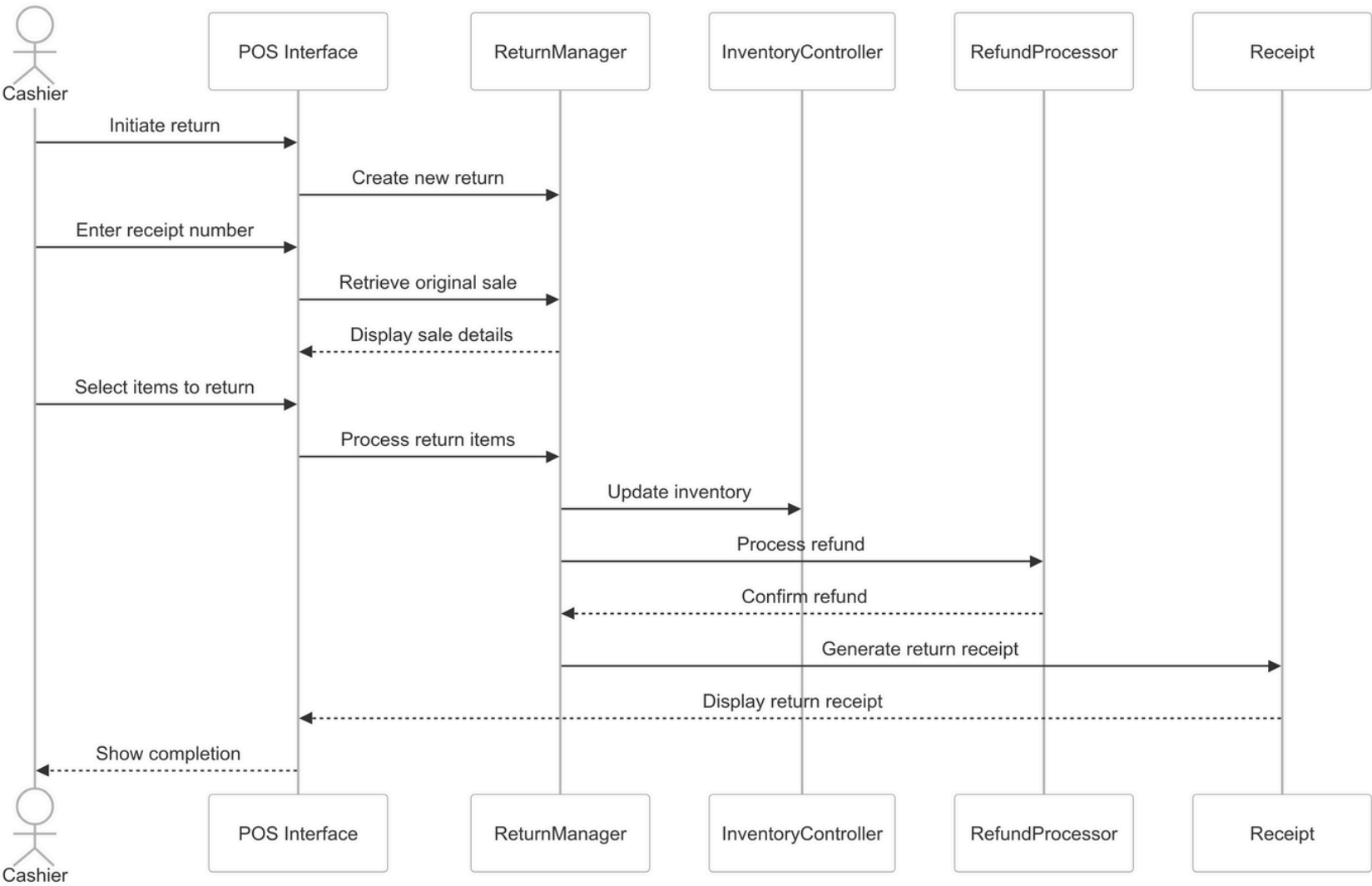
Control Objects:

- Transaction Controller
- Stock Management Controller
- Product List Controller
- Payment Processing Controller
- User Login Controller
- Return Processing Controller

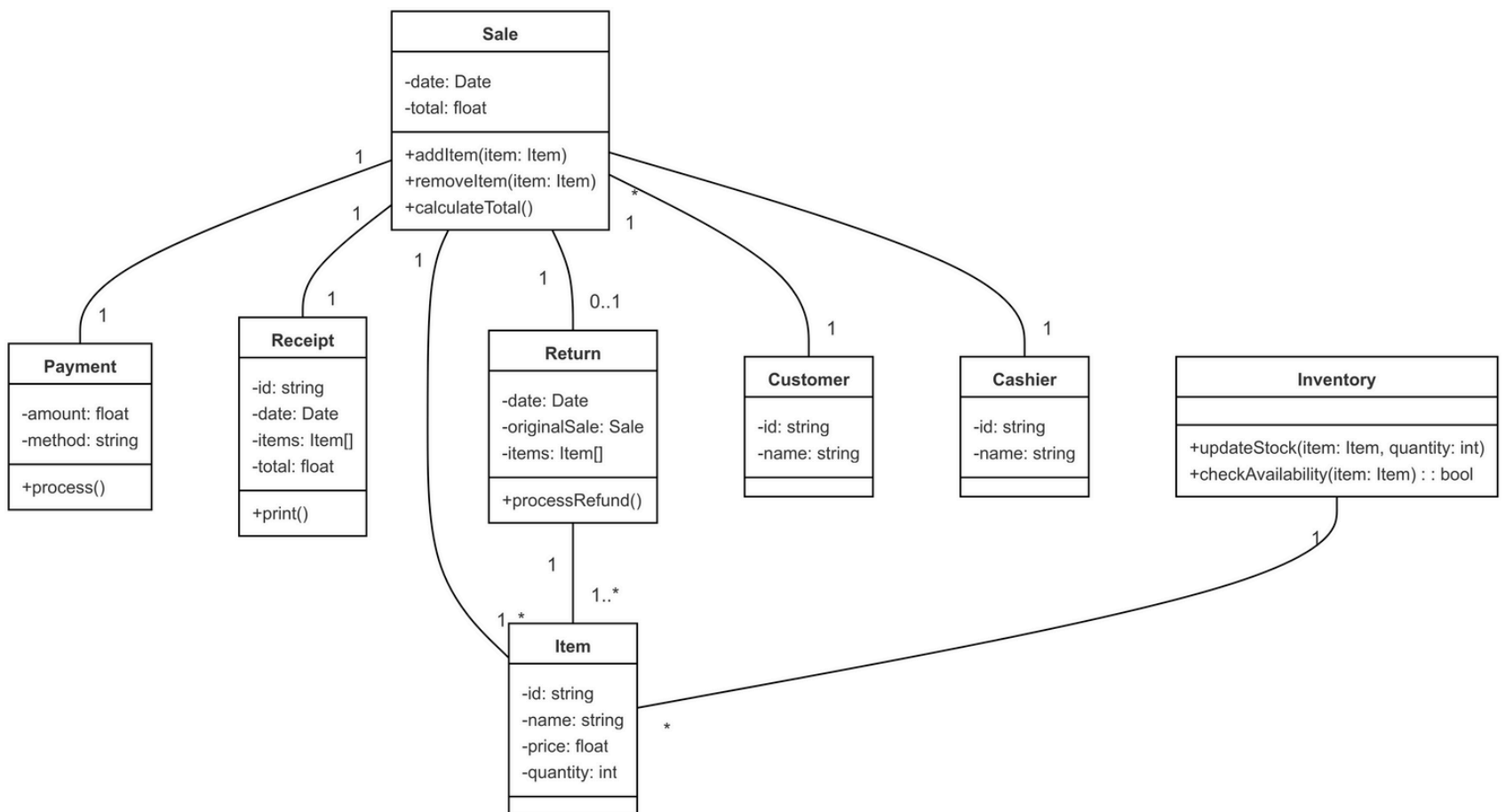
Sequence Diagram for Process Sale



Sequence Diagram for Handle Return



Analysis Domain Models



Activity diagram for "Process Sale" and "Handle Return" use cases.

