

**Name - Saumya Vasa**

**ID - 202201254**

**Lab - 06**

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

**Process Sale**

**Primary Actor:** Cashier

**Precondition:** The cashier is logged into the POS system.

**Main Success Scenario:**

1. The cashier scans the barcodes of the items the customer intends to purchase.
2. The POS system retrieves item details (name, price) from the Catalog System.
3. The system calculates the total cost for all items.
4. The customer chooses a payment method:
  - **Cash:** The cashier enters the received amount, and the system calculates the change due.
  - **Credit Card:** The customer's card is swiped, and payment is processed.
5. Upon successful payment, the Inventory System updates the stock levels of the sold items.
6. A receipt is printed for the customer.

**Postcondition:** The sale is completed, and the inventory records are updated accordingly.

**Extensions:**

- **Gift Coupon:** If a gift coupon is presented, the system reduces the total by the coupon's value.
- **Payment Failure:** If the payment fails (e.g., credit card is declined), the system prompts the cashier to retry or choose a different payment method.

**Handle Return**

**Primary Actor:** Cashier

**Precondition:** The cashier is logged into the POS system, and the customer provides the receipt for the return.

**Main Success Scenario:**

1. The cashier scans the item the customer wishes to return.
2. The system verifies the original purchase by accessing the receipt details in the database.
3. The system checks if the item meets the return policy criteria.
4. The system calculates the refund amount:
  - **Cash Purchase:** The refund is processed in cash.
  - **Credit Card Purchase:** The refund is issued to the original credit card.
5. The Inventory System adjusts stock levels to reflect the returned item.
6. A return receipt is printed for the customer.

**Postcondition:**

The return is processed successfully, and inventory records are updated.

**Extensions:**

- **Lost/Damaged Receipt:** If the receipt is lost or damaged, the system allows the cashier to search by transaction date or ID.
- **Ineligible Item:** If the item is not eligible for return, the system alerts the cashier.

## **Identifying Entity, Boundary, and Control Objects**

**Entity Objects (representing real-world business objects and data):**

- Sale
- Item
- Payment
- Customer
- Receipt
- Return
- Gift Coupon

**Boundary Objects (serving as the interface between actors and the system):**

- Cashier Interface
- Payment Gateway Interface
- Catalog System Interface
- Inventory System Interface

**Control Objects (responsible for managing workflows of the use cases):**

- SaleController (handles the logic for processing sales)
- ReturnController (manages the return process)
- PaymentController (facilitates various payment methods)

- CouponController (manages the application of coupons)
- StockController (coordinates with the Inventory System)









