



Software Engineering (IT-314)

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1).

USE CASE: Process Sale

ACTOR: Cashier

DESCRIPTION: In this use case we will describe the process of completing a sales transaction which includes payment processing and receipt generation.

PRECONDITIONS:

- Cashier will log into the POS system.
- Customers will select items to purchase.

POSTCONDITIONS:

- Sale transaction will be completed.
- Receipt will be printed out for the customer.
- Inventory will be updated .

MAIN FLOW:

1. Cashier scans the barcode of the first item.
2. POS will take out details of that particular item such as its price, expiry date, category etc.
3. System will check whether the item is in stock or not.
4. Items will be added to the transaction list.
5. Above steps will be repeated for other items that the user wishes to purchase.
6. After scanning all the items, the user will confirm the total amount.
7. The user will select the payment method such as via cash or card or upi.
8. Users can use coupons to get discounts and the system will reduce the amount.
9. Cashier will proceed ahead:
 - If the selected payment method is a card, then the cashier will swipe the card, and the system will process the payment.
 - If the selected payment method is cash, then the cashier will enter the amount received, and the system will calculate the change due.
10. After the confirmation of payment, the system will generate a receipt and it will be printed out.

USE CASE: Handle Return

ACTOR: Cashier

DESCRIPTION: In this use case we will describe the process of handling a request to return the items purchased by a customer.

PRECONDITIONS:

- The cashier will log into the POS system.
- The customer will have items to return and a receipt for the original purchase.

POSTCONDITIONS:

- The returned items will be processed.
- Inventory will be updated to reflect the return.
- A return receipt will be printed out for the customer.

MAIN FLOW:

1. The customer will request the items that it wants to return.
2. The cashier will ask for the original purchase receipt.
3. The cashier will verify the receipt and checks the return policy such as what's the time limit, what are the condition of items etc.
4. Then the cashier will scan each item that is being returned.
5. The system will get the original purchase details from the Catalog System.
6. The system will update the Inventory System to add the item that is being returned back into stock.
7. The system will calculate any refund amount that is due to the customer.
8. The cashier will process the refund using the original payment method that is either with cash or with a credit card.
 - In case of cash payment: The cashier will prepare the cash refund.
 - In case of credit Card refund: The system will process the refund back to the card.

9. The system will generate a return receipt and print it out for the customer.

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ENTITY OBJECTS

1. Product

- Represents the items that are for sale which includes attributes like its product ID, its name, its price, and stock quantity.

2. Transaction

- Represents a sale or return transaction that contains details such as transaction ID, data, items that are sold or returned, payment method and the total amount.

3. Receipt

- It represents the printed receipt for transactions which includes the details of the transaction like items, prices, and payment information.

4. Customer

- It represents the customer that is making a purchase or return which includes the attributes like its customer ID, its name, and its contact number.

5. Coupon

- It represents the coupons that can be used to get a discount and it includes the attributes like coupon code, its discount value, and its expiration date.

6. Inventory

- It represents the inventory database which tracks the level of stock for each product.

BOUNDARY OBJECTS

1. POS Terminal Interface

- It is a user interface by which the cashier can interact with the POS system which includes touch screen, buttons.

2. Barcode Scanner

- It is a device which is used to scan product barcodes and interact with the POS system to retrieve product information.

3. Payment Gateway Interface

- It is an interface for processing credit card payments which connects to external payment systems.

4. Receipt Printer

- It is a boundary object which is responsible for printing transaction receipts for customers.

5. Coupon Input Interface

- It is an Interface for the cashier to input or scan coupons during transactions.

CONTROL OBJECTS

1. Process-Sale Control

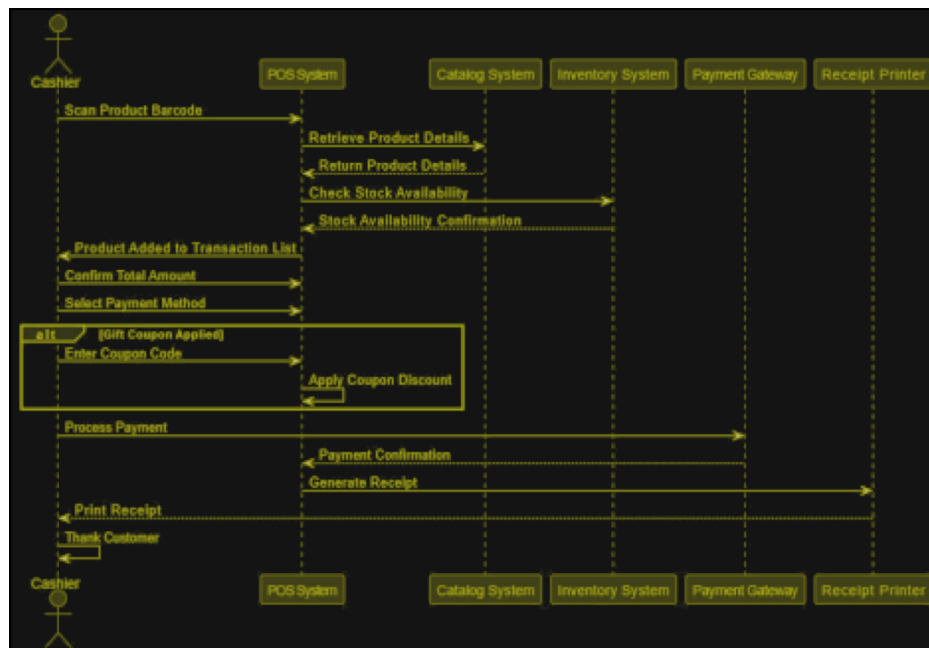
- It is created when the cashier starts a sale transaction in which it coordinates with the scanning of items, handles payment processing, and generates the receipt. It also manages the flow of data between the boundary objects that are Barcode Scanner, Payment Gateway and also with the entity objects that are Transaction and the Product..

2. HandleReturnControl

- It is created when the cashier starts processing a return. It also manages the scanning of returned items, and also checks the return policy, processes refunds, and generates return receipts. It also interacts with the relevant boundary and entity objects in the whole return process.

3).

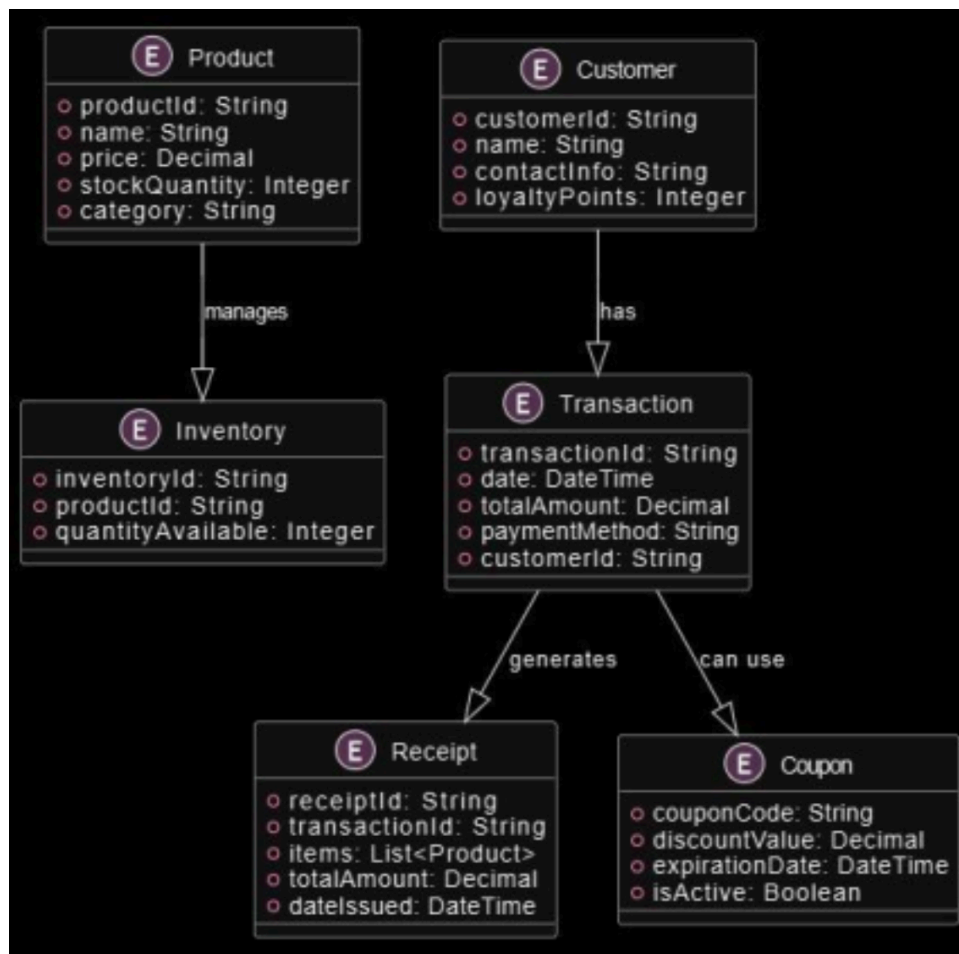
Process Sales



Handle Returns

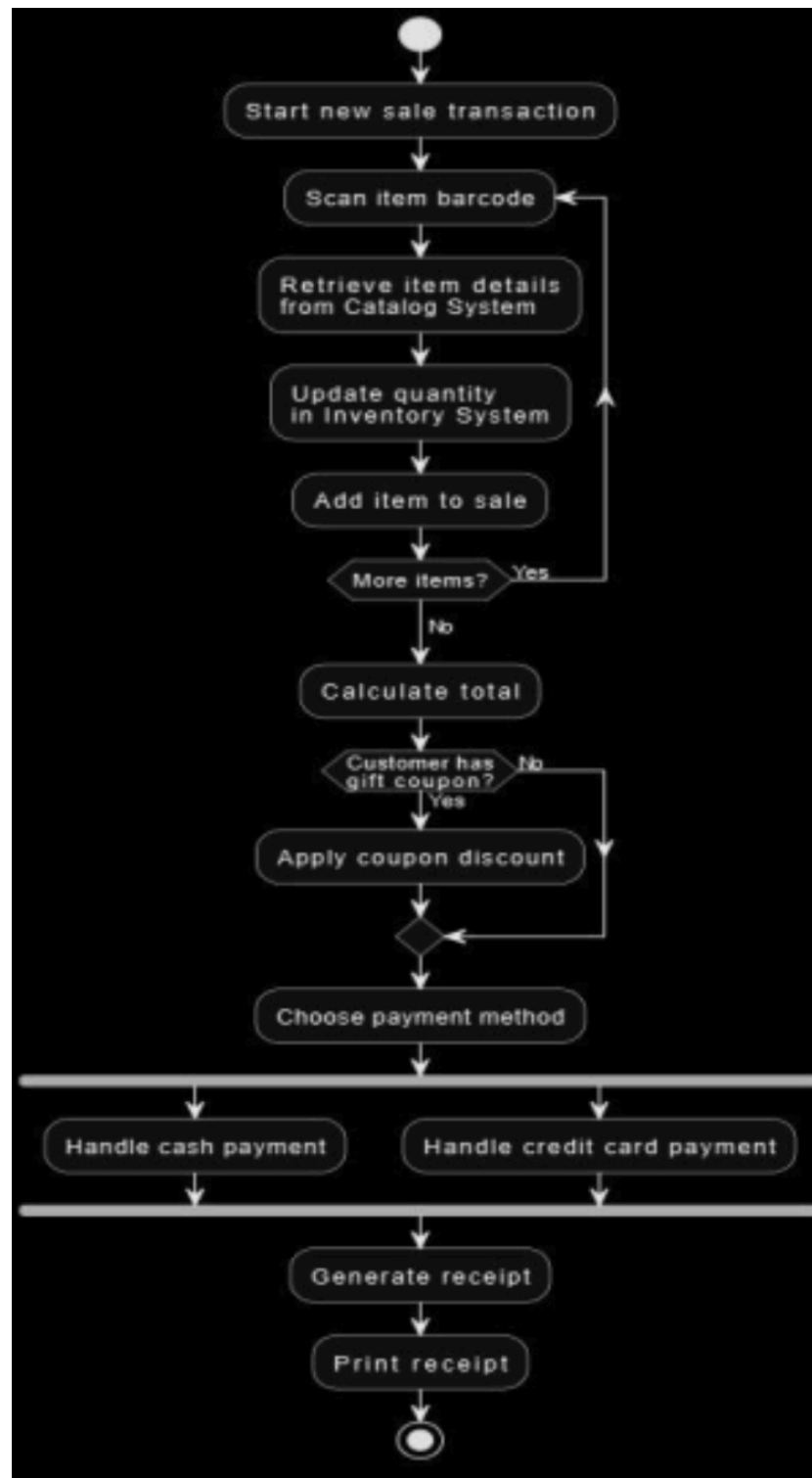


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PROCESS-SALE ACTIVITY DIAGRAM



HANDLE RETURNS ACTIVITY DIAGRAM

