Object-Oriented Design & Prog

Fall 2023

FAU: COP4331

MILESTONE 1

Application Option #1: GoCart

Platform In Use: Swing

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Group 15:

Matthew Anthony- anthonym2021@fau.edu

Nick Becker- nbecker2017@fau.edu

Brandon Pojoga- bpojoga2019@fau.edu

Victor Silva- jsilva2020@fau.edu

Summary:

Our shopping cart application serves as a simplified, user-friendly platform, designed to facilitate seamless buying and selling experiences. The application presents distinct interfaces and functionalities depending on the user. This user may look to buy goods or may be the one selling the goods. This application creates an intuitive and secure environment for buying and selling, allowing for a streamlined transaction process for both customers and sellers.

Application Requirements

For this application, we must serve two primary users: customers and sellers.

Functional Specifications:

1. Shopping Cart Application has a dual interface:
   - Customer Interface
   - Seller Interface
2. The application is accessed by customers and sellers using distinct login credentials.
3. Customers can browse through products which include:
   - Product name
   - Price
   - Available quantity
4. Detailed Product descriptions are available through pop-up windows.
5. Customers can add products to the shopping cart and proceed to checkout for payment verification.
6. Sellers can review, update, and add products to the inventory.
7. The internal product representation includes:
   - ID
   - Type
   - Quantity
   - Invoice price
   - Selling price
8. The application keeps track of all costs, revenues, and profits, accessible from the Seller Interface.

Use Cases:

A. User Logs In

Actors: Customer/Seller

1. User enters username and password.
2. System validates credentials.
3. System grants access to the respective interface.

B. Customer Adds Items to Shopping Cart

Actors: Customer

1. Customer selects an item from the product list or description pop-up.
2. Customer adds item to the shopping cart.
3. System updates the shopping cart total amount.

C. Customer Reviews Product Details

Actors: Customer

1. Customer clicks on a product.
2. System displays product details in a pop-up window.

D. Customer Reviews/Updates Shopping Cart

Actors: Customer

1. Customer reviews the shopping cart.
2. Customer updates item count or removes items.
3. System updates the total amount.

E. Customer Checks Out

Actors: Customer

1. Customer verifies the shopping cart content.
2. Customer supplies the credit card.
3. System validates the payment.

F. Seller Reviews/Updates Inventory

Actors: Seller

1. Seller reviews the current inventory state.

2. Seller updates product details and quantity.

3. System updates the inventory.

G. Seller Adds New Product

Actors: Seller

1. Seller inputs new product details.

2. System adds the product to the inventory.

H. Seller Reviews Sales and Profit Metrics

Actors: Seller

1. Seller accesses the sales dashboard or metrics section.

2. System displays aggregated sales data including total revenue, number of sales, and profit margins.

3. Seller can choose to view data for specific periods (e.g., daily, weekly, monthly).

4. System filters and displays the relevant metrics based on the selected period.

5. Seller can drill down into specific sales data for more granular insights if needed.

6. System provides detailed transaction and product-wise breakdowns upon request.

Glossary

Concept	Meaning
User	An entity that uses the application either as a seller or customer, typically attached to a login.
Customer	A user of the the application who browses products, adds them to the shopping cart, and/or makes purchases
Seller	A user of the application who manages the inventory of products, reviews sales metrics, and has access to revenue and profit details
Cart	A virtual container where customers place products to save until purchase. Keeps track of selected products and their total amount in container
Product	An item available for purchase within the application. Will contain attributes such as name, price, available quantity, ID, etc.
Inventory	A collection of all the products available for sale. Managed by the seller
Transaction	A completed sale or purchase within the application. Works for both sides of users
Login	A combination of username and password used to access the application under a certain user
Checkout	The process where the customer provides payment for the products in their cart. Also have ability to remove product from cart if desired.
Revenue	The total amount of money brought in by the sales of products

Profit	The difference between the amount earned from selling products and the amount spent in buying or producing them
Sales	The number of products or transactions made over a specific period
Product Cost	The price at which the seller has acquired the product
Product Price	The price at which the product is sold to the custome