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9/27/23

COP 4331

Application Requirements

Project Title: CartSafari

Platform specification: Swing

Functionality Specifications:

1. Application boots up and presents the user with a login screen.
2. If a customer is logging in, the app goes through the customer design flow.
3. If a seller is logging in, the app goes through the seller design flow.
4. When a customer logs in, they enter a user name and a password. Then a window appears where they can look through a list of products that include the product name, the product price, and the product quantity available.
5. In the same window, the customer can choose products and add them to their shopping cart.
6. They can also click on a product and see the product description, its pricing and its availability in a smaller pop-up window.
7. The customer can add any product to their shopping cart, as long as they match the availability.
8. The total amount in the shopping cart as well as the total current price can be viewed on the main window.
9. The customer can checkout whenever they want.
10. The customer's cart can be updated in the checkout windows by adjusting the quantity that the customer would like to purchase for specific products.
11. When checking out the customer confirms the details of their cart and proceeds to pay for the goods using their credit card information.

12. When a seller logs in, they enter a user name and password. Then a window opens where they can see the current state of their inventory.
13. The seller can choose to update their inventory by adding products along with adding the product name, invoice price, sell price and by adjusting the quantity available as needed.
14. The internal product display includes the product ID, the product type, the product quantity, the product invoice price, and the product selling price.
15. The app keeps tabs on all costs, revenues and profits so that the seller can manage everything.
16. The seller can view all this information from the app's UI software.

Use Cases:

Case 1: User Logs In

1. Customer starts the shopping cart application.
2. System prompts the customer to enter their login credentials: username (or email) and password.
3. Customer enters valid credentials.
4. System grants access to the customer's account.
5. Available products are displayed in the online shop.

Variant Scenario: Invalid Credentials

1. Customer starts the shopping cart application.
2. System prompts the customer to enter their login credentials: username (or email) and password.
3. Customer enters invalid credentials.
4. System displays an error message.
5. Customer remains on the login page.

Case 2: Customer Adds Items to Shopping Cart

1. Customer browses the application and searches for products.
2. Customer selects a product.
3. System displays detailed product information: images, description, price, and 'add to cart' button.
4. Customer clicks 'add to cart'.
5. System updates the shopping cart.

Variant Scenario: Item Unavailable

1. Customer selects a product.
2. System displays detailed product information: images, description, price, and 'add to cart' button.
3. Customer clicks 'add to cart', but the item is unavailable.
4. System displays an alert.
5. Customer returns to browsing products.

Case 3: Customer Reviews Product Details

1. Customer selects a product.
2. System displays product details: name, description, price, quantity available, and reviews.
3. Customer decides not to purchase.
4. Customer returns to the main window with the cart unchanged.

Variant Scenario: Customer Makes a Purchase

1. Customer selects a product.
2. System displays product details: name, description, price, quantity available, and reviews.
3. Customer decides to purchase the product.
4. System updates the shopping cart.
5. Customer returns to the main window.

Case 4: Customer Reviews Shopping Cart

1. Customer selects the cart icon on the home screen.
2. System opens the cart window, displaying a list of items with the option to remove them.
3. Customer chooses to remove items.
4. System updates the cart.

Variant Scenario: Customer Closes Cart Window

1. Customer selects the cart icon on the home screen.
2. System opens the cart window, displaying a list of items with the option to remove them.
3. Customer closes the window without removing any items.
4. The cart remains unchanged.

Case 5: Customer Checks Out

1. Customer selects the cart icon on the home screen.
2. System opens the cart window.

3. Customer clicks 'check out', leading to the shipment window.
4. Customer enters shipment details if applicable.
5. Payment window appears, where customer enters payment information.
6. Customer confirms the purchase.
7. Payment is processed; confirmation panel briefly appears.
8. System sends an email with purchase details to the customer.

Variant Scenario: Payment Failure

1. Customer selects the cart icon on the home screen.
2. System opens the cart window.
3. Customer clicks 'check out', leading to the shipment window.
4. Customer enters shipment details if applicable.
5. Payment window appears, where customer enters payment information.
6. Customer attempts payment, but it fails.
7. System displays a payment error message.
8. Customer reviews the error message and exits the payment process.

Case 6: Seller Reviews/Updates Inventory

1. Seller navigates to the inventory section of the app.
2. System displays the current inventory and product information.
3. Seller updates inventory details.
4. System saves changes and updates the live version.

Variant Scenario: Seller Discards Changes

1. Seller navigates to the inventory section of the app.
2. System displays the current inventory and product information.
3. Seller updates inventory details but chooses not to save.
4. System retains the previous inventory information.

Case 7: Seller Adds New Product

1. Seller navigates to the inventory section of the app.
2. Seller selects 'add new product' icon.
3. System prompts seller to enter product details: description, quantity, picture, name, price, and category.
4. Seller fills out prompts and clicks 'save' to create the new product.
5. System updates the seller's profile with the new product listing.

Variant Scenario: Seller Abandons New Product

1. Seller navigates to the inventory section of the app.

2. Seller selects 'add new product' icon.
3. System prompts seller to enter product details: description, quantity, picture, name, price, and category.
4. Seller exits the prompt without saving.
5. The app does not update with the new product.

Case 8: Seller Views Financial Reports

1. Seller navigates to the financial reports section of the app.
2. System displays a summary of the seller's financial data for the selected time period.
3. Seller examines detailed breakdowns of revenue, sales, and profit.
4. System provides graphical representations for visualizing financial data.
5. Seller exports the financial reports in PDF and Excel formats.

Glossary:

Transaction: The process of buying or selling goods or services.

Product: An item available for purchase in the application.

Seller: A person or entity selling products through the application.

Customer: A person buying products using the application.

Shopping Cart: Virtual container for selected items before purchase.

Inventory: List of products available for sale.

Checkout: Process of reviewing and confirming a purchase.

Payment Gateway: Secure service for processing payments.

Authentication: Verifying user identity for secure access.

User Interface (UI): Visual elements for user interaction.

Email Confirmation: Automated email providing transaction details.

Variant Scenario: Alternative sequence of events in a use case.

Revised Functional Specification with GUI

Revised Requirements Specification:

Login Screen-

Elements: Username text field, Password text field, Login button

Customer Main Window-

Elements: Product list (Product name, Price, Quantity), Add to Cart button

Product Details Popup-

Elements: Product name, Description, Price, Availability, Add to Cart button, Close button

Shopping Cart Window-

Elements: List of selected items (Product name, Quantity, Price), Remove button, Checkout button

Shipment Window-

Elements: Text fields for shipping address, payment information, Next button, Cancel button

Payment Window-

Elements: Credit card number, Expiry date, CVV, Pay button, Cancel button

Seller Inventory Window-

Elements: List of available products (Product ID, Name, Quantity, Invoice Price, Selling Price), Add Product button, Update button, Delete button

Financial Reports Window-

Elements: Summary of financial data, Export buttons (PDF, Excel)

Use Cases with GUI-

Case 1: User Logs In

1. Buyer enters username and password into corresponding text fields.
2. Buyer clicks 'Login' button.
3. The system validates the login information and proceeds to UC “Review Products”.

Variant Scenario: Invalid Credentials

1. Buyer enters username and password into corresponding text fields.
2. Buyer clicks 'Login' button.
3. The system displays an error message.
4. Buyer remains on the login page.

Case 2: Customer Adds Items to Shopping Cart

1. Customer selects a product from the list.
2. System displays detailed product information with an 'Add to Cart' button.
3. Customer clicks 'Add to Cart' button.
4. System updates the shopping cart.

Variant Scenario: Item Unavailable

1. Customer selects a product.
2. System displays detailed product information with an 'Add to Cart' button.
3. Customer clicks 'Add to Cart' button, but the item is unavailable.
4. System displays an alert.
5. Customer returns to browsing products.

Case 3: Customer Reviews Product Details

1. Customer selects a product.
2. System displays product details in a pop-up window.
3. Customer decides not to purchase and closes the pop-up.

Variant Scenario: Customer Makes a Purchase

1. Customer selects a product.
2. System displays product details in a pop-up window.
3. Customer decides to purchase the product.
4. System updates the shopping cart.
5. Customer returns to the main window.

Case 4: Customer Reviews Shopping Cart

1. Customer clicks the cart icon on the home screen.
2. System opens the cart window displaying selected items.
3. Customer removes items if desired.
4. System updates the cart.

Variant Scenario: Customer Closes Cart Window

1. Customer clicks the cart icon on the home screen.
2. System opens the cart window displaying selected items.
3. Customer closes the window without removing any items.
4. The cart remains unchanged.

Case 5: Customer Checks Out

1. Customer clicks the cart icon on the home screen.
2. System opens the cart window.
3. Customer clicks 'Checkout' button, leading to the shipment window.
4. Customer enters shipment details and clicks 'Next'.
5. Payment window appears, customer enters payment information.
6. Customer confirms the purchase.
7. Payment is processed; confirmation panel briefly appears.
8. System sends an email confirmation to the customer.

Variant Scenario: Payment Failure

1. Customer clicks the cart icon on the home screen.
2. System opens the cart window.
3. Customer clicks 'Checkout' button, leading to the shipment window.
4. Customer enters shipment details and clicks 'Next'.

5. Payment window appears, customer enters payment information and clicks 'Pay'.
6. Payment fails.
7. System displays an error message.
8. Customer can retry payment or cancel the purchase.

Case 6: Seller Reviews/Updates Inventory

1. Seller navigates to the inventory section.
2. Seller selects a product to update.
3. Seller makes changes and clicks 'Update'.
4. System saves changes and updates the live version.
5. Seller can click 'Add Product' to add a new product.

Variant Scenario: Seller Discards Changes

1. Seller navigates to the inventory section.
2. Seller selects a product to update.
3. Seller makes changes but clicks 'Cancel'.
4. System retains the previous inventory information.

Case 7: Seller Adds New Product

1. Seller navigates to the inventory section.
2. Seller clicks 'Add New Product' button.
3. Seller fills out product details and clicks 'Save' to create the new product.
4. System updates the seller's profile with the new product listing.

Variant Scenario: Seller Abandons New Product

1. Seller navigates to the inventory section.
2. Seller clicks 'Add New Product' button.
3. Seller exits the prompt without saving.
4. The app does not update with the new product.

Case 8: Seller Views Financial Reports

1. Seller navigates to the financial reports section.
2. Seller examines detailed breakdowns of revenue, sales, and profit.
3. Seller exports the financial reports in PDF and Excel formats if desired.