

DEPARTMENT OF COMPUTER & INFORMATION SYSTEMS ENGINEERING
BACHELORS IN COMPUTER SYSTEMS ENGINEERING

Course Code: CS-116

Course Title: Object Oriented Programming

Complex Engineering Problem

FE Batch 2023, Spring Semester 2024

Grading Rubric

TERM PROJECT

Group Members:

Student No.	Name	Roll No.
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S2	Muhammad Anas Yazdani Niazi	CS-23102
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CRITERIA AND SCALES				Marks Obtained		
				S1	S2	S3
Criterion 1: Does the class diagram meet the desired specifications and produce the desired outputs? (CPA-1, CPA-3) [4 marks]						
1	2	3	4			
The class diagram does not meet the desired specifications and is producing incorrect outputs.	The class diagram partially meets the desired specifications and is producing incorrect or partially correct outputs.	The class diagram meets the desired specifications but is producing incorrect or partially correct outputs.	The class diagram meets all the desired specifications and is producing correct outputs.			
Criterion 2: Does the application meet the desired specifications and produce the desired outputs? (CPA-1, CPA-3) [6 marks]						
1	2	3	4			
The application does not meet the desired specifications and is producing incorrect outputs.	The application partially meets the desired specifications and is producing incorrect or partially correct outputs.	The application meets the desired specifications but is producing incorrect or partially correct outputs.	The application meets all the desired specifications and is producing correct outputs.			
Criterion 3: How well is the code organization? [2 marks]						
1	2	3	4			
The code is poorly organized and very difficult to read.	The code is readable only to someone who knows what it is supposed to be doing.	Some part of the code is well organized, while some part is difficult to follow.	The code is well organized and very easy to follow.			
Criterion 4: How friendly is the application interface? (CPA-1, CPA-3) [2 marks]						
1	2	3	4			
The application interface is difficult to understand and use.	The application interface is easy to understand and but not that comfortable to use.	The application interface is very easy to understand and use.	The application interface is very interesting/ innovative and easy to understand and use.			
Criterion 5: How does the student performed individually and as a team member? (CPA-2, CPA-3) [4 marks]						
1	2	3	4			
The student did not work on the assigned task.	The student worked on the assigned task, and accomplished goals partially.	The student worked on the assigned task, and accomplished goals satisfactorily.	The student worked on the assigned task, and accomplished goals beyond expectations.			
Criterion 6: Does the report adhere to the given format and requirements? [2 marks]						
1	2	3	4			
The report does not contain the required information and is formatted poorly.	The report contains the required information only partially but is formatted well.	The report contains all the required information but is formatted poorly.	The report contains all the required information and completely adheres to the given format.			
Total Marks:						

Teacher's Signatu

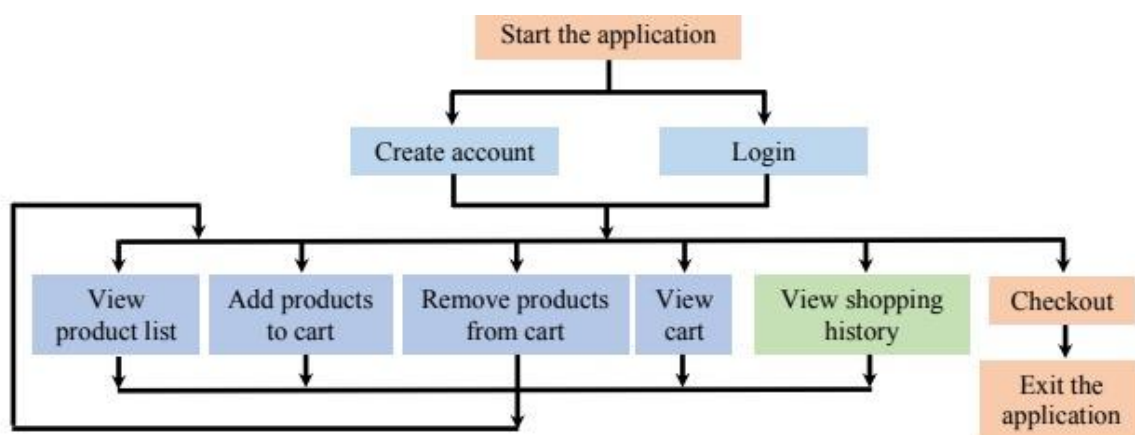
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Title: Report on Python AMO Store Application

1. Introduction:

The Python AMO Store Application is designed to provide a robust shopping experience by allowing users to view items, add them to a cart, and proceed through a checkout process. This report outlines the main features, distinguishing characteristics, and proposed improvements for the application.



2. Main Features:

2.1 User Authentication:

- The application includes a user authentication system where users can sign up and log in using unique usernames and passwords. User data is stored securely for future access.

2.2 Shopping Menu:

- Users can browse a shopping menu that lists available items along with their prices and quantities. The interface is designed to be user-friendly, making it easy for users to select and purchase items.

2.3 Cart Management:

- The application allows users to add items to a shopping cart, specifying the quantity they wish to purchase. The cart is updated in real-time, reflecting the availability of items.
- Users can also remove items from the cart, with the system updating the quantities accordingly.

2.4 Checkout Process:

- A detailed summary of the items in the cart is displayed during checkout, along with the total cost. Users can complete their purchases efficiently through a streamlined process.

2.5 Robust Signup and Login:

- The signup process ensures the uniqueness of usernames and enforces password criteria to enhance security. The login system verifies user credentials, providing a secure and personalized experience.

3. Distinguishing Features:

3.1 Password Validation:

- Passwords must be at least 8 characters long and include at least one uppercase letter, one lowercase letter, and one digit, enhancing user account security.

3.2 Dynamic Cart Interaction:

- The shopping cart dynamically updates item quantities and availability based on user actions, providing a realistic and interactive shopping experience.

3.3 User-Friendly Interface:

- Clear and concise prompts guide users through the application, ensuring an intuitive and pleasant user experience.

3.4 File-Based User Data Storage:

- User information is stored in files, allowing users to retrieve their data across multiple sessions for a convenient shopping experience.

4. Proposed Improvements:

4.1 Exception Handling:

- Implement robust exception handling to enhance the application's resilience to unexpected user inputs or file operation failures.

4.2 Enhanced Security Measures:

- Additional security measures, such as hashing passwords, can be implemented to further protect user accounts.

4.3 User Feedback Integration:

- Develop a comprehensive system for providing user feedback, guiding users through the signup, login, and shopping processes.

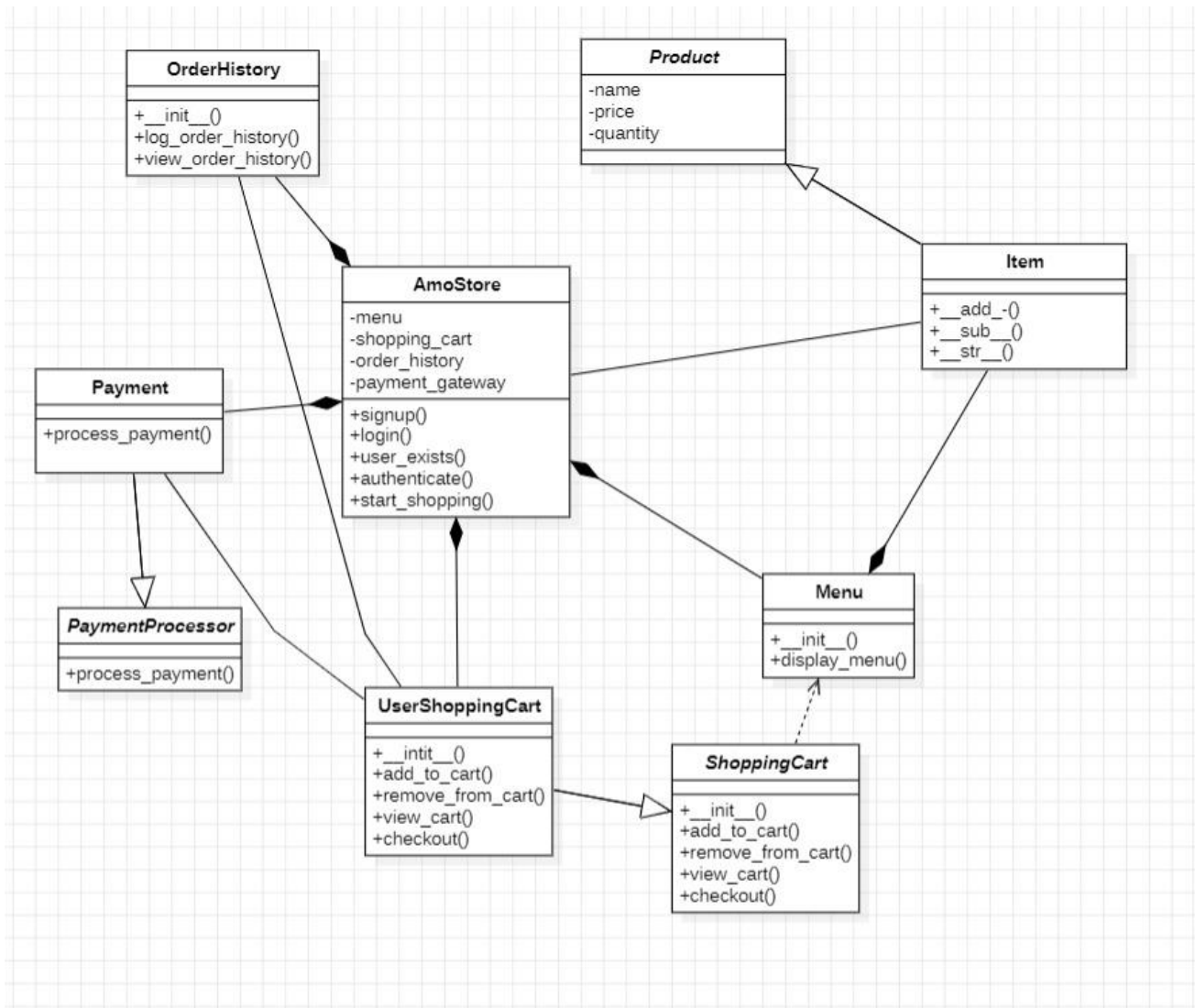
4.4 Refinement of User Interface:

- Enhance the user interface for better clarity, aesthetics, and overall user experience.

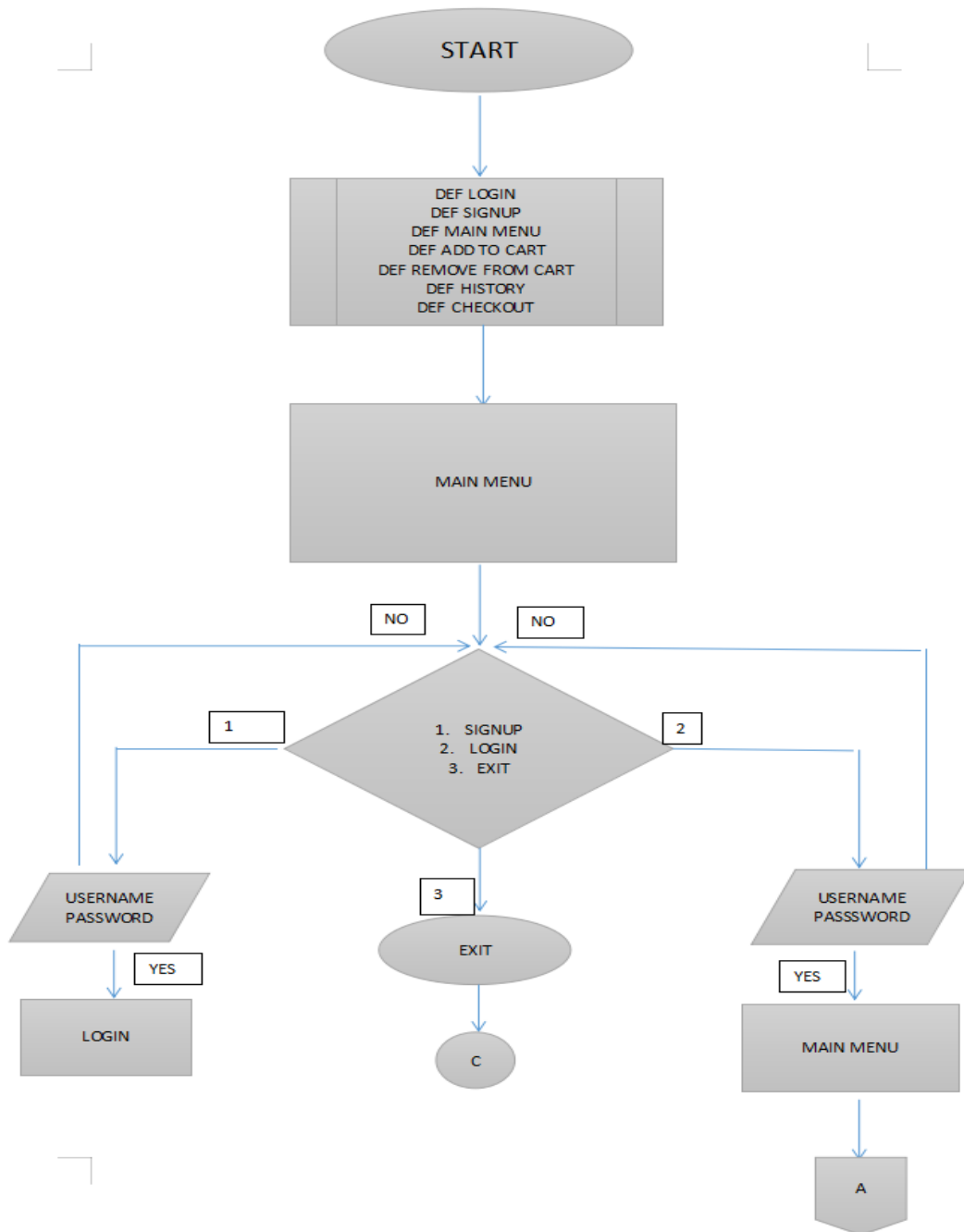
5. Things We Learnt for This Project:

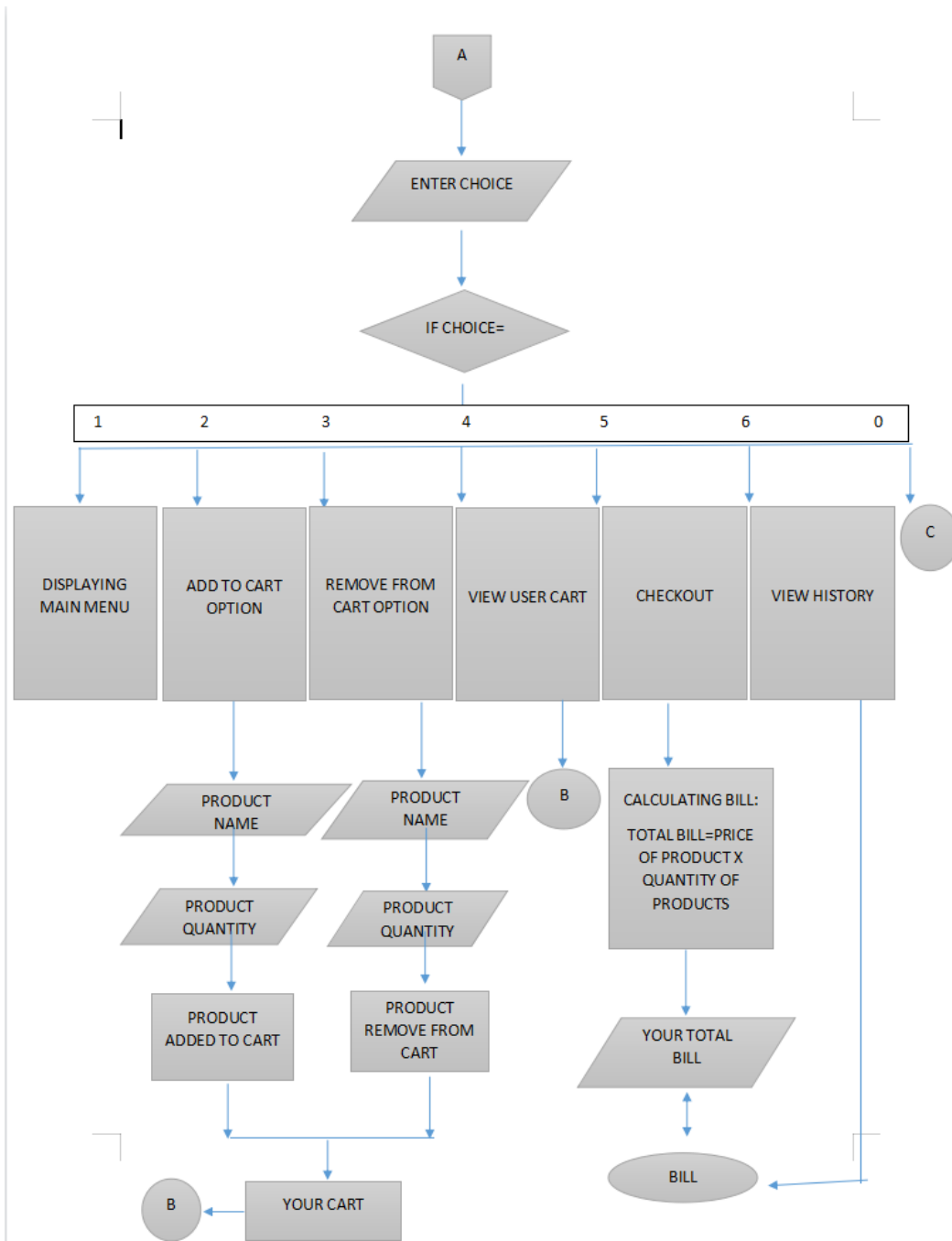
- New functions such as `any` and `remove`.
- New string methods such as `isupper`, `islower`, `isdigit`, and `items`.
- The `continue` keyword in loops.
- New libraries such as `time` and `datetime`.
- How to give relative paths in code.
- How to Format strings and their relevant methods.
- We learn how to LOG data in file.
- We learn how to use `enumerate` keyword.

6. Class Diagram:



7. Flowchart:





8. Contribution by Members:

- Mashaal Ali CS-23091: Class of login and signup.
- Anas Yazdani Niazi CS-23102: Class of main menu and shopping cart display.
- Osama Humayun CS-23139: Class of shopping cart.

9. Snippets of Code Working:

```
***          ***  ****          ***          ****          ****          ****          ****
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-----
|                               Welcome to AmoStore                               |
-----
|                               1. Signup                                         |
-----
|                               2. Login                                          |
-----
|                               3. Exit                                           |
-----
Enter your choice: 1
```

Enter your username: (ENTER ### AND LEAVE PASSWORD BLANK FOR RETURN TO MAIN MENU): Anasyazdani1
Enter your password: Anasyazdani1
Welcome, Anasyazdani1!

Available Items:

No.	Item	Price (\$)	Available
1	Laptop	\$1000	50
2	Smartphone	\$800	50
3	Headphones	\$150	50
4	Keyboard	\$200	50
5	Mouse	\$80	50
6	Tablet	\$700	50
7	Stylus	\$30	50
8	Graphic tablet	\$125	50
9	Projector	\$300	50
10	Backpack	\$50	50

1. Add item to cart
 2. Remove item from cart
 3. View cart
 4. Checkout
 5. View order history
 6. Logout
- Enter your choice:

Enter your choice: 2

Shopping Cart:

1. Laptop - \$1000 each (Quantity: 3) - Subtotal: \$3000

Total Price: \$3000

Enter the name of the item you want to remove from the cart: laptop

How many laptop do you want to remove from the cart? 1

1 laptop removed from the cart.

Enter your choice: 3

Shopping Cart:

1. Laptop - \$1000 each (Quantity: 2) - Subtotal: \$2000

Total Price: \$2000

Enter your choice: 4

Processing payment of \$2000

Checkout - Total Bill:

2 Laptop - \$1000 each

Total: \$2000

Thank you for shopping with us!

```
Enter your choice: 5
Your order history:
Order Date: 2024-06-26 Time: 14:48:01
2 Laptop - $1000 each

Order Date: 2024-06-26 Time: 14:48:07
2 Laptop - $1000 each

Order Date: 2024-06-26 Time: 14:48:10
2 Laptop - $1000 each

Order Date: 2024-06-26 Time: 14:48:23
2 Laptop - $1000 each

Order Date: 2024-07-06 Time: 19:29:12
3 Smartphone - $800 each

Order Date: 2024-07-06 Time: 21:29:53
2 Laptop - $1000 each
```

```
Enter your choice: 6
Logging out...

-----
|                               Welcome to AmoStore                               |
-----
|                               1. Signup                                         |
-----
|                               2. Login                                         |
-----
|                               3. Exit                                          |
-----
Enter your choice: 3
-----
|                               Thank you for visiting AmoStore!                  |
-----
```

```
LOG_DATA - Notepad
File Edit Format View Help
2024-07-07 13:17:19,860 - root - INFO - Program started
2024-07-07 13:17:20,050 - root - DEBUG - Product created: Laptop, Price: 1000, Quantity: 50
2024-07-07 13:17:20,050 - root - DEBUG - Product created: Smartphone, Price: 800, Quantity: 50
2024-07-07 13:17:20,051 - root - DEBUG - Product created: Headphones, Price: 150, Quantity: 50
2024-07-07 13:17:20,051 - root - DEBUG - Product created: Keyboard, Price: 200, Quantity: 50
2024-07-07 13:17:20,051 - root - DEBUG - Product created: Mouse, Price: 80, Quantity: 50
2024-07-07 13:17:20,051 - root - DEBUG - Product created: Tablet, Price: 700, Quantity: 50
2024-07-07 13:17:20,052 - root - DEBUG - Product created: Stylus, Price: 30, Quantity: 50
2024-07-07 13:17:20,052 - root - DEBUG - Product created: Graphic tablet, Price: 125, Quantity: 50
2024-07-07 13:17:20,063 - root - DEBUG - Product created: Projector, Price: 300, Quantity: 50
2024-07-07 13:17:20,063 - root - DEBUG - Product created: Backpack, Price: 50, Quantity: 50
2024-07-07 13:17:20,063 - root - INFO - Menu initialized with items.
2024-07-07 13:17:20,063 - root - INFO - Shopping cart initialized.
2024-07-07 13:17:23,397 - root - INFO - Login process started
2024-07-07 13:17:31,025 - root - INFO - Displaying menu
2024-07-07 13:17:36,111 - root - INFO - Added 4 Smartphone to the cart.
2024-07-07 13:17:36,111 - root - INFO - Displaying menu
2024-07-07 13:17:38,043 - root - INFO - Viewing cart
2024-07-07 13:17:38,076 - root - INFO - Total price of cart: $3200
2024-07-07 13:17:45,691 - root - INFO - Attempting to remove smartphone from cart
2024-07-07 13:17:48,859 - root - INFO - Removed 1 smartphone from the cart.
2024-07-07 13:17:48,859 - root - INFO - Displaying menu
2024-07-07 13:17:55,169 - root - INFO - Added 30 Mouse to the cart.
2024-07-07 13:17:55,169 - root - INFO - Displaying menu
2024-07-07 13:18:00,068 - root - INFO - Added 22 Keyboard to the cart.
2024-07-07 13:18:00,068 - root - INFO - Displaying menu
2024-07-07 13:18:04,944 - root - INFO - Viewing cart
2024-07-07 13:18:05,001 - root - INFO - Total price of cart: $9200
2024-07-07 13:18:05,001 - root - INFO - Displaying menu
2024-07-07 13:18:12,557 - root - INFO - Added 12 Backpack to the cart.
2024-07-07 13:18:12,557 - root - INFO - Displaying menu
2024-07-07 13:18:18,691 - root - INFO - Added 45 Headphones to the cart.
2024-07-07 13:18:18,691 - root - INFO - Displaying menu
2024-07-07 13:18:25,724 - root - WARNING - Attempted to add more Headphones than available.
2024-07-07 13:18:25,724 - root - INFO - Displaying menu
2024-07-07 13:18:46,733 - root - WARNING - Attempted to add more Headphones than available.
```

10. Conclusion:

In conclusion, the Python AMO Store Application showcases the implementation of key features necessary for an online shopping experience. The proposed improvements aim to enhance the application's security, user-friendliness, and resilience. This project serves as a practical learning tool for new developers and provides a functional shopping application for users.