

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

**Course Code: CS-115**

**Course Title: Computer Programming**

**Complex Engineering Problem**

**FE Batch 2023, Fall Semester 2023**

*Grading Rubric*

**TERM PROJECT**

**Group Members:**

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CRITERIA AND SCALES				S1	S2
Criterion 1: Does the application meet the desired specifications and produce the desired outputs? (CPA-1, CPA-3) [8 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 2: 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 3: 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 4: 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.		

## \*Title: Report on Python Shopping Cart Application\*

### \*1. Introduction:\*

The Python Shopping Cart Application presented here is a versatile and user-friendly system designed to simulate an online shopping experience. This report provides an overview of the main features, functionalities, distinguishing characteristics, and proposed improvements of the

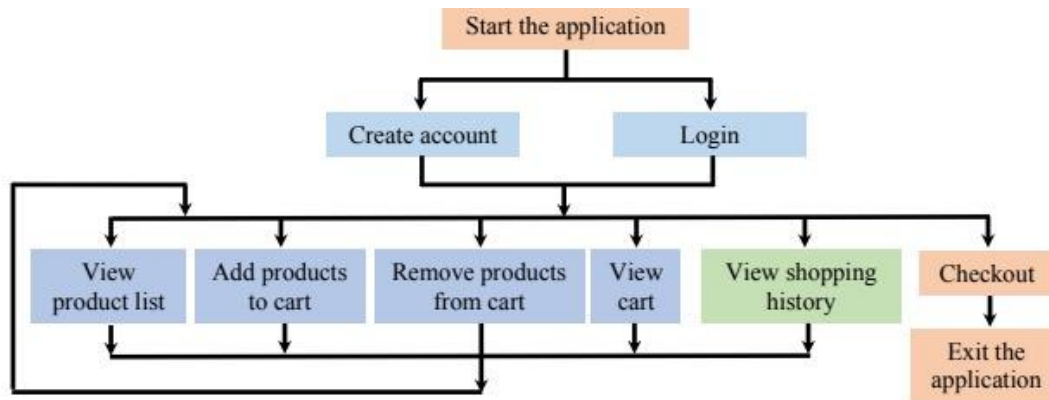
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## Abstract:

The goal of this project was to create a shopping mart management system with distinct functionalities for users and administrators. The outcome is a modular and user-friendly application that allows users to interact with a virtual shopping mart, add items to their carts, and check out. Admins can manage products, update stock, and perform account-related tasks. The project delves into user account management, file I/O, and efficient menu-driven interfaces.



## Distinguishing Features:

```
Enter Your Choice In Login Process:2
Enter User-id to login (enter 0 to back):usuf12
Enter your password (enter 0 to back):*****

Password Matched...

Generated Captcha:

G j 1
D $ I
1 u * m
Enter Captcha (enter 0 to back):Gj1D$I1u*m

Login Successful...
```

Figure 1: Captcha.

```
Login Successful...

You Have Pending Orders In Your Cart.

Your Cart

Product Id Product Name Quantity Price/UnitTotal PriceTime Status Cataegory
-----
2723 ak7 2 1000 2000 15:01:56 pending guns

Do You Want To Delete Pending Orders?
1.Ves
2.No
```

Figure 2: Pending orders will remain in cart.

```
Enter Your Choice:1
Enter Your Gmail (enter 0 to back):muhammadyousufmateen932@gmail.com
Enter Your User-id (enter 0 to go back):usuf12

ERROR:This User-Id Already Taken By Seller. Select another or login as a seller.

1. usu51f12
2. usf1173
3. Login to your account.
4. Enter your own User-Id.
Enter your choice : █
```

Figure 3: Suggestion if new user-id matched with old user-id.

```
Loading.....

Email sent successfully!
OTP sent successfully.

Enter your OTP (or 0 to exit): 53791
OTP verified successfully!

Account Created Successfully..
```

Figure 4: Verification code will be sent when register via gmail.

```
Enter Your Choice In Login Process:1
Enter User-id to login (enter 0 to back):usuf12
Enter your password (enter 0 to back):*****

ERROR:Password Not Matched. Please Enter Correct Password.

Do You Forgot Password?
1.Yes
2.No

Enter Your Choice:1
What Is Your Favourite Pet Animal (enter 0 to back):tara

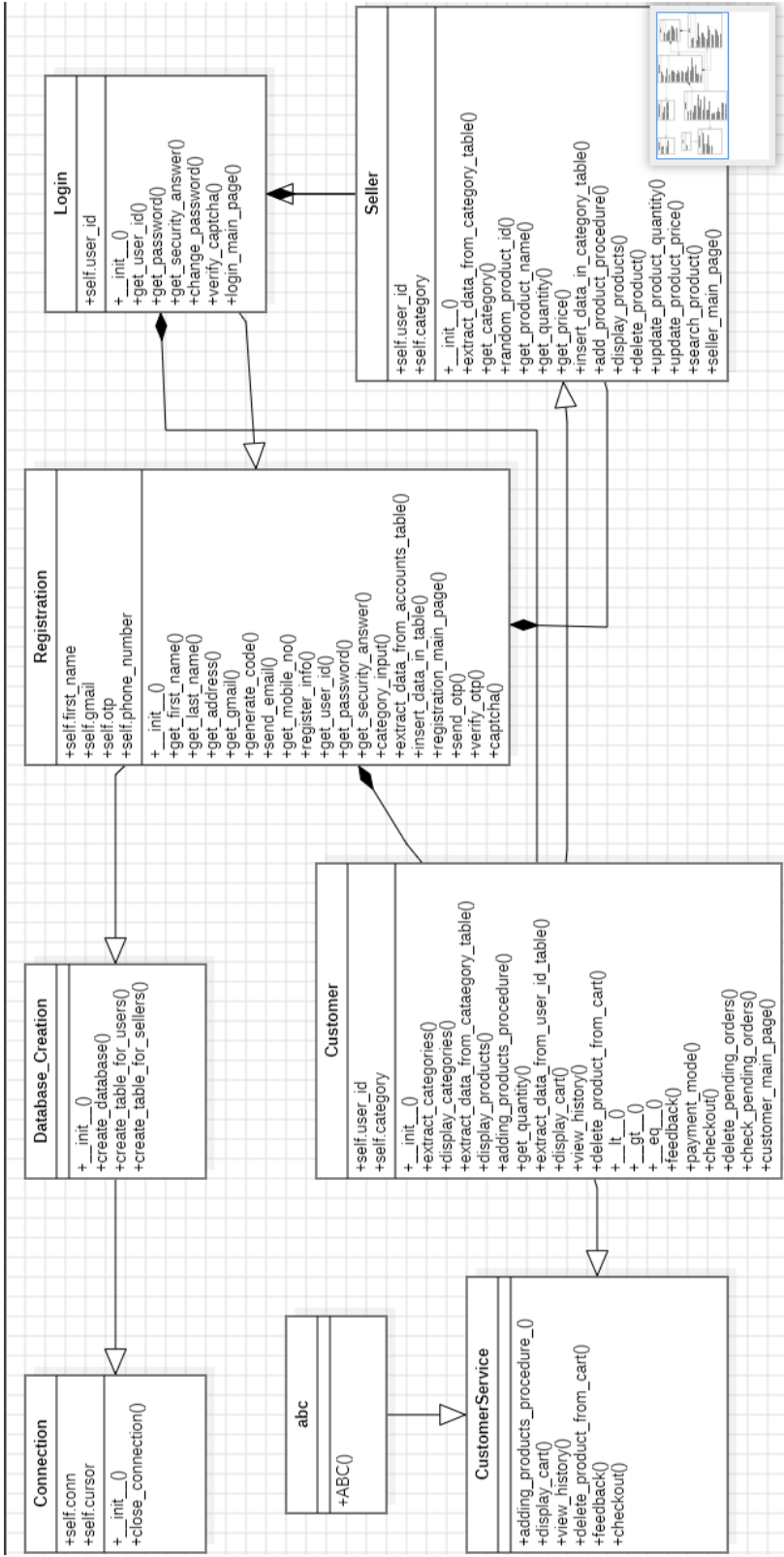
Security Answer Matched...

Enter your password (enter 0 to back) : *****

Password Updated Successfully...
```

*Figure 5: Forgot password option given, when yes required security answer set earlier during registration.*

## Flow of Our Project





## Most Challenging Part:

### 1) Menu Navigation:

- Designing a user-friendly menu system for both users and admins.

### 2) Maintaining Different Sellers:

- To maintain different Sellers ,like every sellers can make changes in their respective Dashboard.

### 3) User History Management:

- Efficiently managing and displaying customer shopping history, especially if the application grows and accumulates a significant amount of historical data.
- Also in managing the history of items present in cart of customer will remain in the cart until next login.

### 4) Documentation Clarity:

- Ensuring that the documentation is clear, comprehensive, and accessible for anyone who may need to understand or modify the code.

### 5) Code Breaking:

- The major issue we faced in this project was the breaking of code into different modules.

## What we Learn in this Project:

### 1) Database (SQL) With Python:

- Working with SQL operations, including creation of file and updating file wherever necessary.
- Handling exceptions related to SQL operations, such as my sql connector error..

### 2) Command-Line Interface (CLI) Interaction:

- Implementing a basic command-line interface for user interaction.
- Processing user input either seller or customer and providing appropriate responses in different text color, distinguishing in between the terminal original color.

### 3) User Authentication and Authorization:

- Implementing a basic user authentication system for both seller and customer using a username-password approach.
- Verification code sent when user signup via gmail and captcha is asked when register via mobile.

### 4) Class Decomposition:

- Breaking down the application into modular classes to handle specific tasks.
- Understanding the importance of modular design for code organization and readability.

### 5) Exception Handling:

- Implementing exception handling to manage errors and unexpected situations in the code.
- Using try-except blocks for graceful error handling.

### 6) Understanding Customer and Seller Roles:

- Implementing different classes and access levels for customers and sellers.

### 7) Product Management for Seller:

- Developing features for adding, updating, searching and deleting products in inventory system of seller.
- Managing product details, including product id, prices and quantities.

### 8) Project Documentation:

- Creating and maintaining project documentation, including doc string, comments, to enhance code readability.

## Task Distribution:

### 1) Muhammad Ahmed Raza CS-23097:

- Ahmed and Yousuf mutually maintain the database and configuration of SQL.
- Registration and Customer classes have been made by Ahmed. Project testing, code flow, additional features (captcha, verification code and many more) and class diagram is mutually maintained.

### 2) Muhammad Yousuf Mateen CS-23135:

- Yousuf and Ahmed mutually maintain the database and configuration of SQL.

- Login and Seller classes have been made by Yousuf. Project testing, code flow , additional features (captcha, verification code and many more) and class diagram is mutually maintained.

## Future Enhancements:

### 1) User Authentication and Authorization:

- Implement a more robust user authentication system, possibly incorporating encryption for storing passwords.

### 2) Graphical User Interface (GUI):

- Develop a graphical user interface using a GUI using Python Frameworks like Django Or Flask. This can provide a more user-friendly experience compared to a command-line interface.

### 3) Product Categories and Filtering:

- Add support for product categories, allowing customers to filter and search for products based on categories.

### 4) Discounts and Promotions:

- Introduce a system for discounts, promotions, or coupon codes that users can apply during checkout.
- Implement logic for handling special events or sales.

### 5) Inventory Management:

- Provide alerts for low-stock items to sellers.

### 6) Data Backup and Recovery:

- Develop a system for regular data backups to prevent data loss. Include mechanisms for data recovery in case of unexpected issues.

### 7) Add Admin Feature:

- Develop a class for admin that admin has complete access for the store , He can cancel sellers's Registration at any moment.

## Test Cases:

Login Successful...

- 1.Add Product in sports Cataegory.
- 2.View products in your sports cataegory.
- 3.Delete Product From Your sports Cataegory.
- 4.Update Product Quantity From Your sports Cataegory.
- 5.Update Product Price From Your sports Cataegory.
- 6.Search Product in your sports cataegory.
- 7.Back From Seller Dashboard.

Enter Your Choice In Seller Area:1

Enter Product Name (enter 0 to back):cricketing gloves

Enter Quantity (enter 0 to back):100

Enter Price (enter 0 to back):-21

ERROR:Price Must contain only digits.

Enter Price (enter 0 to back):10000

Product Added Successfully...

Figure 6: Seller adding product and its info.

- 1.proceed For Registration.
- 2.proceed For Login.
- 3.Exit From Store.

Enter Your Choice In Store:2

- 1.Login As Seller.
- 2.Login As Customer.
- 3.Back From Login.

Enter Your Choice In Login Process:1

Enter User-id to login (enter 0 to back):ususus

ERROR:User-Id not found. You should Signup first.

Want to signup (y/n) ? y

- 1.Proceed As Seller.
- 2.Proceed As Customer.
- 3.Back From Registration.

Enter Your Choice In Registration Process:

Figure 7: When user enter user-id during login while not in our database, can go to signup directly if user want.

Login Successful...

You Have Pending Orders In Your Cart.

#### Your Cart

Product Id	Product Name	Quantity	Price/Unit	Total Price	Time	Status	Category
2723	ak7	2	1000	2000	15:01:56	pending	guns

Do You Want To Delete Pending Orders?

- 1.Yes
- 2.No

Enter Your Choice:2

- 1.Add Products In Cart.
- 2.Display Cart.
- 3.Delete Product From Cart.
- 4.Checkout.
- 5.View History.
- 6.Feedback.
- 7.Back From Customer.

Enter Your Choice In Customer Area:1

#### All Categories

Category Id	Category Name
1	sports
2	electronics
3	guns

Enter Category Id to view Products (enter 0 to go back): 1

#### sports Products

Product Id	Product Name	Quantity	Price
8990	bat	2	500
7190	ball	8	100
8903	cricketing gloves	100	10000

Enter Product Id to add to cart from sports Category (enter 0 to go back): 8990  
You want to buy Product bat. Please enter quantity.

Enter Quantity (enter 0 to back):1

Product added to cart successfully from sports category...

Do you want to continue shopping in this category?

1. Yes
2. No

Enter your choice: 2

- 1.Add Products In Cart.
- 2.Display Cart.
- 3.Delete Product From Cart.
- 4.Checkout.
- 5.View History.
- 6.Feedback.
- 7.Back From Customer.

```
Enter Your Choice In Customer Area:4

Your Cart

Product Id  Product Name      Quantity  Price/UnitTotal PriceTime      Status  Cataegory
-----
2723       ak7                2         1000    2000    15:01:56 pending  guns
8990       bat                1          500     500    16:18:33 pending  sports

1.Cash On Delivery.
2.Credit Card.
3.Back From Payment Method.

Enter Your Choice For Payment Mode:1

Cash On Delivery Selected.

Do You Want To Confirm Checkout?
1.Yes
2.No

Enter Your Choice:1
Total Bill is 2500.

Your Payment Mode is Cash On Delivery.You must pay 2500.
You Must pay the amount at the time of delievery.

Checkout Successfully.Thanks For Shopping...
```

Figure 8: Above three pics showing that the customer adding product and doing checkout.

## Reference:

Functions and concepts for this project were derived from various sources and tutorials, including online platforms like Stack Overflow, official Python documentation, and educational resources.