Programming Fundamentals
LAB PROJECT

Total Marks: 15   Deadline: 19-06-25: till 11:59 PM

Instructions:

You have to upload your assignments on CMS.

CPP should be combined with files into zip folder, named your Registration Number.

This is an individual Project.

All program codes should be written in C/C++. Students should use Visual studio compiler for coding.

Plagiarism in the work is Professional dishonesty which leads to strict disciplinary action and zero in grading of Assignment.

Make your own functions and every function should perform one functionality only.

Don't use of any built-in function related to char array otherwise your task will be cancelled.

Don't use Global variables.

100 % marks will be given on the basis of no Memory leakage, no dangling pointers, and No extra space should be wasted. Also make use of helper functions where ever required.

String data type not allowed instead use CString with null termination else you will get 0.

Learning Objectives: Demonstrate knowledge of overall contents of C++ in PF programming.

Question 1   Online Shopping Cart

The Online Shopping Cart program is a command-line application that provides users with the ability to add and remove items from their shopping cart, calculate the total cost, and place an order. The program uses dynamic arrays for efficient storage of user-added products.

product.txt

Categories.txt

Program Flow for admin side:

There should be one admin to fulfil below activity, admin must login his profile.

Display available products to the user (display all).

Insert product

Delete specific product

Update product information

View orders

Program Flow for Customer side:

Register User information.

To fulfil below activity, user must login his profile.
Display available products to the user (display all).
Prompt the user to add items to their cart by specifying the item and quantity.
Repeat the process until the user enters 'E' to exit.
User can remove the item from the shopping cart as well.
View data according to category
Calculate the total cost of the items in the cart and display it to the user.
Confirm the user's order. If confirmed:
Subtract the quantity of items from the available stock.
Save the order details, including the user's information, in a file named after the user order.
Request and save the user's details for order confirmation.

Sample Output:
Welcome to the Online Shopping Cart - Admin Panel!

Admin Login:
Username: admin
Password: ********

Logged in as Admin.

1. Display available products
2. Insert new product
3. Delete specific product
4. Update product information
5. View orders
6. Logout

Enter your choice: 1
Available Products:
ID	Name	Price	Quantity
1	Laptop	$800.50	20
2	Smartphone	$399.99	30
3	Headphones	$49.99	50
****
Enter your choice: 2

Insert New Product:
Product Name: New Product
Price: $99.99
Quantity: 10
Category: Electronics

Product added successfully!
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****************************************************************
```
Enter your choice: 3

Delete Specific Product:
Enter the Product ID to delete: 4

Product deleted successfully!
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****************************************************************
```
Enter your choice: 4
Enter your choice: 4

Update Product Information:
Enter the Product ID to update: 2

Enter updated product information:
Product Name: Updated Smartphone
Price: $449.99
Quantity: 25
Product information updated successfully!

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```
Enter your choice: 5

Order History:

Order ID	Product ID	Quantity	Price	Total Cost
1	2	1	2	$800.50	$1601.00

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```
Enter your choice: 6
Logged out successfully. Goodbye!

Welcome to the Online Shopping Cart as a user!

1. Register
2. Login
3. Exit

Enter your choice: 1

Register:
Name: John Doe
Username: user123

Password: ********
Registration successful!

1. Register
2. Login
3. Exit

Enter your choice: 2

Login:
Username: user123
Password: ********

Logged in as John Doe.

1. Display available products
2. Add items to the cart
3. View cart
4. Place order
5. Logout
****

Enter your choice: 1

Available Products:
ID	Name	Price	Quantity
1	Laptop	$800.50	20
2	Smartphone	$399.99	30
3	Headphones	$49.99	50
...
****

Enter your choice: 2

Add items to the cart:
Enter Product ID: 1
Enter Quantity: 2

Product added to the cart successfully!

Enter your choice: 3

Your Shopping Cart:

```
| ID | Name        | Price  | Quantity |
|----|-------------|--------|----------|
| 1  | Laptop      | $800.50| 2        |
```

Total Cost: $1601.00

Enter your choice: 4

Confirm order? (Y/N): Y

Order confirmed! Please provide your details for delivery:
Name: John Doe

Thank you for shopping with us, John Doe! Your order has been confirmed.

Enter your choice: 5

Logged out successfully. Goodbye!

Construct to be used:

Dynamic One D array
Dynamic Two D array
Functions
Regrow and shrink (bonus)