Subject code	:	CEUC102	Semester	:	2	Academic Year	:	2024-2025
Subject name	:	Programming with C++						
Name	:	Jay Shirishbhai Patel						
ID No.	:	24CE081						

Output 1.1	Enter '1' for create Account. Enter '2' for deposit money. Enter '3' for withdraw money. Enter '4' for Display Details. Enter '5' for Exit. Enter your choice : 1 ------------------------ Enter Holder Name : Jay Enter Account Number : 1 Enter your Balance : 1200 ------------------------ Enter '1' for create Account. Enter '2' for deposit money. Enter '3' for withdraw money. Enter '4' for Display Details. Enter '5' for Exit. Enter your choice : 2 Enter Account no for check : 1 ------------------------ Enter your amount that you want to deposit : 200 Your new balance is : 1400 ------------------------ Enter '1' for create Account. Enter '2' for deposit money. Enter '3' for withdraw money. Enter '4' for Display Details. Enter '5' for Exit. Enter your choice : 3 Enter product ID for check : 1 ------------------------ Enter your amount that you want to withdraw : 100 New Balance : 1300 ------------------------ Enter '1' for create Account. Enter '2' for deposit money. Enter '3' for withdraw money. Enter '4' for Display Details. Enter '5' for Exit. Enter your choice : 4 Enter product ID for check : 1 ------------------------ Holder Name : Jay Number : 1 CurrentBalance : 1300 ------------------------ Enter '1' for create Account. Enter '2' for deposit money. Enter '3' for withdraw money. Enter '4' for Display Details. Enter '5' for Exit. Enter your choice : 5 Thank you, Exit.

| **Output 1.2** | ```
Enter '1' for Add Product ,
Enter '2' for Update Quantity ,
Enter '3' for Display Product details ,
Enter '4' for Display total bill .
Enter '5' for Exit .
Enter your choice: 1
--------------------------
Enter ID : 1
Enter name : pencil
Quantity : 1
Enter price : 10
--------------------------
Enter '1' for Add Product ,
Enter '2' for Update Quantity ,
Enter '3' for Display Product details ,
Enter '4' for Display total bill .
Enter '5' for Exit .
Enter your choice: 1
--------------------------
Enter ID : 2
Enter name : pen
Quantity : 1
Enter price : 15
--------------------------
``` |
| | ```
Enter '1' for Add Product ,
Enter '2' for Update Quantity ,
Enter '3' for Display Product details ,
Enter '4' for Display total bill .
Enter '5' for Exit .
Enter your choice: 2
Enter product ID for check : 2
Enter the product quantity for update : 2
Updated Quantity : 3
--------------------------
Enter '1' for Add Product ,
Enter '2' for Update Quantity ,
Enter '3' for Display Product details ,
Enter '4' for Display total bill .
Enter '5' for Exit .
Enter your choice: 3
Enter product ID for check : 1
--------------------------
Product ID : 1
Product Name : pencil
Product Quantity : 1
Product total price : 10
--------------------------
``` |

```
Enter '1' for Add Product ,
Enter '2' for Update Quantity ,
Enter '3' for Display Product details ,
Enter '4' for Display total bill .
Enter '5' for Exit .
Enter your choice: 4
-------------------------
Product ID : 1
Product Name : pencil
Product Quantity : 1
Product total price : 10
-------------------------
-------------------------
Product ID : 2
Product Name : pen
Product Quantity : 3
Product total price : 45
-------------------------
Total Bill Amount: 55

Enter '1' for Add Product ,
Enter '2' for Update Quantity ,
Enter '3' for Display Product details ,
Enter '4' for Display total bill .
Enter '5' for Exit .
Enter your choice: 5
Thank you, Exit.
```

| **Output 2.1** | ```
--- MENU ---
1. Add Data
2. Update Data
3. Display Data
4. Exit.
Enter choice: 1
Enter length : 4
Enter width : 5

--- MENU ---
1. Add Data
2. Update Data
3. Display Data
4. Exit.
Enter choice: 2
Enter Plot No. to update (1 to 1): 1
Enter new length : 6
Enter new width : 5
``` |
| | ```
--- MENU ---
1. Add Data
2. Update Data
3. Display Data
4. Exit.
Enter choice: 3
Enter Plot No. to display (1 to 1): 1
-------------------------
Length: 6
Width: 5
Area: 30
Perimeter: 22
-------------------------

--- MENU ---
1. Add Data
2. Update Data
3. Display Data
4. Exit.
Enter choice: 4
Thank you,exit.
``` |

Output 2.2

```
=========== MENU ===========
1. Show default student record
2. Add student records
3. Display all student records
4. Exit
Enter your choice (1-4): 1

--- Default Student Record ---
--------------------------------------
Roll Number   : 0
Name          : N/A
Subject Marks : 0, 0, 0
Average Marks : 0
--------------------------------------

=========== MENU ===========
1. Show default student record
2. Add student records
3. Display all student records
4. Exit
Enter your choice (1-4): 2
```

```
Enter the number of students you want to add (1 to 100): 2

--- Enter details for Student 1 ---
Roll Number      : 1
Name             : Jay
Marks (m1 m2 m3) : 99 98 96

--- Enter details for Student 2 ---
Roll Number      : 2
Name             : Max
Marks (m1 m2 m3) : 50 66 67

=========== MENU ===========
1. Show default student record
2. Add student records
3. Display all student records
4. Exit
Enter your choice (1-4): 3
```

```
=== Displaying Student Records ===

Student 1:
------------------------------------
Roll Number   : 1
Name          : Jay
Subject Marks : 99, 98, 96
Average Marks : 97.6667
------------------------------------

Student 2:
------------------------------------
Roll Number   : 2
Name          : Max
Subject Marks : 50, 66, 67
Average Marks : 61
------------------------------------

========== MENU ==========
1. Show default student record
2. Add student records
3. Display all student records
4. Exit
Enter your choice (1-4): 4
```

| Output 2.3 | ```
Enter '1' for create Account.
Enter '2' for deposit money.
Enter '3' for withdraw money.
Enter '4' for Display Details.
Enter '5' for Exit.
Enter your choice : 1
-------------------------
Enter Holder Name : Jay
Enter Account Number : 1
Enter your Balance : 1200
-------------------------
Enter '1' for create Account.
Enter '2' for deposit money.
Enter '3' for withdraw money.
Enter '4' for Display Details.
Enter '5' for Exit.
Enter your choice : 3
Enter product ID for check : 1
-------------------------
Enter your amount that you want to withdraw : 50
New Balance : 1150
-------------------------
Enter '1' for create Account.
Enter '2' for deposit money.
Enter '3' for withdraw money.
Enter '4' for Display Details.
Enter '5' for Exit.
Enter your choice : 2
Enter Account no for check : 1
``` |
| | ```
-------------------------
Enter your amount that you want to deposit : 2000
Your new balance is : 3150
-------------------------
Enter '1' for create Account.
Enter '2' for deposit money.
Enter '3' for withdraw money.
Enter '4' for Display Details.
Enter '5' for Exit.
Enter your choice : 4
Enter product ID for check : 1
-------------------------
Holder Name : Jay
Number : 1
CurrentBalance : 3150
-------------------------
Enter '1' for create Account.
Enter '2' for deposit money.
Enter '3' for withdraw money.
Enter '4' for Display Details.
Enter '5' for Exit.
Enter your choice : 5
Thank you, Exit.
``` |

| Output 2.4 | ```
======= INVENTORY MENU =======
1. Add Item.
2. Increase Quantity.
3. Decrease Quantity.
4. Display Item Details.
5. Exit.
.=============================
Enter your choice: 1

--- Add New Item ---
Enter item ID      : 1
Enter item's name   : Pen
Enter price of item : 15
Item added successfully!
----------------------------


======= INVENTORY MENU =======
1. Add Item.
2. Increase Quantity.
3. Decrease Quantity.
4. Display Item Details.
5. Exit.
.=============================
Enter your choice: 2

Enter item ID to increase quantity: 1

--- Increase Quantity ---
Enter quantity to be increased: 5
Item's Quantity is successfully increased!
--------------------------
``` |

```
======= INVENTORY MENU =======
1. Add Item.
2. Increase Quantity.
3. Decrease Quantity.
4. Display Item Details.
5. Exit.
.=============================
Enter your choice: 3

Enter item ID to decrease quantity: 1

--- Decrease Quantity ---
Enter quantity to be decreased: 2
Item's Quantity is successfully decreased!
---------------------------

======= INVENTORY MENU =======
1. Add Item.
2. Increase Quantity.
3. Decrease Quantity.
4. Display Item Details.
5. Exit.
.=============================
Enter your choice: 4

Enter item ID to display details: 1

--- Item Details ---
ID       : 1
Name     : Pen
Price    : 15
Quantity : 4
---------------------------
```

```
======= INVENTORY MENU =======
1. Add Item.
2. Increase Quantity.
3. Decrease Quantity.
4. Display Item Details.
5. Exit.
.=============================
Enter your choice: 5

Thank you for using Inventory System!
```

| Output 2.5 | ```
========== Loan Management Menu ==========
1. Add Account Details
2. Display Account Details by ID
3. Exit.
Enter your choice (1 or 3): 1

----- Enter Loan Account Details -----
Enter Loan ID            : 1
Enter Name               : Jay
Enter Loan Amount        : 20000
Enter Annual Interest (%) : 8
Enter Loan Tenure (months): 12
Account details added successfully!

========== Loan Management Menu ==========
1. Add Account Details
2. Display Account Details by ID
3. Exit.
Enter your choice (1 or 3): 1

----- Enter Loan Account Details -----
Enter Loan ID            : 2
Enter Name               : Patel
Enter Loan Amount        : 50000
Enter Annual Interest (%) : 8
Enter Loan Tenure (months): 24
Account details added successfully!
``` |
| | ```
========== Loan Management Menu ==========
1. Add Account Details
2. Display Account Details by ID
3. Exit.
Enter your choice (1 or 3): 2

Enter Loan ID to display details: 2

========== Loan Account Details ==========
Loan ID        : 2
Name           : Patel
Loan Amount    : 50000
Annual Rate    : 8%
Loan Tenure    : 24 months
Monthly EMI    : 2261.37
==========================================

========== Loan Management Menu ==========
1. Add Account Details
2. Display Account Details by ID
3. Exit.
Enter your choice (1 or 3): 3
Exit,Thank you.
``` |

| **Output 3.1** | ```
=============== Employee Management System ===============
1. Add Employee Data
2. Display Employee Data
3. Exit
==========================================================
Enter your choice: 1
Enter number of employees to add (max remaining: 20): 2

Enter employee ID:1
Enter employee name:Jay
Enter employee salary:20000
Enter employee bonus if he/she got specific bonus otherwise enter 0 for default bonus:0

Enter employee ID:2
Enter employee name:Patel
Enter employee salary:50000
Enter employee bonus if he/she got specific bonus otherwise enter 0 for default bonus:2500

=============== Employee Management System ===============
1. Add Employee Data
2. Display Employee Data
3. Exit
==========================================================
Enter your choice: 2

Enter employee ID for display:1
``` |
| | ```
=============== Employee Details ===============
ID           : 1
Name         : Jay
Basic Salary : 20000
Bonus        : 1000
Total Salary : 21000
==========================================================


=============== Employee Management System ===============
1. Add Employee Data
2. Display Employee Data
3. Exit
==========================================================
Enter your choice: 2

Enter employee ID for display:2

=============== Employee Details ===============
ID           : 2
Name         : Patel
Basic Salary : 50000
Bonus        : 2500
Total Salary : 52500
==========================================================
``` |
| | ```
=============== Employee Management System ===============
1. Add Employee Data
2. Display Employee Data
3. Exit
==========================================================
Enter your choice: 3
Thank you,Exit.
``` |

Output 3.2	``` Enter the number of elements in the array: 5 Enter 5 elements: Element 1: 5 Element 2: 25 Element 3: 56 Element 4: 8 Element 5: 99 === Result === Recursive Sum: 193 Iterative Sum: 193 PS D:\C++\oop\OOPS\3.()> ┃ ```

Output 3.3	``` == Welcome to Community Bank System == 1. Add New Account 2. Transfer Money 3. Show Total Accounts 4. Exit == Select an Option: 1 --- Add New Account --- Enter Account Number : 1 Enter Account Holder's Name : Jay Enter Initial Balance : 20000 Account added successfully! Select an Option: 1 --- Add New Account --- Enter Account Number : 2 Enter Account Holder's Name : Patel Enter Initial Balance : 5200 Account added successfully! Select an Option: 2 --- Money Transfer --- Enter Sender's Account Number : 1 Enter Receiver's Account Number : 2 Enter Amount to Transfer : 200 ```

```
Transfer successful!

--- Transaction Summary ---
--- Account Details ---
Account Number        : 1
Account Holder's Name : Jay
Current Balance       : 19800

--- Account Details ---
Account Number        : 2
Account Holder's Name : Patel
Current Balance       : 5400

Select an Option: 3

Total Accounts Created: 2

Select an Option: 4

Thank you,exit.
```

| **Output 3.4** | ```
==============================
Select Data Type to Process:
1. Integer
2. Float
3. Character
4. Exit
==============================
Enter your choice: 1

Enter integers (enter 0 to stop):
25
4
0

--- Input Summary ---
Original elements: 25 - 4
--- Max Value ---
Maximum element: 25
--- Reversed Collection ---
Reversed elements: 4 - 25


==============================
Select Data Type to Process:
1. Integer
2. Float
3. Character
4. Exit
==============================
Enter your choice: 2
``` |

```
Enter your choice: 2

Enter float values (enter 0 to stop):
3.25
5.5
9.99
0

--- Input Summary ---
Original elements: 3.25 - 5.5 - 9.99
--- Max Value ---
Maximum element: 9.99
--- Reversed Collection ---
Reversed elements: 9.99 - 5.5 - 3.25

==============================
Select Data Type to Process:
1. Integer
2. Float
3. Character
4. Exit
==============================
Enter your choice: 3

Enter characters (enter '!' to stop):
A
c
d
!
```

```
--- Input Summary ---
Original elements: A - c - d
--- Max Value ---
Maximum element: d
--- Reversed Collection ---
Reversed elements: d - c - A

==============================
Select Data Type to Process:
1. Integer
2. Float
3. Character
4. Exit
==============================
Enter your choice: 4

Thank you,exit.
```

Output 3.5	Enter number: 6982 Enter the number of repetitions: 5 Super digit: 8

Output 4.1	Enter radius: 25 Area of circle: 1962.5 Want to add more circle? (1 for yes/0 for no) Enter your choice: 1 Enter radius: 6 Area of circle: 113.04 Want to add more circle? (1 for yes/0 for no) Enter your choice: 0

Output 4.2	Enter name: Jay Enter age: 18 Enter employee Id: 1 Enter Department: CE Do you want to add more Employee?(1 for yes/0 for no) Enter your choice: 1 Enter name: Patel Enter age: 20 Enter employee Id: 2 Enter Department: CE Do you want to add more Employee?(1 for yes/0 for no) Enter your choice: 0 Displaying details of employee EMPLOYEE 1 Name: Jay Age: 18 Employee ID: 1 Department: CE EMPLOYEE 2 Name: Patel Age: 20 Employee ID: 2 Department: CE

Output 4.3	```
	Enter details for car 1:
	Enter Car Name: Volvo
	Enter Fuel Type: diesel
	Enter Brand Name: Volvo
	Do you want to add another car? (y/n): y
	Enter details for car 2:
	Enter Car Name: XUV500
	Enter Fuel Type: petrol
	Enter Brand Name: XUV
	Do you want to add another car? (y/n): n
	Displaying all car details:
	--- Car Details ---
	Car Name: Volvo
	Fuel Type: diesel
	Brand Name: Volvo
	--- Car Details ---
	Car Name: XUV500
	Fuel Type: petrol
	Brand Name: XUV

| Output 4.4 | ```
Enter 1 to create saving account
Enter 2 to create current account
Enter your choice: 1
Enter account number: 1
Enter initial balance: 10200
Enter interest rate: 8
Saving account created successfully!
Enter 1 to Deposit amount
Enter 2 to withdraw amount
Enter 3 to undo last transaction
Enter 0 to exit
Enter your choice: 1
Enter amount to deposit: 200
Amount 200 deposited successfully!
Current balance: 10400
Enter 1 to Deposit amount
Enter 2 to withdraw amount
Enter 3 to undo last transaction
Enter 0 to exit
Enter your choice: 2
Enter amount to withdraw: 400
Amount 400 withdrawn successfully!
Current balance: 10000
``` |
| | ```
Enter 1 to Deposit amount
Enter 2 to withdraw amount
Enter 3 to undo last transaction
Enter 0 to exit
Enter your choice: 3
Undo done and current balance: 10400
Enter 1 to Deposit amount
Enter 2 to withdraw amount
Enter 3 to undo last transaction
Enter 0 to exit
Enter your choice: 0
Thank you!
``` |

Output 4.5	Enter 1 for UG student and 2 for PG student : 1 Enter the name of student : Jay Enter the marks of 3 subjects : 98 58 88 The average of 3 subjects : 81.3333 --- The name of student : Jay The marks of 3 subjects : 98,58,88 The student is pass