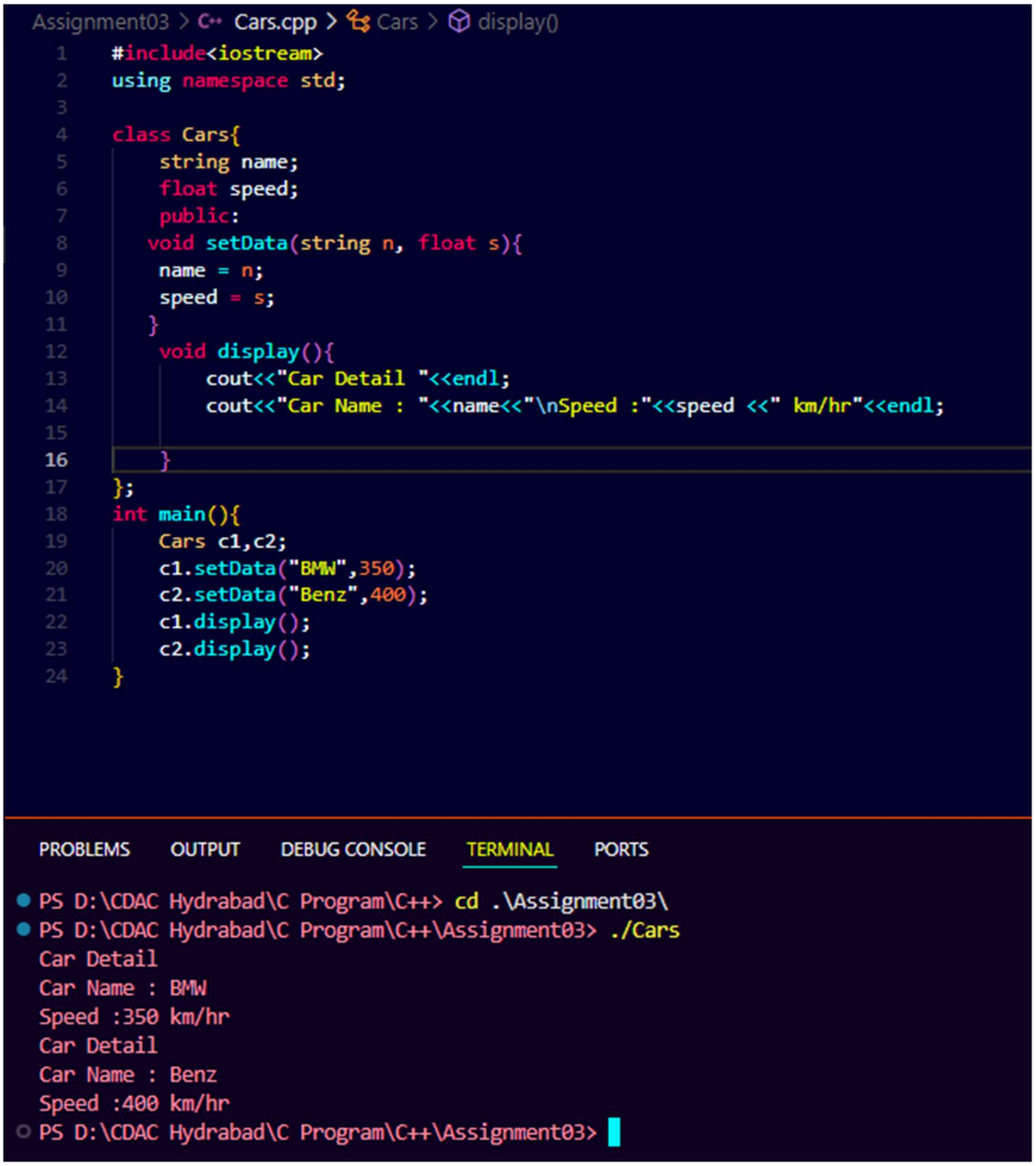
Assignment - 03(CPP)

Q1) Write a program in C++ to create a class Car with data members name and speed.

Use a member function display() to print values.

Create two objects and display their details.



Q2) Rectangle (Area & Perimeter) Create a class Rectangle with data members length and width.

Add member functions to calculate area and perimeter.

Read values from user and display results.

urth.cpp | fifth.cpp | sixth.cpp | sebenth.cpp | eight.cpp

Assignment03 > Rectangle.cpp > Rectangle > area()

```cpp
#include <iostream>
using namespace std;

class Rectangle
{
    float length;
    float breadth;

public:
    void input()
    {
        cout << "Enter the Parameter to Calculate Area & Perimeter " << endl;
        cin >> length >> breadth;
    }
    void perimeter()
    {
        float p = 2 * (length + breadth);
        cout << "Perimeter of Rectangle " << 2 * (length + breadth) << endl;
    }
    void area()
    {
        float a = length * breadth;
        cout << "Rectangle Area " << length * breadth << endl;
    }
};
int main()
{
    Rectangle r;
    r.input();
    r.perimeter();
    r.area();
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS D:\CDAC Hydrabad\C Program\C++\Assignment03> ./Rectangle
Enter the Parameter to Calculate Area & Perimeter
5
5
Perimeter of Rectangle 20
Rectangle Area 25
PS D:\CDAC Hydrabad\C Program\C++\Assignment03>
```

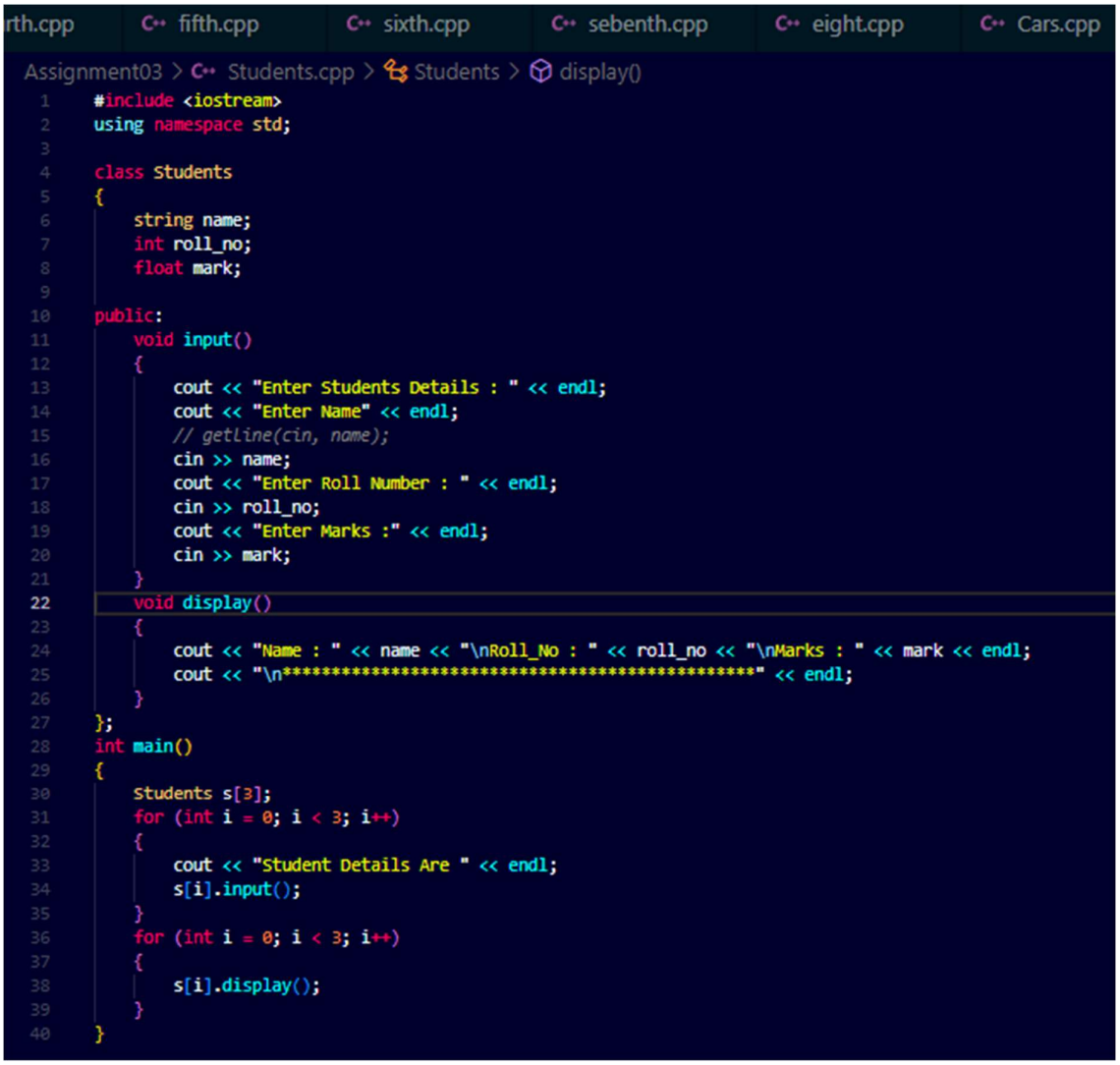
Q3) Student Details

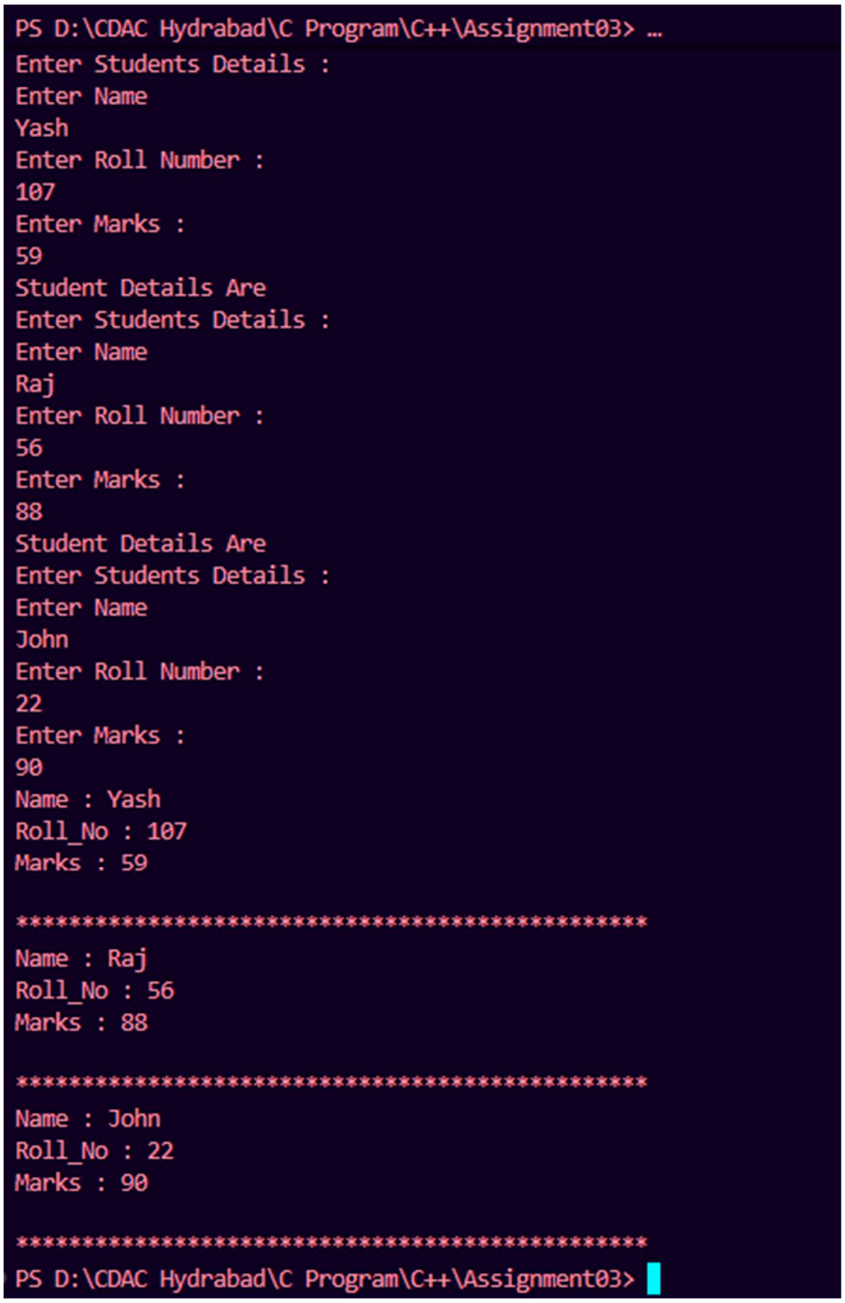
Create a class Student with data members: rollNo, name, and marks.

Add member function input() to take values.

Add function display() to print them.

Create an array of 3 students and display all details.





Q4) . Bank Account Create a class BankAccount with:

Data members: accountNumber, balance.

Functions: deposit(), withdraw(), displayBalance().

Perform deposit and withdrawal operations using objects.

Assignment03 > C++ Bank.cpp > main()

```cpp
#include<iostream>
using namespace std;

class Bank{
    int accno;
    float balance = 0;
public:
    void deposit(double amt){
        if (amt>0)
        {
            balance += amt;
            cout<<"Amount Deposited "<<amt<<"\nAvalabil Balance "<<balance<<endl;
        }
        else{
            cout<<"Invalid amount"<<endl;
        }
    }
    void withdraw(double amt){
        if (amt<=balance)
        {
            balance -= amt;
            cout<<"Withdraw Succes "<<amt<<"\nAvalabil Balance "<<balance<<endl;
        }
        else{
            cout<<"Insuffecent Balance"<<endl;
        }

    }
    void display(){
        cout<<"Avalaible Balance "<<balance<<endl;
    }
    };
    int main(){
        Bank b;
        b.deposit(10000);
        b.withdraw(10);
        b.display();
    }
```

```
PS D:\CDAC Hydrabad\C Program\C++\Assignment03> ./bank
Amount Deposited 10000
Avalabil Balance 10000
Withdraw Succes 10
Avalabil Balance 9990
Avalaible Balance 9990
PS D:\CDAC Hydrabad\C Program\C++\Assignment03>
```

Q5) Employee Salary (Parameterized Constructor)

Write a C++ program to create a class Employee with data members id, name, and salary.Use a parameterized constructor to initialize values.Display employee details using a function.

```cpp
#include <iostream>
using namespace std;

class Employees{
    int id;
    string name;
    double salary;
    public:
    Employees(int Id, string n, double s){
        id = Id;
        name = n;
        salary =s;
    }
    void display(){
        cout<<"Employees Details"<<endl;
        cout<<"Employee ID : "<<id<<"\nEmployee Name : "<<name<<"\nSalary : "<<salary<<endl;
    }
};
int main(){
    Employees e(1001,"Yash",100000);
    e.display();
}
```

```
PS D:\CDAC Hydrabad\C Program\C++\Assignment03> ./Employees
Employees Details
Employee ID : 1001
Employee Name : Yash
Salary : 100000
PS D:\CDAC Hydrabad\C Program\C++\Assignment03>
```

Q6) . Complex Number (Object as Argument)

Create a class Complex with data members real and imag.

Add a member function add() that takes another Complex object and returns the result as a new object.

Display the sum of two complex numbers.

Q7. Library Management

Create a class Book with data members title, author, and price. Write functions to input and display details. Create an array of 5 books and print the book with the highest price

Assignment03 > C++ Library.cpp > Library > input()

```cpp
#include<iostream>
using namespace std;

class Library{
    string title;
    double price;

    public:
    void input(){
        cout<<"Enter Book Title";
        cin>>title;

        cout<<"Enter Book Price"<<endl;
        cin>>price;
    }
    void display(){
        cout<<"\nBook Title"<<title<<endl;
        cout<<"Price"<<price<<endl;
        cout<<"*****************************************"<<endl;
    }
    double getprice(){
        return price;
    }
};
int main(){
    Library l[5];

    for (int i = 0; i < 5; i++)
    {
        cout<<"Book Number "<<i+1<<endl;
        l[i].input();
    }
     for (int i = 0; i < 5; i++)
    {
        cout<<"Book Number "<<i+1<<" Display"<<endl;
        l[i].display();
    }
    int f = 0;
    int h = l[0].getprice();
    for (int i = 0; i < 5; i++)
    {
      if (h<l[i].getprice())
      {
        h = l[i].getprice();
        f = i;
      }


    }
    cout<<"*****************************************"<<endl;
    cout<<"Higest Book Price"<<endl;
    l[f].display();
    return 0:
```

Ln 10, Col 26 Spaces: 4

```
PS D:\CDAC Hydrabad\C Program\C++\Assignment03> ./Library
Book Number 1
Enter Book Title :Panchtantra
Enter Book Price :
200
Book Number 2
Enter Book Title :Champian
Enter Book Price :
600
Book Number 3
Enter Book Title :Happines
Enter Book Price :
500
Book Number 4
Enter Book Title :Life
Enter Book Price :
745
Book Number 5
Enter Book Title :Introvert
Enter Book Price :
997.9
Book Number 1 Display

Book TitlePanchtantra
Price200
********************************************
Book Number 2 Display

Book TitleChampian
Price600
********************************************
Book Number 3 Display

Book TitleHappines
Price500
********************************************
Book Number 4 Display

Book TitleLife
Price745
********************************************
Book Number 5 Display

Book TitleIntrovert
Price997.9
********************************************
********************************************
Higest Book Price

Book TitleIntrovert
Price997.9
********************************************
PS D:\CDAC Hydrabad\C Program\C++\Assignment03>
```