C++ Assignment

Q1. Write a C++ Program which prints highest number from 3 entered numbers.

```
// Write a C++ program which prints highest number from entered 3 numbers.

#include <iostream>

using namespace std;

int main()
{
   int num1, num2, num3, biggest;

   cout << "\nEnter 3 numbers: ";
   cin >> num1 >> num2 >> num3;

   if (num1 > num2 && num2 > num3)
   {
      biggest = num1;
      cout << "\nBiggest number out of the three is " << biggest;
   }
   else if (num2 > num3)
   {
      biggest = num2;
      cout << "\nBiggest number out of the three is " << biggest;
   }
   else
   {
      biggest = num3;
      cout << "\nBiggest number out of the three is " << biggest;
   }
}
```

```
❯ ./biggest_number.exe

Enter 3 numbers: 10 20 30

Biggest number out of the three is 30
```

Q2. Write a C++ program to create a function named as area and find area of a triangle using no return and no parameter

```
// Write a C++ program to create a function named as area and find area of a triangle using no return and no parameter

#include <iostream>

using namespace std;

void area()
{
   int base, height, area_of_triangle;

   cout << "\nEnter base of the triangle : ";
   cin >> base;
   cout << "\nEnter height of the triangle : ";
   cin >> height;

   area_of_triangle = 0.5 * base * height;
   cout << "\nArea of the triangle is " << area_of_triangle;
}

int main()
{
   area();
}
```

```
❯ ./area_of_triangle.exe

Enter base of the triangle : 10

Enter height of the triangle : 20

Area of the triangle is 100
```

Q3. Write a C++ program to Read and Print Student Information using simple class.

```
// Write a C++ program to Read and Print Student Information using simple class.

#include <iostream>

using namespace std;

class Student
{
   private:
   string name;
   int sub1, sub2, sub3, sub4, sub5, reg_no;
   float total, percentage;

   public:
   void read()
   {
      cout << "\nEnter name of the student : ";
      cin >> name;
      cout << "\nEnter Registration Number of the student : ";
      cin >> reg_no;
      cout << "\nEnter marks of the student for 5 subjects [seperated by <space>] : ";
      cin >> sub1 >> sub2 >> sub3 >> sub4 >> sub5;
   }

   void total_percentage()
   {
      total = sub1+sub2+sub3+sub4+sub5;
      percentage = total / 500 * 100;
   }

   void print_info()
   {
      cout << "\nStudent Name        : " << name;
      cout << "\nRegistration Number  : " << reg_no;
      cout << "\n==============================";
      cout << "\nMarks in subject 1   : " << sub1 << "/100";
      cout << "\nMarks in subject 2   : " << sub2 << "/100";
      cout << "\nMarks in subject 3   : " << sub3 << "/100";
      cout << "\nMarks in subject 4   : " << sub4 << "/100";
      cout << "\nMarks in subject 5   : " << sub5 << "/100";
      cout << "\n------------------------------";
      cout << "\nTotal Marks         : " << total << "/500";
      cout << "\nPercentage          : " << percentage << "%";
   }
};

int main()
```

```
{
   class Student stu;

   stu.read();
   stu.total_percentage();
   stu.print_info();
}
```

```
❯ ./student_info.exe

Enter name of the student : Shalmon

Enter Registration Number of the student : 12345

Enter marks of the student for 5 subjects [seperated by <space>] : 40 50 60 45 56

Student Name         : Shalmon
Registration Number  : 12345
==============================
Marks in subject 1   : 40/100
Marks in subject 2   : 50/100
Marks in subject 3   : 60/100
Marks in subject 4   : 45/100
Marks in subject 5   : 56/100
------------------------------
Total Marks          : 251/500
Percentage           : 50.2%
```

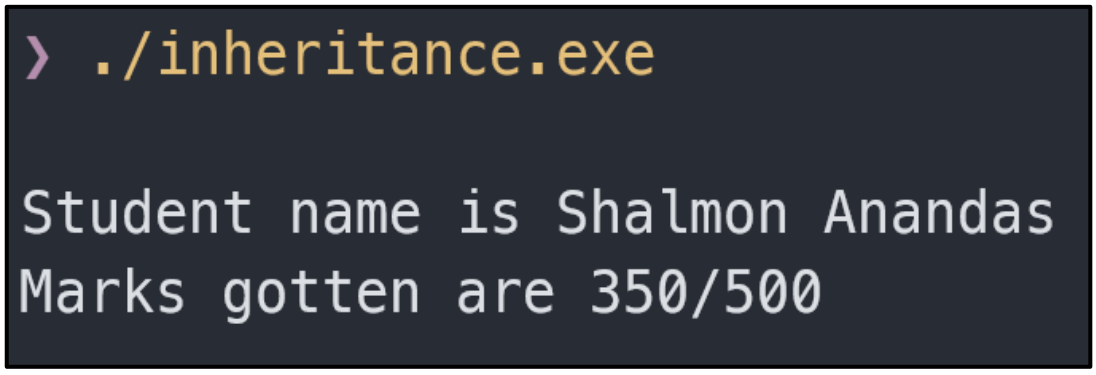
Q4. Write a C++ program to perform perimeter of a triangle and square function named perimeter() using function overloading

```
// Write a C++ program to perform perimeter of a triangle and square function named perimeter() using function overloading

#include <iostream>

using namespace std;

void perimeter(int a, int b, int c)
{
    int peri;
    peri = a + b + c;
    cout << "\nPerimeter of triangle is " << peri;
}

void perimeter(int side)
{
    int peri;
    peri = side * 4;
    cout << "\nPerimeter of Square is " << peri;
}

int main()
{
    perimeter(10, 20, 30);
    perimeter(10);
}
```

```
❯ ./function_overloading.exe

Perimeter of triangle is 60
Perimeter of Square is 40
```

Q5. Write a C++ program for multiple inheritance

```
// Write a C++ program for multiple inheritance

#include <iostream>

using namespace std;

class Stu
{
   public:
   Stu()          // constructor for Stu class
   {
      cout << "\nStudent name is Shalmon Anandas";
   }
};

class Marks
{
   public:
   Marks()      // contructor for Marks class
   {
      cout << "\nMarks gotten are 350/500";
   }
};

class Result: public Stu, public Marks{};

int main()
{
   Result Obj; // calling derived class, constructor gets called automatically
}
```



Q6. Write a c++ program to demonstrate virtual function.

```
// Write a c++ program to demonstrate virtual function.

#include <iostream>

using namespace std;

class Base
{
   public:
   virtual void print()
   {
      cout << "\nThis is the base class";
   }
};

class Derived:public Base
{
   public:
   void print()
   {
      cout << "\nThis is the derived class";
   }
};

int main()              // main function
{
   Base objB;        // Base class called as object objB
   Base* bptr;       // pointer of Base class called as object bptr
   Derived objD;   // Derived class called as object objD

   bptr = &objD;   // Address of Derived class assigned to object bptr

   objB.print();     // prints virtual function before runtime redefining
   bptr -> print();  // prints virtual function after runtime redefining
}
```

```
› ./virtual_function

This is the base class
This is the derived class
```