Lab Assignment-3

3. Programming Excerices on Constructors

3.1 Define a class String that could work as an user-defined string type. Include constructors that will enable us to create uninitialized string

   String s1; // string with length 0

and also to initialize an object with a string constant at the time of creation like

   String s2("Well done!");

Include a function that adds two strings to make a third string. Note that the statement
string s2 = s1;
will be perfectly reasonable expression to copy one string to another. Write a complete program to test your class to see that it does the following tasks:

(a) Creates uninitialized string objects.

(b) Creates objects with string constants.

(c) Concatenates two strings properly.

(d) Displays a desired string object.

3.2 Create a class Product with the following data members:
Non-Static data members: Product's name and price.
Static data members: totalProducts and totalPrice.
Initialize the objects of the Product class using constructors. Each time a product is created, update the total number of products and the total price. Display the total average price of all products using a static function.

3.3 Create a class Complex with data members real and imaginary. Initialize two objects of the Complex class using constructors. Include a static member function addcomplex() to perform the addition of two complex numbers and return the result.
Sample Run:
A = 3.12 +j 5.65
B = 2.75 +j 1.21
C = 5.87 +j 6.86
Here, A, B, and C represent the objects of class Complex.