

CS127-5L: Computer Programming 2 Laboratory

Machine Problem #1: Introduction to Classes

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|----------|-----------------------------|------------------|
| Name: | Carreon, Ma. Addine Anne T. | Score: |
| Section: | A35 | Date: 03-02-2023 |

Instructions:

1. Save your file as Surname_Firstname_MP1. *Ex. Isip_MP1.cpp*
2. You will submit the following and send it to BB.
 - a. PDF file of Machine Problem 1 provided with the screenshot of your answers (Sample Run)
 - b. C++ script with .cpp extension.
3. Your program must have comments for each section.
Header Comments:

Write a description of the program.
Written by: Cheryl Mari M. Isip
Date: March 02,2023
Time: 7:30am
Program: BSCPE
Course: CS127-5L
Section: B20
School: Mapua University

EXERCISE

- a. Construct a class named Rectangle that has a double-precision data members named **length and width**. The class should have a member functions named **perimeter ()** and **area ()** to calculate a rectangle's perimeter and area, a member function named **setdata ()** to set the rectangle's length and width, and a member function named **showdata ()** that displays the rectangle's length, width, perimeter and area.
- b. Include the Rectangle class constructed in a working C++ program.

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Take a screenshot and paste your output:

```
1 //The code is to take the length and width of the rectangle, then the results, including area and perimeter will be displayed
2 //Written by: Ma. Addine Anne T. Carreon
3 //Date: March 02, 2023
4 //Time: 10:54
5 //Course: CS127-5L
6 //Section: A35
7 //School: MAPUA University
8
9 #include <iostream>
10 #include <iomanip>
11
12 using namespace std;
13
14 //The function is to provide computation of the Rectangle
15 class Rectangle {
16 private:
17     double length;
18     double width;
19
20 public:
21     void setData(double l, double w) {
22         length = l;
23         width = w;
24     }
25
26     double perimeter() {
27         return 2 * (length + width);
28     }
29 }
```

Microsoft Visual Studio Debug Console

```
Enter the length: 5
Enter the width: 7

Length: 5
Width: 7
Perimeter: 24
Area: 35

C:\Users\Addine Carreon\Desktop\COMP LAB\Carreon_Ma. Addine_MP1\Debug\Carreon_Ma. Addine_MP1.exe (process 29740) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

```
30
31 double area() {
32     return length * width;
33 }
34
35 void showData() {
36     cout << "Length: " << length << endl;
37     cout << "Width: " << width << endl;
38     cout << "Perimeter: " << perimeter() << endl;
39     cout << "Area: " << area() << endl;
40 }
41
42 //The function is to properly utilize the use of classes
43 int main() {
44     Rectangle r;
45     double l, w;
46
47     cout << "Enter the length: ";
48     cin >> l;
49     cout << "Enter the width: ";
50     cin >> w;
51
52     r.setData(l, w);
53     cout << endl;
54     r.showData();
55     return 0;
56 }
57 }
```

Microsoft Visual Studio Debug Console

```
Enter the length: 20
Enter the width: 25

Length: 20
Width: 25
Perimeter: 90
Area: 500

C:\Users\Addine Carreon\Desktop\COMP LAB\Carreon_Ma. Addine_MP1\Debug\Carreon_Ma. Addine_MP1.exe (process 10948) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```