

CSE 102 – Computer Programming

Spring 2016

Homework #2

Due Date: March 2, 23:55

In this homework you will write simple programs to exercise with functions. Please do not forget that your program should work **exactly** as the example runs given below the part definitions.

PART I

In the previous homework you wrote a program that calculates the overall grade of the students. In this part of homework you will write a program which consists of one main function and one helper function for this job. Assume that there is only one midterm, one homework and one final exam and your program will calculate the grade of **three students**.

The helper function should be in the form:

```
void calculateLastGrade()
{
}

```

and there will be **no input/output operations** in the main function.

Example run:

```
Please enter the 1. midterm weight:20
Please enter the 1. homework weight:30
Please enter the final exam weight:50
Please enter the 1. midterm grade:20
Please enter the 1. homework grade:20
Please enter the final exam grade:20
Your final grade is: 20.000000
Please enter the 1. midterm weight:10
Please enter the 1. homework weight:40
Please enter the final exam weight:50
Please enter the 1. midterm grade:100
Please enter the 1. homework grade:60
Please enter the final exam grade:50
Your final grade is: 59.000000
Please enter the 1. midterm weight:25
Please enter the 1. homework weight:25
Please enter the final exam weight:50
Please enter the 1. midterm grade:60
Please enter the 1. homework grade:60
Please enter the final exam grade:70
Your final grade is: 65.000000

```

PART II

Write a program that calculates the area and perimeter of certain geometric shapes. You will write helper functions for each shape type that calculates the area or perimeter and return the result. Example functions are shown below. In the main function you will ask the user to enter the necessary parameters of one rectangle, one square and one circle, respectively and print out the result.

```
int areaofRectangle(int width, int height)
{
    ...
}
int perimeterOfCircle(int radius)
{
    ...
}
```

Example run:

```
Please enter the width of the rectangle:10
Please enter the height of the rectangle:20
The area of the rectangle is: 200
The perimeter of the rectangle is: 60
Please enter the width of the square:10
The area of the square is: 100
The perimeter of the square is: 40
Please enter the radius of the circle:2
The area of the circle is: 12
The perimeter of the circle is: 12
```