Homework 6 *(Due: Jun 12)*
C++ Programming - COSC 2321

Department of Computer Science and Electrical Engineering

Summer Session I, 2022

Exercises

*Create a **New Project** for every exercise. Take a screenshot of the source code along with its output and place the **source code** and the **screenshot** in a **zipped folder** named **LastNameFirstName_HW6***

Exercise 1

In a *.h* file create a *Class* named **GeometricShapes** that has *three* private members, namely, **width, height radius** of data type *double*. Create a **default** *Constructor* with no parameters that initializes all variables with 0 and prints a message. Define three *setter* functions, one for each variable and the following five *getter* functions: **getSquareArea, getRectangleArea, getTriangleArea, getCircleArea, getCircleCircumference**. Create also a *Destructor* function that simply prints a message. In *.cpp* file construct an object using the *parametereless default* constructor. Ask user to enter values for width, height, and radius and call the three respective *setter* functions. Print in one *cout* the **areas** of: **Square, Rectangle, Triangle, Circle** and **Circle Circumference**

Exercise 2

Similarly to Ex. 1, replace your *parametereless* **default** *Constructor* with a parameterized **default** *Constructor* (**all** variables need to have default values) and remove all *setter* functions. In your **main** function (*.cpp*), create a single object and pass only one parameter to the *Constructor*. Print the areas of all shapes and circle circumference as above

Exercise 3

Create a *Class* named **Palindrome** that has a *string* private member and two public functions, namely, **setWord** and **getChar**. In your **main**, Ask user to enter single word (with no white spaces). Assign the word entered to the private member of the class using the *setter* function. Find whether the word entered is a palindrome or not

Note: You may wish to make use of the **getChar** function to get a single character from the string given the index

Note: Submit through **Canvas**