SE 463 – Fall 2024
Assignment #1
Due: 9/25/2024

Your first assignment is to begin to explore not only how to think like a Software Tester but how to perform formalized software testing strategies. In this assignment, you are going to be evaluating a CS 142 program by taking a Unit Testing approach – more specifically, you will be performing Boundary Value Analysis (BVA). You will be crafting a test plan and test cases to execute to evaluate the software provided to you. Recall that BVA is a Blackbox Testing Technique and thus you will only be given the executable on which to execute your test cases.

For this assignment I want you to provide the following analysis for each of the following techniques:

- Normal Boundary Value Testing
- Robust Boundary Value Testing
- Worst-case Boundary Value Testing
- Robust worst-case Boundary Value Testing

Development Process:

You are expected to submit a "professional" report with this submission (e.g., a PDF document). This report should include your analysis for each Boundary Value technique. You should outline what your specific test cases are in each technique. Execution of your test cases are required and full results should be shown. Including screenshots will be helpful to document your execution. You should follow standard practice in the creation of your respective test cases (as discussed in lecture – please refer to lecture slides for report format and test case structure).

Your report should be named: **assignment1.pdf**

You are allowed to work on this assignment in pairs (e.g., groups of 2). Each student should submit a copy of their report and include any supplemental materials in their repository. NOTE: Each student should have their own repository.

Submission:

All assignments must be submitted on Butler GitHub (**github.butler.edu**). The name of your Butler GitHub repository must be as follows: **se463_fall2024**

Make sure your repository is **private** and that I (**rrybarcz**) am added as a collaborator. Failure to do so will result in a loss of points and possible non-grade.

Program Requirements/Specification

Create a computer program that calculates the area of the following shapes: **Squares**, **Rectangles, Rhombus'** and **Triangles**. Here we assume we can only calculate these four (4) shapes and always will calculate them in the same order. Here we also assume that only whole value numbers are used for input. The items in **BOLD** below are sample user entered input.

```
CS 142 Shape Wizard!

****Rectangle Area****
Please enter the length: 5
Please enter the width: 7
The area of the rectangle is: 35

****Square Area****
Please enter the side: 5
The area of the square is: 25

****Rhombus Area****
Please enter the diagonal: 4
Please enter the diagonal: 4
The area of the rhombus is: 8

****Triangle Area****
Please enter the base: 5
Please enter the height: 6
The area of the triangle is: 15

Thank you! Goodbye!
```

Developer Note

We will need two (2) variables of type `int` and one (1) variable of type `double`.