

PROG2070

Programming: SQA

Assignment #2 – Unit Testing

Due Week 05 at the beginning of your scheduled class

75 Marks – worth 7.5%

This is an individual assignment. Do your own work and do not share your work with others. Sharing work is an Academic Offense and is subject to a penalty. Be aware that all source code and other documentation is automatically checked by eConestoga upon submission.

For this assignment, we are going to develop unit tests for some C# (Class Library - .NET Framework). The requirements for this code are as follows:

- The application takes in three integers, each representing the sides of a triangle and based on the sides entered, shows what type of triangle could be formed – either Equilateral, Isosceles or Scalene.
- In doing so, the application makes use of the property that the sum of the two sides must be greater than the third - otherwise, an invalid response is returned.
- The application also checks to see if any side entered is a zero and if so, returns a particular error to this effect.

The code for this application is available in eConestoga along with this Assignment. Download this code, unzip it and double-click on the solution file to bring up this file in your Visual Studio.

Your task is to create fifteen (15) unique unit tests based on the following guidelines:

- Only one (1) test for a valid equilateral triangle
- Three (3) tests for a valid isosceles triangle
- Five (5) tests for a valid scalene triangle
- Three (3) tests for verifying a zero length for one or more sides
- Three (3) tests for verifying an invalid response (other than a zero length)

Ensure that your tests are properly named as per the convention shown in the slides as well as they are created using the proper A-A-A format along with the appropriate spacing.

You are also required to make three (3) commits into Git (or GitHub) based on any three test categories from above. For instance, you can make your first commit after completing your test for the equilateral case, the second commit after the isosceles cases and then the third after completing the scalene cases, etc...

Provide a single screenshot of all 15 Unit cases being run (take a screenshot of the Visual Studio Test Explorer after a run) – do not submit 15 separate screen shots of each individual unit test. All of your unit tests should pass and be based on correct inputs and expected results.

Provide a screenshot or output from a `git log` command showing your three commits. Feel free to run more commits as it makes sense for your particular project and your work schedule. But at minimum there should be the three commits as described in the assignment.

Submissions

The format for submitting the assignment is as follows:

1. eConestoga submissions:

- A single MS Word document named:

FirstName_LastName_StudentID_Assignment2.docx (where First_Name, Last_Name and StudentID are your particulars) that contains (in order):

- i. Assignment Title Page with your name, student ID, “Assignment #2” in the title and date;
 - ii. Copy of your test source code (copy and paste from Visual Studio – do NOT screenshot)
 - iii. Screenshot showing the results of your unit tests being run in Test Explorer,
 - iv. Screenshot/output of your Git/GitHub repository log showing all three commits along with their messages and hash values.
- A single compressed (.zip format) archive file containing **the entire Solution folder** of the source code and your tests

(Do not include the .docx file in the .zip file)

Please submit the above two files into the “**Assignment 02**” assignment folder in eConestoga.

Late penalties will apply for any late submissions.

A -10% penalty will be applied for any files that are zipped up or not using the correct naming format.

As this is a technical report, proper spelling and grammar will also be required and marks may be lost for reports that have poor spelling and / or grammar.

A more detailed marking scheme is shown in the Rubric associated with the Assignment Folder in eConestoga.
