CSE360 Spring 2016 Assignment 3
Due February 22 4PM

This assignment is designed to give you more practice with using test driven development plus an introduction to using git and github. You will need to create a github account. Select the free public account option as you will need to provide access to this account for grading.

Be sure to follow these steps in order to receive full credit for the assignment. These instructions assume that you are using Eclipse. If you are not, then you are responsible for the similar results for each step.

1. You will need to create a local git and github repository. If you are not familiar with this process, there are many references on line and especially on youtube.com. I found a very good tutorial that will walk you through the steps "Creating a Repository: Git & Eclipse" by Dr. Brian Fraser. https://www.youtube.com/watch?v=r5C6yXNaSGo The video demonstrates how to set up both git and github repositories and commit through Eclipse.
2. Create the initial version
    a. Create the package cse360assign3.
    b. Copy the file Calculator.java to this package. Document this file using the Javadoc comment style but do not make any code changes to the file at this time.
    c. Generate the Junit tests for this code. There should be seven test stub methods generated, one for each method. All but the testCalculator method should include the default fail assert. The testCalculator method should test to make sure that the constructor does not return a null.
    d. Commit the project to git and github
3. Create the second version
    a. Make the following changes to the Calculator class.
        i. The add method should add the parameter to the total variable
        ii. The subtract method should subtract the parameter from the total variable
        iii. The getTotal method should return the correct total
        iv. The multiply method should multiply the total by the total by the parameter
        v. The divide method should divide the total by the parameter. Use integer division. If the parameter is zero, set the total to zero. Do not print an error message.
        vi. The getHistory method should NOT be changed at this time and should continue to return an empty String
    b. Update the CalculatorTest to test all methods. Be sure to test for divide by zero.
    c. Commit the project to git and github.
4. Create the third version
    a. Make the changes to the Calculator class as needed so that the getHistory method will return a history of all actions as a String.
        i. The history should start from the initial 0 value to the last input.
        ii. Use the normal operators for the operations (+, -, *, /). There is no limit on the size of the String returned.
        iii. The return String should separate all operations and values with a space.

For example, if the following actions are done,

```
myCalculator.add (4);
myCalculator.subtract (2);
myCalculator.multiply (2);
myCalculator.add(5);
```

then the value returned should be

```
0 + 4 – 2 * 2 + 5
```

iv. Add other variables as needed to the class. Make changes to the other methods as needed.

b. Update the CalculatorTest to test the getHistory method.
c. Submit both java files to git and github.

5. Submit your two java files (Calculator.java and CalculatorTest.java) on Blackboard. Put the URL to your github repository in the comment for the assignment submittal. The repository will be checked as part of the grading.

Notes

- A program that does not compile will only receive a minimal amount of credit.
- Test your code thoroughly.