Lab Assignment #7

Unit Testing

Description

Unit Testing is a software testing method by which individual units (smallest parts of the program) are tested to determine whether they are working correctly. There are several different frameworks that can do unit testing, JUnit being a popular choice.

Testing induvial small parts of the program to make sure that they are working as expected improves the quality and performance of our application. By having unit tests set up and running them regularly will help us find and fix bugs sooner and quicker.

When a test fails, we know exactly what the input is that caused our code to behave differently than expected. This decreases the time of finding bugs in our software as we know where to look quickly. It is much easier to debug a few lines of code rather than a few java classes which are working together.

You are given two different Java files which can be found on Canvas. Each file has a few methods in it, you must write JUnit tests for each of the methods in both files.

Details

You are given ***Arthmatic.java*** and ***CollectionOfFunctions.java*** which can be found on Canvas under the Lab directory. You must write JUnit tests for all of the methods in both classes. At least 5 different tests for each method. Once you write one of the tests for a specific method, the other 4 can be easily produced by copying/pasting the first one and adjusting the input/output parameters.

As mentioned in the lecture, it is important to test boundary inputs as most of the bugs are usually found in those edge cases. If your tests cases are failing, because there is a bug in the given code, then it is okay. You are not required to fix the code; you just need to write the test cases for this assignment.

Submission

You need to upload to Canvas file(s) which contain your JUnit tests. Also upload a picture of the console output when you run the tests (screenshot of the tests results).

Rubric

There are 5 methods in each java file. Together 10 functions which need 5 test cases each. Each test case will be worth 2 points.

10 methods *5 test cases each = 50 test cases *2 points = 100 points total.