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CS 1632 - DELIVERABLE 4

PROPERTY-BASED TESTING

https://github.com/mikestoltz/cs1632deliverable4

Introduction

I chose to go with the property-based testing project. Although the combinatorial testing did seem interesting, I enjoy writing code and decided that I would most likely like the property-based testing more. The property-based testing project also did not require me to come up with an original, semi-creative idea; something I often times have the most trouble with in assignments.

I created a JUnit test case file in eclipse and realized the first thing I needed to do was generate my arrays for testing. I discovered the before keyword in JUnit that would allow me to write a method that would be run before each test in the file. This would work great for my array generating code that could then generate a new set of arrays to test with for each of my three property tests. Having this before function made splitting the tests into separate methods much easier, as opposed to having all tests and assertions done in one method. Testing the properties I selected turned out to be fairly intuitive, they were that the output array has the same size as the passed-in array, the values in the output array are always increasing or stay the same, and every element in the input array is in the output array.

I did not run into any major issues when developing my tests. I was having a problem when generating a random length for my arrays, some were getting negative lengths, but by passing an upper bound into the nextInt function I was able to force it to return positive values in that instance. I learned that property-testing, although similar to unit testing in the way that it uses an automated test suite, requires approaching what you are testing in a different way, that to me, seemed more intuitive that unit testing was.

Test Results

