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CS 1632 – Deliverable 4

Property Based Testing

I choose this project because I wanted to practice writingwrite JUnit tests on the Arrays.sort() method. Also generating random arrays with random numbers sounded like it would be fun. It was. The way I went about doing this was I started off with the a part that I knew well which was generating the arrays. I wrote a couple methods that would return a random number and one that would generate an array.

After that I created an arraylist of arrays that that I filled with my random arrays. Once I had all that done the tests came together rather easily. One of the hard parts was understanding the differences between testing 1) the output, 6) the idempotent testing and 7) the Pure property. For each test I used a for loop to loop through my arraylist in order to test each array. For 1) I made a copy of the array then sorted each of them then asserted if they were of equal length. For 6) I sort the array then make a copy then sort the original array again then assert that they are equal. For 7) I copy the original array then sort both of them then assert that they are equal using Arrays.equals().

Some of the biggest problems that I encountered was making sure that I had a `before()`. I also ran into usability issues with the Eclipse IDE but those were resolved after some tinkering. I learned better the structure of testing and how to build code in way that makes it easy to test. Such as using a global arraylist which made calling elements out of it very easy with `.get()`.

