CS1632 Deliverable 4

PROPERTY-BASED TESTING

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Summary:

On this project, I decided to choose property-based testing as my task. Once I went through the java documentation I chose to test the following three properties of array.sort(int[]):

1. Size of pre and post sorted arrays.
2. Whether the sorted and unsorted arrays contains the same elements.
3. If the array is sorted twice, their results should be same.

I also wrote several corner/edge case arrays to ensure that some wierd arrays are also generated and tested.

Then I began to write jUnit tests for the above three properties and check whether they are implemented corrected.

I also run into some issues, one of them is that when I create a array, I may put too many elements in it. So I decided to choose 66 as the largest array size so I will not run into the case too many elements exist and slow down the test speed.

Another Issue is that if I sort the array in test cases, it may also be too slow. Therefore I sort those arrays right after creation of the whole arrayList to ensure the speed.

Screenshot: