Ryan Rahuba

CS 1632 – DELIVERABLE 4

PROPERTY-BASED TESTING

The assignment I chose was property-based testing with Java’s Arrays.sort(). This was based on several factors. The first of which was the fact that I simply like coding! I like to have a problem or situation and trying to figure out how to solve it. Secondly, it was something that I knew I could do easily and well which was big consideration when taking into account other assignments from other classes.

The first decision to make when determining how to proceed with this deliverable was how to arrange the test or tests. Should all three assertions be in one test, or should they each get their own tests? For simplicity’s sake I chose to use just one test method and have all three assertions inside. Not only is it simple, visually, but I feel it is computationally less taxing. While Java’s code is optimized, and the time and special complexities of creating 100 arrays are negligible for this assignment, I thought it best to have everything in one test method where creating the arrays was done only once.

The next decision was which properties of a sorted array should be tested. While several were mentioned during lecture, I chose three: that the sorted array should be the same length of the base array, that the sorted array should not be null, and that the sorted array should be in ascending order. The first was done by storing the length of the array before and after the .sort() and asserting that they are equal. The second was tested by simply asserting that the sorted array was not null. As for the third, a for each loop was implemented and if at any point a value was greater than the next, it set a flag to false. At the end, the flag was asserted as True.

There were no issues faced with this assignment. As mentioned previously, and in the assignment description, Java’s code is already well tested and optimized. And since an internal method was tested, no problems were expected.

