YIYANG ZHAO QUIZ 3

I modified the test code of “SortTest” a little to test for the doubles.

```
/*
 * This code is modified from the SortTest provided on the class GitHub
 * This code requires a new method in DSUtil: getRandomDoubleArray which works like getRandomIntArray
 * but instead of generating a list of integers, it generates a list of doubles (0,1)
 */


package sort;



import static org.junit.Assert.assertTrue;

import java.util.Arrays;
import java.util.Random;

import org.junit.Ignore;
import org.junit.Test;

import utils.AbstractEngineComparer;
import utils.DSUtils;


public class ProbabilityBucketSortTest
{
        @Test
        public void testAccuracy()
        {
                final int ITERATIONS = 10;
                final int SIZE = 100;

                testAccuracy(ITERATIONS, SIZE, new ProbabilityBucketSort(SIZE));

        }

        void testAccuracy(final int ITERATIONS, final int SIZE, AbstractSort<Double> engine)
        {
                final Random rand = new Random(0);
                Double[] original, sorted;

                for (int i=0; i<ITERATIONS; i++)
                {
                        original = DSUtils.getRandomDoubleArray(rand, SIZE);
                        sorted = Arrays.copyOf(original, SIZE);

                        engine.sort(original);
                        Arrays.sort(sorted);

                        assertTrue(DSUtils.equals(original, sorted));
                }
        }
}
```

And the DSUtil need a method of getRandomDoubleArray as described in the comment.

My code passed all tests.

I choose to use a fixed number of buckets.