CSCE 156 Lab: Sorting & Efficiency

Worksheet

Name _____

1. Verify that your sorting algorithms are correctly sorting by printing the content of the arrays and demonstrating your results to a lab instructor. _____Instructor Initials
2. Run some timed experiments as outlined in the lab handout for each algorithm for various input sizes. Note that you can restrict the number of locations loaded from the data file by changing the value of `n` in the `main` method of the `SortingPerformance` class. Fill in the table below (for best results, run the experiment at least three times each and take an average running time unless you're feeling lazy).

Algorithm	Theoretical Efficiency	Observed Average Running Time (seconds)			
		n = 2000	n = 4000	n = 8000	n = 20000
Java Sort	O(nlog(n))				
Buble Sort	O(n^2)				
Selection Sort	O(n^2)				
Insertion Sort	O(n^2)				
Quick Sort	O(nlog(n))				

3. Without actually running the simulation, predict the running time of each algorithm for n = 64,000 based on the theoretical efficiency and observed running time.

4. According to your experiments, is there a clear ranking of the sorting algorithms? If so, list them from best to worst. Present your results to the lab instructor.

_____Instructor Signature