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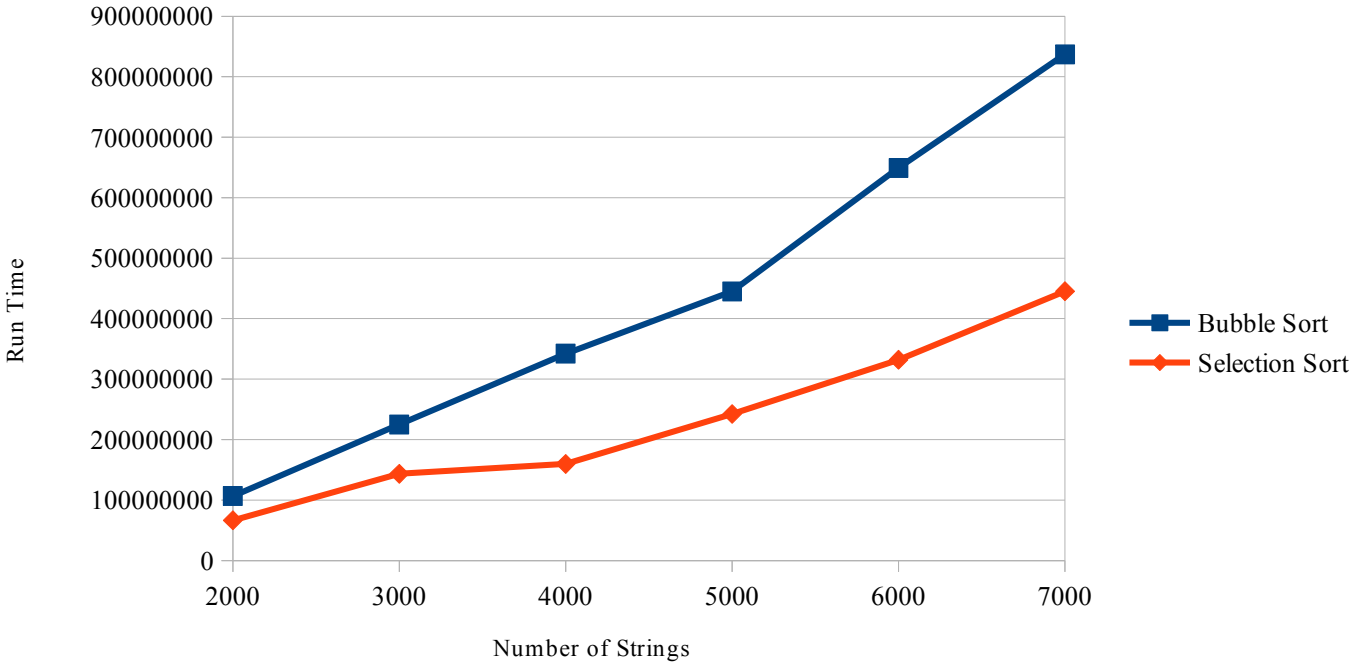
November 2, 2017
Lab 7

Lab 7 Report



Configuration

Processor Speed: Intel® Core™ i3-7100U CPU @ 2.40GHz × 4
Model: Dell Inspion 15 3000 Series
Memory: 5.6 GiB
Operating System: Ubuntu 16.04 LTS

Time Complexities

	Bubble Sort	Selection Sort
Worst Case	$O(n^2)$	$O(n^2)$
Best Case	$O(n)$	$O(n^2)$
Average	$O(n^2)$	$O(n^2)$

Conclusion:

Selection sort, when it comes to random input, is more optimal than Bubble Sort. As *n* increases, Bubble Sort also increases, becoming worse as it relates to time complexity. The graph above illustrates this very concept. This is due to the fact that while Selection Sort swaps *n* times in the worst case scenario, Bubble Sort swaps *n(n-1)* times.