*CSC 172 Lab*

Lab 5 Report

**Contact**

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Lab session - M/W 6:15 - 7:30

**Lab Synopsis & Methods**

For this lab we used the following sorting algorithms – default, bubble, selection, insertion, merge and quick sorts – on 4 different integer arrays ‘a’, ‘b’, ‘c’ and ‘d.’ Array ‘a’ was the original file we were given, ‘b’ was the sorted array, ‘c’ was the reverse sorted so worst case, and ‘d’ was a randomly sorted array we generated from the original using random swaps on the elements in the array. The findings of the lab are found below.

***Note:*** All code for the sorting were from either zybook (readings) or lecture

**Runtime Summary**

**Tables:**

All runtimes are in milliseconds

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*All sorting algorithm runtimes for array ‘a’*

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*All sorting algorithm runtimes for array ‘b’*

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*All sorting algorithm runtimes for array ‘c’*

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*All sorting algorithm runtimes for array ‘d’*

*Note: Bubble sort was the slowest every time as expected, and default sort was the fastest.*

**Plots:**

The following plots visualize the runtime differences between each sorting algorithm acted on the 4 different arrays.