Lab 12 Report

Date: 4/27/20

Group: Wednesday Group 08

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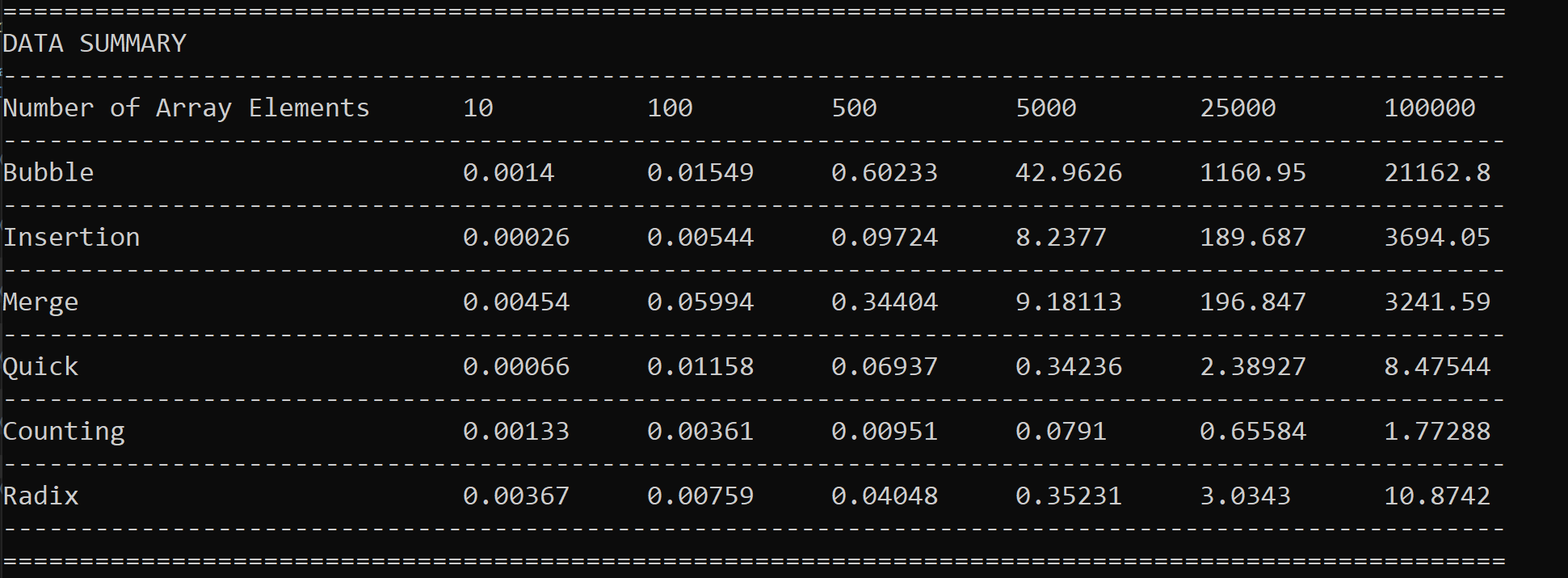
# Objectives/Concepts explored and their Importance in Computer Science

The objective of this lab was to investigate the actual performance of different sorting algorithms.

# Task 2: Table

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sorting algorithm/array size | Time (in ms) for 10 runs | | | | | |
| 10 | 100 | 500 | 5000 | 25000 | 100000 |
| Bubble sort | 0.0014 | 0.01549 | 0.60233 | 42.9626 | 1160.95 | 21162.8 |
| Insertion sort | 0.00026 | 0.00544 | 0.09724 | 8.2377 | 189.687 | 3694.05 |
| Merge sort | 0.00454 | 0.05994 | 0.34404 | 9.18113 | 196.847 | 3241.59 |
| Quicksort | 0.00066 | 0.01158 | 0.06937 | 0.34236 | 2.38927 | 8.47544 |
| Counting sort | 0.00133 | 0.00361 | 0.00951 | 0.0791 | 0.65584 | 1.77288 |
| Radix-sort | 0.00367 | 0.00759 | 0.04048 | 0.35231 | 3.0343 | 10.8742 |

### Screenshot:

 This TEST WAS RUn IN RElease MODE (RUNTIMES MAy be LONGER IN DEBUG MODE)

# Task 2: Graph

# Task 2: Discussion

Using the table and the graphs above, we can infer that Radix Sort, Counting Sort and Quick Sort work much faster than the remaining three.

# User Instructions

# Contributions

All members contributed an equal amount.