Lab13 Quadratic Sorting Algorithms – cs2020 s17 Name(s):

Set Size: 5000 – 1µs Microsecond == 0.000001s ($10^{-6}$) Second

| Shuffled Numbers | Trial 1 µs | Trial 2 µs | Trial 3 µs | Trial 4 µs | Trial 5 µs | Average Time µs |
|---|---|---|---|---|---|---|
| Bubble Sort | | | | | | |
| Selection Sort | | | | | | |
| Insertion Sort | | | | | | |
| Linear Print | | | | | | |

| Reversed Numbers | Trial 1 µs | Trial 2 µs | Trial 3 µs | Trial 4 µs | Trial 5 µs | Average Time µs |
|---|---|---|---|---|---|---|
| Bubble Sort | | | | | | |
| Selection Sort | | | | | | |
| Insertion Sort | | | | | | |
| Linear Print | | | | | | |

On average, which sorting algorithm was the fastest for the *shuffled numbers* set? What was the average time?

On average, which sorting algorithm was the slowest for the *shuffled numbers* set? What was the average time?

On average, which sorting algorithm was the fastest for the *reversed-ordered numbers* set? What was the average time?

On average, which sorting algorithm was the slowest for *reversed-ordered numbers* set? What was the average time?

Is the fastest algorithm the same for both data sets? Which data set gave the algorithm a faster average time?

Is the slowest algorithm the same for both data sets? Which data set gave the algorithm the slower average time?

Briefly describe the bubble sort algorithm.

Briefly describe the selection sort algorithm.

Briefly describe the insertion sort algorithm.

What is the BigO efficiency for a quadratic sorting algorithm?

What is the BigO efficiency for a linear print?

What is the BigO efficiency for a linear search?

What is the BigO efficiency for a binary search?

What is the BigO efficiency for an *InOrder* traversal for a binary search tree?

What is the BigO efficiency for a *PostOrder* traversal for a binary search tree?