

Sorting Algorithms

Alejandro Ferrer

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In this assignment I was able to test different types of sorting algorithms in order to analyze their performance. In this case I used four different algorithms: Bubble Sort, Selection Sort, Insertion Sort and Quick Sort–

- Bubble Sort consists in a simple algorithm that works by swapping elements if they are in the wrong order.
- Insertion Sort builds the final arrangement one element at a time. It is not very efficient in large lists.
- Selection Sort rearranges the array by finding the smallest value of the unsorted array and puts it on a subarray of sorted elements. It repeats this process until the sorted list is completed.
- Quick Sort is a Divide and Conquer algorithm. It finds a pivot point and then it partitions the array from the pivot point into two parts.

Throughout this assignment I implemented all of these sorting algorithms using a data sample with 10000 different numbers. The results indicate that Bubble sort is the slowest one in terms of run time but it has a very simple implementation. Selection sorting and Insertion Sorting were roughly the same in amount of time to sort. Finally, Quick sort was the fastest of all four algorithms but I had to use one more method to implement it.