

Assignment 1

Attached is a file containing 1 to 10k unsorted numbers. Your task is to use QuickSort and find the number of comparison it makes using 3 different pivoting strategies:

- 1- Choose pivot as the first element.
- 2- Choose pivot as the last element
- 3- Choose pivot by taking middle (median) number from 1st, middle and last element. Choose lower middle num if size of array is even.

As we studied in class that choosing different pivot can result in different running time (and comparisons). So above different strategies may result in different comparisons.

You are also supposed to run Insertion sort on the list and find the number of comparisons it make.

4-Use insertion sort and find number of comparisons it make.

Your code should take input from the user, lets say x, and then choose first x numbers from the attached file and run all 4 algorithms as asked above.

Make a table in excel for input 1000,2000,3000 upto 10000. and put the results for each input for the 4 algorithms. Then plot a graph of this table.

Languages: C#, JAVA

NOTE: Your code must compile and run. It should ask an input, and then return 4 numbers on each line such that the first line is the output of #1, second line is output for #2 and so on.

You may not get any credit if your code does not compile or gives no output.

Submission date: 5th-Oct-2016. 8 pm.