HackerRank For Work

Spring_2018_INFO6205_Se... 40 minutes

Question - 1

SCORE: **20 points**

Sort

Suppose there is a class Person, containing the First Name and Last Name. If you want to implement a sort method to sort a list of Person according to their First Name and Last Name (First based on the first character of Last Name and then based on the first character of First Name), which sort method would be more suitable?

- quicksort
- mergesort
- selectionsort
- shellsort

Question - 2

SCORE: **20 points**

quick sort

Please briefly describe why we need to random the array before applying quicksort to keep satisfactory performance?

No more than 40 words!

Question - 3

SCORE: **60 points**

merge sort

Given k already sorted arrays, please apply the concept of Merge sort to sort these arrays to be one sorted array.

I.e.: {1,2,3,4},{2,3,4,5},{},{1,3},{0,2}

Result: {011222333445}

Please do not use any sort functions provided by Java library.

If the Input is empty, please return an array of size 0 instead of null.

Question - 4

SCORE: **20 points**

Bonus

This is a bonus question and will add up to the total of this quiz(The maximum of score of this quiz is 100). According to the coding question, If the average length of the k sorted arrays is N, what's the performance of the above program? (The result should be reasonable and

based on the required merge sort concept implementation)

- N*log(N)
- N*log(k)
- kN*log(N)
- kN*log(k)
- N*log(kN)
- kN*log(kN)
- N^2
- kN^2
- kN