

Question - 1
Sorting Method Selection (1)

SCORE: 15 points

As a developer of your company, you are asked to implement sorting method for processing business data.
If the input data are already sorted in *****most cases*****, which one would you choose?

- ☒ Insertion Sort
- ☐ Selection Sort
- ☐ Merge Sort

Question - 2
Sorting Method Selection (2)

SCORE: 15 points

As a developer of your company, you are asked to implement sorting method for processing business data.
If the input data are *****random*****, which one would you choose?

- ☐ Insertion Sort
- ☐ Selection Sort
- ☒ Merge Sort

Question - 3
Sorting Method Selection (3)

SCORE: 15 points

One of the methods (Insertion / Selection / Merge) was not selected in the former 2 questions.. Please describe the reason.

Question - 4
Merge Sort

SCORE: 15 points

Please briefly describe why the complexity of Merge Sort is $O(n \log n)$.

Question - 5
Anagram

SCORE: 40 points

(An anagram is a word or phrase formed by rearranging the letters of a different word or phrase, typically using all the original letters exactly once.)
Given two strings s and t , write a function to determine if t is an anagram of s .

For example,

s = "anagram", t = "nagaram", return true.

s = "rat", t = "car", return false.

Note:

You may assume the string contains only lowercase alphabets.

Hint:

1. There is $O(n)$ solution for this question but your algorithm doesn't have to be $O(n)$ as long as you can pass the test cases.
2. You may find `toCharArray()` and `charAt()` methods in String Class useful.
3. You may sort the characters in the given Strings to solve this problem.