AlgoExpert Quad Layout Python 12px Sublime Monokai 00:00:00

Prompt Scratchpad Our Solution(s) Video Explanation Run Code

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Solution 1 Solution 2
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1\, \, # Copyright @ 2020 AlgoExpert, LLC. All rights reserved.
 3  # Best: O(nlog(n)) time | O(nlog(n)) space
 4 # Average: O(nlog(n)) time | O(nlog(n)) space
 5 # Worst: O(nlog(n)) time | O(nlog(n)) space
 6 def mergeSort(array):
        if len(array) == 1:
           return array
        middleIdx = len(array) // 2
10
        leftHalf = array[:middleIdx]
        rightHalf = array[middleIdx:]
11
12
        return mergeSortedArrays(mergeSort(leftHalf), mergeSort(rightHalf))
13
14
    def mergeSortedArrays(leftHalf, rightHalf):
15
16
        sortedArray = [None] * (len(leftHalf) + len(rightHalf))
17
        k = i = j = 0
18
        while i < len(leftHalf) and j < len(rightHalf):
19
            if leftHalf[i] <= rightHalf[j]:</pre>
20
21
              sortedArray[k] = leftHalf[i]
               i += 1
22
            else:
23
               sortedArray[k] = rightHalf[j]
24
               j += 1
25
            k += 1
26
27
28
29
        while i < len(leftHalf):</pre>
            sortedArray[k] = leftHalf[i]
            i += 1
            k += 1
30
31
        while j < len(rightHalf):</pre>
            sortedArray[k] = rightHalf[j]
32
            j += 1
33
            k += 1
34
        return sortedArray
```