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

Prompt Scratchpad Our Solution(s) Video Explanation Run Code

Solution 1 Solution 2

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1 \, # Copyright @ 2020 AlgoExpert, LLC. All rights reserved.
 \mbox{3}\mbox{ \# O(nm) time }\mbox{| O(nm) space - where n is the length of the}
 4 # first string and m is the length of the second string
 5 def interweavingStrings(one, two, three):
       if len(three) != len(one) + len(two):
           return False
        cache = [[None for j in range(len(two) + 1)] for i in range(len(one) + 1)]
9
10
        return areInterwoven(one, two, three, 0, 0, cache)
11
12
13 def areInterwoven(one, two, three, i, j, cache):
       if cache[i][j] is not None:
14
15
           return cache[i][j]
16
17
        k = i + j
        if k == len(three):
18
19
           return True
20
21
        if i < len(one) and one[i] == three[k]:</pre>
22
            cache[i][j] = areInterwoven(one, two, three, i + 1, j, cache)
23
            if cache[i][j]:
24
               return True
25
26
        if j < len(two) and two[j] == three[k]:</pre>
            cache[i][j] = areInterwoven(one, two, three, i, j + 1, cache)
27
28
            return cache[i][j]
29
30
        cache[i][j] = False
31
        return False
```