

Run Code

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1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 package main
4
5 // O(nm) time | O(nm) space - where n is the length of the
6 // first string and m is the length of the second string
7 func InterweavingStrings(one, two, three string) bool {
8     if len(three) != len(one)+len(two) {
9         return false
10    }
11    cache := make([][]*bool, len(one)+1)
12    for i := 0; i < len(one)+1; i++ {
13        cache[i] = make([]*bool, len(two)+1)
14    }
15    return areInterwoven(one, two, three, 0, 0, cache)
16 }
17
18 func areInterwoven(one, two, three string, i, j int, cache []*bool)
19     bool {
20     if cache[i][j] != nil {
21         return *cache[i][j]
22     }
23     k := i + j
24     if k == len(three) {
25         return true
26     }
27
28     if i < len(one) && one[i] == three[k] {
29         result := areInterwoven(one, two, three, i+1, j, cache)
30         cache[i][j] = &result
31         if result {
32             return true
33         }
34     }
35 }

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