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

Prompt Scratchpad Our Solution(s) Video Explanation Run Code

```
_{\rm 1} \, // Copyright 0 2020 AlgoExpert, LLC. All rights reserved.
     class Program {
          // O(n^2) time | O(n) space
          func longestIncreasingSubsequence(_ array: [Int]) -> [Int] {
              var indexOfMaxLength: Int? = 0
              var lengths = Array(repeating: 1, count: array.count)
var sequences: [Int?] = Array(repeating: nil, count: array.count)
10
              for i in 0 ...<br/> array.count {
                   let currentNumber = array[i]
11
12
13
                   for j in 0 ... i {
                        let otherNumber = array[j]
14
15
                        if otherNumber < currentNumber, lengths[i] <= lengths[j] + 1 {</pre>
16
17
                            lengths[i] = lengths[j] + 1
                             sequences[i] = j
19
20
21
22
                   if lengths[i] > lengths[indexOfMaxLength!] {
23
                        indexOfMaxLength = i
24
25
26
27
              return buildSequence(array, sequences, &indexOfMaxLength)
28
30
          \begin{tabular}{ll} func buildSequence (\_ array: [Int], \_ sequences: [Int?], \_ currentIndex: inout Int?) \end{tabular} \rightarrow [Int] \end{tabular}
31
              var sequence = [Int]()
32
33
              while currentIndex != nil {
                   sequence.insert(array[currentIndex!], at: 0)
currentIndex = sequences[currentIndex!]
34
35
36
37
38
              return sequence
39
```

Solution 1 Solution 2

40 } 41