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

Prompt Scratchpad Our Solution(s) Video Explanation Run Code

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Solution 1 Solution 2 Solution 3 Solution 4
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1\, // Copyright @ 2020 AlgoExpert, LLC. All rights reserved.
   import java.util.*;
 5 class Program {
     // O(nm*min(n, m)) time | O((min(n, m))^2) space
      public static List<Character> longestCommonSubsequence(String str1, String str2) {
       String small = str1.length() < str2.length() ? str1 : str2;</pre>
 8
9
        String big = str1.length() >= str2.length() ? str1 : str2;
10
        List<List<Character>> evenLcs = new ArrayList<List<Character>>();
11
        List<List<Character>> oddLcs = new ArrayList<List<Character>>();
12
        for (int i = 0; i < small.length() + 1; i++) {</pre>
          evenLcs.add(new ArrayList<Character>());
13
14
15
        for (int i = 0; i < small.length() + 1; i++) {</pre>
16
          oddLcs.add(new ArrayList<Character>());
17
        for (int i = 1; i < big.length() + 1; i++) {</pre>
18
19
         List<List<Character>> currentLcs;
20
          List<List<Character>> previousLcs;
21
          if (i % 2 == 1) {
22
           currentLcs = oddLcs;
23
           previousLcs = evenLcs;
24
          } else {
25
           currentLcs = evenLcs;
26
            previousLcs = oddLcs;
27
28
          for (int j = 1; j < small.length() + 1; j++) {</pre>
29
            if (big.charAt(i - 1) == small.charAt(j - 1)) {
              List<Character> copy = new ArrayList<Character>(previousLcs.get(j - 1));
30
31
              currentLcs.set(j, copy);
32
             currentLcs.get(j).add(big.charAt(i - 1));
33
            } else {
34
              if (previousLcs.get(j).size() > currentLcs.get(j - 1).size()) {
35
               currentLcs.set(j, previousLcs.get(j));
36
              } else {
                currentLcs.set(j, currentLcs.get(j - 1));
37
38
39
40
41
42
        return big.length() % 2 == 0 ? evenLcs.get(small.length()) : oddLcs.get(small.length());
43
44 }
```