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1  /*Author: Bochen (mddboc@foxmail.com)
2  Last Modified: Tue Apr 10 22:28:45 CST 2018*/
3
4  /*Given two binary strings, return their sum (also a binary string).
5
6  .....For example,
7  .....a = "11"
8  .....b = "1"
9  .....Return "100".*/
10
11
12  import java.util.*;
13  import java.lang.Math;
14  import java.lang.System;
15  import java.lang.Integer;
16
17
18  public class Main {
19
20  ....public static void main(String[] args) throws ArithmeticException {
21
22
23  .....Solution solution = new Solution();
24  .....String result = solution.addBinary("0", "0");
25
26  .....System.out.println("haha");
27  ....}
28
29  }
30
31
32  class ListNode {
33  ....int val;
34  ....ListNode next;
35
36  ....ListNode(int x) {
37  .....val = x;
38  ....}
39  }
40
41
42  class TreeNode {
43  ....int val;
44  ....TreeNode left;
45  ....TreeNode right;
46
47  ....TreeNode(int x) {
48  .....val = x;
49  ....}
50  }
51
52
53  class Solution {
54  ....public String addBinary(String a, String b) {
55
56  .....char[] aChars = a.toCharArray();
57  .....char[] bChars = b.toCharArray();
58  .....int pointerAChars = aChars.length - 1;
59  .....int pointerBChars = bChars.length - 1;
60  .....char[] resultChar = new char[Math.max(pointerAChars + 1, pointerBChars + 1)];
61  .....int pointerResult = resultChar.length - 1;
62
63  .....int additionBit = 0;
64  .....while (pointerAChars >= 0 || pointerBChars >= 0) {
65  .....int bitOne = pointerAChars >= 0 ? aChars[pointerAChars] - '0' : 0;
66  .....int bitTwo = pointerBChars >= 0 ? bChars[pointerBChars] - '0' : 0;
67  .....int result = bitOne + bitTwo + additionBit;
68  .....resultChar[pointerResult] = result == 0 ? '0' : '1';
69  .....additionBit = result / 2;
70
71  .....pointerAChars--;
72  .....pointerBChars--;
73  .....pointerResult--;

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```
74 .....}
75
76 .....if (additionBit == 1) {
77 .....    return "1" + new String(resultChar);
78 .....} else
79 .....    return new String(resultChar);
80
81
82 ....}
83 }
```