codility

Check out Codility training tasks

Candidate Report: Anonymous

Test Name:

Summary Timeline

Test Score

100 out of 100 points

100%

Tasks in Test

	Time Spent	Task Score
Brackets Submitted in: Scala	2 min	100%

TASKS DETAILS

EASY

1. Brackets

Determine whether a given string of parentheses (multiple types) is properly nested.

Task Score	Correctness	Performance
100%	100%	100%

Task description

A string S consisting of N characters is considered to be *properly nested* if any of the following conditions is true:

- S is empty;
- S has the form "(U)" or "[U]" or "{U}" where U is a properly nested string;
- S has the form "VW" where V and W are properly nested strings.

For example, the string "{[()()]}" is properly nested but "([)()]" is not.

Write a function:

```
object Solution { def solution(s: String): Int }
```

Solution

Programming language used:	Scala
Total time used:	2 minutes
Effective time used:	2 minutes
Notes:	*not defined yet*

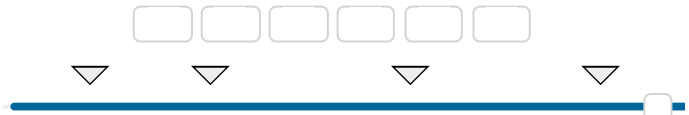
Task timeline

that, given a string S consisting of N characters, returns 1 if S is properly nested and 0 otherwise.

For example, given S = "{[()()]}", the function should return 1 and given S = "([)()]", the function should return 0, as explained above.

Write an **efficient** algorithm for the following assumptions:

- N is an integer within the range [0..200,000];
- string S consists only of the following characters: "(", "{", "[", "]", "}" and/or ")".



08:17:18 08:18:54

Code: 08:18:54 UTC, scala, final, score: **100** show code in pop-up

```scala
import scala.collection.JavaConverters._
import scala.collection.mutable.Stack

// you can write to stdout for debugging purposes, e
// println("this is a debug message")

object Solution {
  private def isSymmetric(char: Char, char2: Char): Bo
    char match {
      case '(' if char2 == ')' => true
      case '{' if char2 == '}' => true
      case '[' if char2 == ']' => true
      case _                   => false
    }
  }

  def solution(s: String): Int = {
    // write your code in Scala 2.12

    val stack = Stack.empty[Char]
    s.toSeq.foreach(char => {
      stack.isEmpty match {
        case true => stack.push(char)
        case false =>
          char match {
            case x @ ('(' | '{' | '[')                    => stac
            case x @ (')' | '}' | ']') if isSymmetric(stack.top
            case _                                        => Unit
          }
      }
    })

    stack.size match {
      case 0 => 1
      case _ => 0
    }
  }
}
```

Analysis summary

The solution obtained perfect score.

Analysis

Detected time complexity: **O(N)**

Example tests

▶	example1 example test 1	✔ OK
▶	example2 example test 2	✔ OK

expand all Correctness tests

▶	negative_match invalid structures	✔ OK
▶	empty empty string	✔ OK
▶	simple_grouped simple grouped positive and negative test, length=22	✔ OK

expand all Performance tests

▶	large1 simple large positive test, 100K ('s followed by 100K)'s +)(	✔ OK
▶	large2 simple large negative test, 10K+1 ('s followed by 10K)'s +)(+ ()	✔ OK
▶	large_full_ternary_tree tree of the form T=(TTT) and depth 11, length=177K+	✔ OK
▶	multiple_full_binary_trees sequence of full trees of the form T=(TT), depths [1..10..1], with/without some brackets at the end, length=49K+	✔ OK
▶	broad_tree_with_deep_paths string of the form [TTT...T] of 300 T's, each T being '{{{...}}}' nested 200-fold, length=120K+	✔ OK