# codility



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### Demo ticket

#### Session

ID: demoDBE6SR-DCE Time limit: 120 min.

Status: closed

Created on: 2014-08-27 03:06 UTC Started on: 2014-08-27 03:06 UTC Finished on: 2014-08-27 03:15 UTC

#### Tasks in test

1 | {} Nesting

Correctness

100%

**Performance** 

100%

Task score

Test score
?
1000/0
100 out of 100 points

Training center

eck out Codility training tasks

## ASY

#### 1. Nesting

Determine whether given string of parentheses is properly nested.

score: 100 of 100



#### Task description

A string S consisting of N characters is called properly nested if:

- S is empty;
- S has the form "(U)" where U is a properly nested string;
- S has the form "vw" where V and W are properly nested strings.

For example, string (()(())()) is properly nested but string ()) isn't.

Write a function:

def solution(S)

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

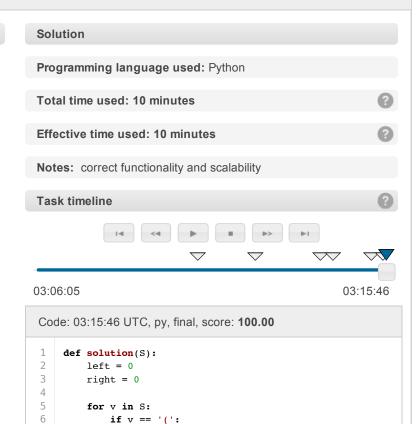
For example, given S = "(()(())())", the function should return 1 and given S = "())", the function should return 0, as explained above. Assume that:

- N is an integer within the range [0..1,000,000];
- string S consists only of the characters "(" and/or ")".

#### Complexity:

- expected worst-case time complexity is O(N);
- expected worst-case space complexity is O(1) (not counting the storage required for input arguments).

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left += 1

right += 1

elif v == ')':

8

### **Analysis**



# Detected time complexity: O(N)

test	time	result
Example tests		
example1 example test	0.056 s	ок
example2 example test2	0.056 s	ок
Correctness tests		
negative_match invalid structure, but the number of parentheses matches	0.064 s	ок
empty empty string	0.048 s	ок
simple_grouped simple grouped positive and negative test, length=22	0.056 s	ок
Performance tests		
large1 simple large positive test, 10K ('s followed by 10K )'s + )(	0.056 s	ок
large2 simple large negative test, 10K+1 ('s followed by 10K)'s + )( + ()	0.048 s	ок
large_full_ternary_tree tree of the form T=(TTT) and depth 11, length=177K+	0.064 s	ок
multiple_full_binary_trees sequence of full trees of the form T=(TT), depths [1101], with/without unmatched ')' at the end, length=49K+	0.048 s	ок
broad_tree_with_deep_paths string of the form (TTTT) of 300 T's, each T being '((()))' nested 200-fold, length=120K+	0.048 s	ок

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