3/14/2014 Codility

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Demo ticket

Session

ID: demoUFHJQR-FYS Time limit: 120 min.

Status: closed

Created on: 2014-03-15 02:44 UTC Started on: 2014-03-15 02:44 UTC Finished on: 2014-03-15 02:56 UTC

Tasks in test



EASY

1. Brackets

Determine whether a given string of parentheses is properly nested.

score: 100 of 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:

def solution(S)

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

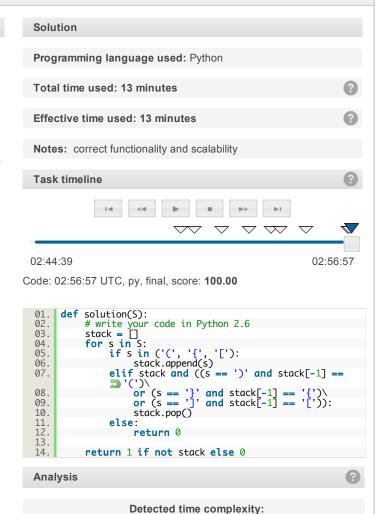
For example, given $S = "\{[()()]\}"$, the function should return 1 and given S = "([)()]", the function should return 0, as explained above. Assume that:

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

Complexity:

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

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O(N)		
test	time	result
example1 example test 1	0.050 s.	ок
example2 example test 2	0.050 s.	ок
negative_match invalid structures	0.050 s.	ок
empty empty string	0.050 s.	ок
simple_grouped simple grouped positive and negative test, length=22	0.050 s.	ок
large1 simple large positive test, 100K ('s followed by 100K)'s +)(0.050 s.	ок
large2 simple large negative test, 10K+1 ('s followed by 10K)'s +)(+ ()	0.050 s.	ок
large_full_ternary_tree tree of the form T=(TTT) and depth 11, length=177K+	0.110 s.	ок
multiple_full_binary_trees sequence of full trees of the form T=(TT), depths [1101], with/without some brackets at the end, length=49K+	0.050 s.	ок
broad_tree_with_deep_paths string of the form [TTTT] of 300 T's, each T being '{{{}}}' nested 200-fold, length=120K+	0.090 s.	ок

Training center

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