

Problem

A bracket is considered to be any one of the following characters: (,), {, }, [, or].

Two brackets are considered to be a matched pair if the an opening bracket (i.e., (, [, or {) occurs to the left of a closing bracket (i.e.,),], or }) of the exact same type. There are three types of matched pairs of brackets: [], {}, and ().

A matching pair of brackets is not balanced if the set of brackets it encloses are not matched. For example, {[(])} is not balanced because the contents in between { and } are not balanced. The pair of square brackets encloses a single, unbalanced opening bracket, (, and the pair of parentheses encloses a single, unbalanced closing square bracket,].

By this logic, we say a sequence of brackets is balanced if the following conditions are met:

- It contains no unmatched brackets.
- The subset of brackets enclosed within the confines of a matched pair of brackets is also a matched pair of brackets.

Given *n* strings of brackets, determine whether each sequence of brackets is balanced. If a string is balanced, return YES. Otherwise, return NO.

Function Description

Complete the function isBalanced in the editor below.

isBalanced has the following parameter(s):

- string s: a string of brackets

Returns

- string: either YES or NO

Input Format

The first line contains a single integer *n*, the number of strings.

Each of the next *n* lines contains a single string *s*, a sequence of brackets.

Constraints

- $1 \leq n \leq 10^3$
- $1 \leq |s| \leq 10^3$, where $|s|$ is the length of the sequence.
- All chracters in the sequences $\in \{ \{, \}, (,), [,] \}$.

Output Format

For each string, return YES or NO.

Sample Input

STDIN Function ----- 3 n = 3 {[()]} first s = '{[()]}' {[()]} second s = '{[()]}' {[[(())]]} third s ='{{[[[(())]]]}'

Sample Output

YES
NO
YES

Explanation

- The string {[()]} meets both criteria for being a balanced string.
- The string {[()]} is not balanced because the brackets enclosed by the matched pair { and } are not balanced: [(]).
- The string {[[(())]]} meets both criteria for being a balanced string.

Change Theme Language Python 3

```
9  #
10 # Complete the 'isBalanced' function below.
11 #
12 # The function is expected to return a STRING.
13 # The function accepts STRING s as parameter.
14 #
15 def match(open, close):
16     if open == '{' and close == '}':
17         return True
18
19     if open == '(' and close == ')':
20         return True
21
22     if open == '[' and close == ']':
23         return True
24
25     return False
26
27 def isBalanced(s):
28     stack = []
29     open_brackets = '{ [ ('
30
31     for bracket in s:
32         if open_brackets.find(bracket) != -1:
33             stack.append(bracket)
34
35         else:
36             if len(stack) == 0:
37                 return 'NO'
38
39             else:
40                 open = stack.pop()
41                 close = bracket
42                 if match(open, close) is False:
43                     return 'NO'
44
45         if len(stack) == 0:
46             return 'YES'
47
48     return 'NO'
49
50
51
52
53
54
```

Line: 48 Col: 15

Upload Codeas File Test against custom input

Run Code

Submit Code

Congratulations

You solved this challenge. Would you like to challenge your friends?



Test case 10

Test case 11

Test case 12

Test case 13

Compiler Message

Success

Hidden Test Case

Unlock this testcase for 5 hacks