

## Problem D. Balanced Brackets

OS Linux

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

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