Balanced Parenthesis

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 considered to be 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.

**Input Format:**

* The first line contains a single integer, n, denoting the number of strings.   
  Each line ith of the n subsequent lines consists of a single string, s, denoting a sequence of brackets.

**Output Format:**

* For each string, print whether or not the string of brackets is balanced on a new line. If the brackets are *balanced*, print YES; otherwise, print NO.

**Sample Input #1:**

**3**

**{[()]}**

**{[(])}**

**{{[[(())]]}}**

**Sample Output #1:**

**YES  
NO  
YES**