**BALANCING PARENTHESES**

**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, ].**

**Given 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. It must return a string: YES if the sequence is balanced or NO if it is not.**

**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. isBalanced has the following parameter(s):**
* ***s*: a string of brackets**

**Input Format**

**The first line contains a single integer , the number of strings.   
Each of the next lines contains a single string , a sequence of brackets.**

**Constraints**

* **, where is the length of the sequence.**
* **All chracters in the sequences ∈ { {, }, (, ), [, ] }.**

**Output Format**

**For each string, return YES or NO.**

**Sample Input**

**3**

**{[()]}**

**{[(])}**

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

**Sample Output**

**YES**

**NO**

**YES**

**Explanation**

1. **The string {[()]} meets both criteria for being a balanced string, so we print YES on a new line.**
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, so we print YES on a new line.**

**PROGRAM:**

**#include<stdio.h>**

**2**

**#include<string.h>**

**3**

**#include<stdlib.h>**

**4**

**​**

**5**

**int main()**

**6**

**{**

**7**

**int s,i;**

**8**

**scanf("%d",&s);**

**9**

**for(i=0;i<s;i++)**

**10**

**{**

**11**

**int top=-1,j;**

**12**

**char stack[1000],c[1000];**

**13**

**scanf("%s",c);**

**14**

**for(j=0;j<strlen(c);j++)**

**15**

**{**

**16**

**if((c[j]=='(')||(c[j]=='{')||(c[j]=='['))**

**17**

**stack[++top]=c[j];**

**18**

**19**

**else if((stack[top]=='('&&c[j]==')')||(stack[top]=='{'&&c[j]=='}')||(stack[top]=='['&&c[j]==']'))**

**20**

**{**

**21**

**top=top-1;**

**22**

**23**

**}**

**24**

**25**

**else**

**26**

**{**

**27**

**stack[++top]=c[j];**

**28**

**}**

**29**

**}**

**30**

**//printf("%d",top);**

**31**

**if(top==-1)**

**32**

**{**

**33**

**printf("YES\n")**

**}**

**35**

**else**

**36**

**{**

**37**

**printf("NO\n");**

**38**

**}**

**39**

**}**

**40}**

**OUTPUT:**

**1**

**{{}}**

**YES**

**2**

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

**({][})**

**YES**

**NO.​​**

**L**ine: 1 Col: 1



Test against custom input

Author

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Difficulty

Medium

Max Score

25

Submitted By

[54011](https://www.hackerrank.com/challenges/balanced-brackets/leaderboard)

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