

The Bracket Balancing Problem

Can you find out if a provided bracket sequence is balanced? `{()}[]()` is an example of a balanced bracket sequence. Formally, a balanced bracket sequence is one where every opening bracket is followed by a corresponding closing bracket, and the number of opening and closing brackets of each type is equal. Additionally, if the brackets involve more than one different types, the inner bracket type should have a closing bracket before the outer bracket type. `{[]}` is an example bracket sequence that violates the last statement.

MODELING HINT

1. What data structure should you use to solve the problem (Array Lists, Linked List, Stack, ?). Use the appropriate class from `java.util` package for this data structure.
2. Implement this data structure. Your code should not import from “`java.util`” package.

INPUT The input starts with a number **N** (the number of expressions to be followed). Each of the next **N** lines contains an expression containing at most 100 characters. **OUTPUT** For each corresponding expression in the input, print “YES” if the expression is balanced, “NO” otherwise.

EXAMPLES

INPUT

10

<code>()</code>	.....	YES
<code>[]</code>	.....	YES
<code>{}</code>	.....	YES
<code>()[]</code>	.....	YES
<code>()()</code>	.....	YES
<code>()[]</code>	.....	NO
<code>{()}[]()</code>	.....	YES
<code>[{{{(())}}}]</code>	.....	YES
<code>[]{})(</code>	.....	NO
<code>{[]{}[]{}[]{}[]{}[]}</code>	.....	YES