A sequence of brackets is called balanced if one can turn it into a valid math expression by adding characters «+» and «1». For example, sequences «(())()», «()» and «(()(()))» are balanced, while «)(», «(()» and «(()))( » are not.

You are given a string which consists of opening and closing round brackets. Check whether it is a balanced bracket sequence.

**Input**

The only line of input contains a string between $1$ and $100$ characters long, inclusive. Each character in the string will be «(» or «)».

**Output**

Output «YES» if the bracket sequence is balanced, and «NO» otherwise (quotes for clarity only).

**Examples**

| input | Copy |
|---|---|
| (()(()))() | |

| output | Copy |
|---|---|
| YES | |

| input | Copy |
|---|---|
| ())() | |

| output | Copy |
|---|---|
| NO | |