F. Domain

This problem doesn't contain real-world specifications about domains, just use the problem statement as a formal document to solve the problem.

The given string s is a domain name if it contains the characters "a"-"z", "0"-"9" and dots. No two dots shoud follow one after another (consecutive). The dots split the given string s into the parts, the last (most right) part should have the length 2 or 3. Domain can't start or end with a dot.

You are given the string s, check if it is domain name.

Input

The only line of the input contains given string s. The string may contain any characters with ASCII codes from 33 to 127, inclusive. The string length is between 1 and 100, inclusive.

Output

Print "YES" if the given string s is a domain name, or print "NO" if it is not.

Examples

input
codeforces.com
output
YES

input
mail.v-kontakte.ru
output
NO