

## E. HQ9+

time limit per test: 3 seconds  
memory limit per test: 256 megabytes  
input: standard input  
output: standard output

HQ9+ is a joke programming language which has only four one-character instructions:

- "H" prints "Hello, World!",
- "Q" prints the whole source code of the program itself (at each call),
- "9" prints the lyrics of "99 Bottles of Beer" song,
- "+" increments the value stored in the internal accumulator.

Instructions "H" and "Q" are case-sensitive and must be uppercase. The characters of the program which are not instructions are ignored.

You are given a program written in HQ9+. You have to figure out whether executing this program will produce any output.

### Input

The input will consist of a single line  $p$  which will give a program in HQ9+. String  $p$  will contain between 1 and 100 characters, inclusive. ASCII-code of each character of  $p$  will be between 33 (exclamation mark) and 126 (tilde), inclusive.

### Output

Output "YES", if executing the program will produce any output, and "NO" otherwise (quotes for clarity only).

### Examples

<b>input</b>
Hello!
<b>output</b>
YES

  

<b>input</b>
VK_Cup_2012!
<b>output</b>
NO

### Note

In the first case the program contains only one instruction — "H", which prints "Hello, World!".

In the second case none of the program characters are language instructions.