C. Replace To Make Regular Bracket Sequence

time limit per test: 1 second

memory limit per test: 256 megabytes

You are given string s consists of opening and closing brackets of four kinds `<>`, `{}`, `[]`, `()`. There are two types of brackets: opening and closing. You can replace any bracket by another of the same type. For example, you can replace `<` by the bracket `{`, but you can't replace it by `)` or `>`.

The following definition of a regular bracket sequence is well-known, so you can be familiar with it.

Let's define a regular bracket sequence (RBS). Empty string is RBS. Let s_1 and s_2 be a RBS then the strings $<s_1>s_2$, $\{s_1\}s_2$, $[s_1]s_2$, $(s_1)s_2$ are also RBS.

For example the string "`[[(){}]<>]`" is RBS, but the strings "`[)()`" and "`][()()`" are not.

Determine the least number of replaces to make the string s RBS.

Input

The only line contains a non empty string s, consisting of only opening and closing brackets of four kinds. The length of s does not exceed 10^6.

Output

If it's impossible to get RBS from s print `Impossible`.

Otherwise print the least number of replaces needed to get RBS from s.

Examples

input	Copy
`[<}){}`	

output	Copy
`2`	

input	Copy
`{()}[]`	

output	Copy
`0`	

input	Copy
`]]`	

output	Copy
`Impossible`	