Problem B
"Brackets sequence"

Input file   `bracket.in`

Output file `bracket.out`

Let us define a regular brackets sequence in the following way:

1. Empty sequence is a regular sequence.
2. If S is a regular sequence, then (S) and [S] are both regular sequences.
3. If A and B are regular sequences, then AB is a regular sequence.

For example, all of the following sequences of characters are regular brackets sequences:

`(),[],(()),([]),()[],()[()]`

And all of the following character sequences are not:

`(,[,),)(,([)],([(]`

Some sequence of characters '(', ')', '[', and ']' is given. You are to find the shortest possible regular brackets sequence, that contains the given character sequence as a subsequence. Here, a string $a_1a_2...a_n$ is called a subsequence of the string $b_1b_2...b_m$ if there exist such indices $1 = i_1 < i_2 < ... < i_n = m$, that $a_j = b_{ij}$ for all $1 = j = n$.

Input

The input file contains at most 100 brackets (characters '(', ')', '[' and ']') that are situated on a single line without any other characters among them.

Output

Write to the output file a single line that contains some regular brackets sequence that has the minimal possible length and contains the given sequence as a subsequence.

Sample input

```
([(]
```

Sample output for the sample input

```
()[()]
```