The String

Time Limit: 2.0s   Memory Limit: 256M

Yiit is not good with problems involved with strings and there is a problem he's having difficulties with. There is a string consisting of upper case characters A and B in the problem. In a single turn, Yiit can remove the first and the last occurrences of any character, but only if they don't coincide. Can you help Yiit and find the lexicographically smallest non-empty string that can be obtained after any number of turns?

String s is considered lexicographically smaller than t if s is a prefix of t, or s has a smaller character at the first position, they differ (from left to right).

Input

The only line contains the initial string s that Yiit have.

- \(1 \leq |s| \leq 10^5\),
- s consists only of characters A and B.

Output

Print the answer to the problem.

Example

Input:

```
BBABBAB
```

Output:

```
ABA
```

Explanation

Yiit can two times remove the first and the last occurrences of character B to get the string ABA. This is the lexicographically smallest possible result they can achieve.