IOITC 2016 Practice Test Day 1

Password

Anudeep would like to have his own startup. His business idea is a password service. Anudeep's service will help clients to create a password with requirements.

There are two inputs: n, which denotes that the required password can consist only of the first n lowercase letters from the English alphabet. The second input is a string s containing the characters '<', '>' and '='. The sign in position i denotes the comparison result of the i^{th} and the $i+1^{th}$ character in the password. So if the length of s is l then the required password should consist of exactly $l+1$ lowercase letters.

Your task is to write a program to generate the lexicographically smallest password containing some of the first n lowercase letters of the Latin alphabet and which has s as a result of comparisons of consecutive characters.

Input

The first line of the input contains an integer number n.
The second line contains the string s.

Output

Print the lexicographically smallest password, or -1 if it does not exist.

Constraints

- $1 \leq n \leq 26$
- $1 \leq$Length of $s \leq 5000$

Sample Input

```
5
=<>
```

Sample Output

aaba

Limits

Time: 1 seconds

Memory: 256 MB