One Different Inequality

Input file:	`standard input`
Output file:	`standard output`
Time limit:	3 seconds
Memory limit:	1024 megabytes

You are given an integer N and a string S of length $N-1$ consisting of the characters `<` and `>`.

Let $P = (P_1, P_2, \cdots, P_N)$ be a permutation of $(1, 2, \cdots, N)$.

A permutation P is called a **Good Permutation** if it satisfies the following condition.

- For every i $(1 \le i \le N-1)$, if i-th character of S is `<`, then $P_i < P_{i+1}$; if it is `>`, then $P_i > P_{i+1}$.

A permutation P is called a **Wonderful Permutation** if it satisfies the following condition.

- P is a Good Permutation.
- The number of indices i $(1 \le i \le N-1)$ such that $|P_i - P_{i+1}| = 1$ is maximum among all Good Permutations.

Your task is to count the number of Wonderful Permutations modulo 998244353.

Input

The input is given in the following format:

N
S

- N is an integer.
- $2 \le N \le 2 \times 10^5$
- S is a string of length $N-1$ consisting of `<` or `>`.

Output

Output answer on single line.

Examples

standard input	standard output
`5` `<<>>`	`2`
`40` `<<>><>><>>>><><<><><><<>><<<<>><><<<>><`	`535474657`

Note

In the first test case, $(1,2,5,4,3)$ and $(2,3,5,4,1)$ are Good Permutations. The number of i which satisfies $|P_i - P_{i+1}| = 1$ is $3, 2$.

We can prove that the maximum number of i which satisfies $|P_i - P_{i+1}| = 1$ among Good Permutations is 3, and Wonderful Permutations are $(1,2,5,4,3)$ and $(3,4,5,2,1)$.