

PalindromemordnilaP

Input file: standard input
Output file: standard output
Time limit: 2 seconds
Memory limit: 1024 megabytes

Life is always full of uncertainties. For example, you might think from the problem title that this is a string problem, but actually it is not.

You are given a string s and a character c . Each time, you randomly choose a position i that has **not been chosen before**, and change s_i to c (if $s_i = c$, it still counts as one operation). You repeat this operation until s becomes a palindrome, and then stop. You want to know the expected number of operations needed.

In particular, if s is already a palindrome at the beginning, the answer is 0.

Input

The first line contains a string s ($1 \leq |s| \leq 250000$), guaranteed to consist only of lowercase English letters.

The second line contains a lowercase English letter c .

Output

Output one integer on a single line, representing the expected value modulo 998244353.

Examples

standard input	standard output
abcab a	4
abcdcbd a	177465668
aba z	0