

Palindrome Count

Time limit: 1 second

Memory limit: 1024 MB

An ancient inscription discovered in Lithuania is believed to contain a coded message. Scientists found that the decoded message is a *palindromic* sequence that can be obtained by removing some (or none) of the symbols from the ancient inscription. A sequence of symbols is *palindromic* if it can be read the same backwards and forwards. The scientists will look at all possible messages.

Help them by finding the number of *palindromic* messages that can be obtained by erasing some (or none) of the symbols of the inscription. As this number can be very large, you have to find it modulo $10^9 + 7$. For simplicity, we will denote the symbols with lowercase Latin letters.

Implementation details

You should implement the function `count_palindromes`:

```
int count_palindromes(std::string s)
```

It will be called once for each test with s – a string, representing the inscription. The function should return the count of *palindromic* messages that can be obtained modulo $10^9 + 7$.

Constraints

- $1 \leq N \leq 9\,000$, where N is the size of the string.
- s consists of lowercase Latin letters.

Example

Consider the following call:

```
count_palindromes("acbac")
```

In this case there are 11 *palindromic* messages that can be obtained (bold letters are kept, struck-through letters are erased): **a**~~c~~**b**~~a~~**c**, **a**~~c~~**a**~~c~~**a**, **a**~~c~~**b**~~a~~**c**, **a**~~c~~**a**~~b~~**a**, **a**~~c~~**b**~~a~~**c**, **a**~~c~~**a**~~b~~**a**, **a**~~c~~**b**~~a~~**c**, **a**~~c~~**a**~~b~~**a**, **a**~~c~~**b**~~a~~**c**, **a**~~c~~**a**~~b~~**a**, and **a**~~c~~**a**~~b~~**a**. Therefore, the call should return 11.

Subtasks

Subtask	Points	N	Additional constraints
0	0	-	The example.
1	20	≤ 20	-
2	40	≤ 500	-
3	40	$\leq 9\,000$	-

Sample grader

The input format is the following:

- line 1: a string – the value of s .

The output format is the following:

- line 1: one integer – the return value of the call.