Ephesus

Ephesus, an ancient Greek town built in the 10th century BC, is a famous destination for many visitors to western Turkey. The archeological site, among others, contains numerous sculptures, stones and a very big amphitheater. Young boy Hakan, being an informatics Olympian, was very keen on reading historical texts and formulating informatics tasks around each. On his visit to Ephesus, upon seeing such a text on the biggest stone of the amphitheater, he formulated the following problem.

The text is a string containing *N* letters. Consider *k*-partitioning of this text: partitioning it into *k* (numbered 1,2,…*k*) partitions, where each partition is a substring of the text. The first partition always starts from the beginning, the second starts right after the first finishes, and so on. Any letter in the text belongs to exactly one partition and each partition has at least one letter, i.e. partitions are non-overlapping, non-empty and collectively exhaust the text.

Given the text and *k*, Hakan's question is "how many distinct *k*-partitionings are possible so that partitions are strictly increasing in alphabetical order", i.e. (alphabetically) the first partition is the smallest; the second partition is the second smallest and so on. Let x_k is the answer to his question for *k*. Your task is even harder than his question. You are asked to compute the following: the total of $k*x_k$ for *k* =1,2,…,*N*. More formally, you need to compute the result of the following formula.

$$\sum_{k=1}^{k=N} k * x_k$$

Example

Let the text be `mcyyak`
Then for k=1, x_k=1; for k=2, x_k =2 (one partitioning is `mc yyak` and another partitioning is `mcy yak`); for k=3, x_k =1 (the only partitioning is `mc y yak`); for k=4, x_k =0; for k=5, x_k =0; for k=6, x_k =0. So, the answer to this example is: 1*1+2*2+3*1+4*0+5*0+6*0=8.

Task

Please write a program that finds modulo (10^9 +7) of the result of the formula. The input/output format is explained below with a sample.

input file (`Standard Input`)	output file (`Standard Output`)
`mcyyak`	`8`

Input format: The only line contains the length *N* string (1≤*N*≤10 000). The alphabet of the string is lower-case English letters.

Output format: Modulo (10^9 +7) of the result of the formula.

Subtasks

Subtask 1 (5 points)

N≤3

Subtask 2 (16 points)

N≤700

Subtask 3 (36 points)

N≤5 000

Subtask 4 (43 points)

N≤10 000

Implementation details

You have to submit only one file, called `ephesus.c`, `ephesus.cpp` or `ephesus.pas`. The file implements your full program.