# Super Functional Strings

HackerRank

We define a function, $F$, on a string, $P$, as follows:

$$F(P) = \left(length(P)^{distinct(P)}\right) \% \left(10^9 + 7\right)$$

where:

- $length(P)$ denotes the number of characters in string $P$.
- $distinct(P)$ denotes the number of distinct characters in string $P$.

Consuela loves creating string challenges and she needs your help testing her newest one! Given a string, $S$, consisting of $N$ lowercase letters, compute the summation of function $F$ (provided above) over all possible *distinct substrings* of $S$. As the result is quite large, print it modulo $10^9 + 7$.

### Input Format

The first line contains a single integer, $T$, denoting the number of test cases.
Each of the $T$ subsequent lines contains a string, $S$.

### Constraints

- $1 \leq T \leq 100$
- $1 \leq N \leq 10^5$
- The sum of $N$ over all test cases does not exceed $10^5$.

### Scoring

- $N \leq 100$ for $20\%$ of test data.
- $N \leq 1000$ for $40\%$ of test data.
- $N \leq 10^5$ for $100\%$ of test data.

### Output Format

For each test case, print the answer modulo $10^9 + 7$.

### Sample Input

```
3
aa
aba
abc
```

### Sample Output

```
3
19
38
```

**Explanation**

*Test 0:*

$"\mathbf{a}"$ and $"\mathbf{aa}"$ are the only distinct substrings.

- $F("a") = (1^1)\ \%\ 1000000007 = 1$
- $F("aa") = (2^1)\ \%\ 1000000007 = 2$

$ans = (1+2)\ \%\ 1000000007 = 3$

*Test 1:*

$"\mathbf{a}"$, $"\mathbf{b}"$, $"\mathbf{ab}"$, $"\mathbf{aba}"$, and $"\mathbf{ba}"$ are the only distinct substrings.

- $F("a") = (1^1)\ \%\ 1000000007 = 1$
- $F("ab") = (2^2)\ \%\ 1000000007 = 4$
- $F("aba") = (3^2)\ \%\ 1000000007 = 9$
- $F("b") = (1^1)\ \%\ 1000000007 = 1$
- $F("ba") = (2^2)\ \%\ 1000000007 = 4$

$ans = (1+4+9+1+4)\ \%\ 1000000007 = 19$