

Contest time extended! There were a few configuration issues with the server. So we had to restart it. We appologize for the inconvenience and are extending the contest time for an hour.

B. Subsequence Count

Score: 1

CPU: 1s

Memory: 1024MB

You are given a string S and you have to count how many subsequence of this string does not have same character at adjacent positions.

Subsequence of string S can be obtained from deleting zero or more characters from string S .

Example: let, $S = \text{"aba"}$ then possible subsequences are "a" , "ab" , "aba" , "aa" , "b" , "ba" , "a" and " " (empty string). But among the subsequences all are valid except "aa" .

Input

First line of the input contains $1 \leq T \leq 100$ number of test cases. Each of the following T lines contains a string which have positive and contains at most 1000 lowercase English letters.

Output

Output a single line containing case number and the number of subsequence. As the result can be large print it by modulo 100009.

Sample

Input

Output

1
aba

Case 1: 7

NCPC 2014 Preliminary

2:53:52

You are participating in this contest

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Language

C



Source

Choose..

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