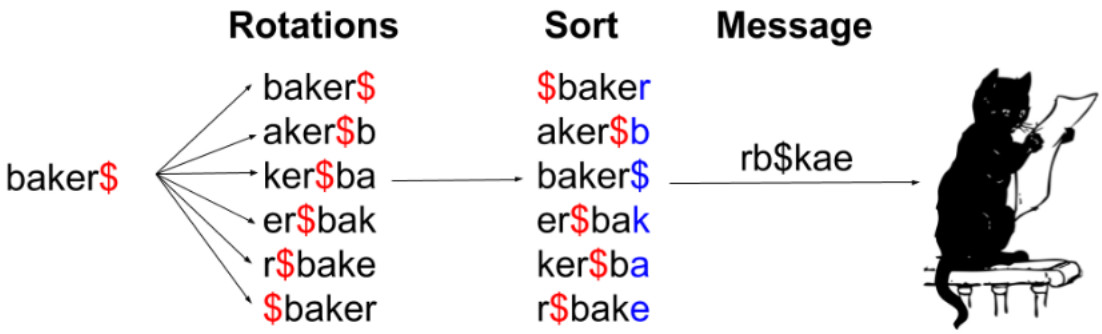
Problem B. Baker$

Source file name:	B.c, B.cpp, B.java, B.py
Input:	`Standard`
Output:	`Standard`

Baker and Iris are really good friends. Last month Iris moved out of the city and now their only way to communicate is using letters. As both Baker and Iris are cats, their each of their letters contains a single string of N characters. In order to create a more secure way of communication, Iris decided that she will encrypt the messages that sends to Baker using the following procedure:

First add the character $ at the end of the string, next she will create all rotations of the string in lexicographical order.Consider the character $ is the lowest lexicographically. The encrypted string is made taking the last character of each rotation.



Your task is to help Baker to decrypt the letter Iris has sent.

Input

The input consists of several test cases. Each test case consists of a line with a string S that contains only lower case characters and the $ symbol.

- $1 \leq |S| \leq 1000$

Output

For each test case print in one line the decrypted message.

Example

Input	Output
rb$kae annb$aa	baker banana