

C. Minimal string

time limit per test: 1 second
 memory limit per test: 256 megabytes
 input: standard input
 output: standard output

Petya recieved a gift of a string s with length up to 10^5 characters for his birthday. He took two more empty strings t and u and decided to play a game. This game has two possible moves:

- Extract the **first** character of s and append t with this character.
- Extract the **last** character of t and append u with this character.

Petya wants to get strings s and t empty and string u lexicographically minimal.

You should write a program that will help Petya win the game.

Input

First line contains non-empty string s ($1 \leq |s| \leq 10^5$), consisting of lowercase English letters.

Output

Print resulting string u .

Examples

input	Copy
cab	
output	Copy
abc	

input	Copy
acdb	
output	Copy
abdc	

Educational Codeforces Round 19

Finished

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