

## Problem K. Minimal string

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**Time limit** 1000 ms

**Mem limit** 262144 kB

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  $u$ .

### Sample 1

Input	Output
cab	abc

### Sample 2

Input	Output
acdb	abdc