Smallest String

You are given a string S and a stack STk. You need to create a new string N such that, N is lexicographically smallest. You are provided with two operations :

1. Remove first element of string S push it to stack.
2. Pop a character from stack and append to the end of output string N.

At the end string S and stack STK should be empty.

Input:
First line contains a single integer n representing size of string S.
Second line contains string S.

Output:
Print resulting string N.

Constraints:
1 <= n <= 100000
S[i] is lowercase english character.

Sample Input #1
acdb
Sample Output #1
abdc