ESO207: Data Structures and Algorithms

Bonus Programming Assignment *2* *Due: September 15 midnight*

Instructions: The precise input-output format will be specified by Programming TAs for submission on Hackerearth.

Problem 1. You are playing a game that allows the following moves. Given an initial string of characters s and empty strings t and u initially. The moves are :

- Remove a character from the front of s and append it to the end of t.
- Remove a character from the end of t and append it to the end of u.

The game ends when s is empty and t is empty and the answer of the game is u. Design a program that makes u to be lexicographically the smallest string possible. For example, suppose the input is `cab`. Then, consider the following moves.

s	t	u
cab		
ab	c	
b	ca	
b	c	a
	cb	a
	c	ab
		abc

Clearly, `abc` is lexicographically the smallest string possible for u.

Example 2. Consider the input string $s =$ `acdb`.

s	t	u
acdb		
cdb	a	
cdb		a
db	c	a
b	cd	a
	cdb	a
	cd	ab
	c	abd
		abdc

The smallest string in lexicographic order possible is `abdc`.