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Question 1 [15 Points]

You are given a stack of integers and an integer **k**. Write a function named ***rotate_stack*** that takes a stack and an integer as input. The function will modify the stack to rotate it ***downward*** by k position(s). You have to return the modified stack.

Assume the Stack class is already given and provides standard methods: **push**, **pop**, **peek**, and **isEmpty**.

Constraints:

- You are only allowed to use instances of the provided Stack class, which supports the provided methods

Sample Input 1:	Sample Output 1:	Sample Input 2:	Sample Output 2:
Input Stack: 10 (Top) 20 30 40 50 K = 2	Output Stack: 40 (Top) 50 10 20 30	Input Stack: 10 (Top) 20 30 40 50 K = 6	Output Stack: 50 (Top) 10 20 30 40

- No other data structures can be used

other than Stack.

- Note that k can be very large. $0 \leq k \leq 1,000,000,000$

