### **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***byk 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
* No other data structures can be used other than Stack.
* Note that k can be very large.

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

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