Assignment: Sorting a Stack

January 2024 CSE 106 Online A1-A2

Time: 30 minutes

Problem Description

In this task, you are required to implement a function to sort a stack such that the smallest elements are at the top. **You can only use stacks and the standard stack operations**: `push`, `pop`, `top`, `isEmpty`, `length` and `clear`. **You are not allowed to use any additional data structures like arrays**.

Example Output

Here is an example of the expected behavior:

Sample Input

```
4
4
10 10 4 5
5
11 3 12 4 3
3
10 10 10
1
100
```

Sample Output

```
-------------Testing Stack with Sorting-------------
Test Case 1:
Current stack: 10 10 5 4
--------------------
Test Case 2:
Current stack: 12 11 4 3 3
--------------------
Test Case 3:
Current stack: 10 10 10
--------------------
Test Case 4:
Current stack: 100
--------------------
```

Hints

- Use both implementations (**StackArray.h** and **StackLinkedList.h**) to solve the problem. You have been given a skeleton code **online_a1a2.cpp** where you need to include the corresponding header files and implement the **sortStack** function. You do not have to worry about output formatting. The skeleton will do that for you. Inputs will be in `input.txt` and outputs will be in `output.txt`.
- You may need more than one stack to solve the problem.