FF: STACK

Sept 29, 2023

Create a video explaining and implementing the code for the following instructions

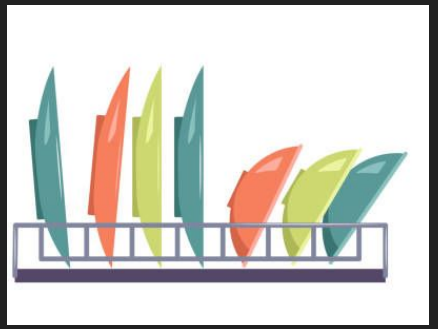
P1: Design a *Stack* Class

You may not use std::stack

Implement a stack class with the following functions

- Push(val) → Pushes element “val” to top of stack
- Pop() → Removes element at top of stack
- top() → returns element at top of stack
- **getMin()** → returns the minimum value in the stack → must be O(1) time

P2: Plate Sorting



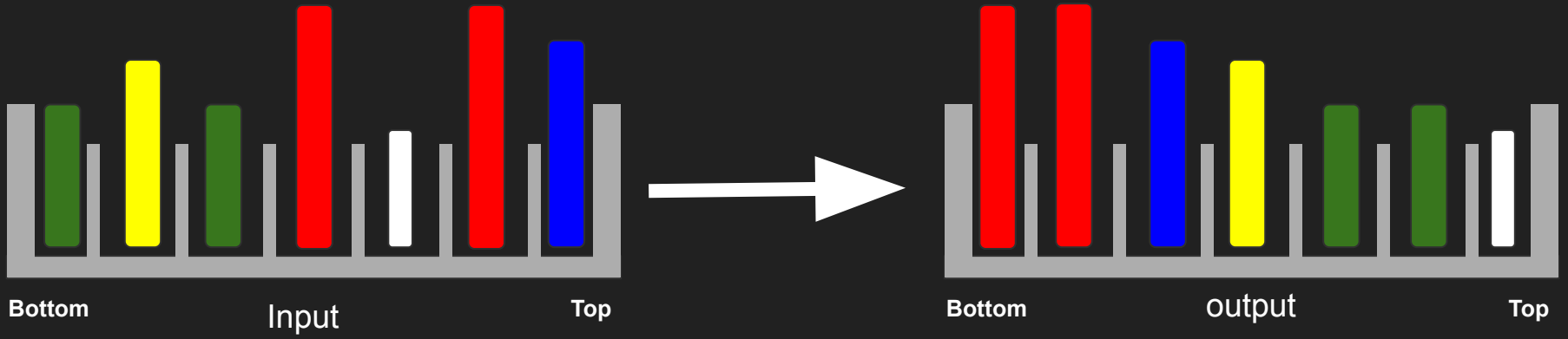
You may use std::stack

Design a program that sorts a plate rack using only one other empty plate rack.

You are given a stack (plate_st) representing a plate rack. Sort it, using only std::stack functions and one temporary stack, so that the stack is in order (Biggest at bottom, smallest at top). Elements must be sorted in its original stack (plate_st). Print the sorted stack.

“Stack Function” found here under “Member Functions” → https://cplusplus.com/reference/stack/stack/

P2: Input → Output example



Input:
45
55
5
55
25
35
25

key

55 35

45 25

5

Output:
5
25
25
35
45
55
55

P2: Visualized

key

55

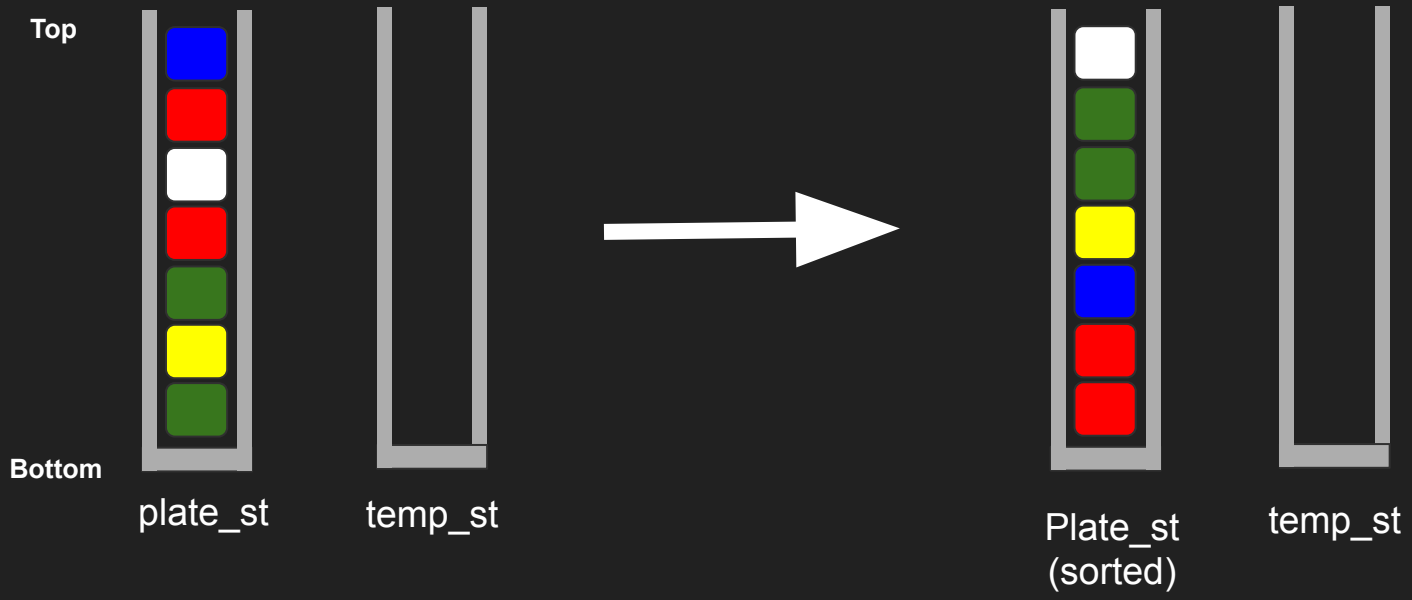
45

35

25

5

You may only use std::stack functions and one additional stack (temp_st)



P2: Sample Starter Code

```cpp
#include <iostream>
#include <stack>
using namespace std;

void sort_stack(stack<int>& s, stack<int>& temp){
    //Algo goes here
}

int main(){
    stack<int> st;
    stack<int> temp;
    // Fill st
    sort_stack(st, temp);
}
```

Temp stack must remain empty until sort_stack() function begins

SUBMIT

Upload video to coogTube or any other video sharing platform (youtube)

FF → Coogtube

Upload code to repl.it or any other code sharing platform

Fill out https://forms.gle/8GJ4SXoFK5njm8sV9

SUBMIT **BEFORE** 10 PM

Contact me if there are any upload/submission errors