

Interview Problems on Stacks in DSA

Pre Placement Training Program





CAN YOU ALL SEE & HEAR ME?



Know About Your Teacher



With
Gladden Rumao

- Expertise in DSA, OOP, Java, Go, React, and AWS
- Successfully mentored over 1000 students



Interview Problems on Stack

What will you learn today?

- ❑ Implement Stack using Queues
- ❑ Implement Queue using Stacks
- ❑ Online Stock Span

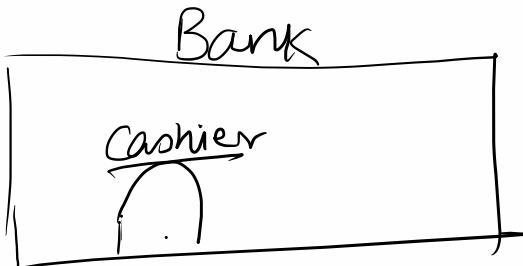
Implement Stack

using Queues

- ① Push() → Insertion
- ② pop() → Deletion
- ③ peek() → topmost element
- ④ isEmpty() → check if stack
is empty

Queue

→ FIFO → First In, First Out



exit ←
top

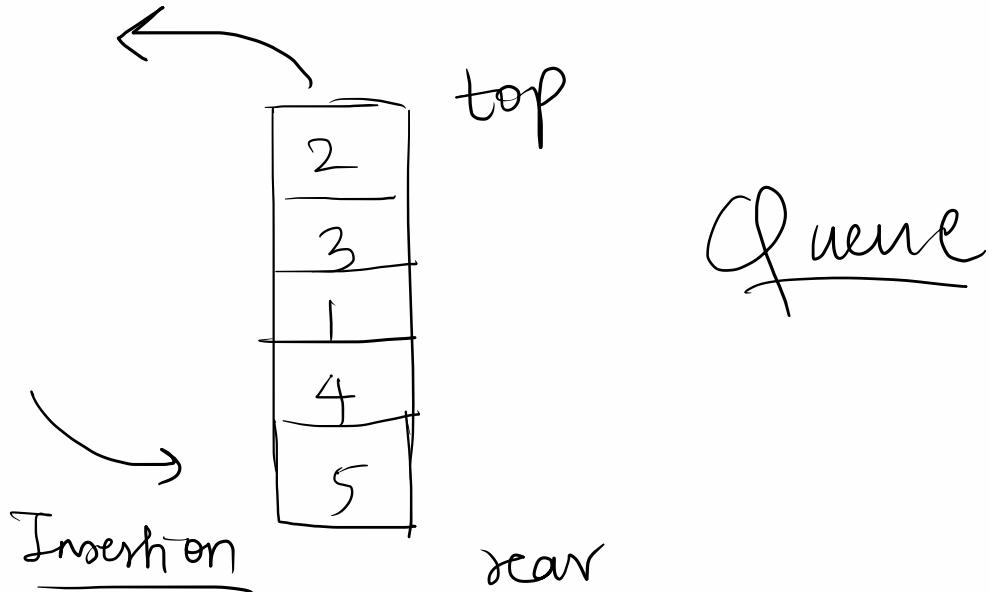


entry
rear →

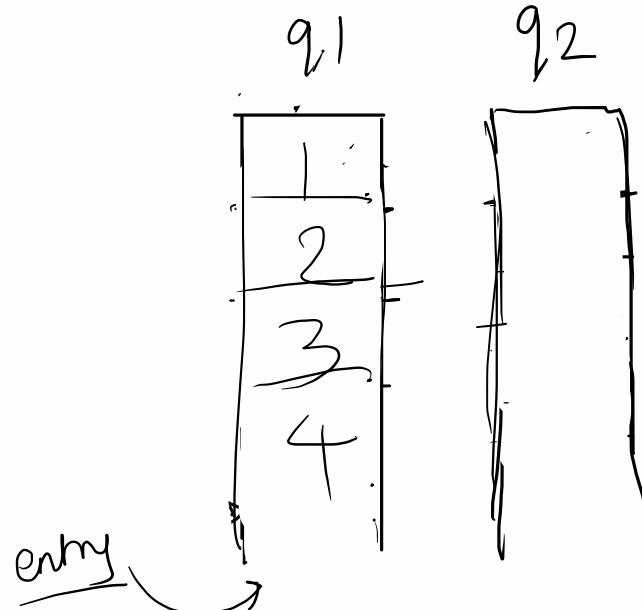
- first come,
first serve

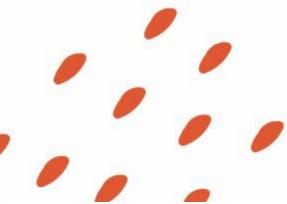


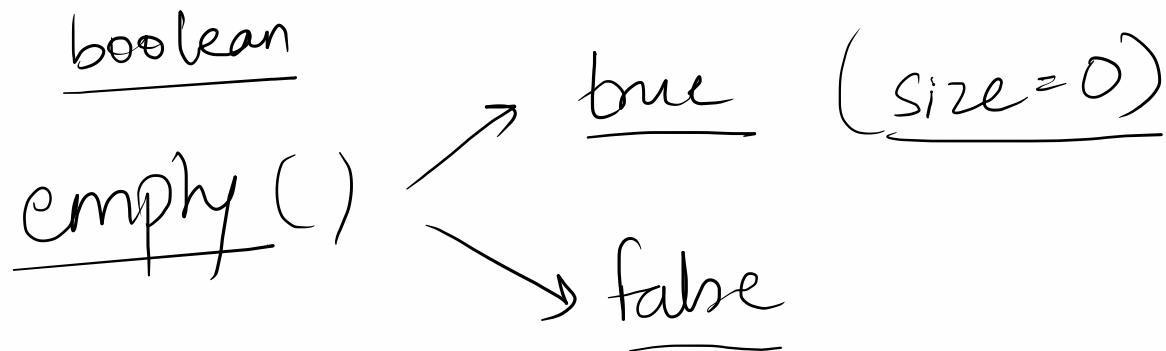
2 3 1 4 5



RecR





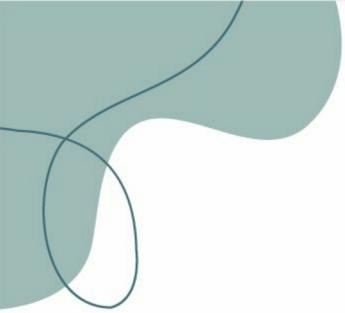


Inserting → push
Remove from empty stack → Underflow

Quick Check

Removing → Pop





Push

→ $q.add(x)$



Let's Summarize

pop

- ✓ ① move element from q_1 to q_2
 - ✓ ② $q_1.remove$
 - ③ move element from q_2 to q_1
- 



Let's Summarize



Stack

push

pop

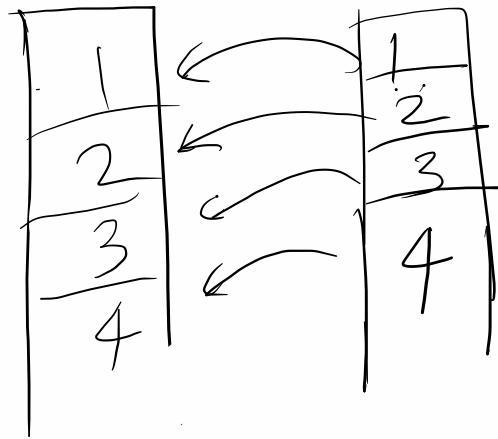


queue

add

remove

q_1 top q_2



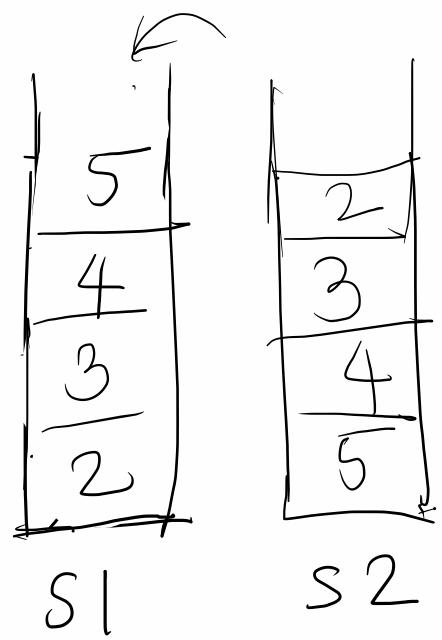
topped = 4

if size = 0 → Empty true
else → Empty false

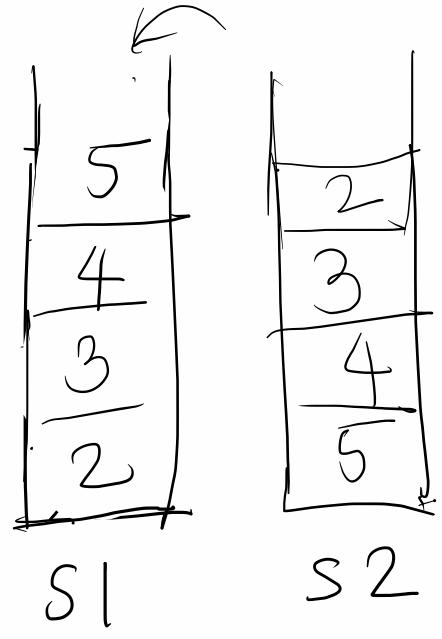
Implement of Queue

Using Stacks

- ① push
- ② pop
- ③ peek
- ④ empty



Pop



Pop

push

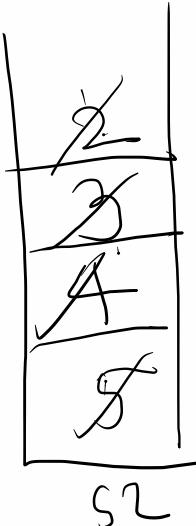
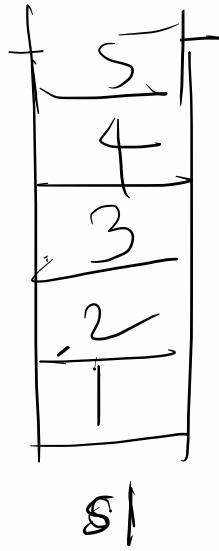
sl.push(x)

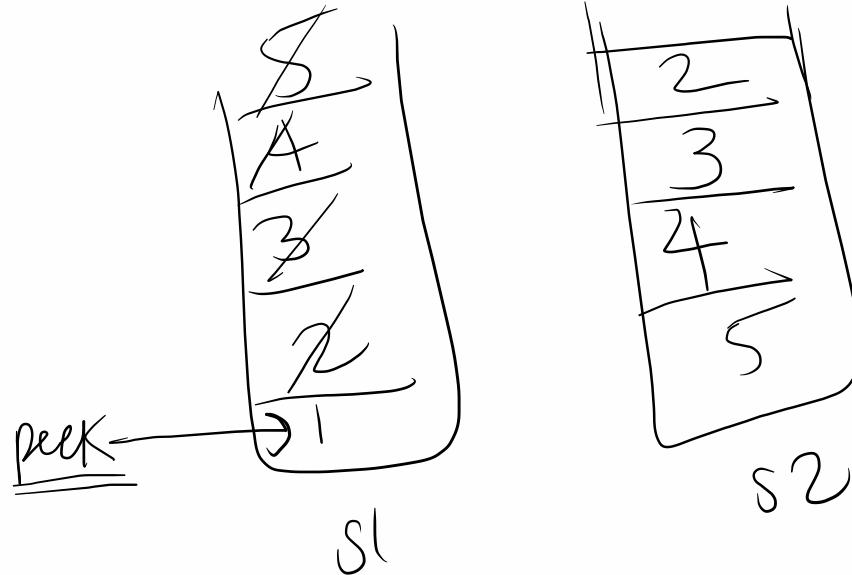
Pop

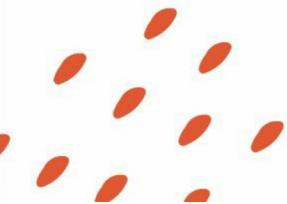
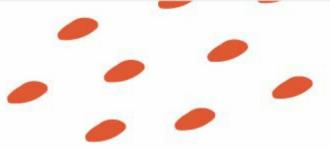
- ① move elements from
s1 to s2 (except last)
- ② s1.pop()
- ③ move elements from
s2 to s1

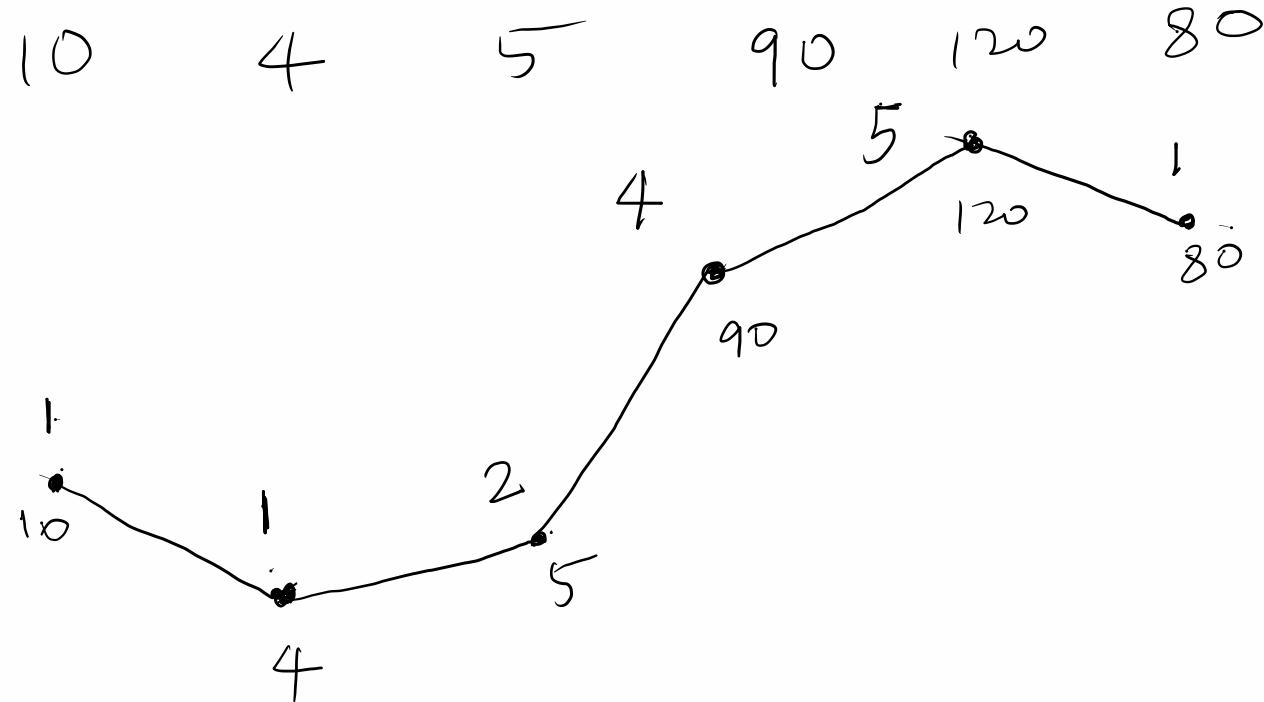
peek

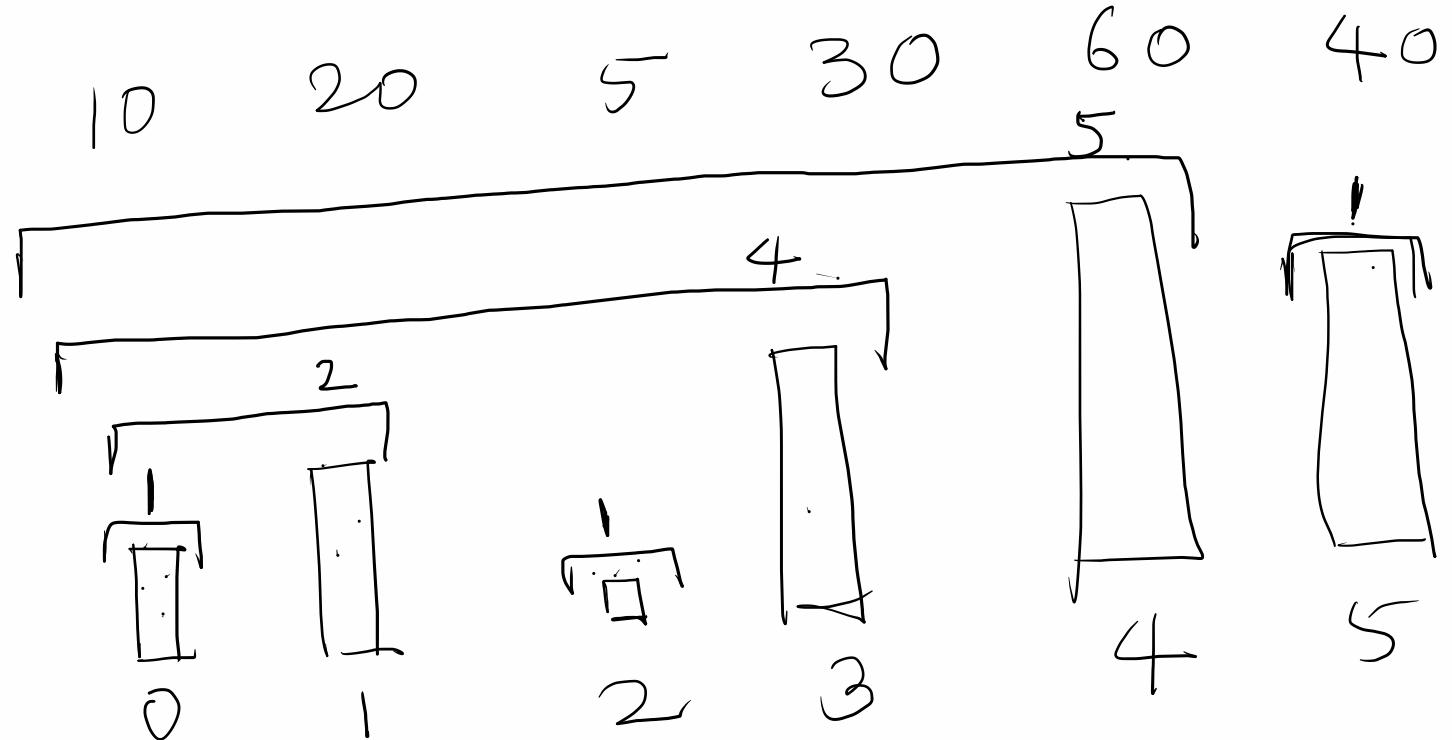
topped = sl.peek();



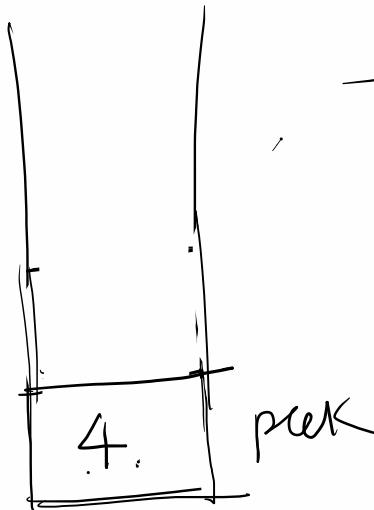








10 20 ~~25~~ 30 ~~60~~ ~~40~~



Stack is empty

i + 1

i - peek

1
2
1
4
5
1


$$\underline{T.C = O(n)}$$
$$\underline{\text{Aux SC} = O(n)}$$



