Adapters

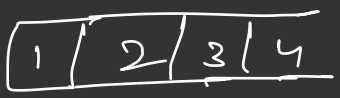
1. Implement Queue using 2 stack
2. Implement Stack using 2 queue

1. Implement queue using 2 stack

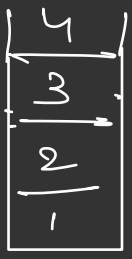
enque –
deque –
peek –
size O(1)
isEmpty O(1)

1. Enque efficient
   enque – O(1) deque – O(n) peek – O(n)
2. Deque Efficient
   deque O(1) enque – O(n) peek O(1)

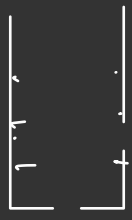
1.



add(1)
add(2)
add(3)
add(4)
remove()



main



helper

① Add — push ✓

② remove

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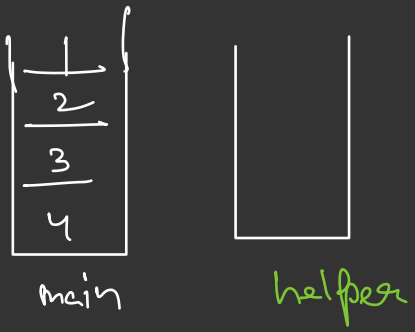
② Remove Efficient O(1)

remove — pop() ✓

add(s)



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② Implement stack using 2 Queues

① Push Efficient

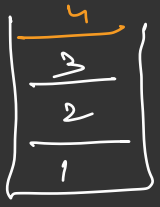
push O(1) pop, peek O(n)

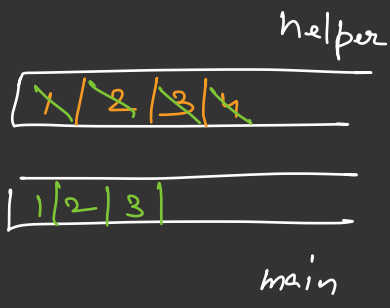
② Pop Efficient

pop, peek O(1) push O(n)

push
pop
peek
isEmpty
size

① Push Efficient





push(1)
push(2)
push(3)
push(4)

push → q.add() O(n)

pop()

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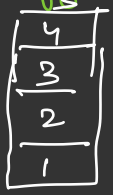
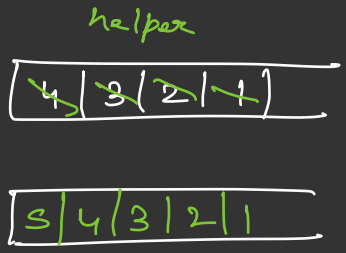
② Pop Efficient





pop - remove

push(s)