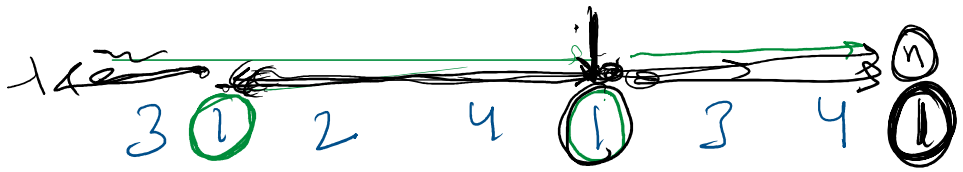
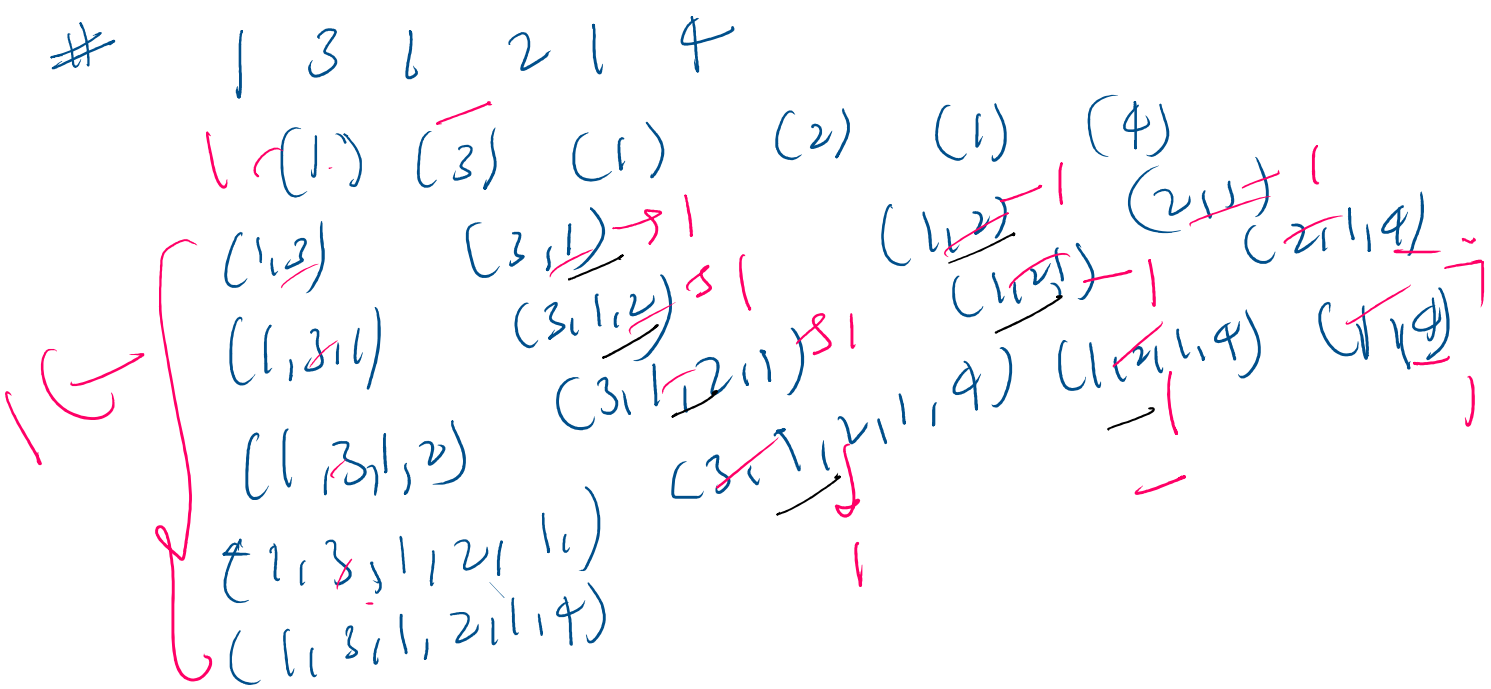
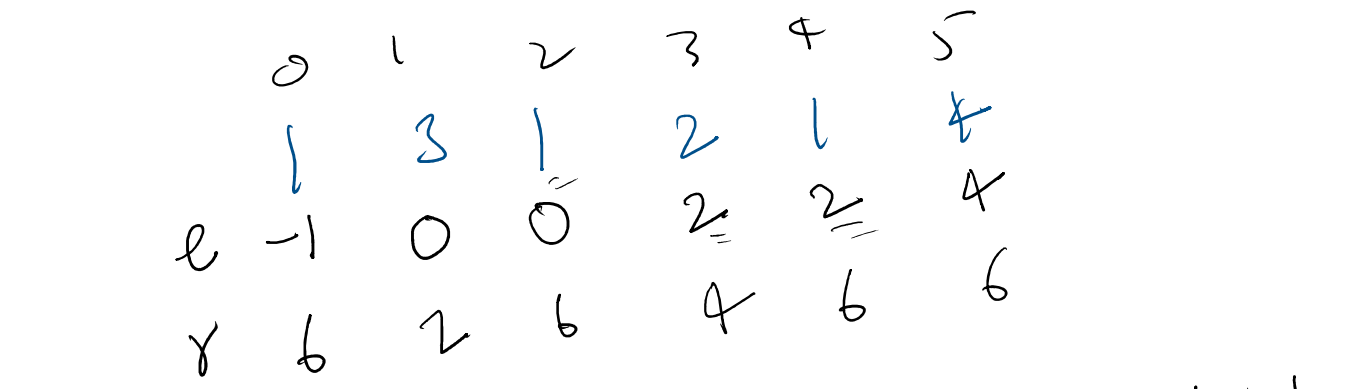
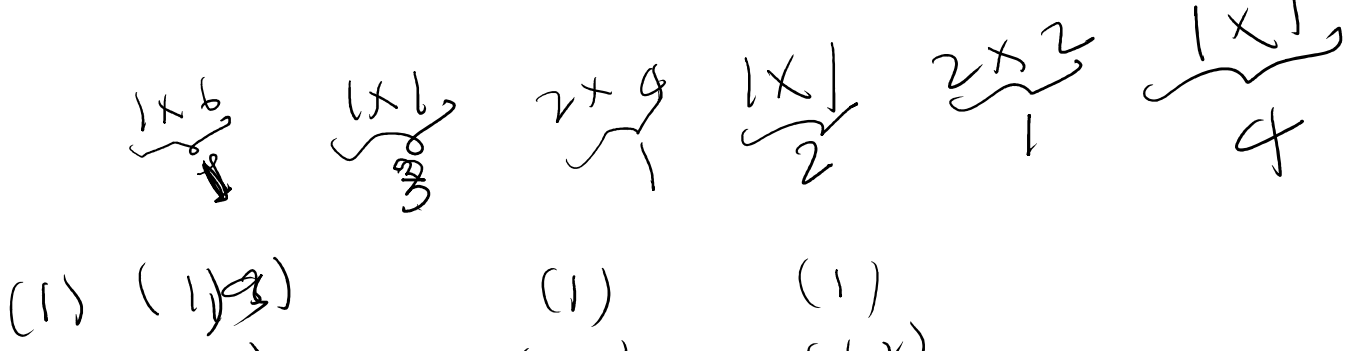
3.13 - Stacks + Queues

Sunday, August 3, 2025 10:41 AM







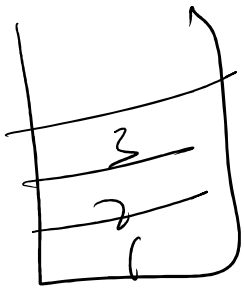


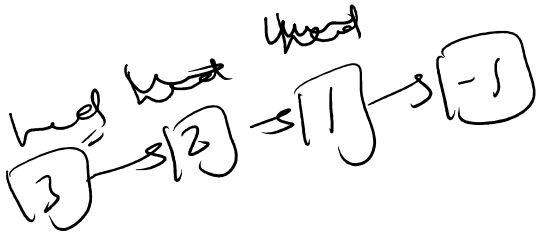
(1) (1,3) (1) (1)
(4,7) (3,1) (1,2)
(7,3,1) (1,2,1)
(1,3,1,2) (1,2,1,4)
(1,3,1,2,1)
(1,3,1,2,1,4)

Queue

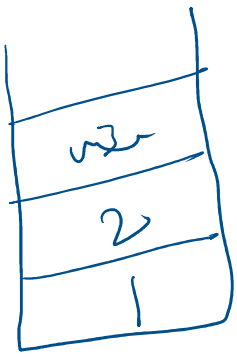
=> Stack using LL
LIFO

1,2,3



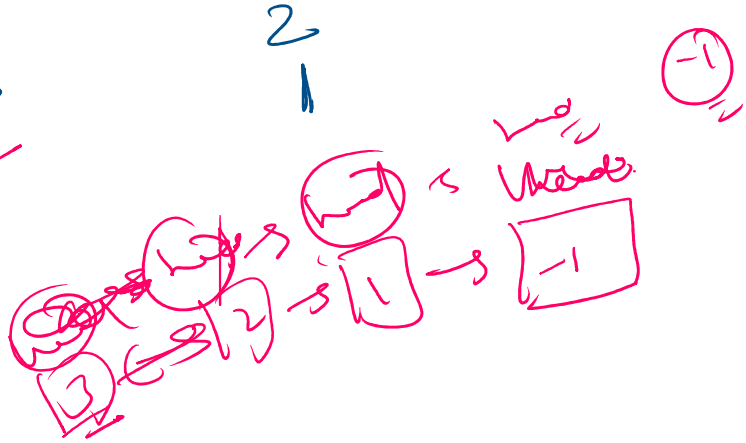


=>

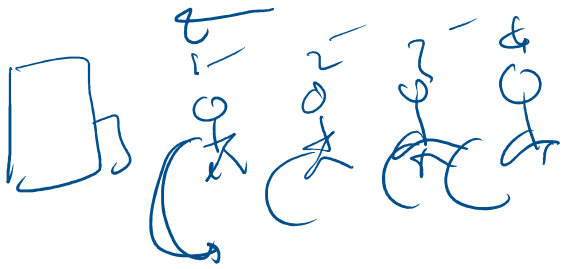


push 1
push 2
push 3
pop
pop
pop

3
2
1

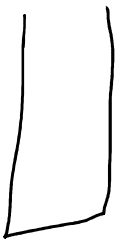


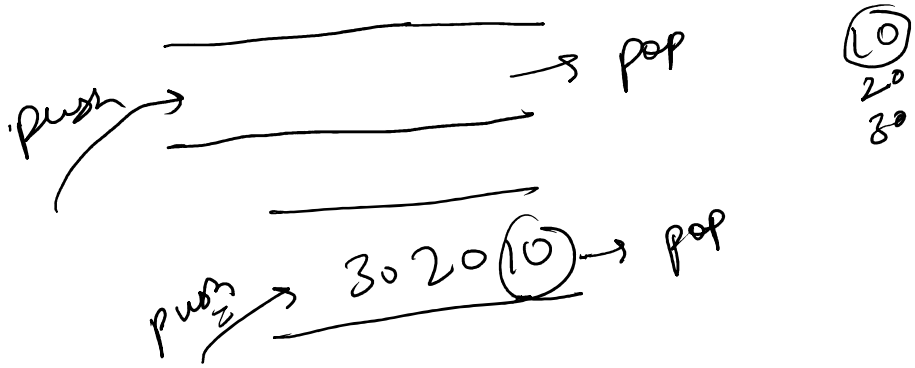
Queue



FIFO

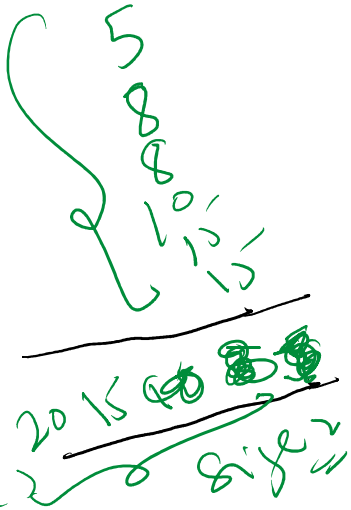
↳ First In First Out





→ push (5)
push (8)
push (10)
push (15)
pop()
peek()

pop()
pop()
peek()
push(20)
peek()

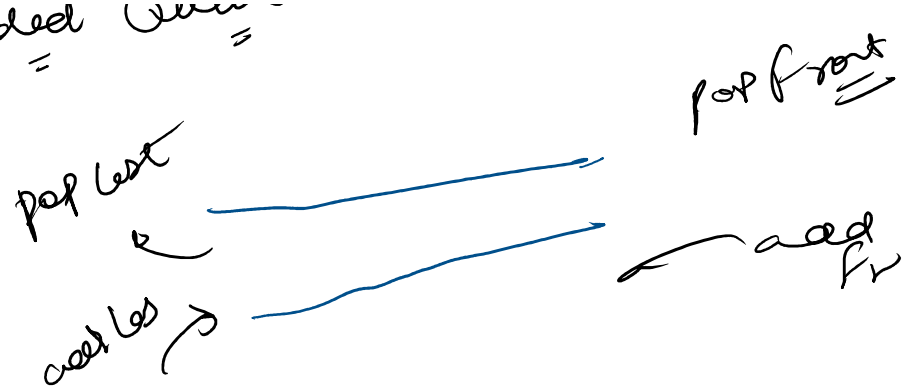


→ enqueue } → insert / push } → offer()
→ dequeue } → deletion / pop } → poll()

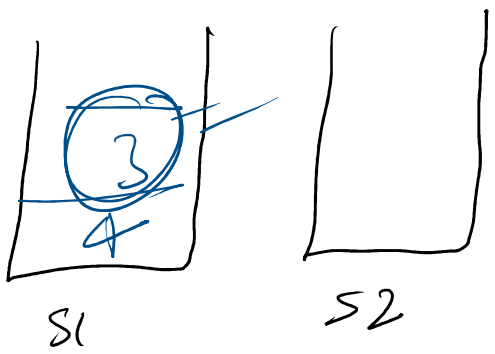
D) Doubly Ended Queue

top front

D) Doubly Ended Queue

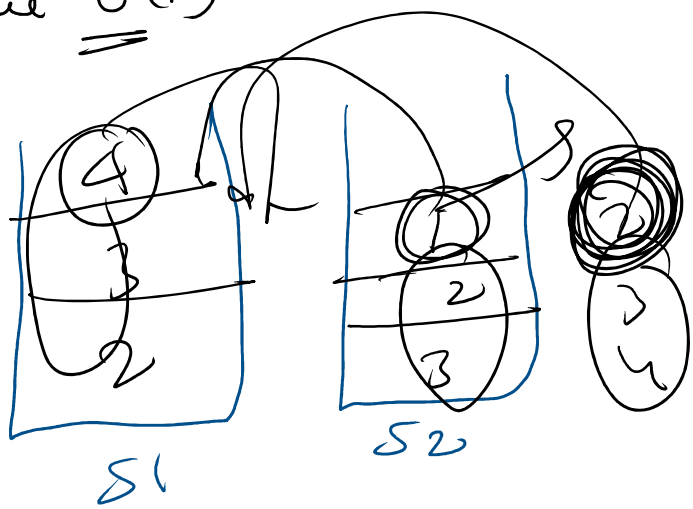


Queue using 2 Stacks (Dequeue O(1))



1 2
1 3
2
1 4
2

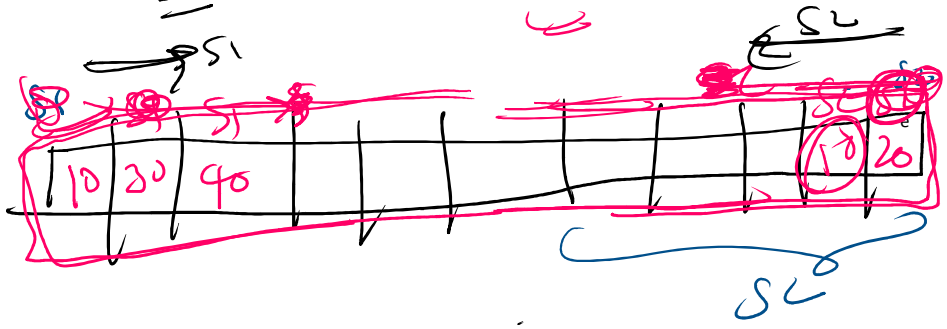
Enqueue O(1)



push (1)
push (2)
push (3)
pop
pop. ← push(9)

2 Stacks using a single array

2 Stacks using a single array



if (S1 > S2)

push1(10)
push2(20)
push1(30)
push1(45)
pop1()
push2(50)
pop2()