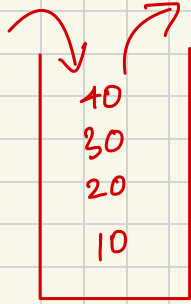




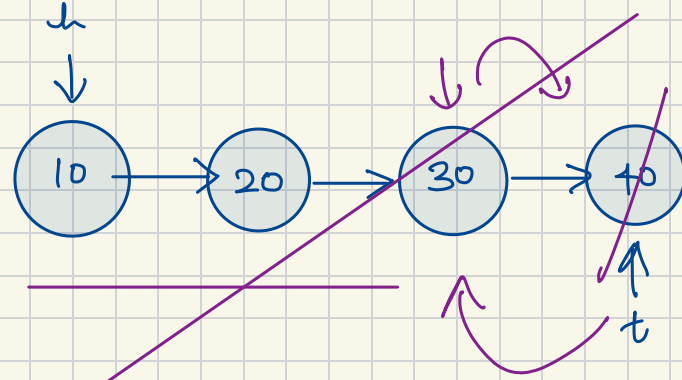
Design a Stack using Linked List

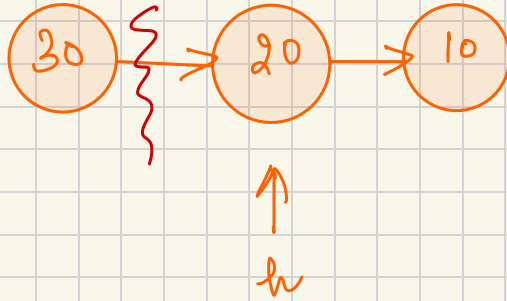


st

→ pop()
 40, 30, 20, 10
 ← push()

~~not optimized~~
 push → addLast()
 pop() → removeLast() } { TC: O(N)
 SC: O(1) }

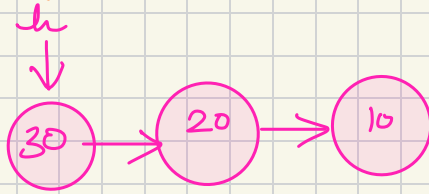
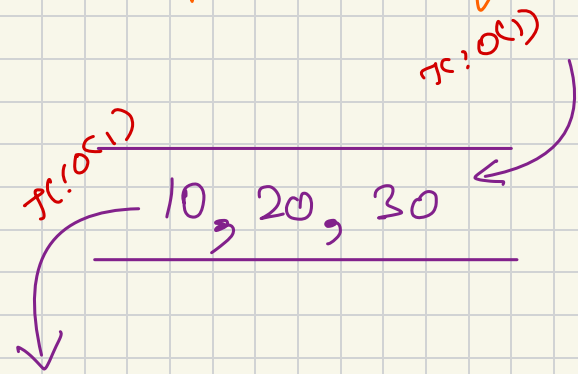




$\text{push}() \rightarrow \text{addFirst}()$ $\left\{ \begin{array}{l} \text{TC: } O(1) \\ \text{SC: } O(1) \end{array} \right.$

$\text{pop}() \rightarrow \text{removeFirst}()$ $\left\{ \begin{array}{l} \text{TC: } O(1) \\ \text{SC: } O(1) \end{array} \right.$

- Implement a queue using linked list

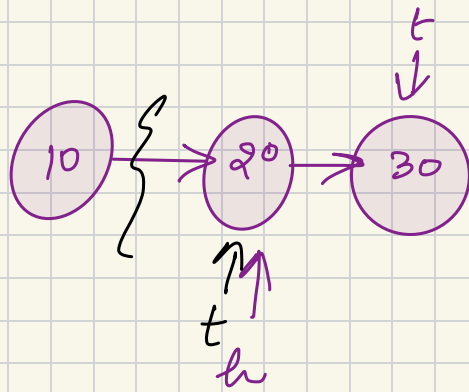


$add() \rightarrow addFirst()$

$remove() \rightarrow removeLast()$

$\left\{ \begin{array}{l} TC: O(N) \\ SC: O(1) \end{array} \right.$

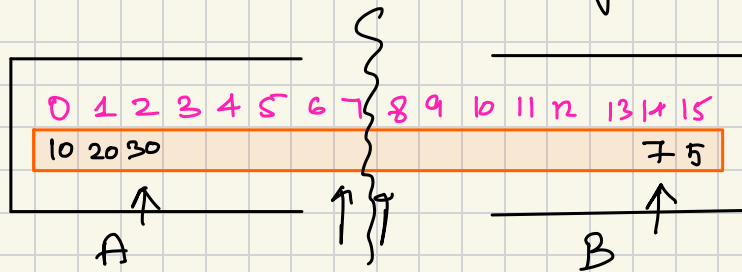
~~NOT OPTIMIZED~~



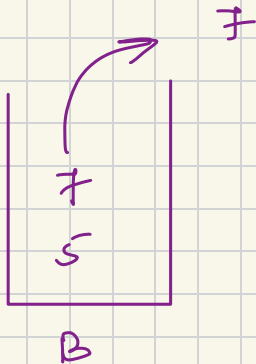
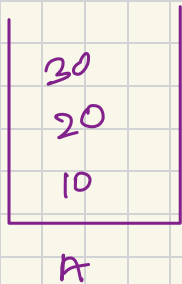
✓ `add(): addLast()` $\begin{cases} TC: O(1) \\ SC: O(1) \end{cases}$

✓ `remove(): removeFirst()` $\begin{cases} TC: O(1) \\ SC: O(1) \end{cases}$

Implement 2 stacks within an array

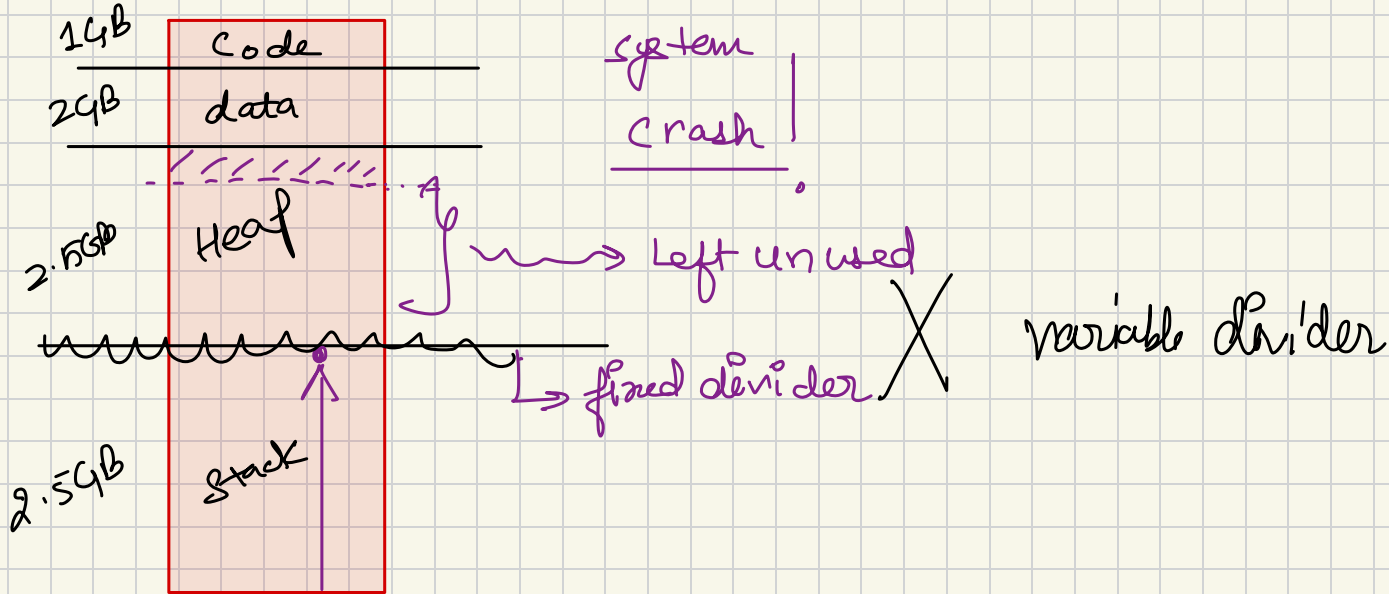


doubt?



OS

8GB



0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160

A

B

Implement Queue using 2 Stack

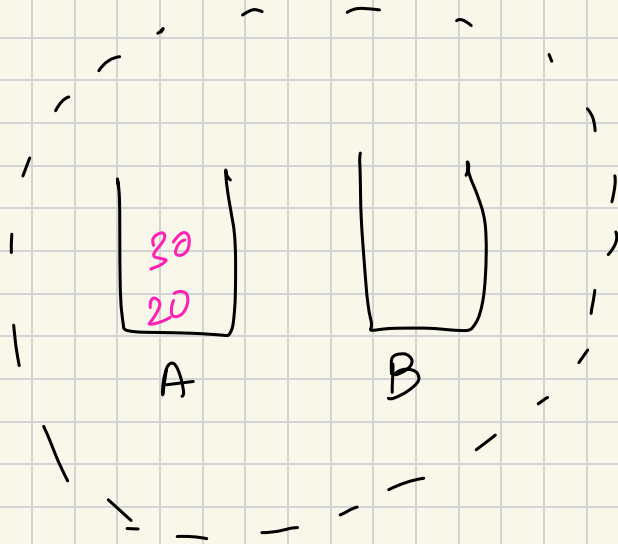
Enqueue $O(1)$
Dequeue $O(N)$

Dequeue $O(1)$
Enqueue $O(N)$

✓ Engine TC: 0C4)

Dequene TC: 0C4)

10



30 20 10
que

10, 20, 30

}

H.W. :

- ① Winner of the circular game
- ② Height problem

