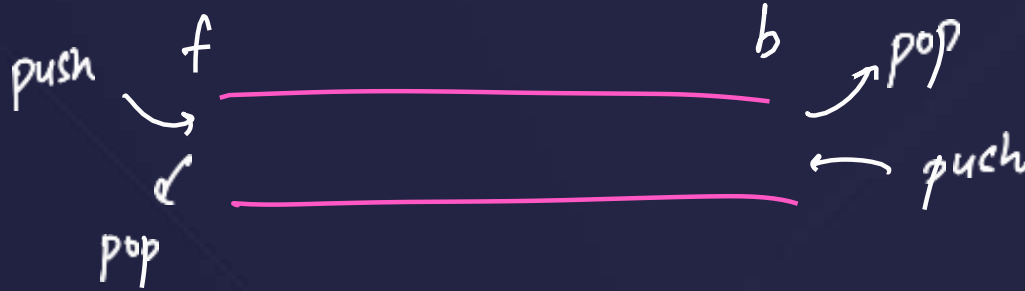


# Queues - 3

**Raghav Garg**

# Ques: Sliding Window Maximum

[Leetcode - 239]



pop-front()  
 pop-back() ✓  
 push-front() ✓  
 push-back()

Monotonic Deque



Decreasing

# Ques: Sliding Window Maximum

[Leetcode - 239]

nums = { 1, 3, -1, -3, 5, 3, 6, 7 }  
 0 1 2 3 4 5 6 7  
 i

k=3

Window ke  
 last me aane  
 ke bad ans  
 me push

f b  
 dq 7

ans = { 3, 3, 5, 5, 6, 7 }

while (nums[i] > dq.back()) pop-back;

dq.push(nums[i])

if (i >= k-1) ans.push(dq.front)

# Ques: Sliding Window Maximum

[Leetcode - 239]

$$\begin{array}{ccc} 0 & 1 & 2 \\ \text{nums} & \{ 7, 2, 4 \} \end{array}$$

$K = 2$

dq

$$\begin{array}{c} \text{-----} \\ 2 \\ \text{-----} \end{array}$$

$$i - j + 1 = K$$

$$j = i - K + 1$$

ans = { 7, 4 }

while (nums[i] > nums[dq.back()]) dq.pop-back();

dq.push-back(i);

while (dq.front() < j) dq.pop-front();

ans.push-back(nums[dq.front()]);

# Ques: Dota2 Senate

[Leetcode - 649]

2 parties Radiant & Dire  
 ↓ ↓  
 'R' 'D'

```
while(q.size() > 1){
```

str  
 0 1 2 3 4 5 6  
 X X X X X D X

```
q <int> q
```

5

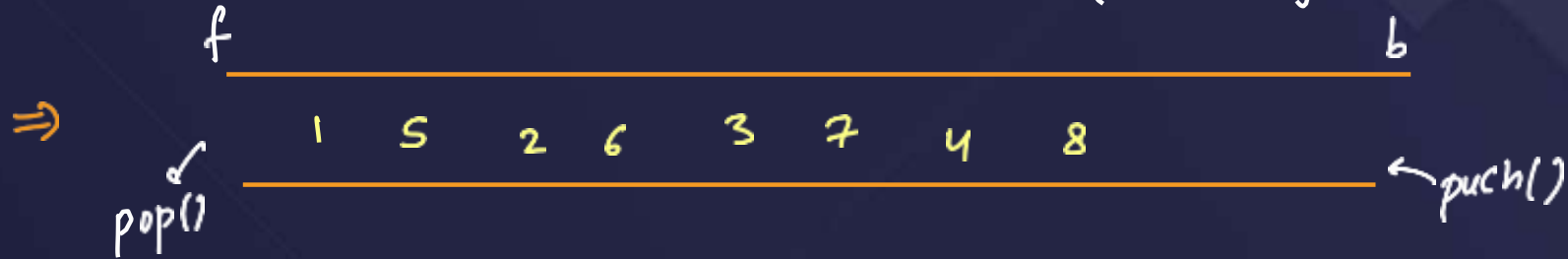
```
q <int> r
```

```
q <int> d
```

5

**Ques:** Reorder Queue (Interleave 1st Half with 2nd Half)

[Do this by using one Stack only] (Even Length)



Steps:

1) First half ko q se st  
& then st se q

2) 1<sup>st</sup> (2nd) half q se st  
one by one,

st se q  
q se q

1 5 2 6 3 7 4 8

3) reverse the q



**Ques:** Reveal Cards in Increasing Order

→ Show one, put the 2<sup>nd</sup> in back

Input: deck = [17,13,11,2,3,5,7]

Output: [2,13,3,11,5,17,7]

deck = {  
 0 1 2 3 4 5 6  
 {2, 3, 5, 7, 11, 13, 17}}

q = 5

ans = {2, 13, 3, 11, 5, 17, 7}

Done

int idx = q.front()

ans[idx] = deck[i]

(i = 0 to 6)

[Leetcode - 950]

# Hint: Sort the array

- Use an extra array for result
- Use a queue

# THANK YOU!

COLLEGE  
WALLAH