

Stacks -3 Lecture-47

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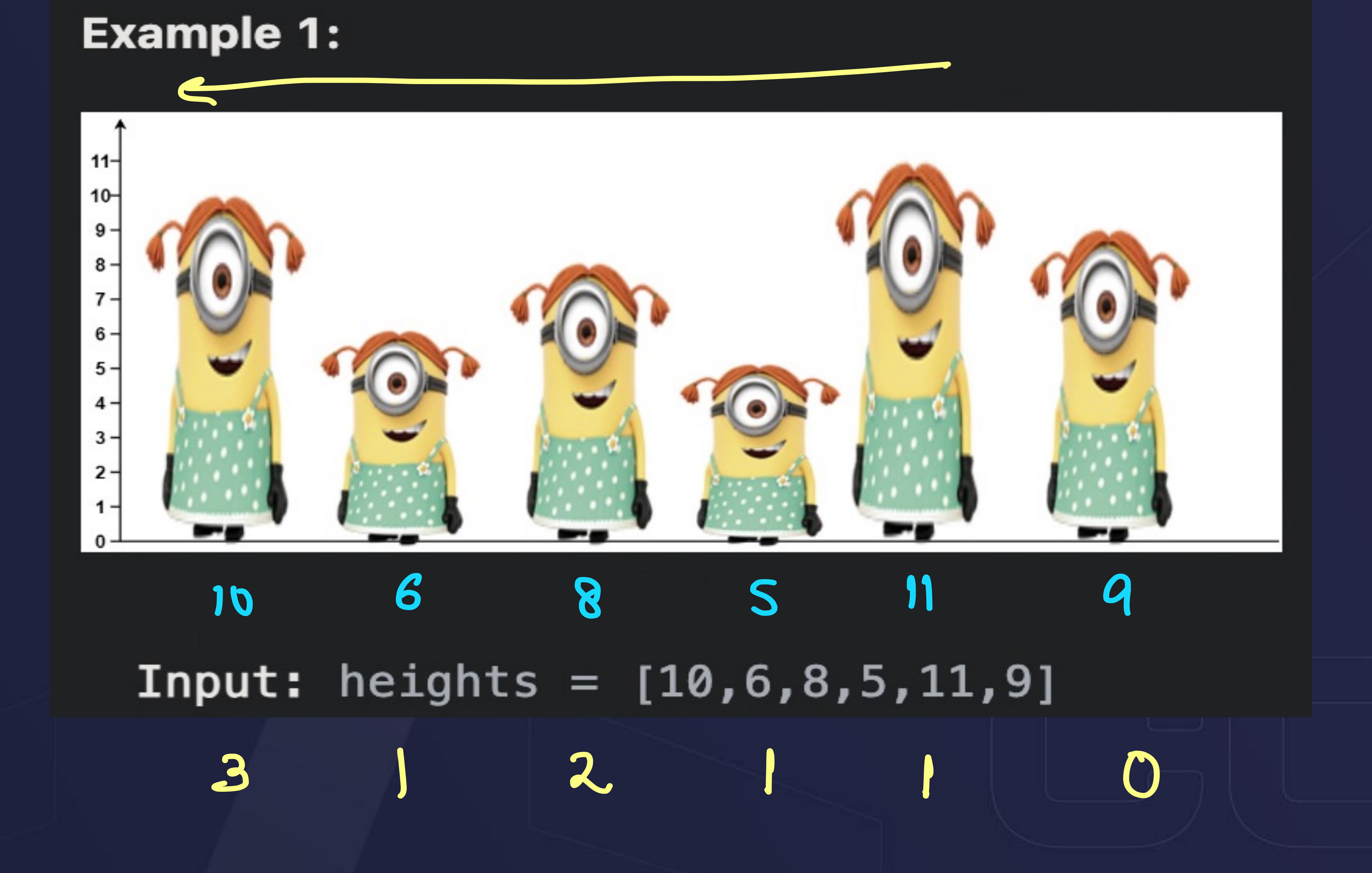
Today's checklist

1) Questions on Stacks





Ques: Number of Visible People in a Queue [Leetcode - 1944]



```
1 Count = p
10: Count = p 23
```

poplans, pubh

M-I Brute Force

$$arr = \{1, 3, -1, -3, 5, 3, 6, 7\}$$
 $ars = \{3, 3, 5, 5, 6, 7\}$
 $ans = \{3, 3, 5, 5, 6, 7\}$

No. of window =
$$n-K+1$$

T. $n\cdot o = (n-K+1)^{*}K$

Leetcode - 239]

```
Mothod-2: Using a Stack [Next greater Element]

0 1 2 3 4 5 6 7 8

arr = \{1, 3, -1, -3, 5, 3, 6, 7\} K=3

ngi = \{1, 4, 4, 4, 6, 6, 7, 8\}

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



```
worst case:
 arr = \{1, 2, 3, 4, 5, 6, 7, 8\}
K=4
```

```
Leetcode - 239
O(n) T.C
```

```
vector<int> ans;
for(int i=0;i<n-k+1;i++){
   int mx = arr[i]; // starting of window se
    while(j < i+k){ // means if nge is inside window</pre>
        mx = arr[j];
         = ngi[j];
    ans.push_back(mx);
return ans;
```

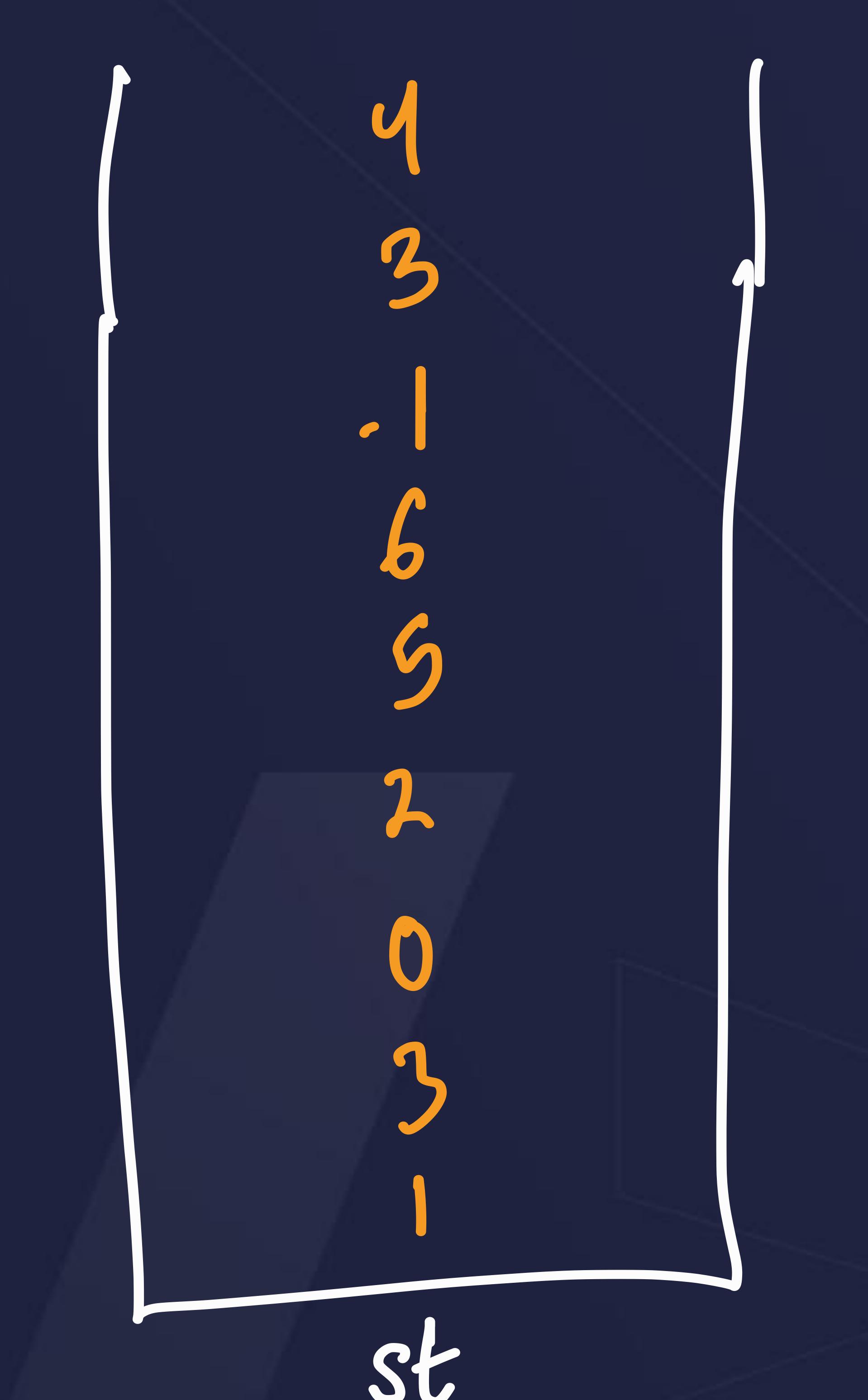
Leetcode - 239

```
vector<int> ans;
int j = 0;
for(int i=0;i<n-k+1;i++){
    int mx = arr[j]; // starting of window se
    while(j < i+k){ // means if nge is inside window
        mx = arr[j];
        if(ngi[j] >= i+k) break;
        j = ngi[j];
    }
    ans.push_back(mx);
}
return ans;
```

arr
$$\{7, 2, 43\}$$
 $K=2$
 i $i+K$
ans = $\{7, 2, 4\}$



Method-1: Brute Force
$$\rightarrow$$
 T·C· = O(n)
S·C· = O(n)





[Leetcode - 155]

```
Method-2: By using extra stack that will
```

always have the same no. of elements as your given st.

$$T \cdot C \cdot = O(1)$$
, $S \cdot C \cdot = O(n)$

```
3
3
5
5
5
7
st
```

```
push (val) 4
    St. pulh (val):
   if (val 1 helper . top())
        helber.push(val);
    due (val >= nelber-topl)
       nelper-push (nelben top(1);
```

Method-3 S·C· = O(1), $T \cdot C \cdot = O(n)$

Infloment the stack with vector

Le each time you call get nin -> O(n)

you have to traveral the entire wealth.

Leetcode - 155]

$$S \cdot C \cdot = O(1)$$

$$01d = 2^{4}3 - 1 = 6 - 1 = 5$$

Leetcode - 155] Tagdi math

a val a mun



- > val -min < 0
 - => val + (val min) < val



THANKYOU!