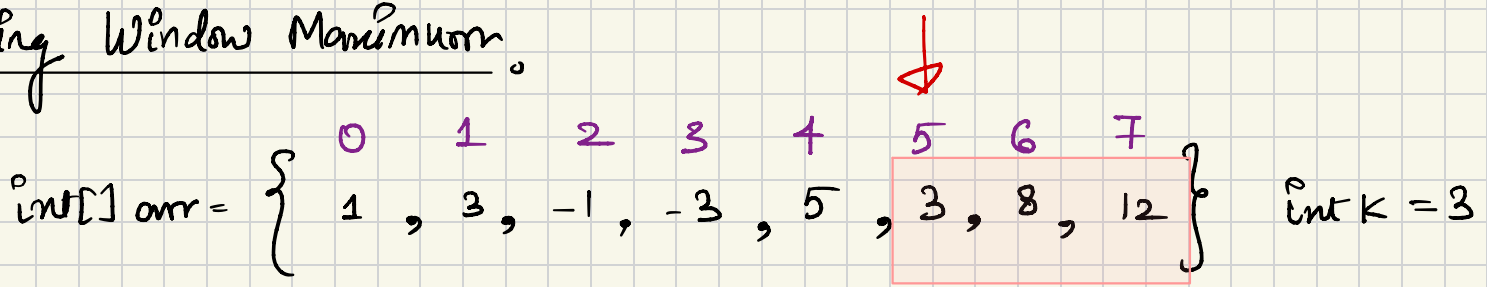
Agenda

1. Sliding window maximum
2. Asteroid collision
3. Rotten Oranges

Sliding Window Maximum.



maxWin[] = O/P { 3 , 3 , 5 , 5 , 8 , 12 }

Brute Force.

TC : O(N*K)

SC : O(1)

```
for(int i = 0 ; i <= N-K ; i++)
{
    int max = -∞;
    for(int j = i ; j < i+k ; j++)
    {
        max = Math.max[max, arr[j]);
    }
    ans.add(max);
}
```

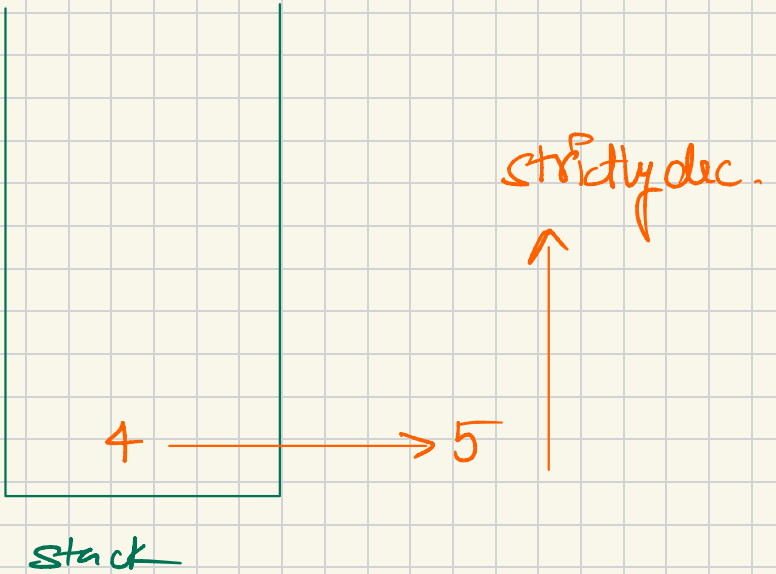
int[] arr = { 1 , 3 , -1 , -3 , 5 , 3 , 8 , 12 } int k = 3

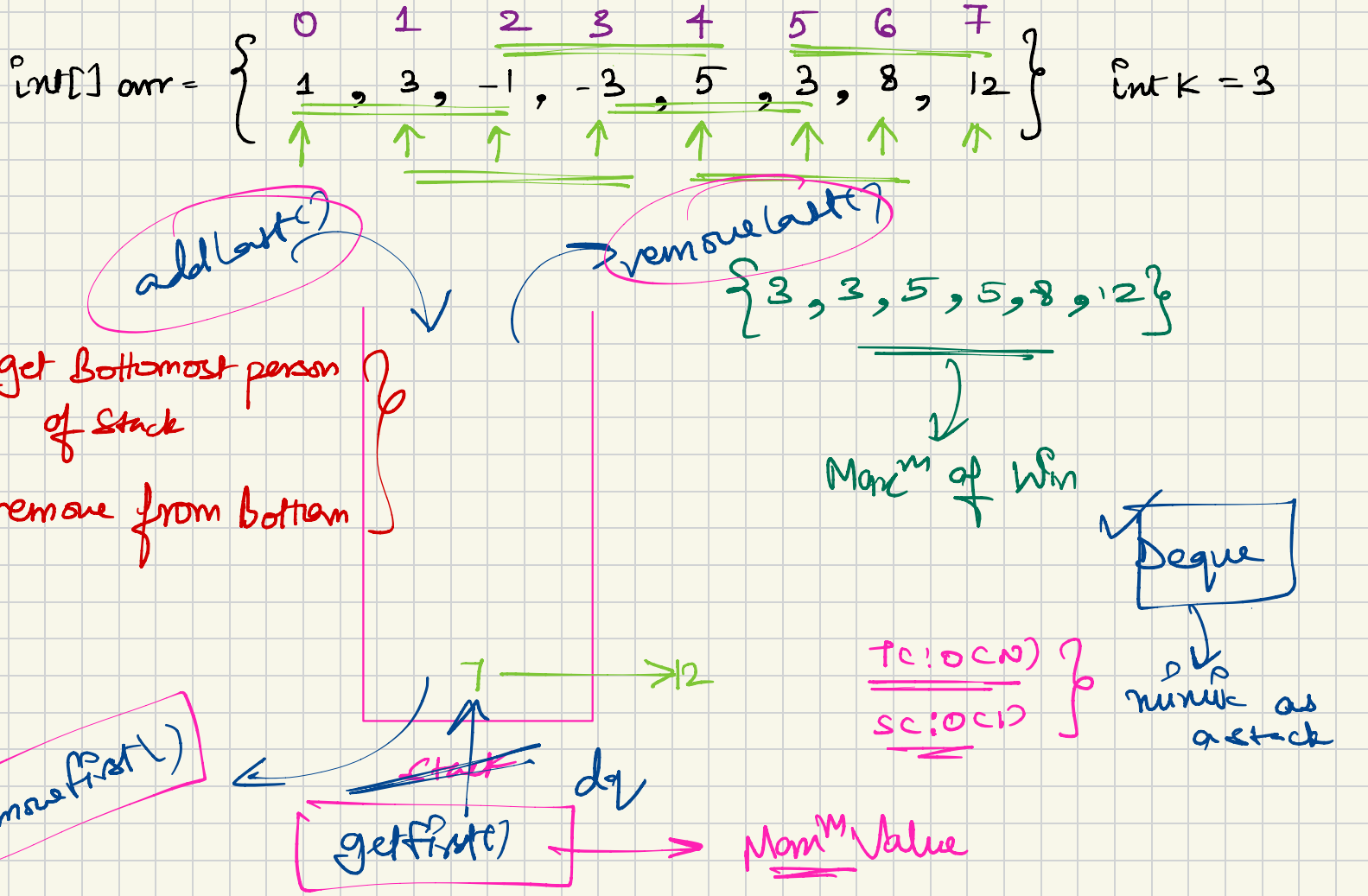
0 1 2 3 4 5 6 7

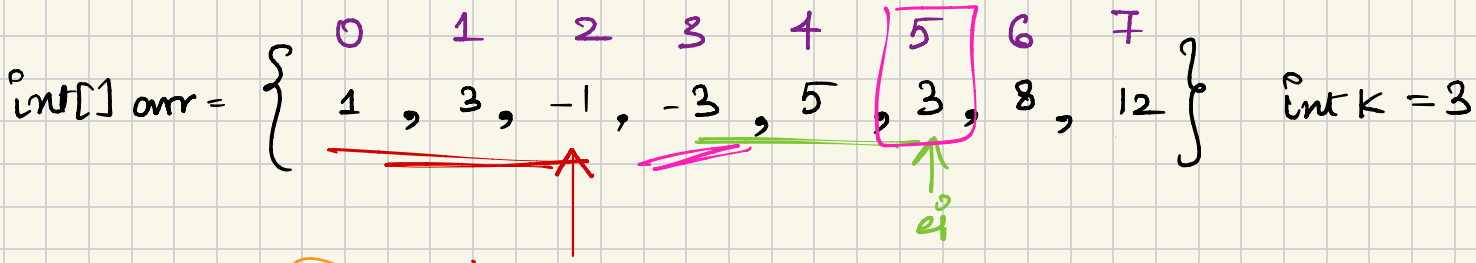
Next greater Ele

using monotonic stack,

the bottom of the stack is the biggest Ele seen till now




int[] arr = { 1 , 3 , -1 , -3 , 5 , 3 , 8 , 12 }
0 1 2 3 4 5 6 7
int k = 3
addLast()
removeLast()
{3, 3, 5, 5, 8, 12}
Max^m of Min
get Bottomost person of Stack
remove from Bottom
Deque
TC: O(N)
SC: O(1)
using as a stack
7
12
removeFirst()
getFirst()
Max^m Value

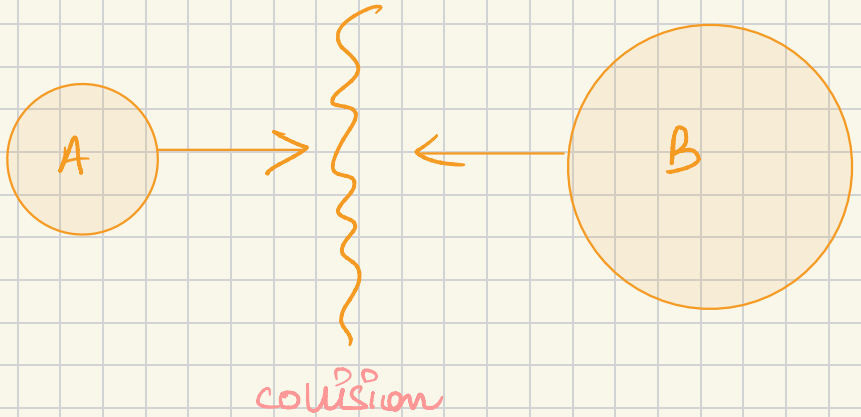


1. ✓ (K-1) pos, Windows started closing

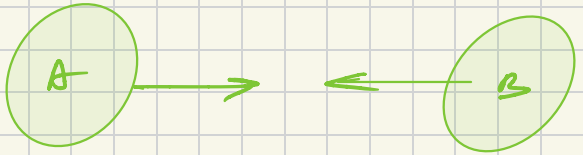
2. $\begin{cases} si \rightarrow (x - k + 1)^{th} \\ ei \rightarrow x^{th} \end{cases}$ ✓

TC: O(N)
SC: O(N)

Asteroid Collision



NOTE: Smaller one will get destroyed, and Bigger will more unaffected.



NOTE: if both are of same size, both will get destroyed

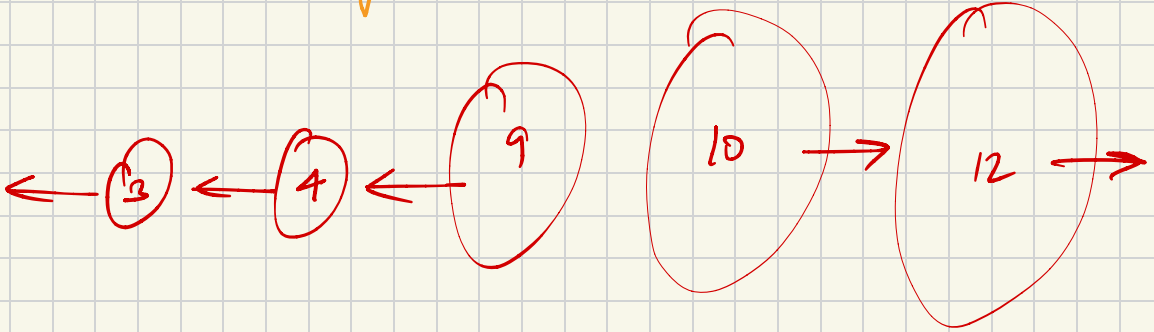
asteroids[] = { -3, -4, 5, 3, -3, -4, 6, -9, 10, 12, 9, 6, -10 }

(+)ve : moving towards right.

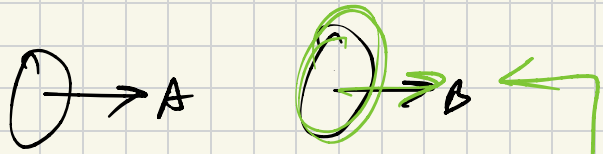
(-)ve : moving towards left.

Ans ⇒ { -3, -4, -9, 10, 12 }

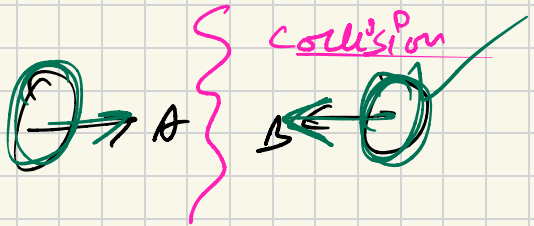
Stable universe



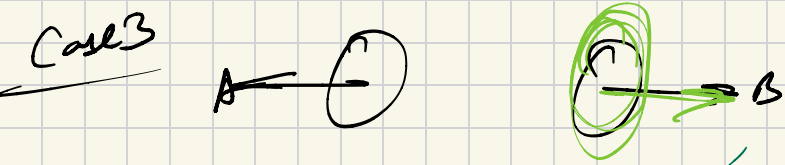
Case1



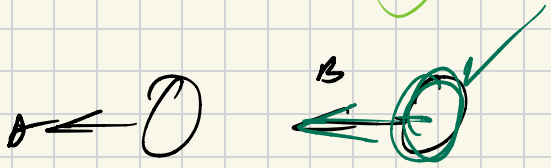
Case2



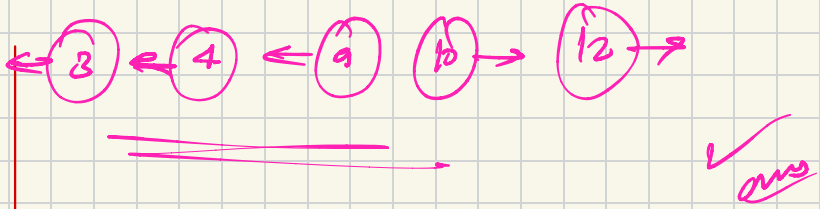
Case3



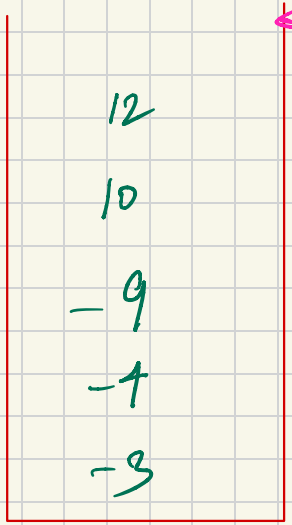
Case4



$\{-3, -4, 5, 3, -3, -4, 6, -9, 10, 12, 9, 6, -10\}$ ✓



✓ ans

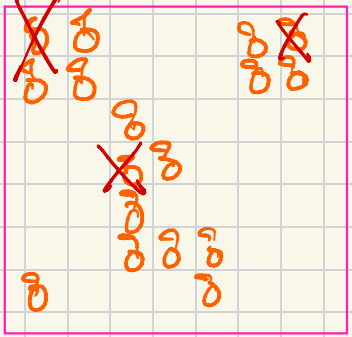


Stack

{Stable universe}

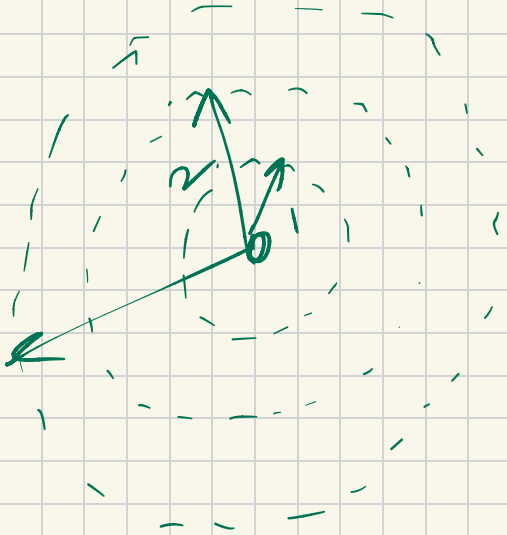
Rotten Oranges {Breadth First Search} ✓

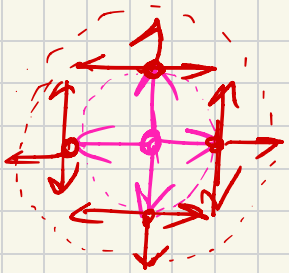
{min^m time in which all the oranges will rotten} ✓

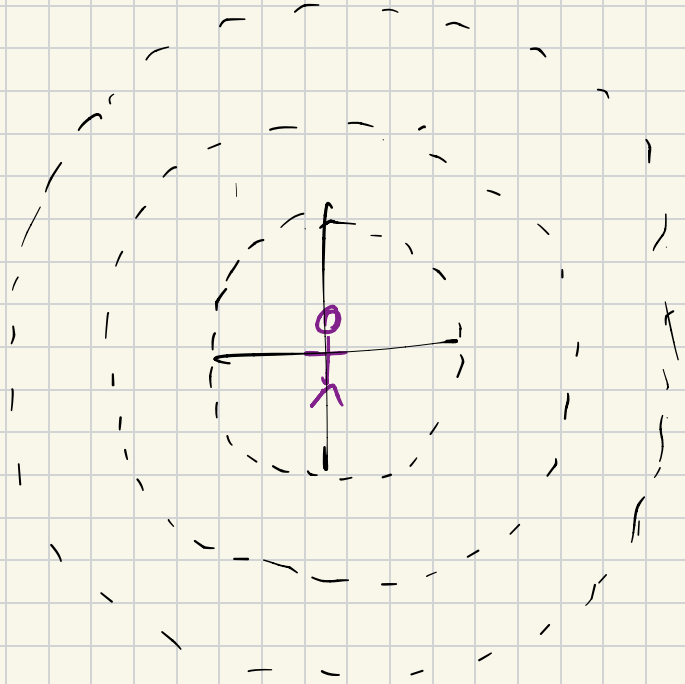


radially

min time



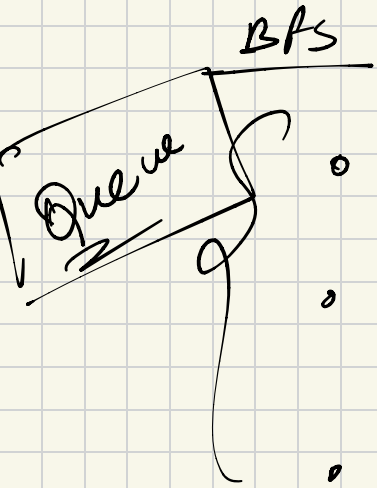




0 → Nothing
1 → fresh
2 → rotten

Time = 0 1 2 3 4

(3,2) (2,2) (3,3) (4,2) (3,1) (1,2) (2,3) (3,4) (4,1) (0,2) (1,3) (2,4)



- add your src's
- try to remove each and, add new people in possible directions
- when particular level people are removed inc. time