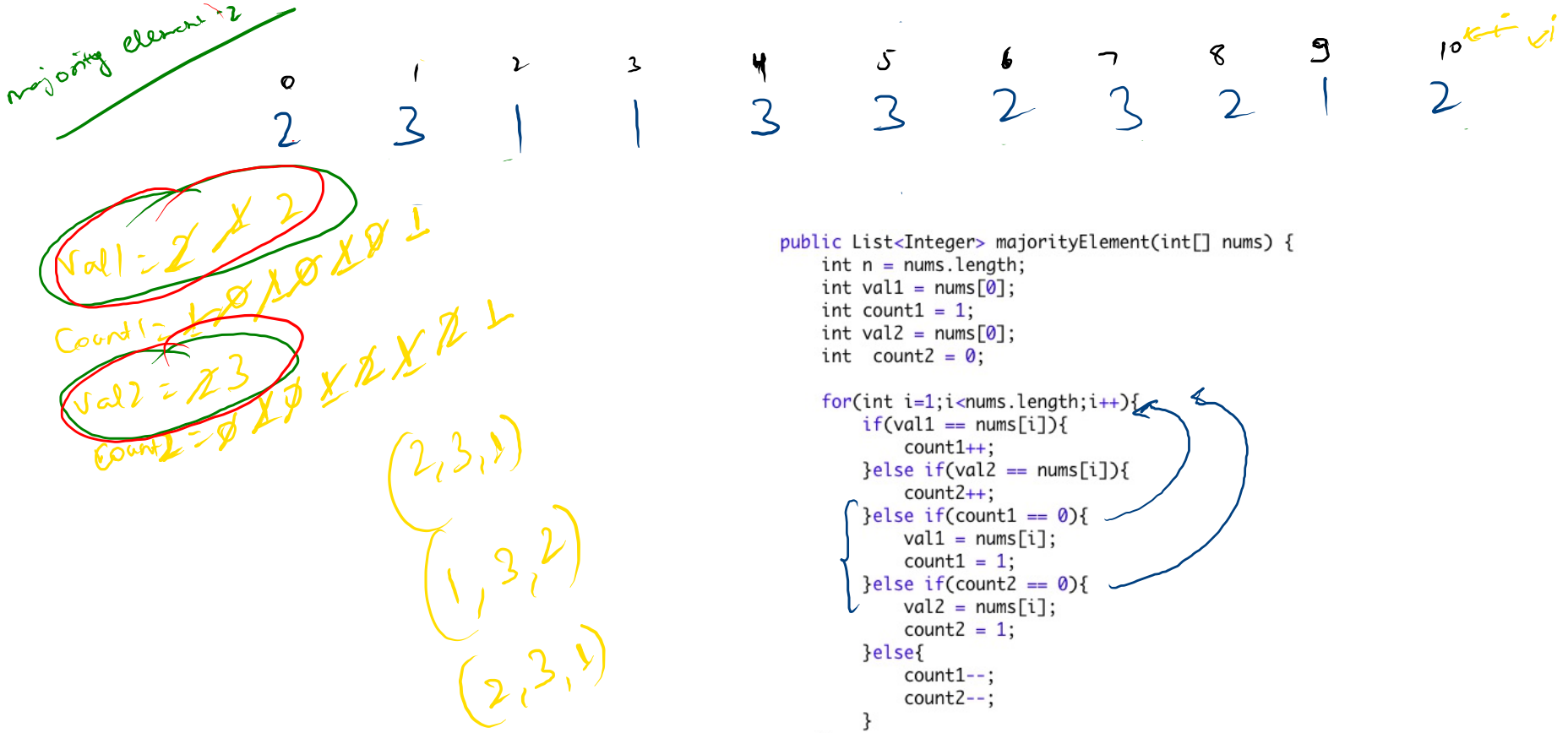
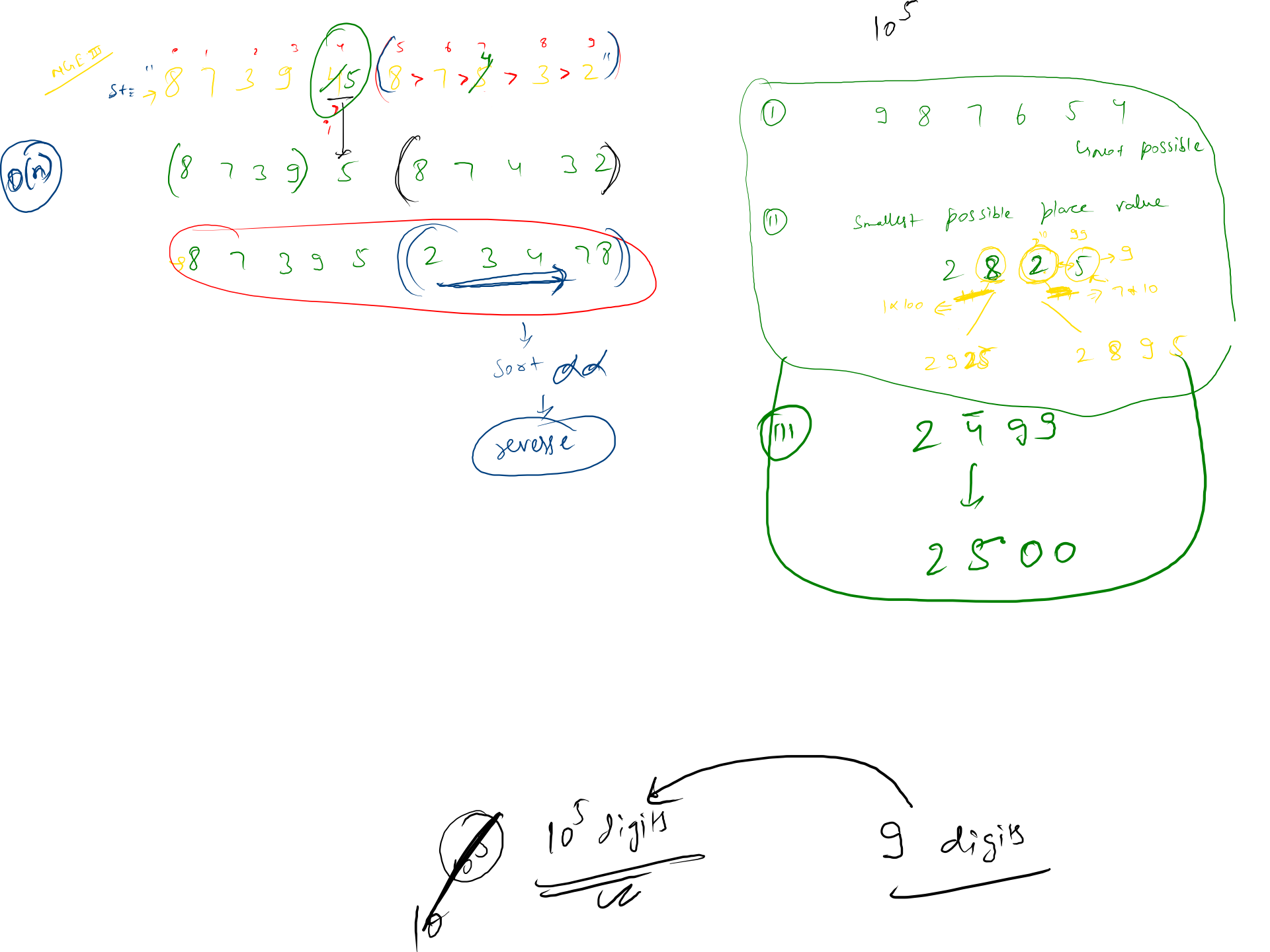
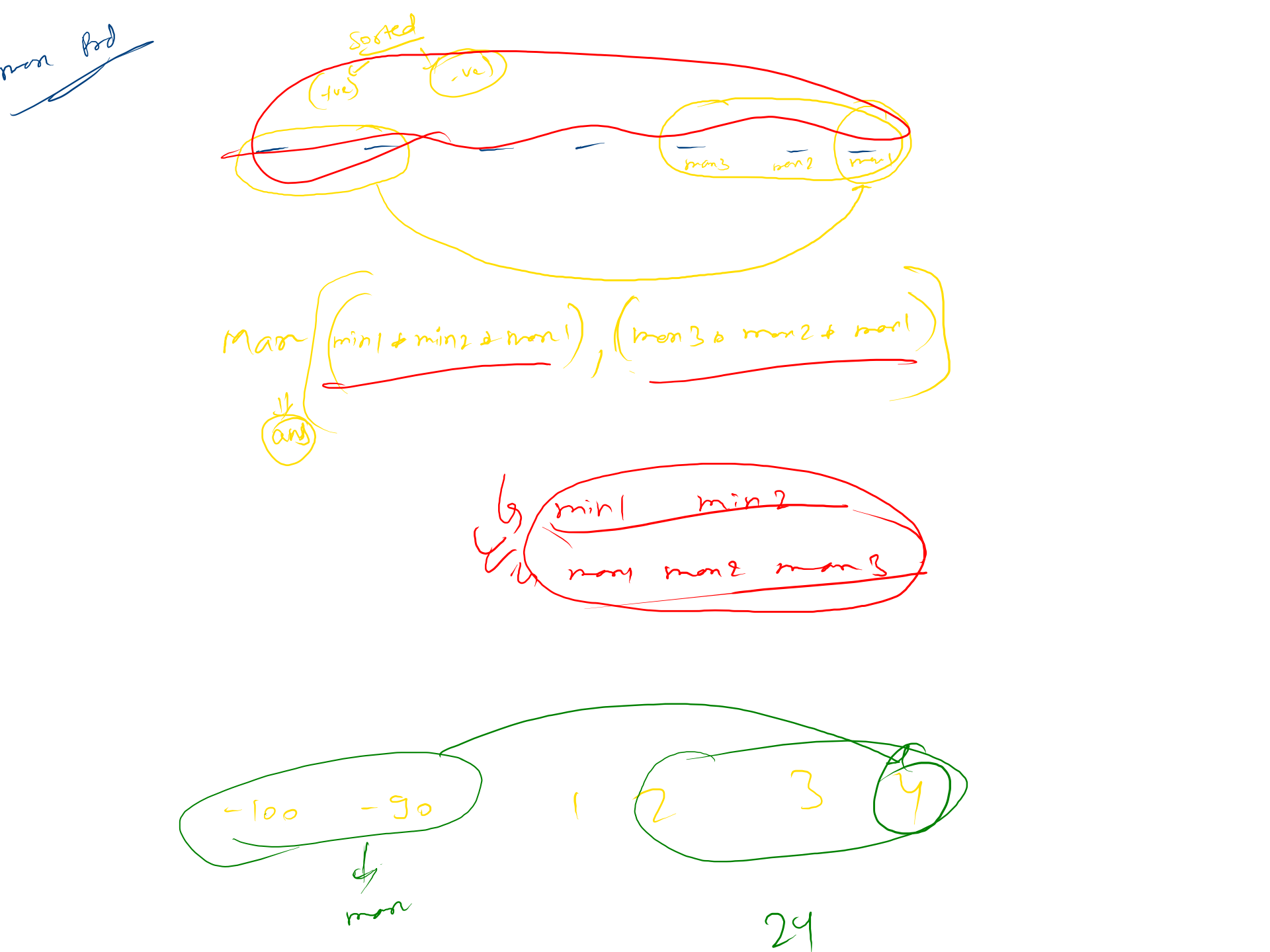


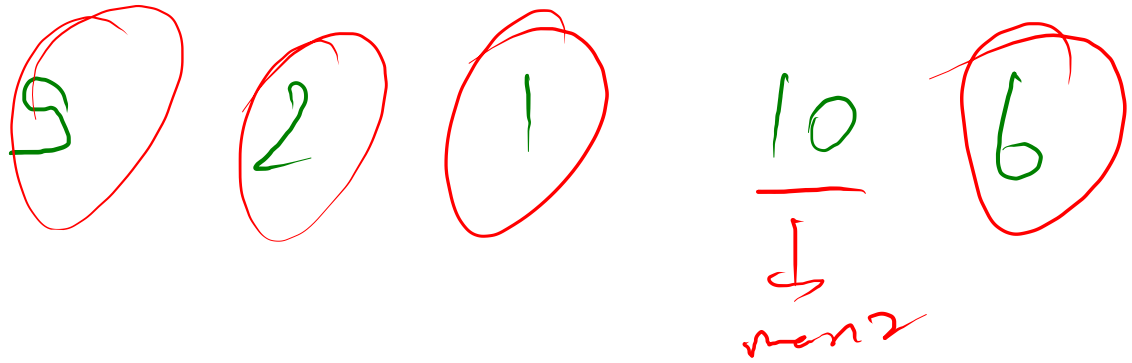

```java
public List<Integer> majorityElement(int[] nums) {
    int n = nums.length;
    int val1 = nums[0];
    int count1 = 1;
    int val2 = nums[0];
    int  count2 = 0;

    for(int i=1;i<nums.length;i++){
        if(val1 == nums[i]){
            count1++;
        }else if(val2 == nums[i]){
            count2++;
        }else if(count1 == 0){
            val1 = nums[i];
            count1 = 1;
        }else if(count2 == 0){
            val2 = nums[i];
            count2 = 1;
        }else{
            count1--;
            count2--;
        }
    }

    int freq1 = 0;
    int freq2 = 0;
```


10^5
I
9 8 7 6 5 4
Not possible
II
Smallest possible place value
2 8 2 5
1×100
7+10
2 9 25
2 8 9 5
III
2 4 9 9
2 5 0 0
O(n)
8 7 3 9 5 4 2
8 7 3 9 5
8 7 4 3 2
8 7 3 9 5 2 3 4 7 8
Sort
reverse
10^5 digits
9 digits

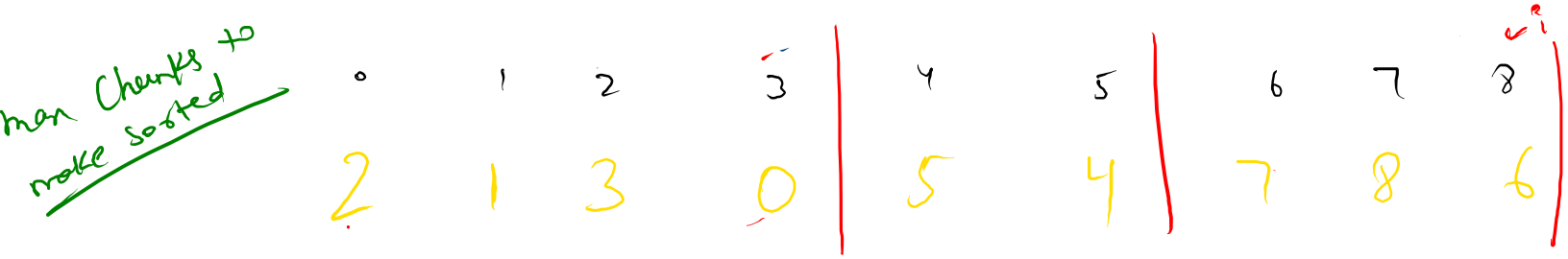

Sorted
-ve
+ve
max3
max2
max1
Max
(min1 * min2 * max1)
(max3 * max2 * max1)
any
min1
min2
max1
max2
max3
-100
-90
1
2
3
4
max
24



max1 >= 2 * max2

→ max1 ≥ max2

⇒ if (max1 >= 2 * max2) {
return true;
} else {
return false;
}



Curr chunk's max idx = ~~0 1 2 3 5~~ 8

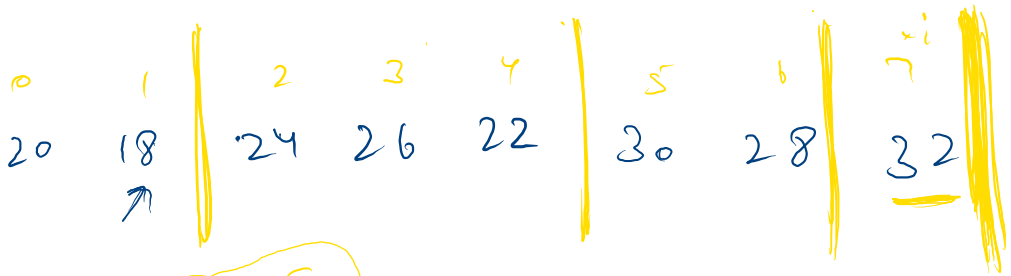
ans = 0 + 1 + 1

```java
public int maxChunksToSorted(int[] arr) {
    int maxidx = Integer.MIN_VALUE;
    int ans =0;
    for(int i=0;i<arr.length;i++){
        maxidx = Math.max(maxidx,arr[i]);

        if(i == maxidx){
            ans++;
        }
    }

    return ans;
}
```

Max Chunks II



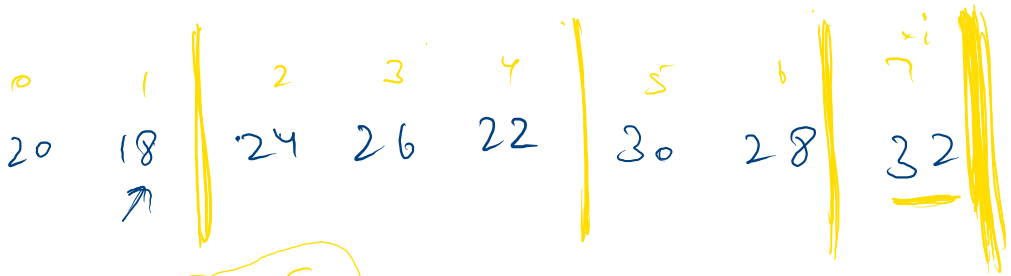
n = 10^5

10^3

```
if (max[i] <= min[i+1]){
    chunk++;
}
```

ans = 0 + 1 + 1 + 1 + 1

Max Chunks II



n = 10^5

10^3

```
if (max[i] <= min[i+1]){
    chunk++;
}
```

ans = 0 + 1 + 1 + 1 + 1

integer

$n \Rightarrow 100000 \Rightarrow$ fact :% (10^9+7) (largest prime no.)

$1 + 2 + \_\_\_\_\_ + 10^4$

$\Rightarrow n \le 10^5$

ans = ans %. (10^9+7) ✓

$10 \rightarrow (2 \times 5)$

$14 \rightarrow (2 \times 7)$

(2)

$m = 10^9+7$

(1)

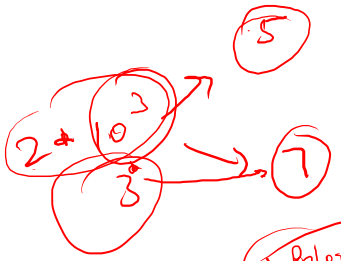
$A + B = (A \,\%.\, m + B \,\%. m) \,\%. m$

$A - B = (A - B + m) \,\%. m$

$A * B = (A \,\%. m * B \,\%. m) \,\%. m$

$\frac{A}{B} = (A * B^{m-2}) \,\%. m$

$\Rightarrow (A \,\%. m * B^{m-2} \,\%. m) \,\%. m$



Topological sort.

a ab ac ad - - -

b bc bd be - - -