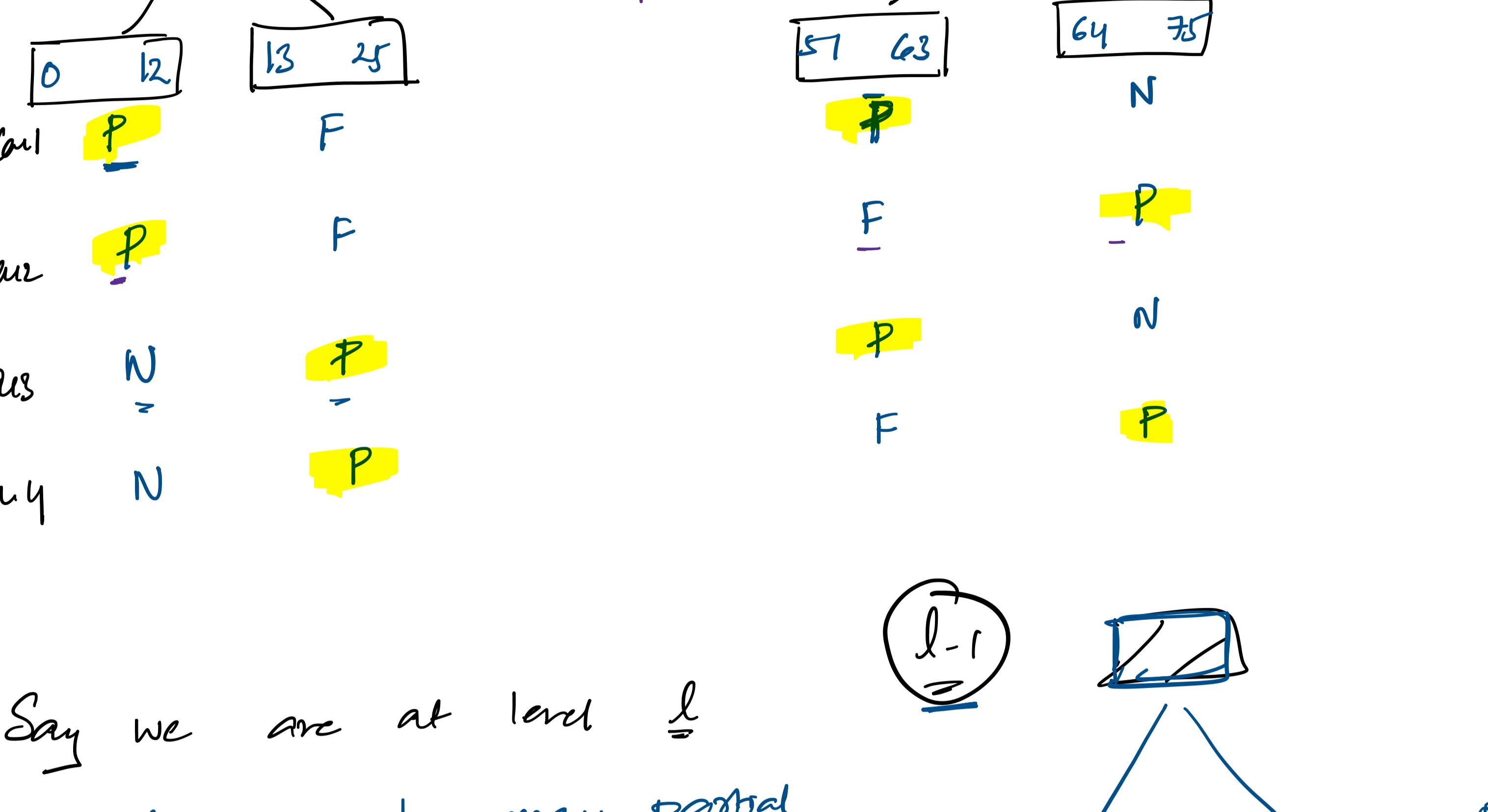
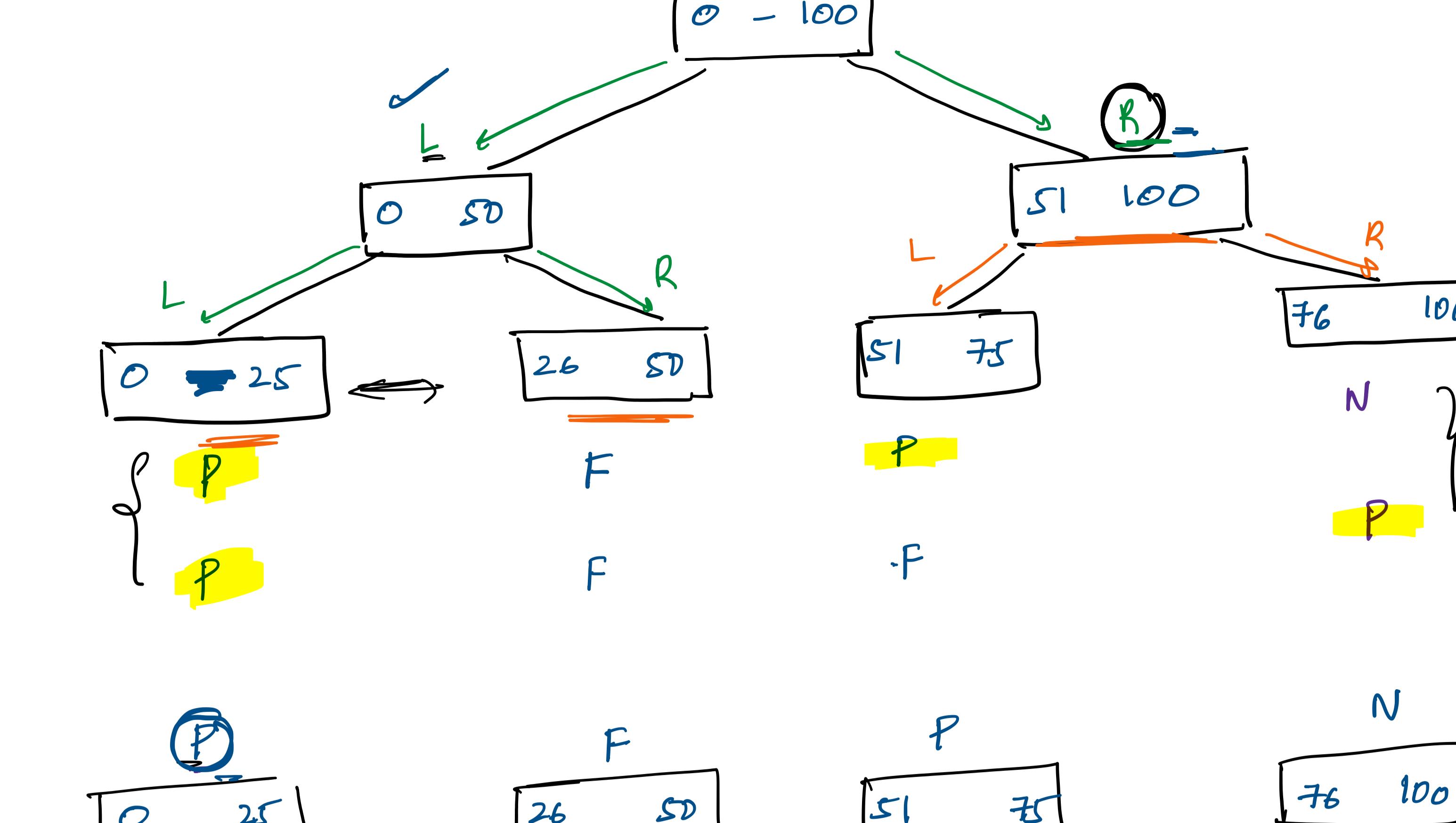


TC for query
At any given level at max we can only have 2 partial overlapping nodes



Say we are at level l
At level $l-1$, how many partial nodes we can have ≥ 2

At level l at max we can be at 4 nodes & Only 2 can be partial

That means again level $l-1$ we can be present at 4 nodes

Based on that:

- ① At any given level at max we can only have 4 nodes
- ② Total level $\log N$

At max how many nodes will we visit = $4 \log N$

For Query TC: $O(4 \log N)$

Q2 Given $[l, r]$, find max subarray sum in given Range

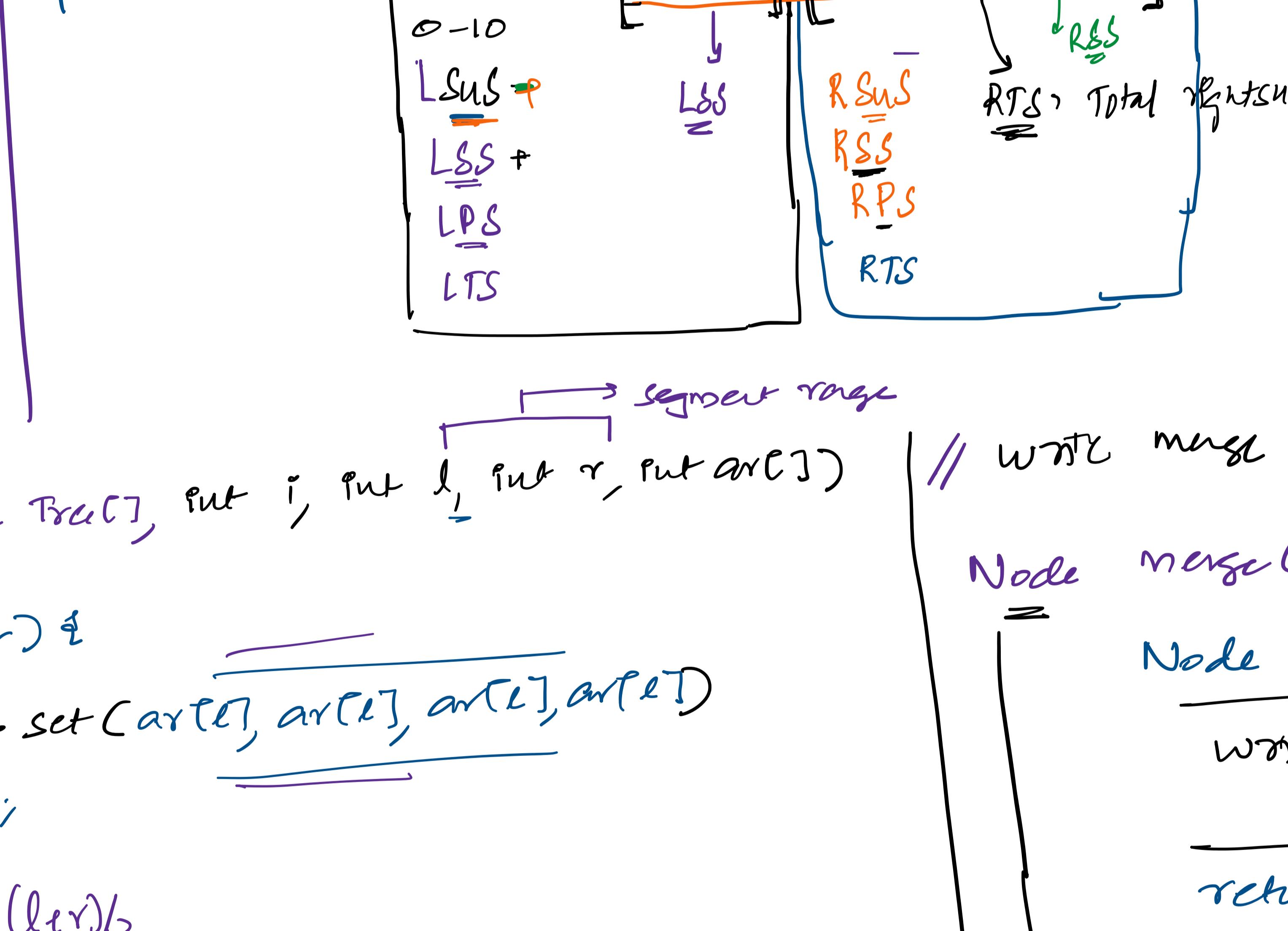
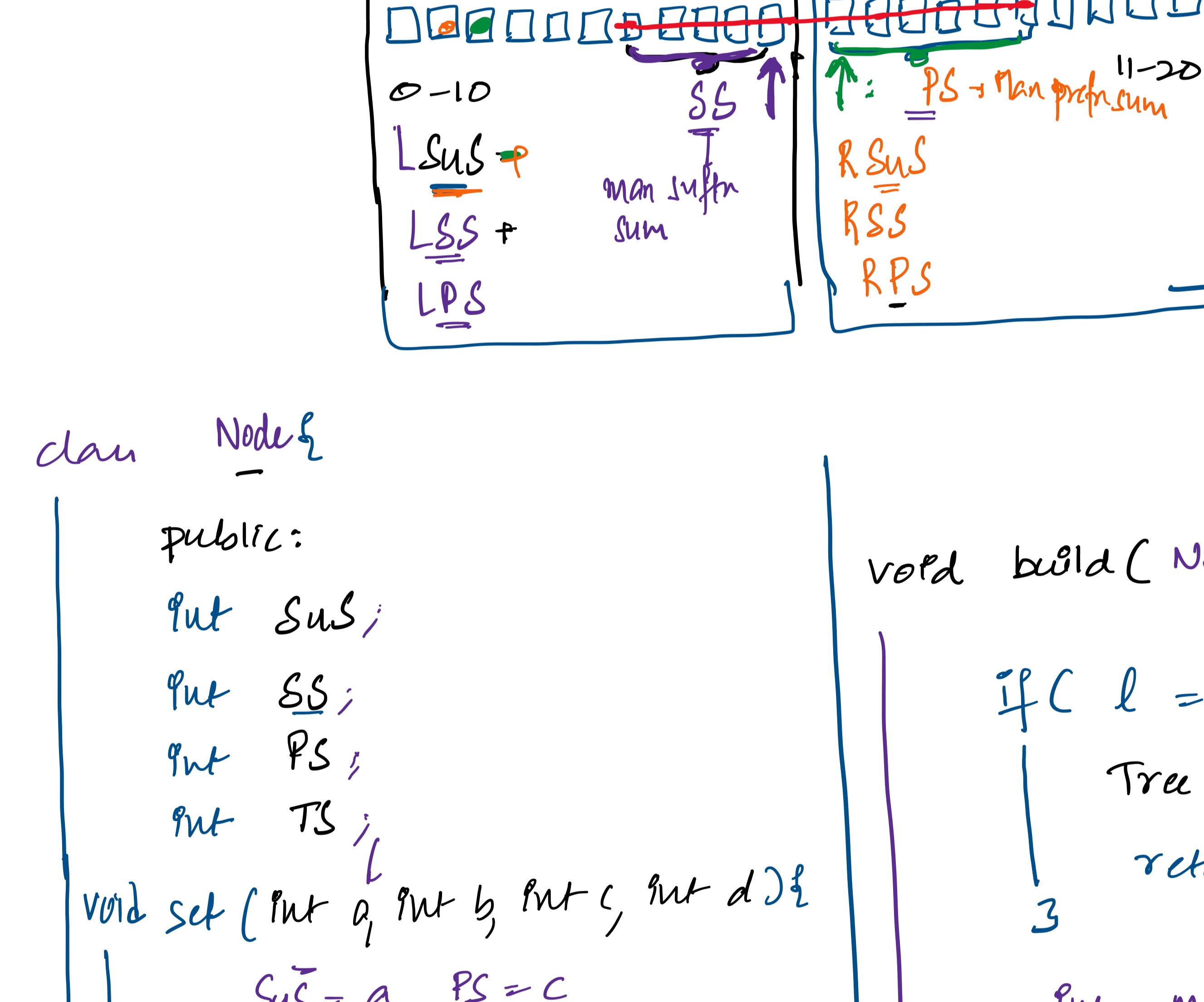
Point update: No need to lazy propagation

Say Q Queries

for every Q apply Kadane's

Overall TC: $O(N)$

- ① What to store Tree[i:j]
- ② How to calculate Tree[i:j] using P[i:j] children
- ③ How to calculate query using P[i:j] & right



class Node{}

```
public:
    put SS;
    put PS;
    put TS;
    void set (put a, put b, put c, put d) {
        SS = a; PS = b; TS = d;
        SS = b; TS = d;
    }
    Node Tr[4N+1];
}
```

void build(Node Tr[], put i, put l, put r, put ar[])

```
if (l == r) {
    Tr[i].set(ar[l], ar[l], ar[l], ar[l]);
    return;
}
int m = (l+r)/2;
build(Tr, 2*i, l, m, ar);
build(Tr, 2*i+1, m+1, r, ar);
calculate Tr[i] using above Tr[2*i] & Tr[2*i+1];
Tr[i] = merge(Tr[2*i], Tr[2*i+1]);
```

// write merge
Node merge(Node a, Node b) {
 Node c;
 work(c);
 return c;
}

Problem Description

You are given an array A denoting the size of the array containing N elements.

You are given Q queries, for each query there are two integers x and y .

If $x = 0$ then update the value of array at index y to 0 .

If $x = 1$ then print the value of array at index y .

NOTE: There will always be such index then output -1 .

Input: There will always be one query.

Output: Print the value of array at index y .

Constraints: $1 \leq N \leq 10^5$, $1 \leq Q \leq 10^5$, $0 \leq x \leq 1$, $0 \leq y \leq N-1$.

Example: If $A = [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]$ and $Q = 1$ then $A[1] = 0$.

Input: $Q = 1$, $x = 1$, $y = 1$.

Output: $A[1] = 0$.

Time Limit: 1 second.

Memory Limit: 1024 MB.

Author: Hitesh .

Editorial: Hitesh .

Tags: Segment Tree .

Difficulty: Medium .

Contributed By: Hitesh .

Topic Tags: Segment Tree .

Topic Notes: Segment Tree .

Topic Video: Segment Tree .

Topic Solution: Segment Tree .

Topic Discussion: Segment Tree .

Topic Rating: Segment Tree .

Topic Status: Segment Tree .

Topic Description: Segment Tree .

Topic Help: Segment Tree .

Topic Examples: Segment Tree .

Topic Testcases: Segment Tree .

Topic Submission: Segment Tree .

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Topic Submission Description: Segment Tree .

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