Programming . Language $\longrightarrow$ C++

C

Java

Ruby

Python

JVS

C#

$\vdots$

any 1

Quiz   Rated

3-4

Leaderboard

DSA

goodies   TS
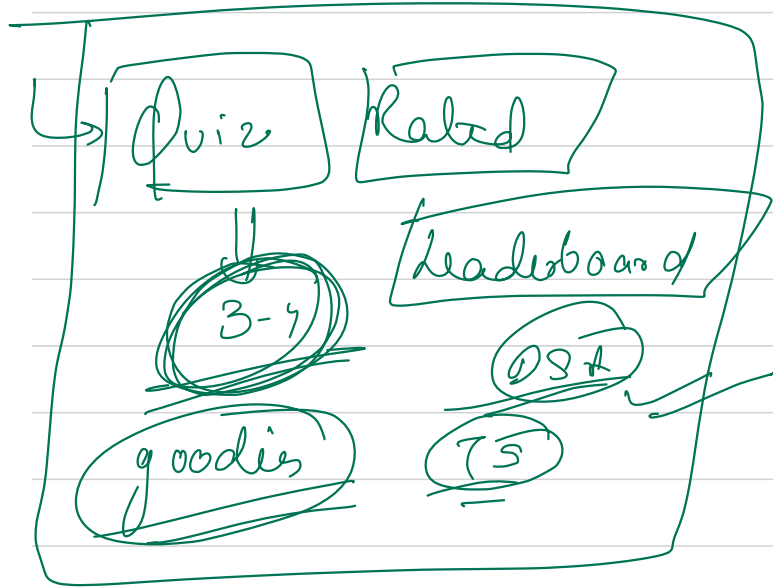
Q₀) You're given a list of numbers which are

initially all zeroes. This list can be of

Size N. Then you will be given 'Q' queries

$n \leq 10^6$ where in each query you have 2 no. 'L' and

$q \leq 10^6$ 'R'. Your task is to increment all the no.

from position 'L' to 'R' by 1. finally print the

updated & final list. inclusive

$$\overset{0\ \ 1\ \ 2\ \ 3\ \ 4}{[0,0,0,0,0]} \qquad n=5$$

① $[0,1,1,1,0.]$ $\boxed{q=3}$

② $[0,1,2,1,0]$

③ $[0,2,3,2,1]$ →

	l	r
①	1	3
②	2	2
③	1	4

final list

ans → $[0,2,3,2,1]$

a) 10^{1000}

b) 10^{100}

c) 10^{10}

d) 10^{8}

e) 10^{5}

Accurate ⟷ Efficient

for each query, start from index I & go till index R & increment everything by 1

$g \leq 10^6$

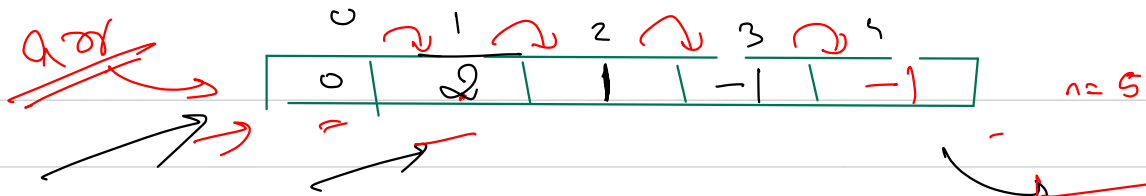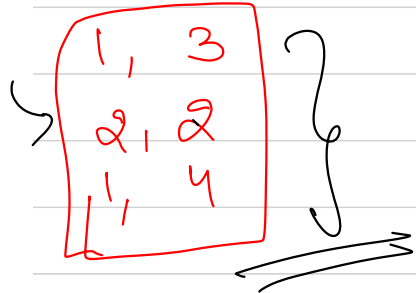$q = 10^6$

$n = 10^6$

$\{ l = 0 \quad R = n-1 \}$

$10^6 \times 10^6 > 10^8$

$1 \sec \longrightarrow 10^8$

$1 \longrightarrow \dfrac{1}{10^8}$

$10^{12} \longrightarrow \dfrac{10^{12}}{10^8} \quad \boxed{10^4 \; sec}$

arr

| 0 | 2 | 1 | -1 | -1 |

$n = 5$

$q = 3$

$0, 2, 3, 2, 1$

$\begin{bmatrix} 1, & 3 \\ 2, & 2 \\ 1, & 4 \end{bmatrix}$

$\rightarrow arr[l] += 1$

$\rightarrow arr[r+1] -= 1$ $\{ r+1 < n \}$

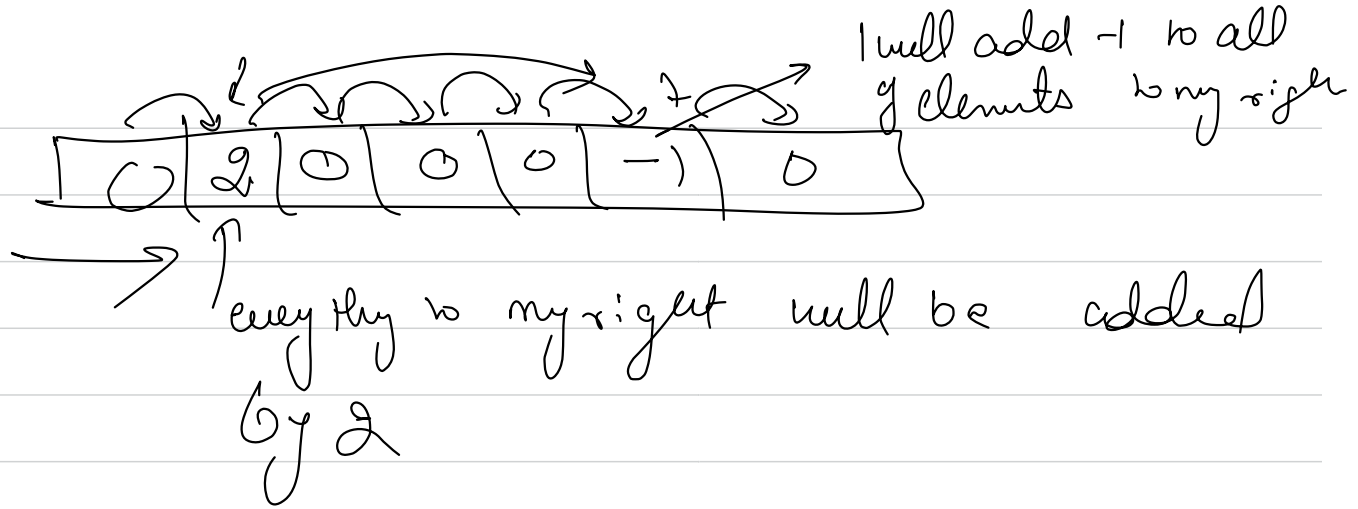We know atleast we have to read all queries.

Think about Secretary So that we don't have

to process them as soon as we read them.

Prefix sum $\longleftarrow$ cumulative sum from l to r

I will add -1 to all
g elements to my right

| 0 | 2 | 0 | 0 | 0 | -1 | 0 |

every thy to my right will be added
by 2

0, 2, 2, 2, 2, 1, 1

a) $\quad q \times n$

b) $\quad q + n$ ✓

c) $\quad n + \log q$

d) $\quad \log n + q$

a) q

b) n

c) no thing ✓

d) q × n

e) q + n

→ It is fun

I O i

(sru)

→ Competitive programming is a brain game.
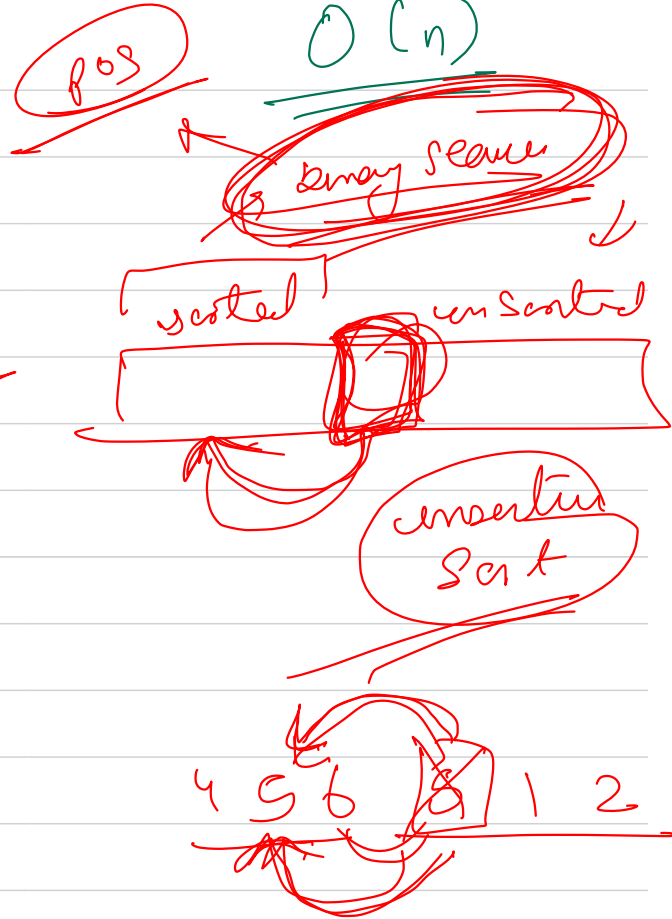
fun mind sport

CP help you to prepare of

SDE interviews

8   ← 4 year

4 n 365

365

C++ $\longrightarrow$ faster than Java / Py new

C++ has STL , OOP while C

doesn't have.

editorial , blogs, video C++

C++ STL , policy based DS

a) $O(1)$
b) $O(1)$ ✓
c) $O(\log n)$
d) None

pos

$O(n)$

binary search

sorted | unsorted

n

a) $\theta(n)$
b) $O(n^2)$ ✓
c) $O(n\log n)$
d) New

insertion
Sort

4 5 6 8 1 2

n

n

1   2   3   5   8   9 8 upply's

Sorted reger   unsorted reger
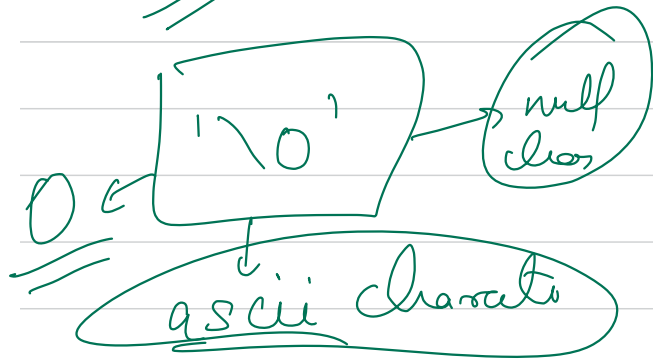
n^2

$'\ 0'$ → null char

0 ascii character
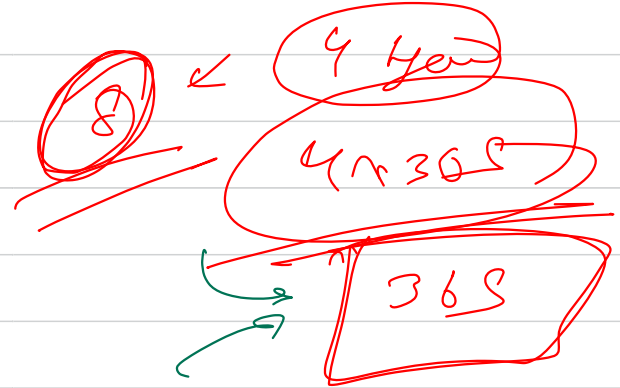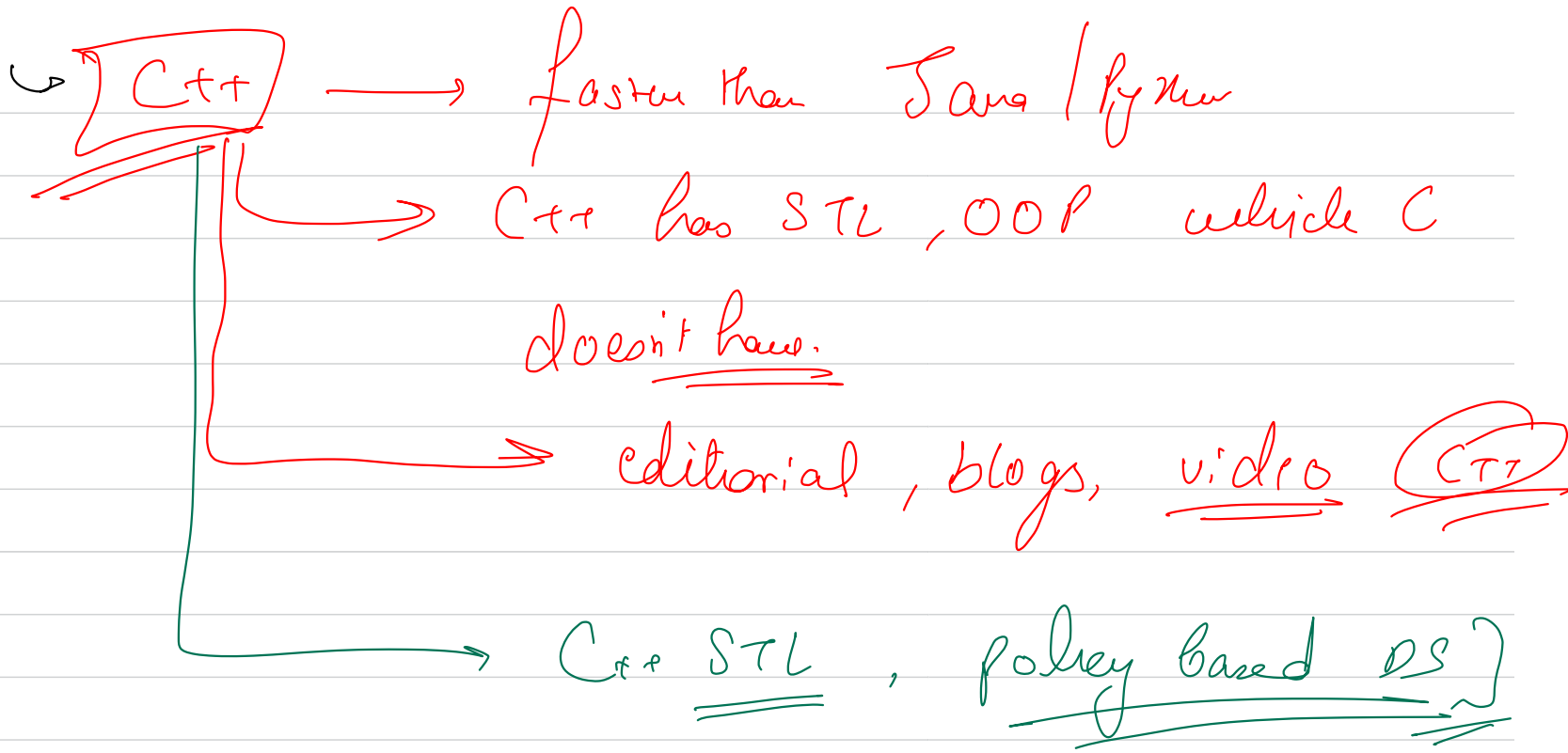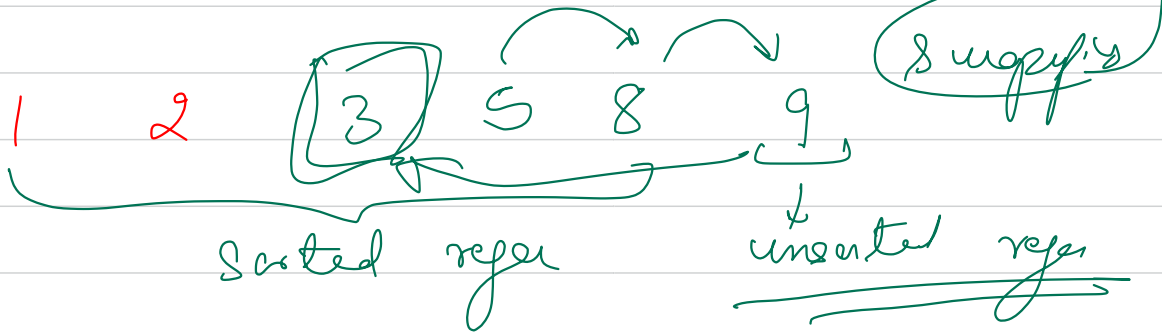
a) True ✓
b) false

Do we have a value of null ??