

Contest Discuss

Q1) a) Concatenate string with itself

b) Delete uppercase

c) Replace vowel with '#'

↓
a e i o u

S = omansh

omanshomansh

aBCd aBCd

S2 = " "

a b d a b d

b d # b d

Q2 Array, Q queries s, e

For each query, tell how many $a[i] \geq 0$

eg1

	0	1	2
	1	-1	0

ans = 2

s	e
0	2
1	2

eg2

	0	1
	-1	-2

ans = 0

s	e
0	0
1	1

Intuition: 1) Care only if number is +ve or -ve

2) From s, e count \rightarrow

Replace ≥ 0 num $\rightarrow 1$
 < 0 num $\rightarrow 0$

0	1	2
1	0	1

queries

s, e

sum

\Rightarrow prefix sum

pfsum = 1 1 2

$$s, e = \text{pfsum}[e] - \text{pfsum}[s-1]$$

Tuesday Adv DSA

MWF 9 PM

Q3 Continuous sequence of K packets with average $\leq C$.

Eg 1 30 25 40 35 20 45 50

 55 22 18 15

$$K = 3$$

$$C = 30$$

Eg 2 4 2 2 5 1

$$K = 4$$

$$C = 1$$

$$\text{average} = \frac{\text{sum}}{\text{num of elem}} = \frac{\text{sum}}{K}$$

$$\text{average of } B \text{ elem} \leq C$$

$$\frac{\text{sum}}{K} \leq C \Rightarrow \text{sum} \leq K * C$$

Find if there is subarray of length K
with $\text{sum} \leq K * C$

→ Sliding window

$$\left. \begin{array}{l} 0, b-1 \\ 1, b \\ \vdots \\ n-1 \end{array} \right\} + a(e) - a(s+1)$$

→ Prefix sum