Equilibrium Index

Sum of all elements before i^{th} idx = Sum of all elements after i^{th} idx

0	1	2	3	4	5	6
-2	0	1	2	3	0	1

Ex:- arr[] = { -2, 0, 1, 2, 3, 0, 1 }

if you take idx = 4, Sum of elements from idx (0 → 3) = 1

Sum of Elements from idx (5 → 6) = 1

∴ idx = 4 ⟶ is an Equilibrium Index / Pivot index

Note: I have mentioned the word 'pf' below,

Means → prefix Sum array

Algorithm

① Calculate prefix Sum array (Pf[ ])

② if (i==0)

↳ There will be no left Sum to check with right Sum
So, need to handle it seperately

Check { Pf(n-1) − Pf(0) ==0 } ⇒ if true, we got One Equilibrium index

(Pf(n-1) − Pf(0): Pf(n-1) ↑ This is right Sum; Pf(0) ↑ left Sum)

//Similarly for last index,

③ if (i == n-1)

↳ There will be no Right Sum to check with left Sum
So, need to handle it seperately

check { Pf(n-2) ==0 } ⇒ if true, we got one Equilibrium index,

(Pf(n-2) ↑ left Sum)

// Apart from edge Cases

(4) Iterate from (1 → n-2)

check { if (Pf(i-1) == Pf(n-1) − Pf(i)) } → if true, we got one more Equilibrium index

Pf(i-1) → leftSum

Pf(n-1) − Pf(i) → rightSum