



Desarrolla tu próxima APP con nosotros

PROGRAMA

**Unetenos Ahora**

Realiza este ejercicio en el lenguaje de programación y plataforma que hayas pactado con tu contacto de Gestion de Talentos.

## Enunciado

A zero-indexed array  $A$  consisting of  $N$  integers is given. An equilibrium index of this array is any integer  $P$  such that  $0 \leq P < N$  and the sum of elements of lower indices is equal to the sum of elements of higher indices, i.e.

$$A[0] + A[1] + \dots + A[P-1] = A[P+1] + \dots + A[N-2] + A[N-1].$$

Sum of zero elements is assumed to be equal to 0. This can happen if  $P = 0$  or if  $P = N-1$ .

For example, consider the following array  $A$  consisting of  $N = 8$  elements:

$$A[0] = -1$$

$$A[1] = 3$$

$$A[2] = -4$$

$$A[3] = 5$$

$$A[4] = 1$$

$$A[5] = -6$$

$$A[6] = 2$$

$$A[7] = 1$$

$P = 1$  is an equilibrium index of this array, because:

$$A[0] = -1 = A[2] + A[3] + A[4] + A[5] + A[6] + A[7]$$

$P = 3$  is an equilibrium index of this array, because:

$$A[0] + A[1] + A[2] = -2 = A[4] + A[5] + A[6] + A[7]$$

$P = 7$  is also an equilibrium index, because:

$$A[0] + A[1] + A[2] + A[3] + A[4] + A[5] + A[6] = 0$$

and there are no elements with indices greater than 7.

$P = 8$  is not an equilibrium index, because it does not fulfill the condition  $0 \leq P < N$ .

## Requerimiento

Write a function:

function solution(A);  
that, given a zero-indexed array A consisting of N integers, returns any of its equilibrium indices. The function should return -1 if no equilibrium index exists.

For example, given array A shown above, the function may return 1, 3 or 7, as explained above.

### Asume

N is an integer within the range [0..100,000];  
each element of array A is an integer within the range [-2,147,483,648..2,147,483,647].

### Aprobacion

expected worst-case time complexity is  $O(N)$ ;  
expected worst-case space complexity is  $O(N)$ , beyond input storage (not counting the storage required for input arguments).  
Elements of input arrays can be modified.