https://www.geeksforgeeks.org/problems/equilibrium-point-1587115620/1?page=1&sprint=a663236c31453b969852f9ea22507634&sortBy=submissions

```
class Solution {
    // Function to find the equilibrium point in the array.
    public static int equilibriumPoint(long arr[]) {
        int n = arr.length;
        if (n == 1) {
            return 1; // Single element array, return index 1 (1-based index)
        }

        long totalSum = 0;
        for (long num : arr) {
            totalSum += num;
        }

        long leftSum = 0;
        for (int i = 0; i < n; i++) {
            totalSum -= arr[i]; // This is now rightSum for index i
            if (leftSum == totalSum) {
                return i + 1; // Return the equilibrium point (1-based index)
            }
            leftSum += arr[i];
        }

        return -1; // No equilibrium point found
    }
}
```

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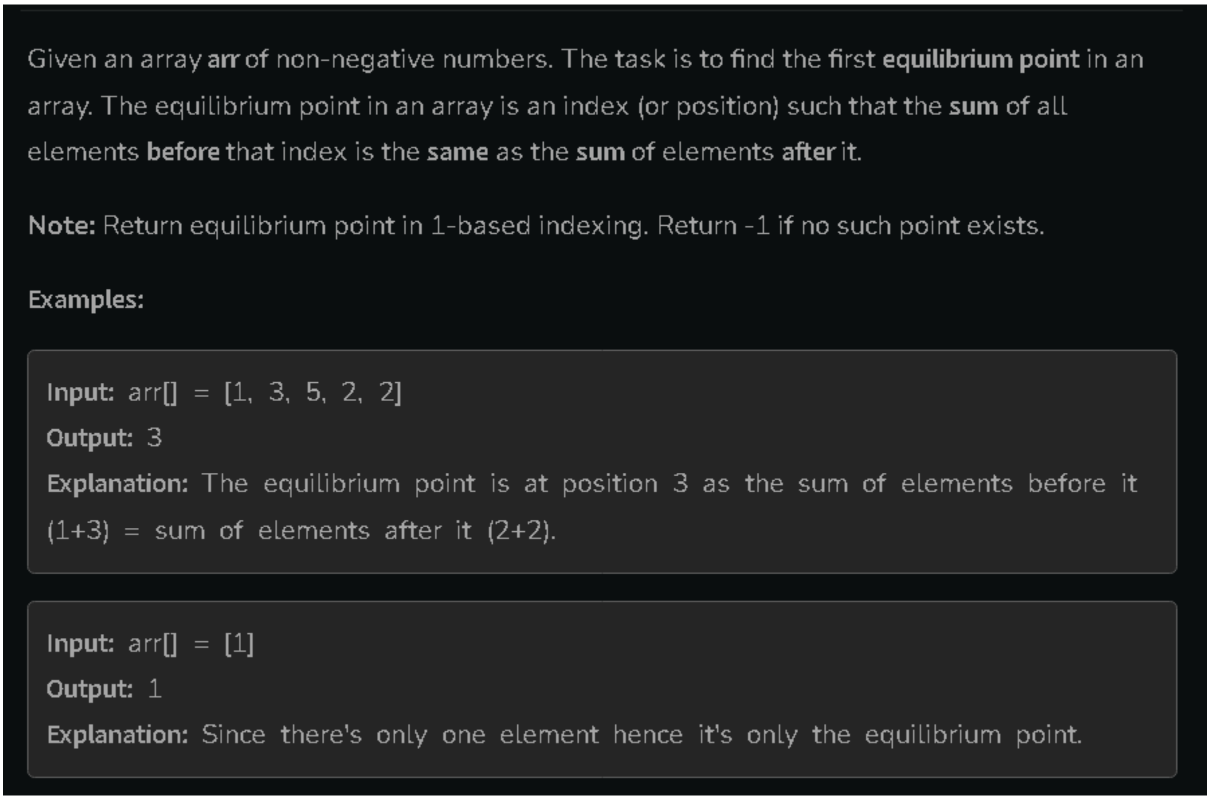

Given an array **arr** of non-negative numbers. The task is to find the first **equilibrium point** in an array. The equilibrium point in an array is an index (or position) such that the **sum** of all elements **before** that index is the **same** as the **sum** of elements **after** it.

Note: Return equilibrium point in 1-based indexing. Return -1 if no such point exists.

Examples:

Input: arr[] = [1, 3, 5, 2, 2]
Output: 3
Explanation: The equilibrium point is at position 3 as the sum of elements before it (1+3) = sum of elements after it (2+2).

Input: arr[] = [1]
Output: 1
Explanation: Since there's only one element hence it's only the equilibrium point.

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ex :

8 2 4 2 2 2 2 2

ts = 24

0 != 24 - 8

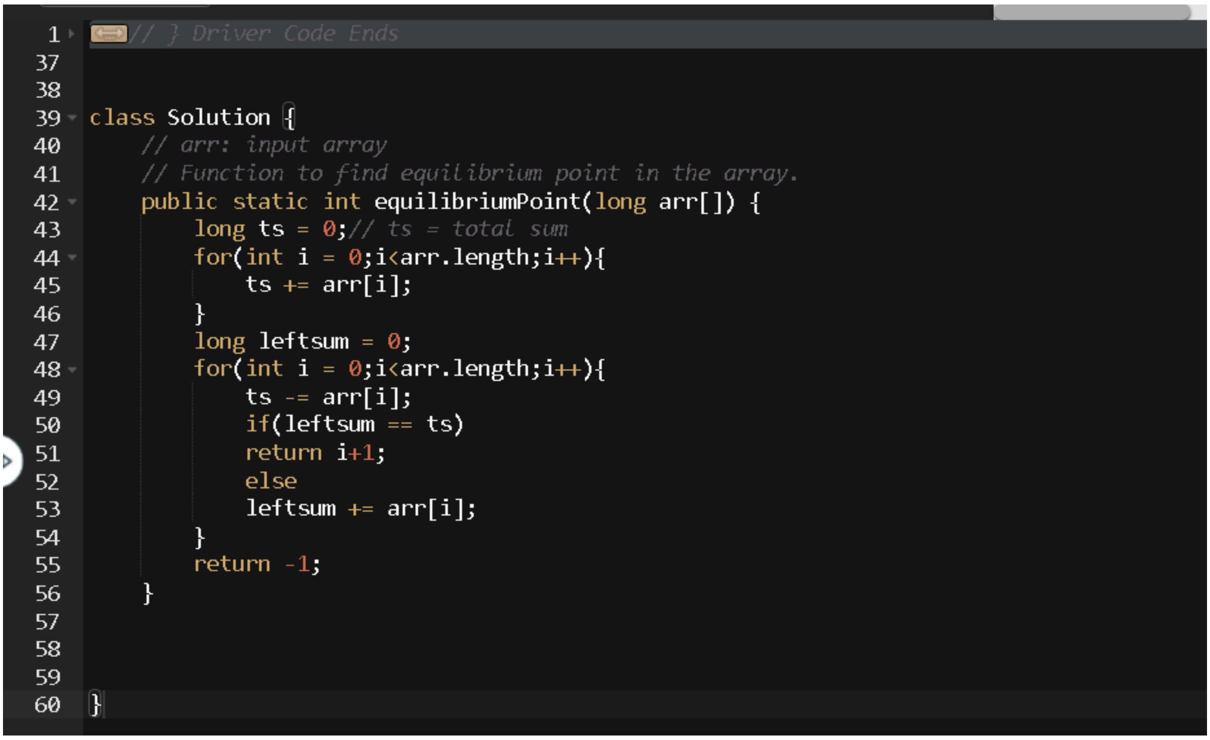
ls = 8

8 != 16 - 2

ls = 10

10 == 14 - 4

return i + 1



```
// } Driver Code Ends


class Solution {
    // arr: input array
    // Function to find equilibrium point in the array.
    public static int equilibriumPoint(long arr[]) {
        long ts = 0;// ts = total sum
        for(int i = 0;i<arr.length;i++){
            ts += arr[i];
        }
        long leftsum = 0;
        for(int i = 0;i<arr.length;i++){
            ts -= arr[i];
            if(leftsum == ts)
            return i+1;
            else
            leftsum += arr[i];
        }
        return -1;
    }




}
```

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