STUDENT REPORT

DETAILS

Name

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EXPERIMENT

Title

EQUILIBRIUM

Description

You are given an array A of N integers. An equilibrium position is a position where the sum of all integers on its left is equal to the sum of all integers on its right in the array A. Print the index of the equilibrium position.

Note:For any given array there is only a single equilibrium position, if no equilibrium position is found then print "NOT FOUND" without quotes.

The array is 1 indexed.

Input Format:

The input consists of two lines:

The first line contains an integer denoting N.

The second line contains N space-separated integers denoting the elements of the array A.

Input will be read from the STDIN by the candidate

Output Format:

Print the index of the equilibrium position. If no index is found, print "NOT FOUND"

Sample Input

5

2 4 7 3 3

Sample Output

3

Source Code:

```
def find_equilibrium_index(A):
    total_sum = sum(A)  # Calculate total sum of the array
    left_sum = 0        # Initialize left sum to 0

    # Iterate through the array to find the equilibrium index
    for i in range(len(A)):
        # Right sum can be calculated as total_sum - left_sum - A[i]
        right_sum = total_sum - left_sum - A[i]

        if left_sum == right_sum:
            return i + 1  # Return the 1-indexed position

        left_sum += A[i]  # Update left sum for the next iteration

    return "NOT FOUND"  # Return if no equilibrium index is found

# Input reading
import sys

input = sys.stdin.read
data = input().splitlines()

N = int(data[0])
A = list(map(int, data[1].split()))

# Calculate and print the result
result = find_equilibrium_index(A)
print(result)
```

RESULT

5 / 5 Test Cases Passed | 100 %