**PUC**

(WEEK 13 One dimensional. Array)

Question 1

Correct Flag queation **Objective:**

Given an array of numbers, find the index of the smallest array element (the pivot), for which the sums of all elements to the left and to the right are equal. The array may not be reordered. Example

Arr-[1,2,3,4,6)

The sum of the first three elements, 1+2+3-6. The value of the last element is 6.

Using zero based indexing, arr[3]-4 is the pivot between the two subarrays.

The index of the pivot is 3.

Function Description

Complete the function balancedSum in the editor below.

balancedSum has the following parameter(s):

int arrfn): an array of integers Returns:

Int: an integer representing the index of the pivot

Constraints

3<n< 10

1s arr[i]s2x10, where Osien

It is guaranteed that a solution always exists.

Input Format for Custom Testing

Input from stdin will be processed as follows and passed to the function.

The first line contains an integer n. the size of the array orr.

Each of the next in lines contains an integer, an(i), where Osi

Sample Case O

Sample input O

STDIN Function Parameters.

4 arr size n-4

1 arr[1, 2, 3, 3]

2

3

Sample Output 0

2

Explanation 0

The sum of the first two elements, 1+2-3. The value of the last element is 3.

Using zero based indexing, arr[2]-3 is the pivot between the two subarrays.

The index of the pivot is 2.

Sample Case 1

Sample Input 1

STDIN Function Parameters

3 arr size n-3

Arr = [1.2.1]

2

Sample Output 1

1

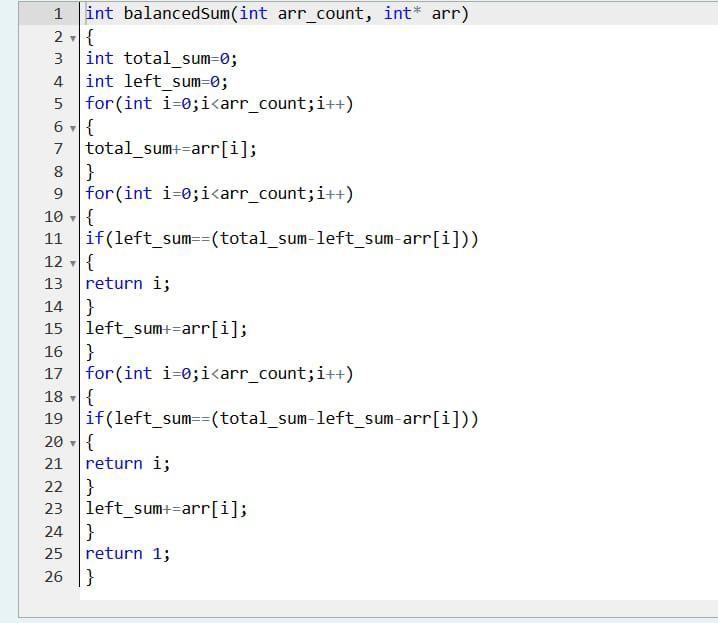
Explanation 1

The first and last elements are equal to 1.

Using zero based indexing, arr[1]=2 is the pivot between the two subarrays.

The index of the pivot is 1.

Answer. (penalty regime: 0%)



Question 2

Correct Flag question **Objective:**

Calculate the sum of an array of integers

Example

Numbers [3, 13, 4, 11, 9)

The sum is 3+13+4+11+9-40.

Function Description

Complete the function arraySum in the editor below. arraySum has the following parameter(s). int numbers[n]: an array of integers

Retums

Int: integer sum of the numbers array

Constraints

1<n< 10

1 < numbers<104

Input Format for Custom Testing

Input from stdin will be processed as follows and passed to the function

The first line contains an integer n, the size of the array numbers

Each of the next n lines contains an integer numbers[i] where Osin.

Sample Case 0

Sample Input 0

STDIN Function

5 numbers] size n=5

Numbers 11, 2, 3,4,5 2

3 4 5

Sample Output 0

15

Explanation O

1+2+3+4+5=15 Sample Case 1 Sample Input 1

STDIN Function

2 numbers] size n=2

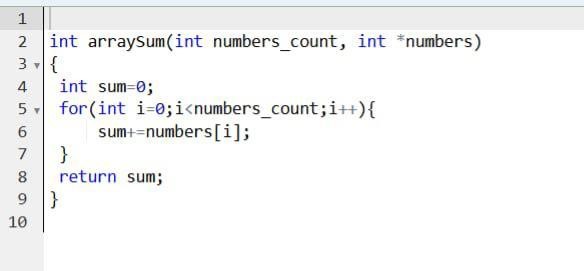
12 numbers = [12, 12112

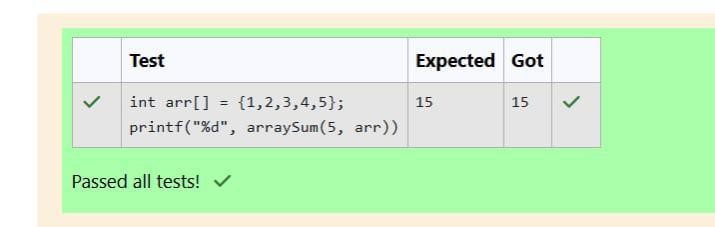
Sample Output 1

24

Explanation 1

12+12=24





Question 3

Correct Flag question **Objective:**

Given an array of n integers, rearrange them so that the sum of the absolute differences of all adjacent elements is minimized. Then, compute the sum of those absolute differences. Example n = 5 arr = [1, 3, 3, 2, 4] If the list is rearranged as arr = [1, 2, 3, 3, 4], the absolute differences are 1-21, 12-31, 13-30, 13-4) = 1. The sum of those differences is 1 + 1 + 0 + 1 = 3 Function Description Complete the function minDiff in the editor below. minDiff has the following parameter: arr: an integer array Returns: int: the sum of the absolute differences of adjacent elements Constraints 2 <= n <=105( ≤ arr[i] ≤ 109, where 0 <= I < n Input Format For Custom Testing The first line of input contains an integer, n, the size of arr. Each of the following n lines contains an integer that describes arr[i] (where 0 <= I < n ) Sample Case 0 Sample Input For Custom Testing STDIN Function 5 arr[] size n = 5.5 arr[] = [5, 1, 3, 7, 3]

1373 Sample Output 6 Explanation n = 5 arr = [5, 1, 3, 7, 3] If arr is rearranged as arr’ = [1, 3,

3, 5, 7], the differences are minimized. The final answer is |1 – 3| + |3 – 3| + |3 – 5| + |5 – 7| =

6. Sample Case 1 Sample Input For Custom Testing STDIN Function 2 arr[] size n = 23 arr[] = [3,2] 2 Sample Output 1 Explanation n = 2 arr = [3, 2] There is no need to rearrange because there are only two elements. The final answer is 13-2 = 1.

Answer: (penalty regime: 0%)

