**Week 13**

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**Balanced array**

**Q1) Problem Statement:**

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): intarr[n]: an array of integers

Returns: int: an integer representing the index of the pivot

Constraints

• 3 ≤ n ≤ 105

• 1 ≤ arr[i] ≤ 2 × 104, where 0 ≤ i< n

• 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 arr. Each of the next n lines contains an integer,

arr[i], where 0 ≤ i< n.

Sample Input

STDIN Function Parameters

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4 → arr[] size n = 4

1 → arr = [1, 2, 3, 3]

2

3

3

Sample Output 0

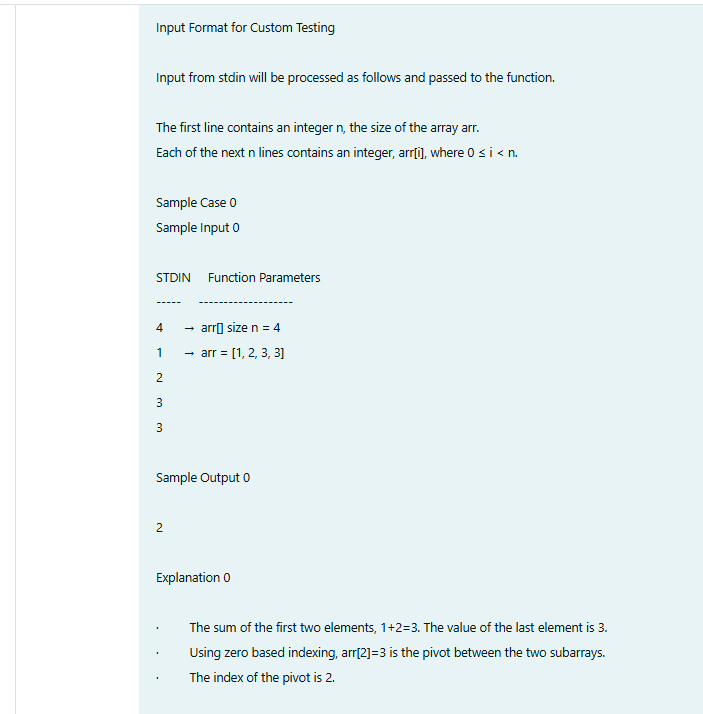
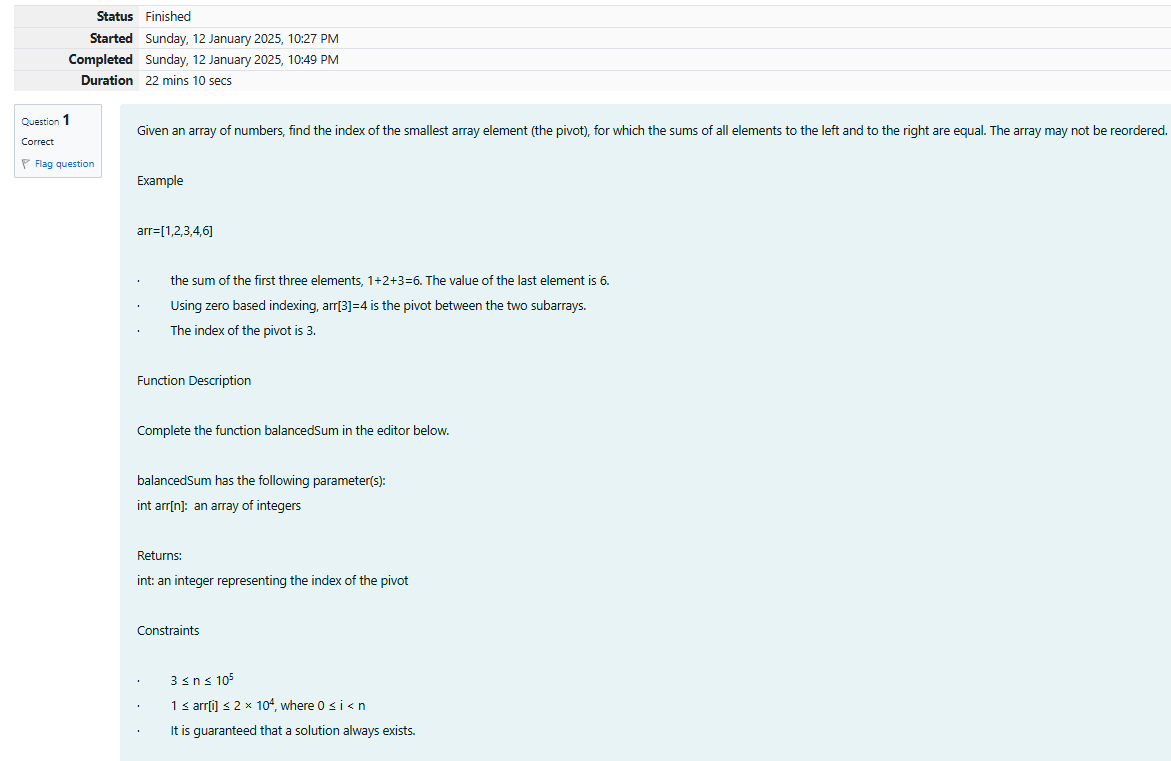
2

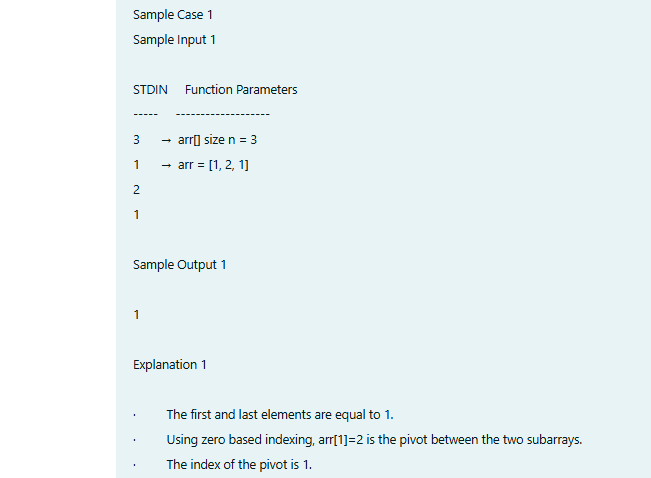
Explanation 0

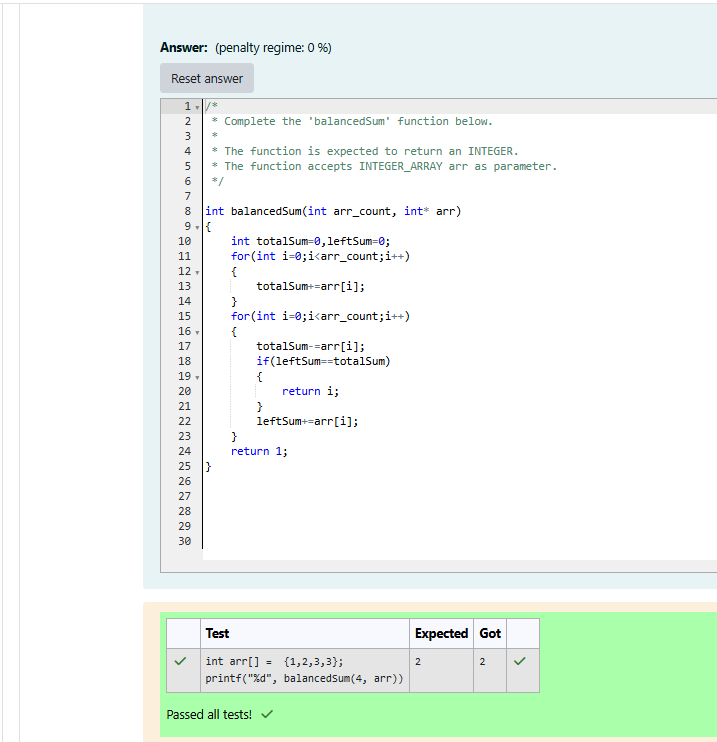
• The sum of the first two elements, 1+2=3. The value of the last element is 3.

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

• The index of the pivot is 2.

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**Sum them all**

**Q2) Problem Statement:**

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

Returns

int: integer sum of the numbers array

Constraints

1 ≤ n ≤ 104

1 ≤ numbers[i] ≤ 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 0 ≤ i< n.

Sample Input

STDIN Function

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5 → numbers[] size n = 5

1 → numbers = [1, 2, 3, 4, 5]

2

3

4

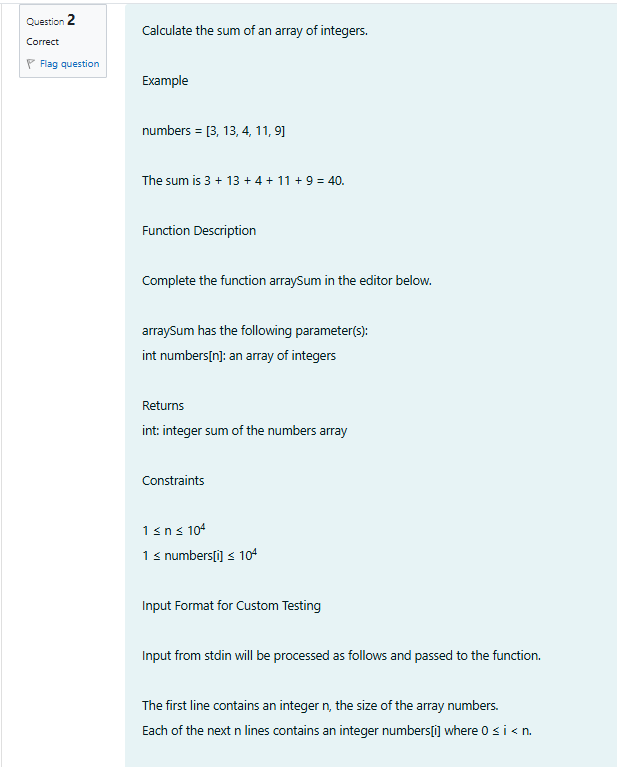
5

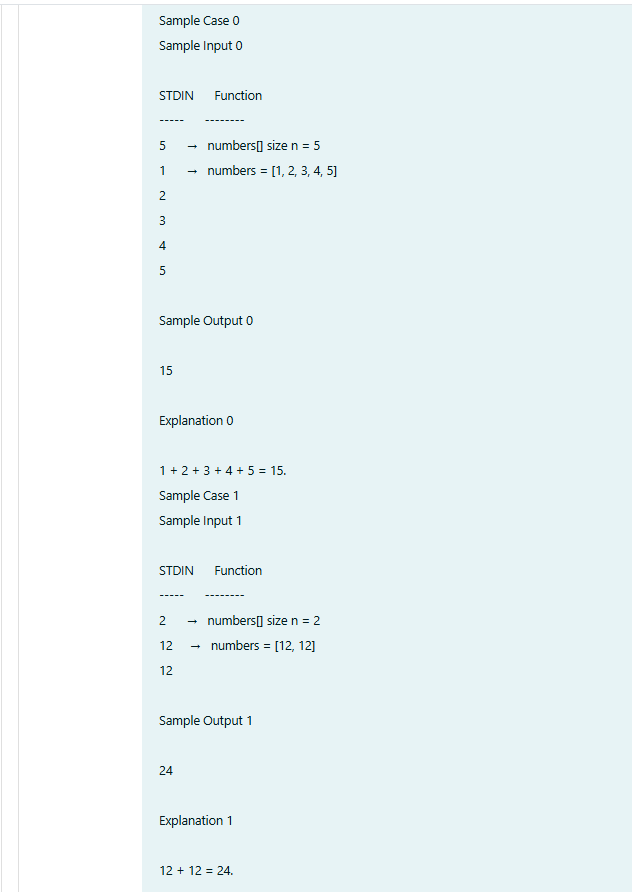
Sample Output

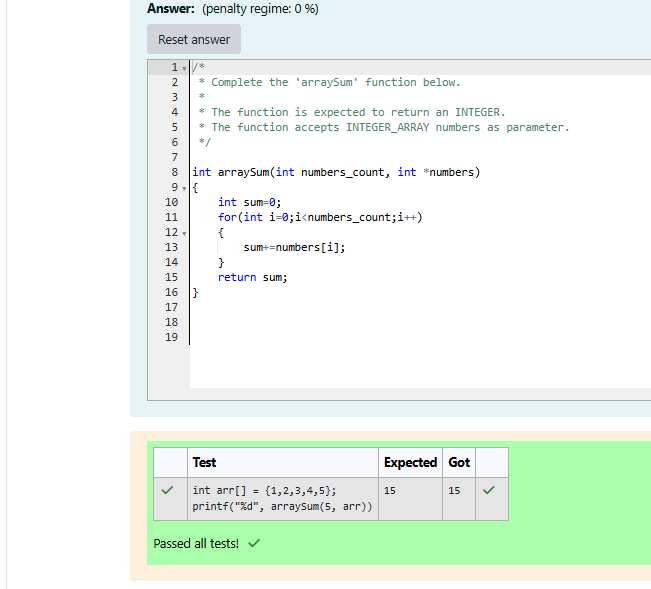
15

Explanation

1 + 2 + 3 + 4 + 5 = 15.

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