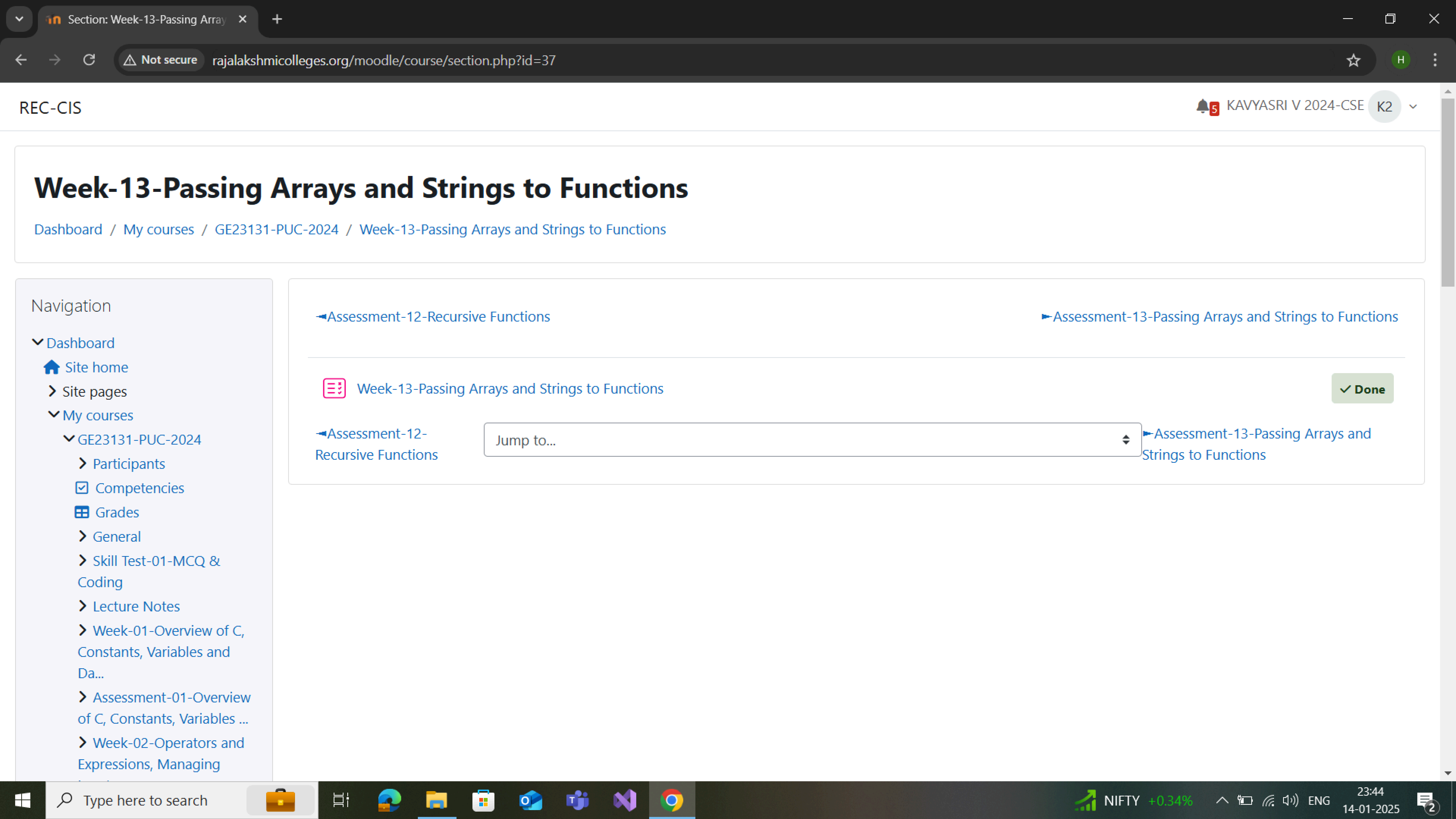

Week-13-Passing Arrays and Strings to Functions

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◄Assessment-12-Recursive Functions

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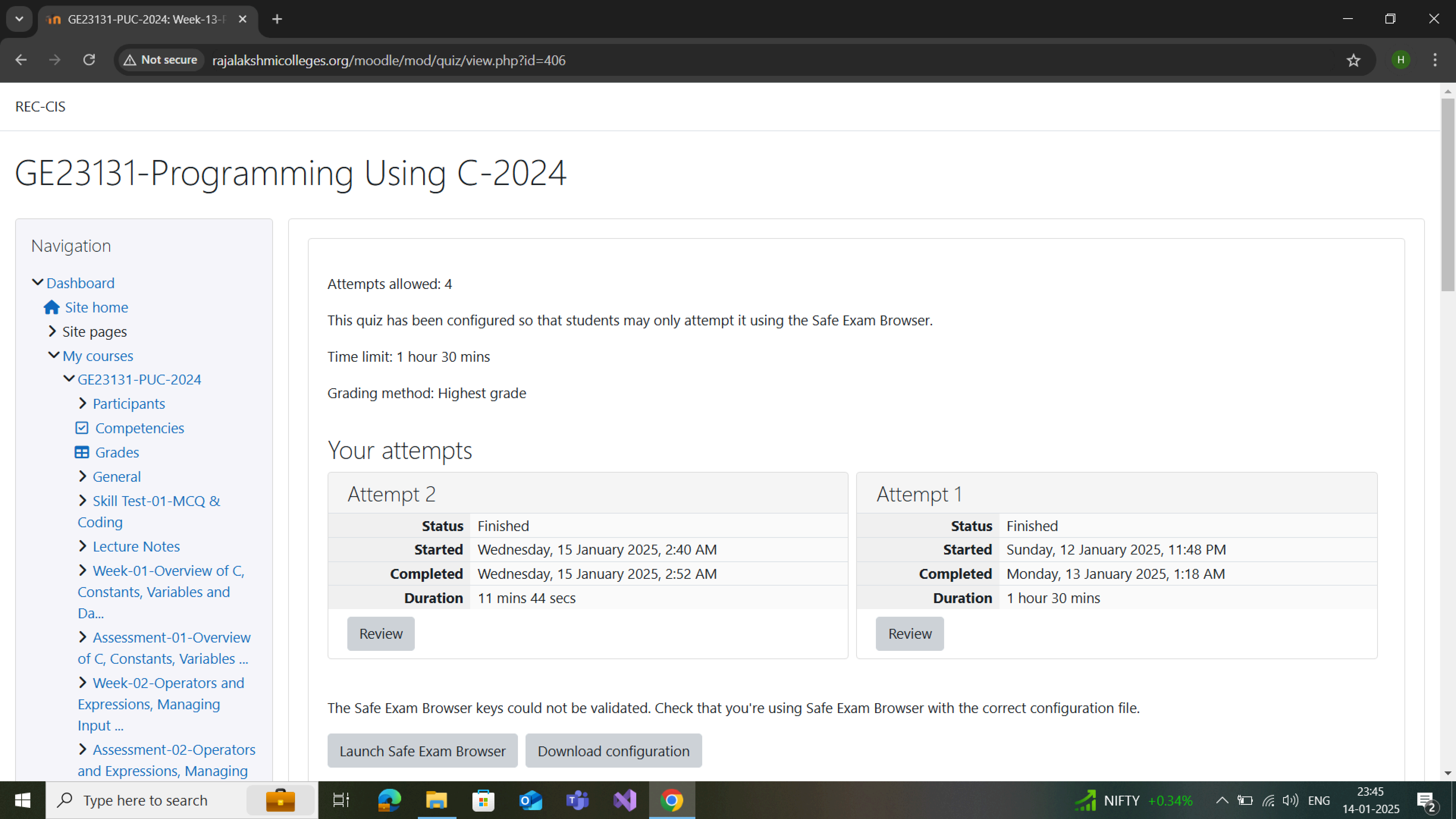
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GE23131-Programming Using C-2024

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Attempts allowed: 4

This quiz has been configured so that students may only attempt it using the Safe Exam Browser.

Time limit: 1 hour 30 mins

Grading method: Highest grade

Your attempts

Attempt 2

Status	Finished
Started	Wednesday, 15 January 2025, 2:40 AM
Completed	Wednesday, 15 January 2025, 2:52 AM
Duration	11 mins 44 secs

Review

Attempt 1

Status	Finished
Started	Sunday, 12 January 2025, 11:48 PM
Completed	Monday, 13 January 2025, 1:18 AM
Duration	1 hour 30 mins

Review

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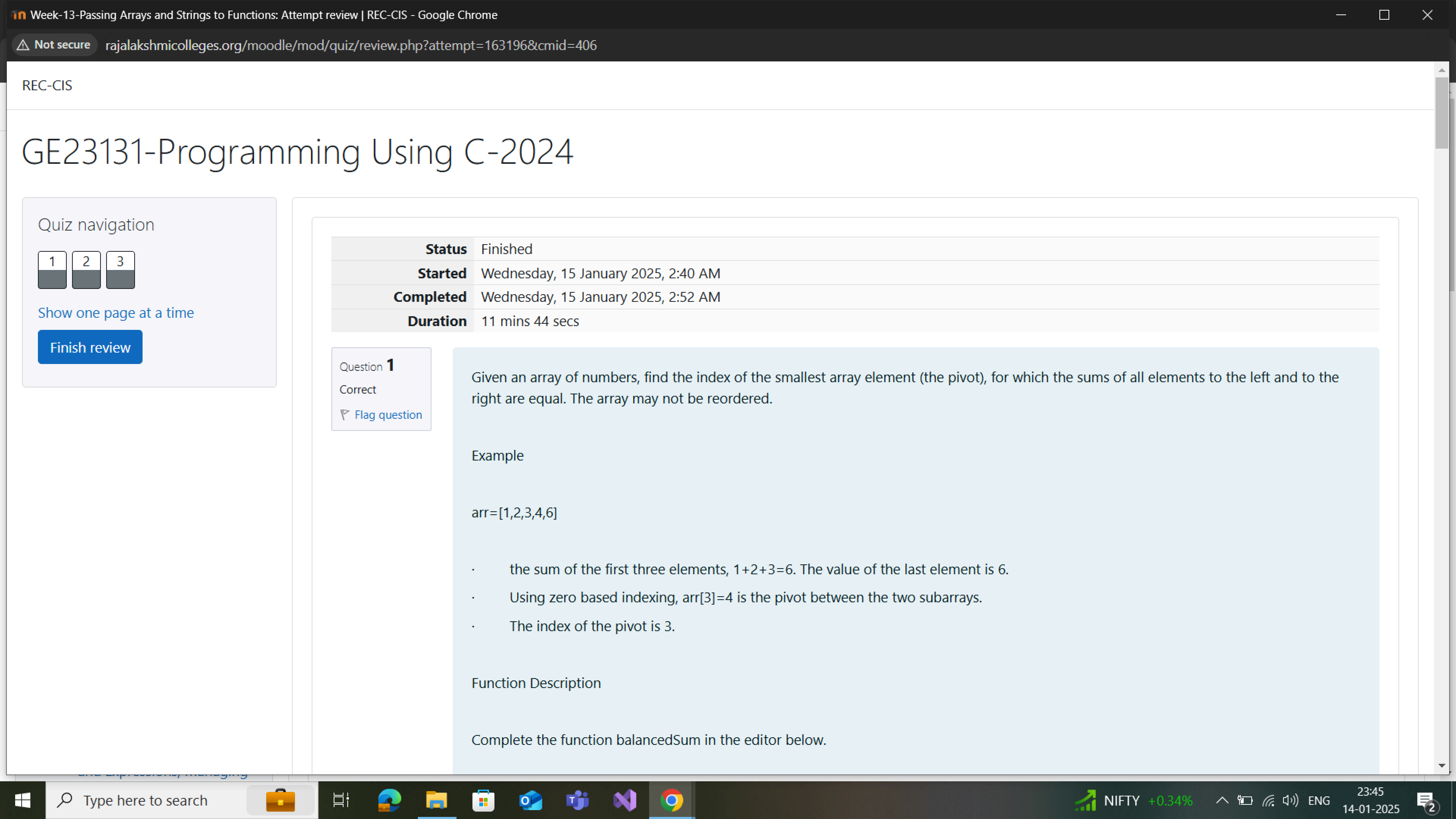
Launch Safe Exam Browser　Download configuration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GE23131-Programming Using C-2024

Status	Finished
Started	Wednesday, 15 January 2025, 2:40 AM
Completed	Wednesday, 15 January 2025, 2:52 AM
Duration	11 mins 44 secs

Question **1**

Correct

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.

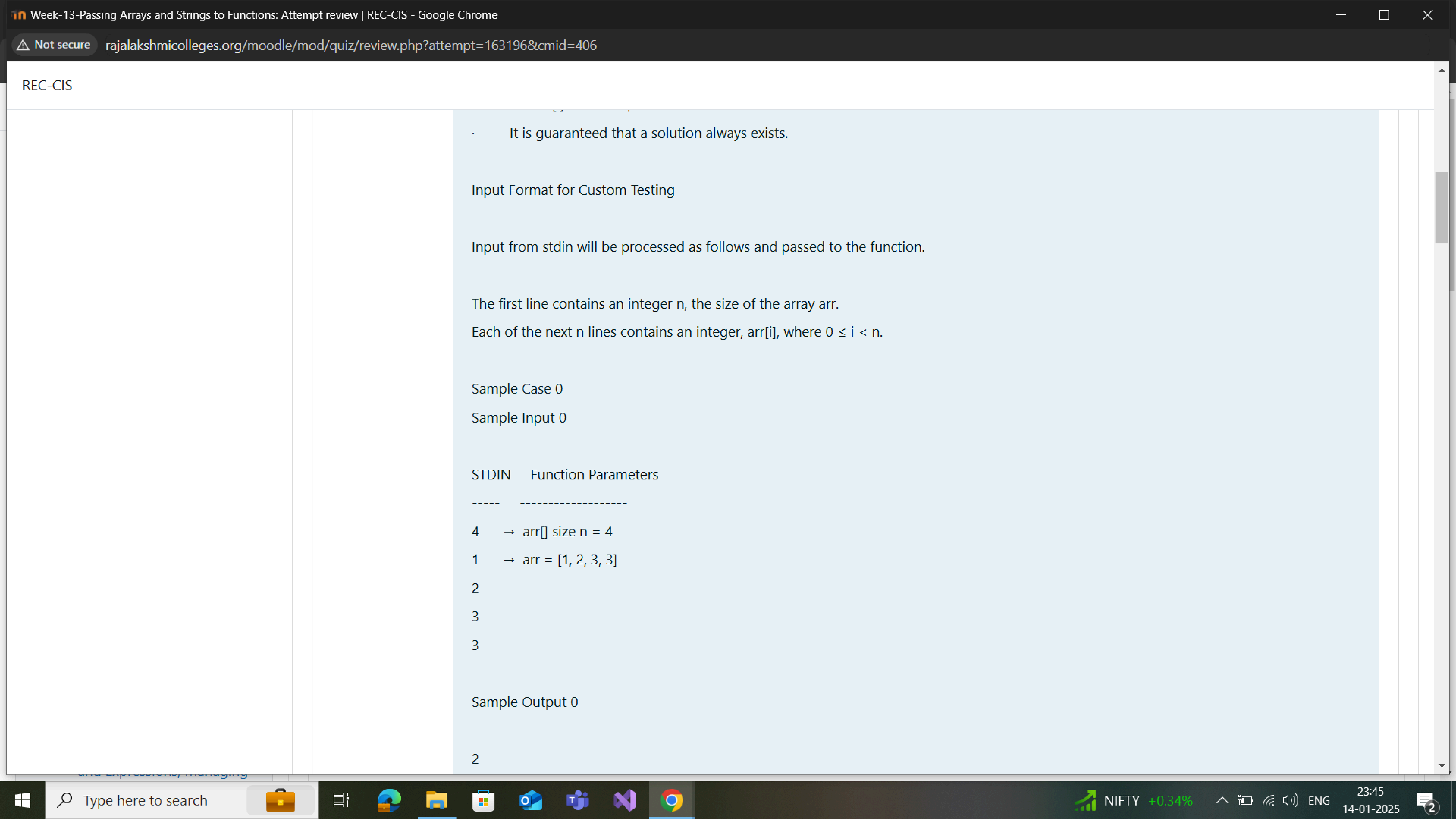
Example

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.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· 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.

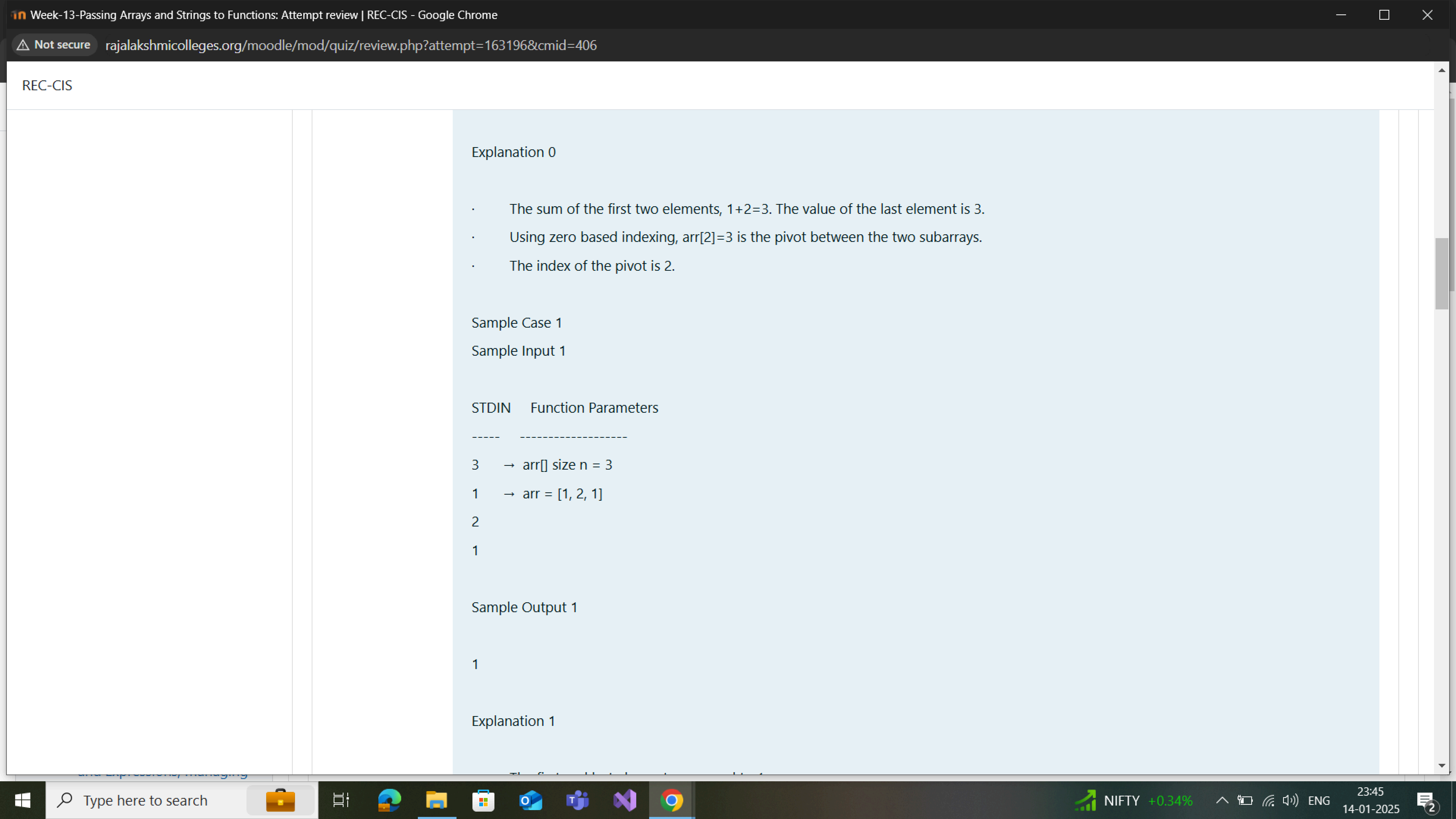
Sample Case 0

Sample Input 0

```
STDIN     Function Parameters
-----     ------------------
4    →  arr[] size n = 4
1    →  arr = [1, 2, 3, 3]
2
3
3
```

Sample Output 0

```
2
```



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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

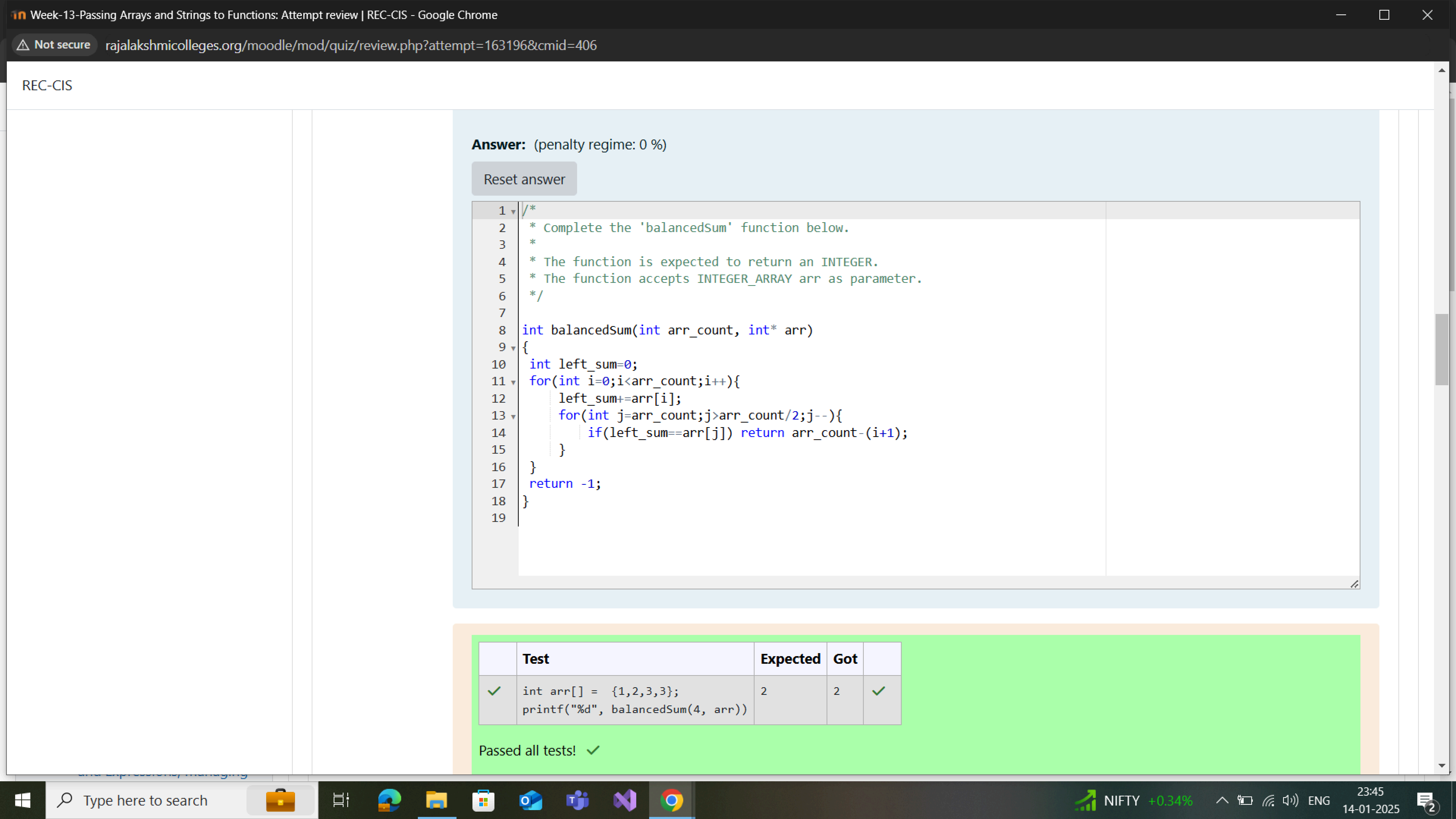
Sample Input 1

```
STDIN     Function Parameters
-----     -------------------
3     →  arr[] size n = 3
1     →  arr = [1, 2, 1]
2
1
```

Sample Output 1

```
1
```

Explanation 1



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Answer: (penalty regime: 0 %)

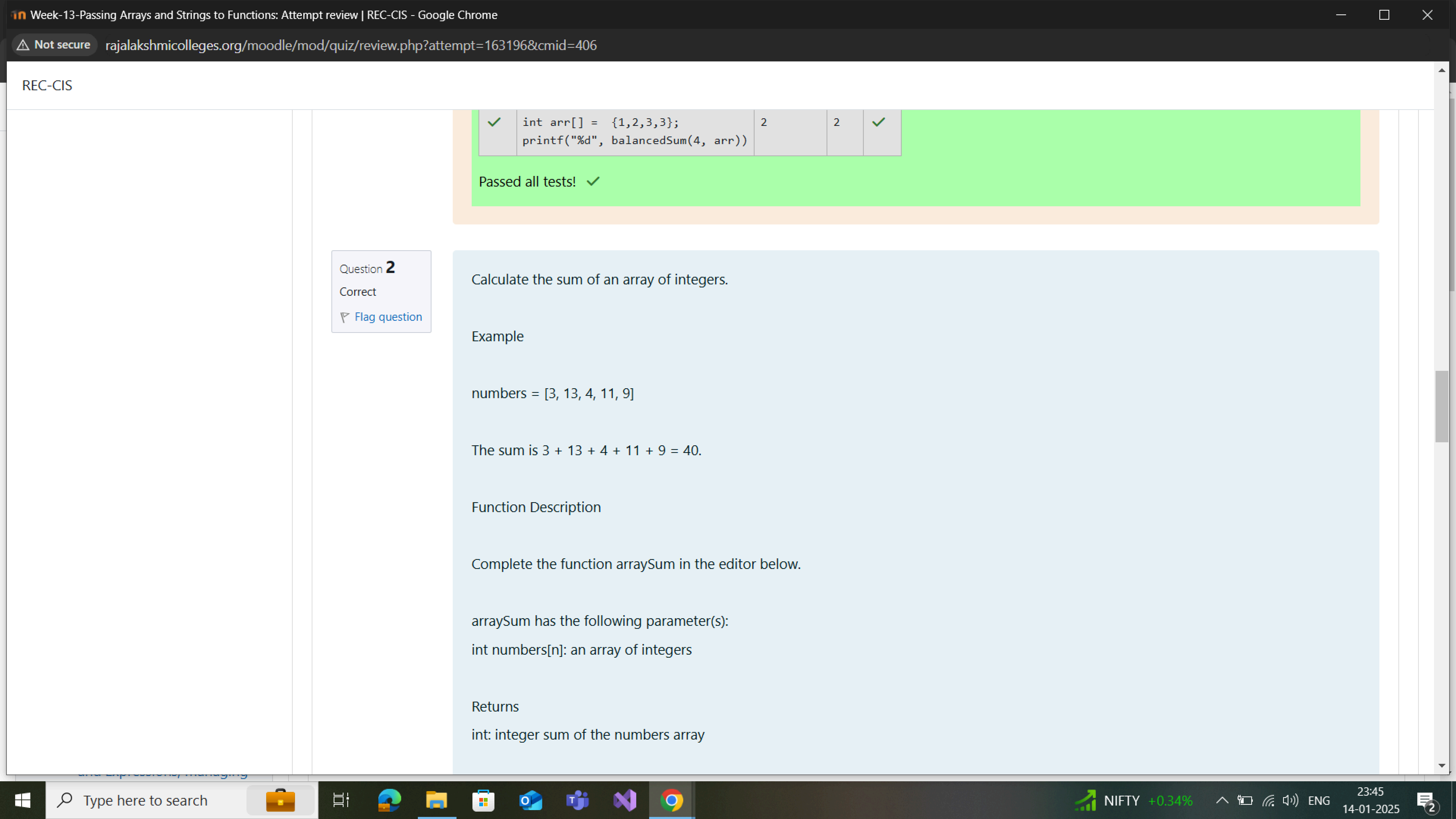
Reset answer

```c
/*
 * Complete the 'balancedSum' function below.
 *
 * The function is expected to return an INTEGER.
 * The function accepts INTEGER_ARRAY arr as parameter.
 */

int balancedSum(int arr_count, int* arr)
{
 int left_sum=0;
 for(int i=0;i<arr_count;i++){
     left_sum+=arr[i];
     for(int j=arr_count;j>arr_count/2;j--){
         if(left_sum==arr[j]) return arr_count-(i+1);
     }
 }
 return -1;
}

```

	Test	Expected	Got	

✓	`int arr[] =  {1,2,3,3};`
	`printf("%d", balancedSum(4, arr))`
		2	2	✓

Passed all tests! ✓



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✓	`int arr[] =  {1,2,3,3};`
	`printf("%d", balancedSum(4, arr))`
		2	2	✓

Passed all tests! ✓

Question **2**

Correct

Flag question

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

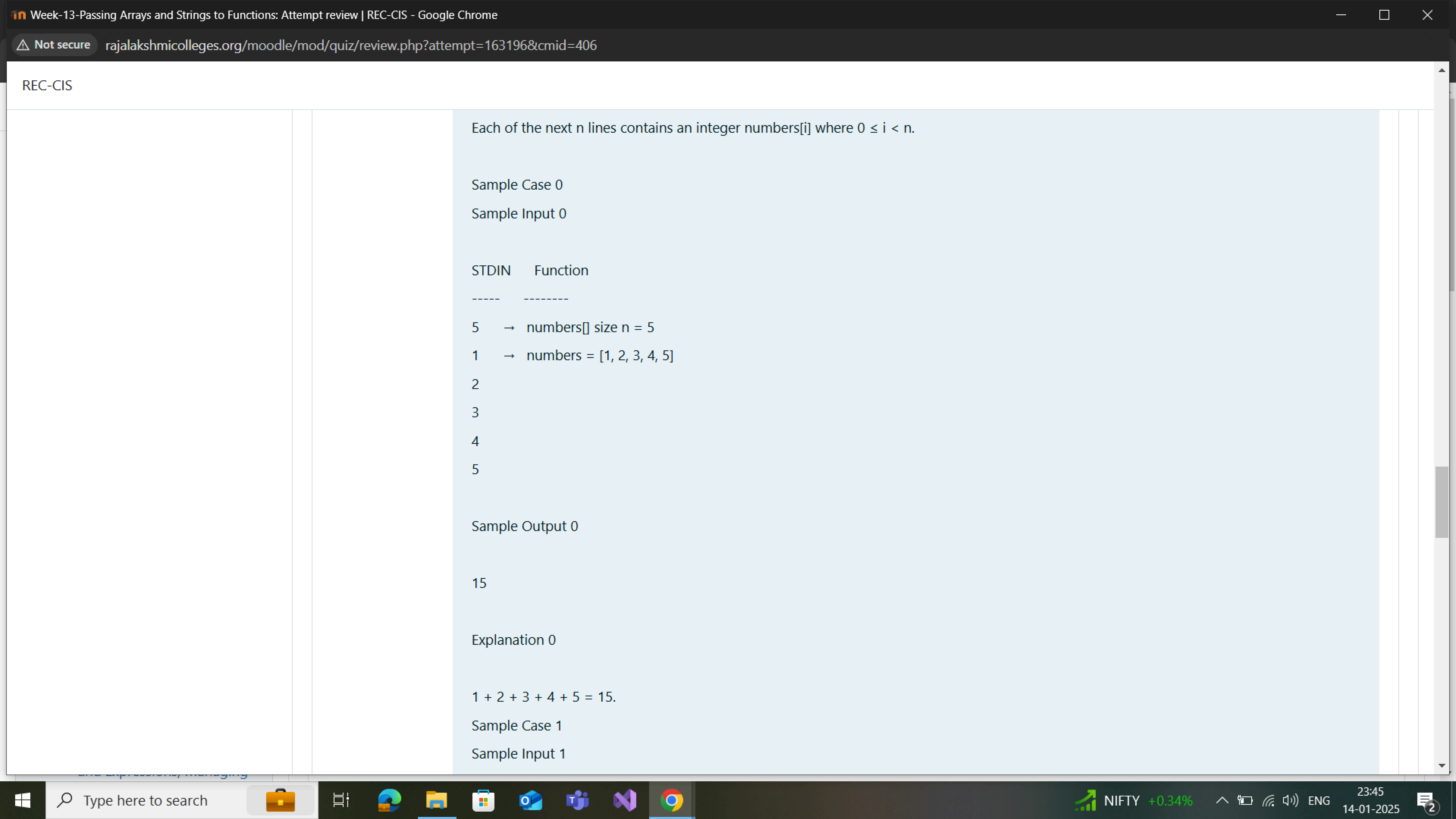
Complete the function arraySum in the editor below.

arraySum has the following parameter(s):

int numbers[n]: an array of integers

Returns

int: integer sum of the numbers array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Each of the next n lines contains an integer numbers[i] where 0 ≤ i < n.

Sample Case 0

Sample Input 0

```
STDIN     Function
-----     --------
5    →   numbers[] size n = 5
1    →   numbers = [1, 2, 3, 4, 5]
2
3
4
5
```

Sample Output 0

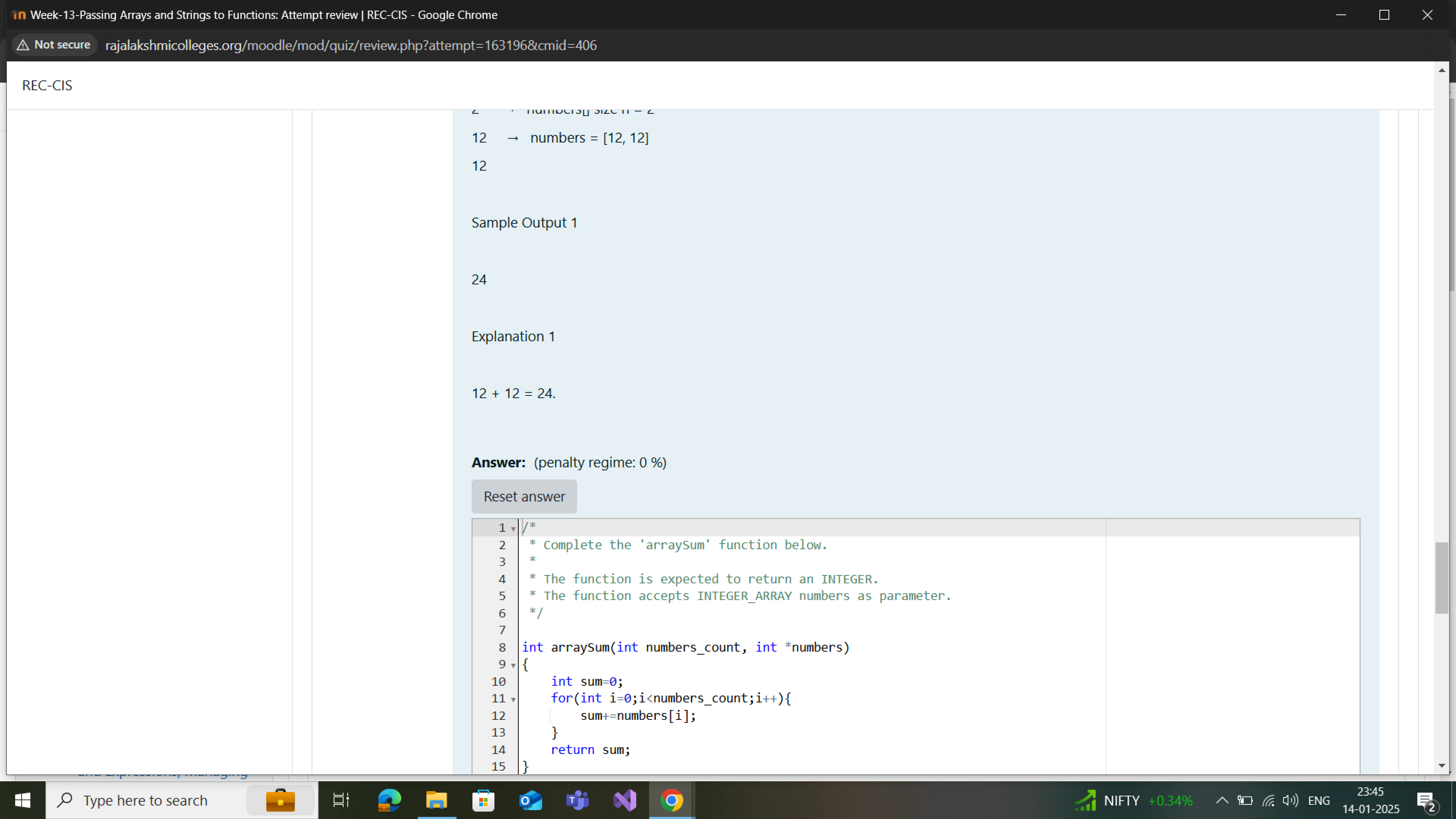
```
15
```

Explanation 0

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

Sample Case 1

Sample Input 1



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2 → numbers[] size n = 2

12 → numbers = [12, 12]

12

Sample Output 1

24

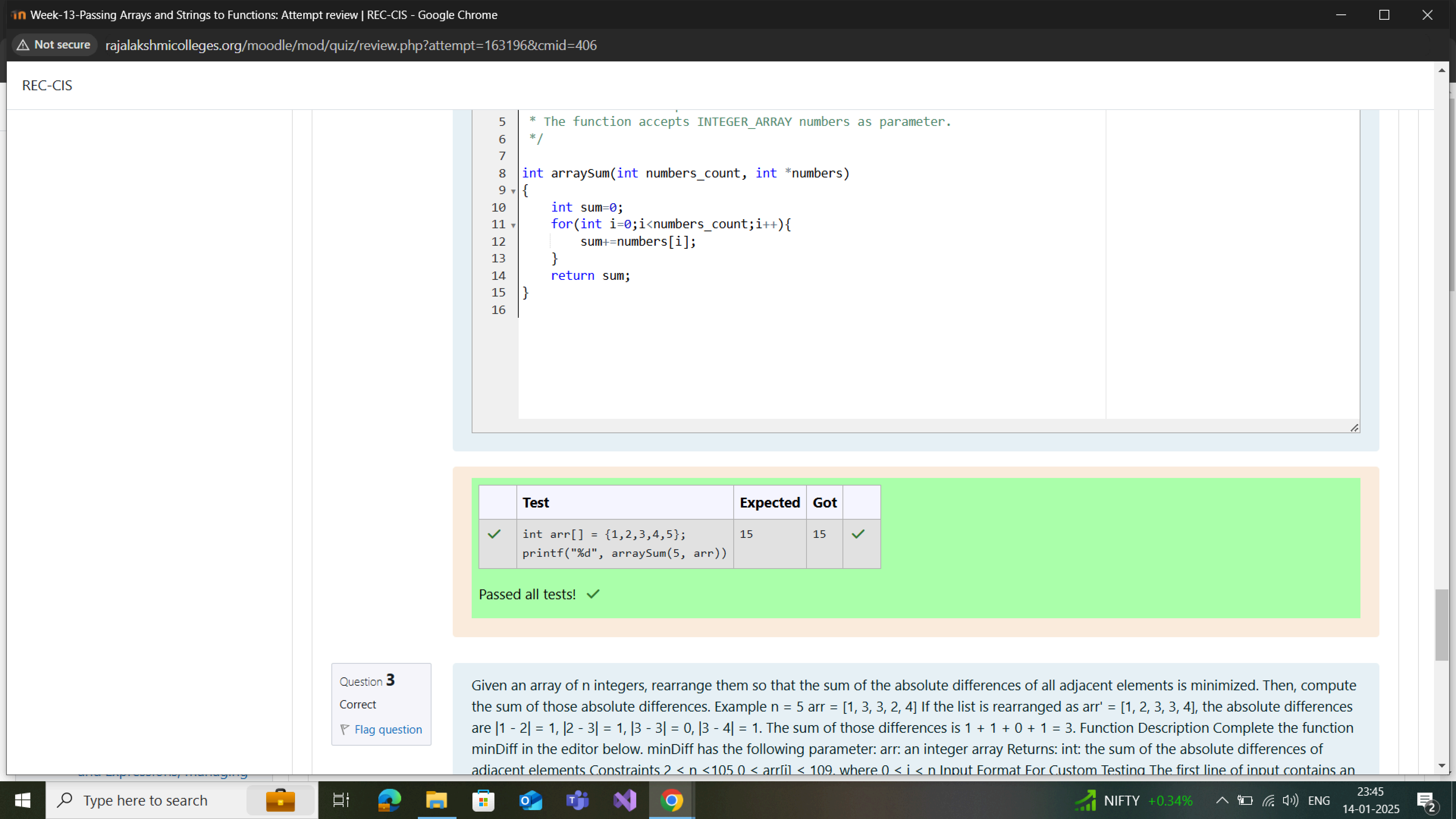
Explanation 1

12 + 12 = 24.

Answer: (penalty regime: 0 %)

```
/*
 * Complete the 'arraySum' function below.
 *
 * The function is expected to return an INTEGER.
 * The function accepts INTEGER_ARRAY numbers as parameter.
 */

int arraySum(int numbers_count, int *numbers)
{
    int sum=0;
    for(int i=0;i<numbers_count;i++){
        sum+=numbers[i];
    }
    return sum;
}
```



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```
 * The function accepts INTEGER_ARRAY numbers as parameter.
 */

int arraySum(int numbers_count, int *numbers)
{
    int sum=0;
    for(int i=0;i<numbers_count;i++){
        sum+=numbers[i];
    }
    return sum;
}

```

	Test	Expected	Got	

✓	`int arr[] = {1,2,3,4,5};`
	`printf("%d", arraySum(5, arr))`
		15	15	✓

Passed all tests! ✓

Question **3**

Correct

Flag question

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 - 2| = 1, |2 - 3| = 1, |3 - 3| = 0, |3 - 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 adiacent elements Constraints 2 < n <105 0 < arr[i] < 109, where 0 < i < n Input Format For Custom Testing The first line of input contains an

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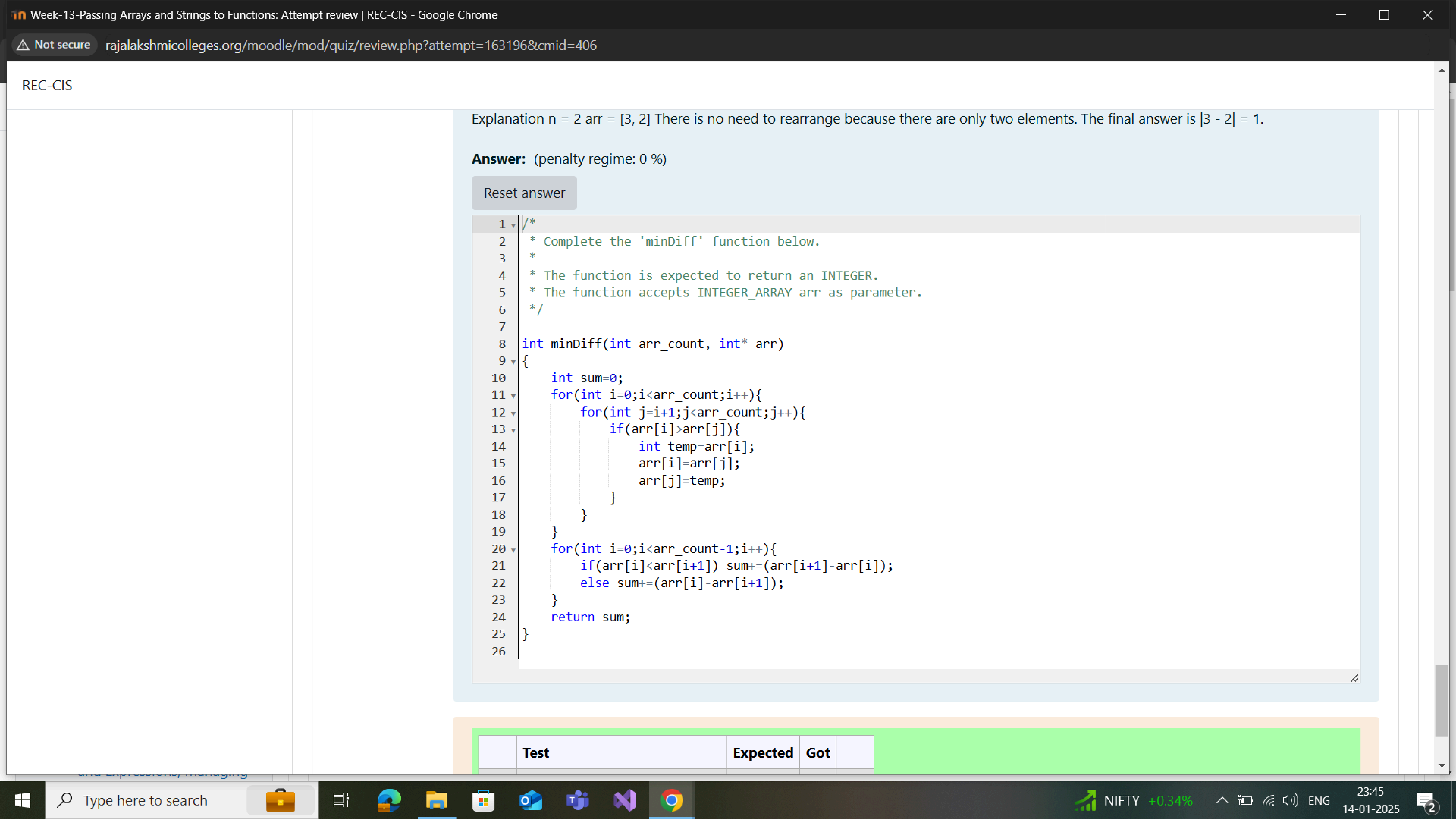
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Explanation n = 2 arr = [3, 2] There is no need to rearrange because there are only two elements. The final answer is |3 - 2| = 1.

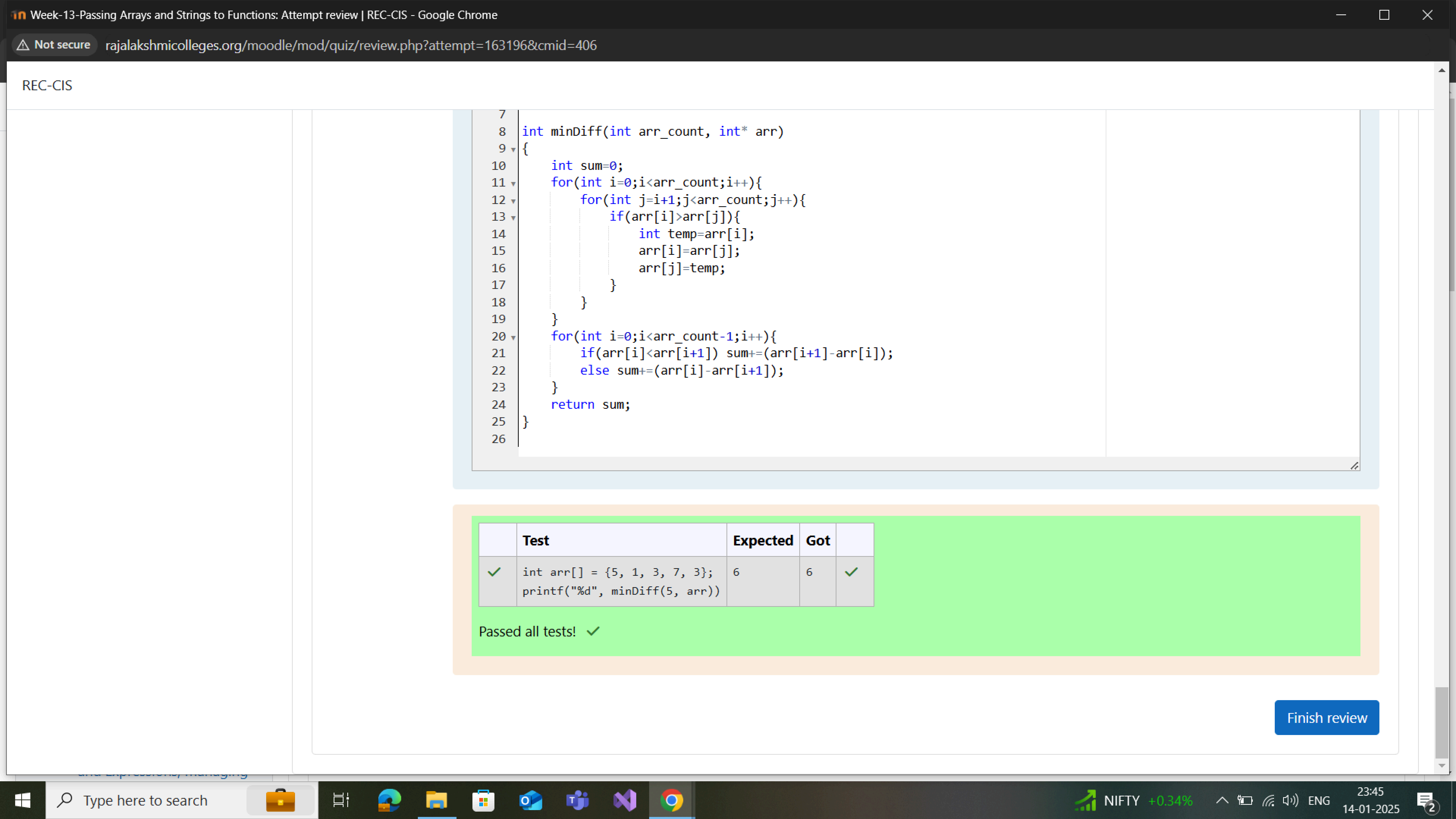
Answer: (penalty regime: 0 %)

```
/*
 * Complete the 'minDiff' function below.
 *
 * The function is expected to return an INTEGER.
 * The function accepts INTEGER_ARRAY arr as parameter.
 */

int minDiff(int arr_count, int* arr)
{
    int sum=0;
    for(int i=0;i<arr_count;i++){
        for(int j=i+1;j<arr_count;j++){
            if(arr[i]>arr[j]){
                int temp=arr[i];
                arr[i]=arr[j];
                arr[j]=temp;
            }
        }
    }
    for(int i=0;i<arr_count-1;i++){
        if(arr[i]<arr[i+1]) sum+=(arr[i+1]-arr[i]);
        else sum+=(arr[i]-arr[i+1]);
    }
    return sum;
}

```

	Test	Expected	Got	



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```c

int minDiff(int arr_count, int* arr)
{
    int sum=0;
    for(int i=0;i<arr_count;i++){
        for(int j=i+1;j<arr_count;j++){
            if(arr[i]>arr[j]){
                int temp=arr[i];
                arr[i]=arr[j];
                arr[j]=temp;
            }
        }
    }
    for(int i=0;i<arr_count-1;i++){
        if(arr[i]<arr[i+1]) sum+=(arr[i+1]-arr[i]);
        else sum+=(arr[i]-arr[i+1]);
    }
    return sum;
}

```

	Test	Expected	Got	

✓	`int arr[] = {5, 1, 3, 7, 3};`
	`printf("%d", minDiff(5, arr))`
		6	6	✓

Passed all tests! ✓

Finish review
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