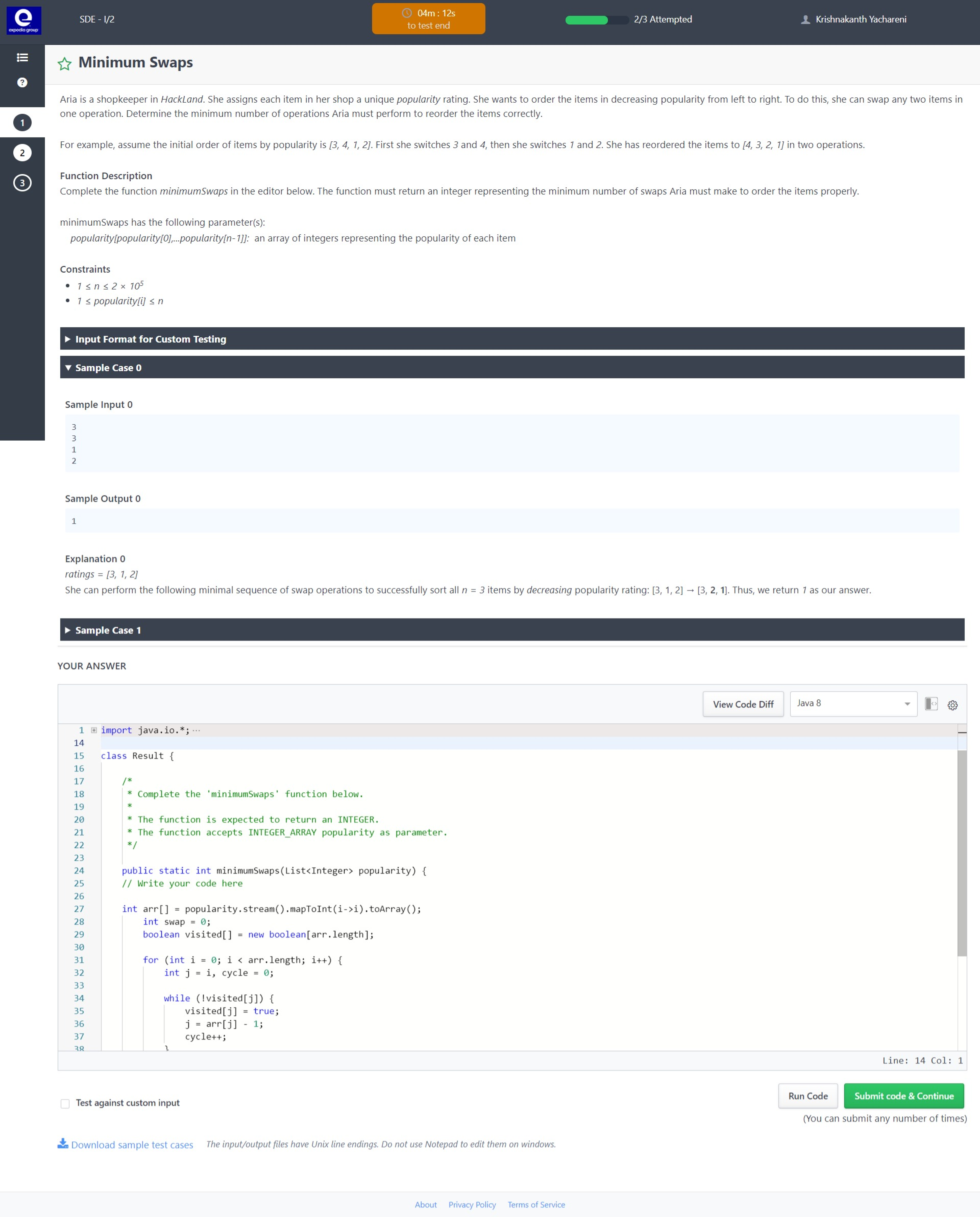

Minimum Swaps

Aria is a shopkeeper in *HackLand*. She assigns each item in her shop a unique *popularity* rating. She wants to order the items in decreasing popularity from left to right. To do this, she can swap any two items in one operation. Determine the minimum number of operations Aria must perform to reorder the items correctly.

For example, assume the initial order of items by popularity is *[3, 4, 1, 2]*. First she switches *3* and *4*, then she switches *1* and *2*. She has reordered the items to *[4, 3, 2, 1]* in two operations.

Function Description

Complete the function *minimumSwaps* in the editor below. The function must return an integer representing the minimum number of swaps Aria must make to order the items properly.

minimumSwaps has the following parameter(s):

popularity[popularity[0],...popularity[n-1]]: an array of integers representing the popularity of each item

Constraints

- $1 \le n \le 2 \times 10^5$
- $1 \le popularity[i] \le n$

▶ **Input Format for Custom Testing**

▼ **Sample Case 0**

Sample Input 0

```
3
3
1
2
```

Sample Output 0

```
1
```

Explanation 0

ratings = [3, 1, 2]

She can perform the following minimal sequence of swap operations to successfully sort all $n = 3$ items by *decreasing* popularity rating: [3, 1, 2] → [3, **2**, **1**]. Thus, we return *1* as our answer.

▶ **Sample Case 1**

YOUR ANSWER

```java
import java.io.*;···

class Result {

    /*
     * Complete the 'minimumSwaps' function below.
     *
     * The function is expected to return an INTEGER.
     * The function accepts INTEGER_ARRAY popularity as parameter.
     */

    public static int minimumSwaps(List<Integer> popularity) {
    // Write your code here

    int arr[] = popularity.stream().mapToInt(i->i).toArray();
        int swap = 0;
        boolean visited[] = new boolean[arr.length];

        for (int i = 0; i < arr.length; i++) {
            int j = i, cycle = 0;

            while (!visited[j]) {
                visited[j] = true;
                j = arr[j] - 1;
                cycle++;
            }
```

Line: 14 Col: 1

□ Test against custom input

(You can submit any number of times)

Download sample test cases *The input/output files have Unix line endings. Do not use Notepad to edit them on windows.*