**Minimum Swaps 2**

You are given an unordered array consisting of consecutive integers <- [1, 2, 3, ..., n] without any duplicates. You are allowed to swap any two elements. You need to find the minimum number of swaps required to sort the array in ascending order.

For example, given the array arr=[7,1,3,2,4,5,6] we perform the following steps:

i arr swap (indices)

0 [7, 1, 3, 2, 4, 5, 6] swap (0,3)

1 [2, 1, 3, 7, 4, 5, 6] swap (0,1)

2 [1, 2, 3, 7, 4, 5, 6] swap (3,4)

3 [1, 2, 3, 4, 7, 5, 6] swap (4,5)

4 [1, 2, 3, 4, 5, 7, 6] swap (5,6)

5 [1, 2, 3, 4, 5, 6, 7]

It took 5 swaps to sort the array.

**Function Description**

Complete the function minimumSwaps in the editor below. It must return an integer representing the minimum number of swaps to sort the array.

minimumSwaps has the following parameter(s):

* arr: an unordered array of integers

**Input Format**

The first line contains an integer, n, the size of arr.   
The second line contains n space-separated integers arr[i].

**Constraints**

* 1<=n<=10^5
* 1<=arr[i]<=n

**Output Format**

Return the minimum number of swaps to sort the given array.

**Sample Input 0**

4

4 3 1 2

**Sample Output 0**

3

**Explanation 0**

Given array  arr=[4,3,1,2]  
After swapping (0,2)  we get  arr:[1,3,4,2]  
After swapping (1,2) we get   arr:[1,4,3,2]

After swapping (1,3) we get  arr:[1,2,3,4]

So, we need a minimum of 3 swaps to sort the array in ascending order.

**Sample Input 1**

5

2 3 4 1 5

**Sample Output 1**

3

**Explanation 1**

Given array  arr:[2,3,4,1,5]  
After swapping (2,3) we get  arr:[2,3,1,4,5]  
After swapping (0,1) we get  arr:[3,2,1,4,5]

After swapping (0,2) we get  arr:[1,2,3,4,5]  
So, we need a minimum of 3 swaps to sort the array in ascending order.

**Sample Input 2**

7

1 3 5 2 4 6 7

**Sample Output 2**

3

**Explanation 2**

Given array  arr:[1,3,5,2,4,6,7]  
After swapping (1,3) we get  arr:[1,2,5,3,4,6,7]  
After swapping  (2,3) we get  arr:[1,2,4,3,5,6,7]  
After swapping  (3,4) we get  arr:[1,2,3,4,5,6,7]  
So, we need a minimum of 3 swaps to sort the array in ascending order.

using System.CodeDom.Compiler;

using System.Collections.Generic;

using System.Collections;

using System.ComponentModel;

using System.Diagnostics.CodeAnalysis;

using System.Globalization;

using System.IO;

using System.Linq;

using System.Reflection;

using System.Runtime.Serialization;

using System.Text.RegularExpressions;

using System.Text;

using System;

class Solution {

// Complete the minimumSwaps function below.

static int minimumSwaps(int[] arr)

{

int swaptimes = 0;

for (int i = 0; i < arr.Length; i++)

{

if (arr[i] == i + 1)

{

//index same value doesn't swap

continue;

}

else

{

swaptimes++;

arr = swap(arr, i);

}

}

return swaptimes;

}

static int[] swap(int[] arr, int j)

{

for (int i = j; i < arr.Length; i++)

{

//find value equal index then swap

if (arr[i] == j + 1)

{

int temp = arr[i];

arr[i] = arr[j];

arr[j] = temp;

break;

}

}

return arr;

}

static void Main(string[] args) {

TextWriter textWriter = new StreamWriter(@System.Environment.GetEnvironmentVariable("OUTPUT\_PATH"), true);

int n = Convert.ToInt32(Console.ReadLine());

int[] arr = Array.ConvertAll(Console.ReadLine().Split(' '), arrTemp => Convert.ToInt32(arrTemp))

;

int res = minimumSwaps(arr);

textWriter.WriteLine(res);

textWriter.Flush();

textWriter.Close();

}

}

**Congratulations**

You solved this challenge. Would you like to challenge your friends?

[Next Challenge](https://www.hackerrank.com/challenges/crush?h_l=interview&playlist_slugs%5B%5D=interview-preparation-kit&playlist_slugs%5B%5D=arrays&h_r=next-challenge&h_v=zen)

* **Test case 0**
* **Test case 1**
* **Test case 2**
* **Test case 3**
* **Test case 4**
* **Test case 5**
* **Test case 6**
* **Test case 7**
* **Test case 8**
* **Test case 9**
* **Test case 10**
* **Test case 11**
* **Test case 12**
* **Test case 13**
* **Test case 14**

Compiler Message

**Success**

Input (stdin)

Download

* **4**
* **4 3 1 2**

Expected Output

Download

* **3**

## Welcome to the d