Minimum Swaps 2 🖈

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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. Find the minimum number of swaps required to sort the array in ascending order.

Example

```
arr = [7, 1, 3, 2, 4, 5, 6]
```

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.

minimumSwaps has the following parameter(s):

• int arr[n]: an unordered array of integers

Returns

• int: the minimum number of swaps to sort the array

Input Format

The first line contains an integer, $m{n}$, the size of $m{arr}$.

The second line contains $m{n}$ space-separated integers $m{arr}[m{i}]$.

Constraints

- $1 \le n \le 10^5$
- $1 \leq arr[i] \leq n$

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 $(\mathbf{1},\mathbf{2})$ we get $arr:[\mathbf{1,4,3,2}]$

After swapping $(\mathbf{1},\mathbf{3})$ we get $arr:[\mathbf{1},\mathbf{2},\mathbf{3},\mathbf{4}]$

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

Sample Input 1





Û

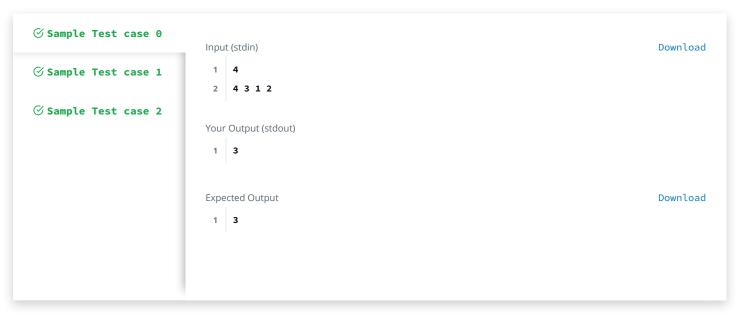
```
2 3 4 1 5
Sample Output 1
   3
Explanation 1
Given array arr:[2,3,4,1,5]
After swapping (2,3) we get arr:[2,3,1,4,5]
After swapping (0,1) we get arr:[3,2,1,4,5]
After swapping (\mathbf{0},\mathbf{2}) we get arr:[1,2,3,4,5]
So, we need a minimum of oldsymbol{3} swaps to sort the array in ascending order.
Sample Input 2
   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 (\mathbf{2},\mathbf{3}) we get arr:[\mathbf{1},\mathbf{2},\mathbf{3},\mathbf{5},\mathbf{4},\mathbf{6},\mathbf{7}]
After swapping (\mathbf{3,4}) we get arr:[1,2,3,4,5,6,7]
So, we need a minimum of oldsymbol{3} swaps to sort the array in ascending order.
```





Congratulations!

You have passed the sample test cases. Click the submit button to run your code against all the test cases.



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