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Ultra-QuickSort

Language: Default

Time Limit: 7000MS   **Memory Limit:** 65536K
Total Submissions: 77670   **Accepted:** 29135

Description

In this problem, you have to analyze a particular sorting algorithm. The algorithm processes a sequence of n distinct integers by swapping two adjacent sequence elements until the sequence is sorted in ascending order. For the input sequence

$$9\ 1\ 0\ 5\ 4\ ,$$

Ultra-QuickSort produces the output

$$0\ 1\ 4\ 5\ 9\ .$$

Your task is to determine how many swap operations Ultra-QuickSort needs to perform in order to sort a given input sequence.

Input

The input contains several test cases. Every test case begins with a line that contains a single integer n < 500,000 -- the length of the input sequence. Each of the the following n lines contains a single integer $0 \leq a[i]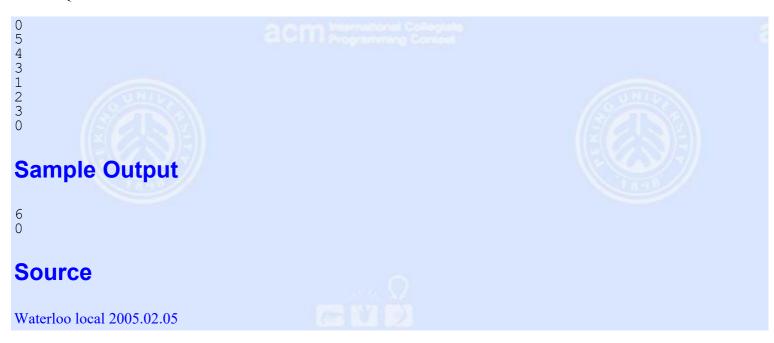 \leq 999,999,999$, the i-th input sequence element. Input is terminated by a sequence of length n = 0. This sequence must not be processed.

Output

For every input sequence, your program prints a single line containing an integer number op, the minimum number of swap operations necessary to sort the given input sequence.

Sample Input

```
5
9
1
```

```
0
5
4
3
1
2
3
0
```

Sample Output

```
6
0
```

Source

Waterloo local 2005.02.05

[Submit]   [Go Back]   [Status]   [Discuss]

Home Page   Go Back   To top

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