Task:

Given an unsorted integer array, find the smallest missing positive integer.

Input Format

The first line contains an integer n, size of the array .

The second line contains an n integers separated with a comma a[], elements of the array .

Output Format

Print a single integer denoting the smallest missing positive integer.

Example 1:

Input:

3

1,2,3,0

Output:

3

Example 2:

Input:

4

3,4,-1,1

Output:

 2

Your algorithm should run in O(n) time and uses constant extra space.