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PAINLESS

## MissingInteger

START

Find the minimal positive integer not occurring in a given sequence.

Programming language: C++ ▼

Write a function:

```
int solution(vector<int> &A);
```

that, given a non-empty zero-indexed array A of N integers, returns the minimal positive integer (greater than 0) that does not occur in A.

For example, given:

```
A[0] = 1
A[1] = 3
A[2] = 6
A[3] = 4
A[4] = 1
A[5] = 2
```

the function should return 5.

Assume that:

- N is an integer within the range [1..100,000];
- each element of array A is an integer within the range [-2,147,483,648..2,147,483,647].

Complexity:

- expected worst-case time complexity is  $O(N)$ ;
- expected worst-case space complexity is  $O(N)$ , beyond input storage (not counting the storage required for input arguments).

Elements of input arrays can be modified.

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**Contact us:**

For customer support  
queries:

UK +44 (0) 208 970  
78 68

US 1-415-466-8085  
support@codility.com

For sales queries:

UK +44 (0) 208 970  
78 67

US 1-415-466-8085  
sales@codility.com

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