

First Missing Positive

<https://leetcode.com/problems/first-missing-positive/>

Given an unsorted integer array `nums`, return the smallest missing positive integer.

You must implement an algorithm that runs in $O(n)$ time and uses constant extra space.

Examples

Input	Output
<code>nums = [1, 2, 0]</code>	3
<code>nums = [3, 4, -1, 1]</code>	2
<code>nums = [7, 8, 9, 11, 12]</code>	1

Constraints:

- $1 \leq \text{nums.length} \leq 5 \times 10^5$
- $-1^{31} \leq \text{nums}[i] \leq 2^{31}-1$