

## 268. Missing Number

Given an array `nums` containing  $n$  distinct numbers in the range  $[0, n]$ , return *the only number in the range that is missing from the array*.

### Example 1:

**Input:** `nums = [3,0,1]`

**Output:** 2

**Explanation:**  $n = 3$  since there are 3 numbers, so all numbers are in the range  $[0, 3]$ . 2 is the missing number in the range since it does not appear in `nums`.

### Example 2:

**Input:** `nums = [0,1]`

**Output:** 2

**Explanation:**  $n = 2$  since there are 2 numbers, so all numbers are in the range  $[0, 2]$ . 2 is the missing number in the range since it does not appear in `nums`.

### Example 3:

**Input:** `nums = [9,6,4,2,3,5,7,0,1]`

**Output:** 8

**Explanation:**  $n = 9$  since there are 9 numbers, so all numbers are in the range  $[0, 9]$ . 8 is the missing number in the range since it does not appear in `nums`.

### Constraints:

- $n == \text{nums.length}$
- $1 \leq n \leq 10^4$
- $0 \leq \text{nums}[i] \leq n$
- All the numbers of `nums` are **unique**.