Problem # 268: Missing Number (Easy)

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<https://leetcode.com/problems/missing-number/>

My Solution:

Runtime beats 96.69%

1. Let n be the length of nums array. We want numbers from 0 through n.

2. So make a set with range from 0 through n + 1.

3. Then do the set difference with the range set and set of nums.

This will give a set with the missing number.

4. To get the number, convert the set into a list and get the first element at index 0.

5. Return the missing number.

class Solution:

def missingNumber(self, nums: List[int]) -> int:

return list(set(range(len(nums) + 1)) - set(nums))[0]

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Better Solution:

Runtime beats 96.69%

1. Let n be the length of nums array.

2. The sum of first n natural numbers = n \* (n + 1) //2 (use integer division)  
3. The missing number is the difference between the sum of the first n natural numbers and sum elements in nums array.

4. Return the missing number.

class Solution:

def missingNumber(self, nums: List[int]) -> int:

n = len(nums)

return (n\*(n+1)//2) - sum(nums)