153. Find Minimum in Rotated Sorted Array

Suppose an array of length `n` sorted in ascending order is **rotated** between `1` and `n` times. For example, the array `nums = [0,1,2,4,5,6,7]` might become:

- `[4,5,6,7,0,1,2]` if it was rotated `4` times.
- `[0,1,2,4,5,6,7]` if it was rotated `7` times.

Notice that **rotating** an array `[a[0], a[1], a[2], ..., a[n-1]]` 1 time results in the array `[a[n-1], a[0], a[1], a[2], ..., a[n-2]]`.

Given the sorted rotated array `nums` of **unique** elements, return *the minimum element of this array*.

You must write an algorithm that runs in `O(log n) time.`

Example 1:

```
Input: nums = [3,4,5,1,2]
Output: 1
Explanation: The original array was [1,2,3,4,5] rotated 3 times.
```

Example 2:

```
Input: nums = [4,5,6,7,0,1,2]
Output: 0
Explanation: The original array was [0,1,2,4,5,6,7] and it was rotated 4
times.
```

Example 3:

```
Input: nums = [11,13,15,17]
Output: 11
Explanation: The original array was [11,13,15,17] and it was rotated 4
times.
```

Constraints:

- `n == nums.length`
- `1 <= n <= 5000`
- `-5000 <= nums[i] <= 5000`
- All the integers of `nums` are **unique**.
- `nums` is sorted and rotated between `1` and `n` times.

```python
class Solution:
    def findMin(self, nums: List[int]) -> int:
        lo = 0
        hi = len(nums)-1
        n = len(nums)
        if nums[lo]<=nums[hi]:
            return nums[lo]
        while lo<=hi:
            mid = (lo+hi)//2
            if nums[mid]<nums[(mid-1+n)%n]:
                return nums[mid]
            elif nums[mid]>nums[(mid+1)%n]:
                return nums[mid+1]
            elif nums[lo]<=nums[mid]:
                lo = mid+1
            elif nums[mid]<=nums[hi]:
                hi = mid-1
```