## 4. Median of Two Sorted Arrays

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Given two sorted arrays `nums1` and `nums2` of size `m` and `n` respectively, return **the median** of the two sorted arrays.

The overall run time complexity should be `O(log (m+n))`.

**Example 1:**

```
Input: nums1 = [1,3], nums2 = [2]
Output: 2.00000
Explanation: merged array = [1,2,3] and median is 2.
```

**Example 2:**

```
Input: nums1 = [1,2], nums2 = [3,4]
Output: 2.50000
Explanation: merged array = [1,2,3,4] and median is (2 + 3) / 2 = 2.5.
```

**Example 3:**

```
Input: nums1 = [0,0], nums2 = [0,0]
Output: 0.00000
```

**Example 4:**

```
Input: nums1 = [], nums2 = [1]
Output: 1.00000
```

**Example 5:**

```
Input: nums1 = [2], nums2 = []
Output: 2.00000
```

**Constraints:**

- `nums1.length == m`
- `nums2.length == n`
- `0 <= m <= 1000`
- `0 <= n <= 1000`
- `1 <= m + n <= 2000`