

# 4. Median of Two Sorted Arrays

## Description

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  $(2 + 3) / 2 = 2.5$ .

### Constraints:

- `nums1.length == m`
- `nums2.length == n`
- $0 \leq m \leq 1000$
- $0 \leq n \leq 1000$
- $1 \leq m + n \leq 2000$
- $-10^6 \leq \text{nums1}[i], \text{nums2}[i] \leq 10^6$

