

004. Median of Two Sorted Arrays

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- Divide and conquer
- Binary Search

Description

There are two sorted arrays **nums1** and **nums2** of size **m** and **n** respectively.

Find the median of the two sorted arrays. The overall run time complexity should be $O(\log(m+n))$.

Example 1:

```
nums1 = [1, 3]
nums2 = [2]

The median is 2.0
```

Example 2:

```
nums1 = [1, 2]
nums2 = [3, 4]

The median is (2 + 3)/2 = 2.5
```

1. Thought Line

(1) The basic idea is to always compare the median of A and B and drop half of A or B elements based on the comparison results.

(2) About median

- When the length is odd, median is $\text{num}[\text{length}/2+1]$
- When the length is even, median is $(\text{num}[\text{length}/2+1] + \text{num}[\text{length}/2])/2$

2. Divide-and-Conquer

3. Binary Search