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 $\bf A$ and $\bf B$ and drop half of $\bf A$ or $\bf B$ elements based on the comparison results.

(2) About median

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

2. Divide-and-Conquer

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3. Binary Search

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