004. Median of Two Sorted Arrays

004 Median of Two Sorted Arrays

- **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 num[length/2+1]
- When the length is even, median is (num[length/2+1]+num[length/2])/2

2. Divide-and-Conquer

3. Binary Search