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 / Median Of Array

Median of Array

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Suggest Edit

There are two sorted arrays A and B of size m and n respectively.

Find the median of the two sorted arrays (The median of the array formed by merging both the arrays).

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

Sample Input

```
A : [1 4 5]
B : [2 3]
```

Sample Output

```
3
```

> **❝** *NOTE: IF the number of elements in the merged array is even, then the median is the average of n / 2 th and n/2 + 1th element.*
> *For example, if the array is [1 2 3 4], the median is (2 + 3) / 2.0 = 2.5* **❞**

See Expected Output

Seen this question in a real interview before   (Yes)   (No)   ✖

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Notes   All Notes (/profile/karandeep-singh_845/notes/?ref=problem-page)

02 : 58 : 52   Current Possible Score: 0   Max Score: 325 ℹ

monokai ▾   Medium ▾   Seek Help   ℹ ⦸ ⛶

C++17 (gcc-9.2)   ▾

```cpp
1  double Solution::findMedianSortedArrays(const vector<int> &A,
2      int n=A.size();
3      int m=B.size();
4      vector<int> c(n+m);
5      int k=0,i=0,j=0;
6       //merge(A.begin(), A.end(), B.begin(), B.end(), c.begin(
7
8      while(k<=(n+m)/2){
9
10         if(i>=n){
11             c[k++]=B[j++];
12         }
13         else if(j>=m){
14             c[k++]=A[i++];
15         }
16         else{
17             if(A[i]<B[j]){
18                 c[k++]=A[i++];
19             }
20             else {
21                 c[k++]=B[j++];
22             }
23         }
24     }
25
26     if((n+m)%2==0){
27         double median=(c[k-1]+c[k-2])/2.0;
28         return median;
29     }
30     else return c[k-1];
31
32
33
34
35
36  }
37
```

| Test with custom input | | Test | | Submit |

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Solution Approach (/courses/1/topics/4/problems/median-of-array/hints/387/)   🔓

Complete Solution (/courses/1/topics/4/problems/median-of-array/hints/388/)   🔓

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Problem Discussion	Solution Discussion

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In an actual interview, are we expected to solve this problem in 45 mins?   1

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Cant i merge the two arrays in a sorted manner and return the median?   1

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Why the exptected out is 1.0 when two array are [0 1 2 3] and [0 1]?   1

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Debug statements act weirdly here. Just a single printf() statement is executed m   0

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What if array A = [1 2 4 5] and B = [2 3] , then result array should be [1 2 3 4   1

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What would the median be if the combined array has an even number of elements?   3

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