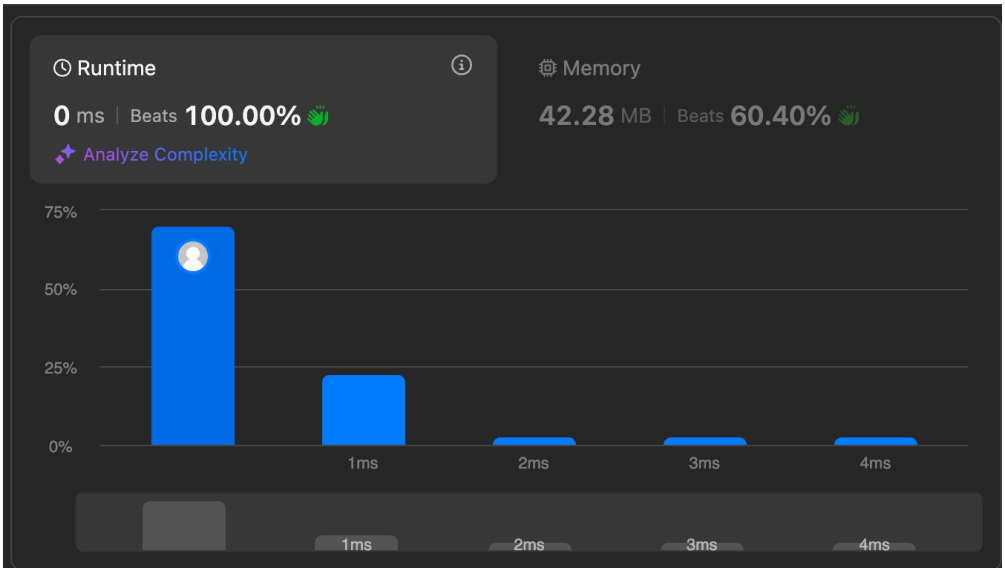
1. **Merge Sorted Array:**

```
import java.util.Arrays;

class Solution {
    public void merge(int[] nums1, int m, int[] nums2, int n) {
        int i = m - 1;
        int j = n - 1;
        int k = m + n - 1;
        while (i >= 0 && j >= 0) {
            if (nums1[i] > nums2[j]) {
                nums1[k--] = nums1[i--];
            } else {
                nums1[k--] = nums2[j--];
            }
        }

        while (j >= 0) {
            nums1[k--] = nums2[j--];
        }
    }
}
```



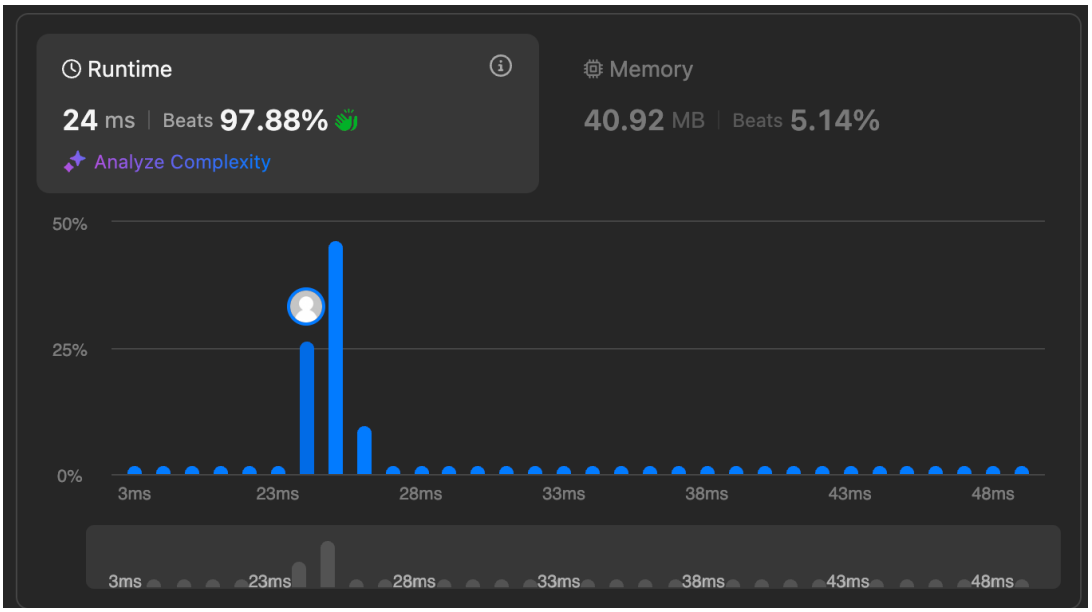
2. **First Bad Version:**

```
public class Solution extends VersionControl {
    public int firstBadVersion(int n) {
        int left = 1, right = n;
```

```
        while (left < right) {
            int mid = left + (right - left) / 2;

            if (isBadVersion(mid)) {
                right = mid;
            } else {
                left = mid + 1;
            }
        }

        return left;
    }
}
```



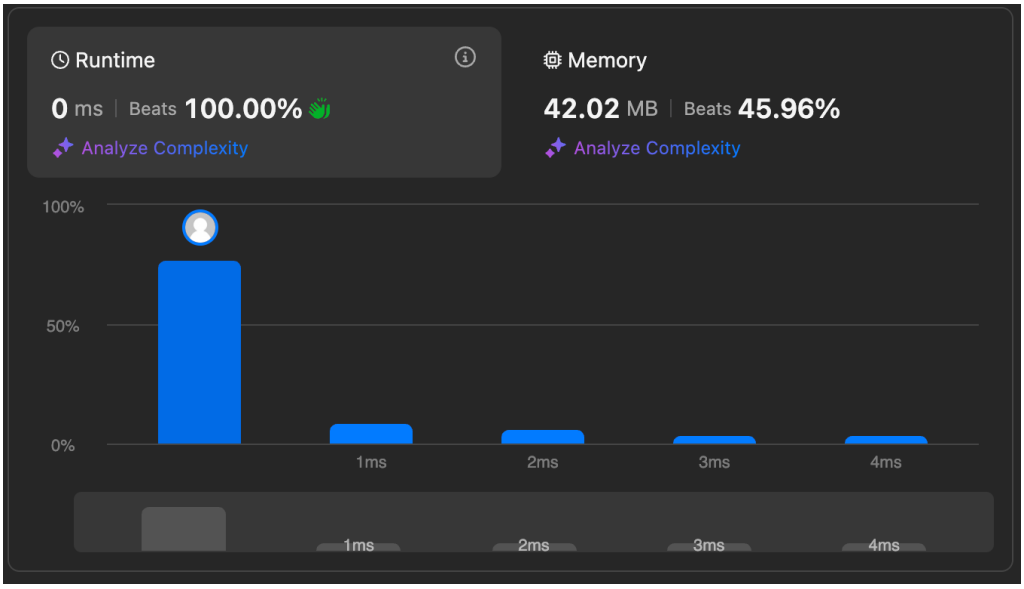
3. **Sort Colors:**

```
class Solution {
    public void sortColors(int[] nums) {
        int low = 0, mid = 0, high = nums.length - 1;

        while (mid <= high) {
            if (nums[mid] == 0) {
                swap(nums, low, mid);
                low++;
                mid++;
            } else if (nums[mid] == 1) {
                mid++;
            } else {
                swap(nums, mid, high);
                high--;
            }
```

```
        }
    }

    private void swap(int[] nums, int i, int j) {
        int temp = nums[i];
        nums[i] = nums[j];
        nums[j] = temp;
    }
}
```



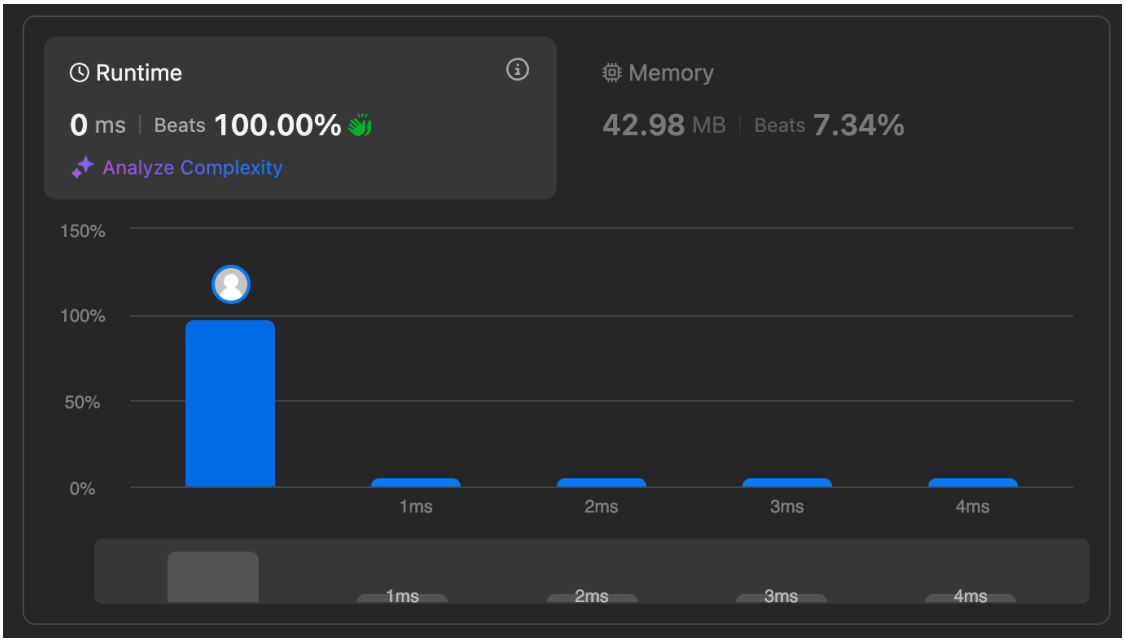
4. **Find Peak Element:**

```
class Solution {
    public int findPeakElement(int[] nums) {
        int left = 0, right = nums.length - 1;

        while (left < right) {
            int mid = left + (right - left) / 2;

            if (nums[mid] > nums[mid + 1]) {
                right = mid;
            } else {
                left = mid + 1;
            }
        }

        return left;
    }
}
```



5. **Median of Two Sorted Arrays:**

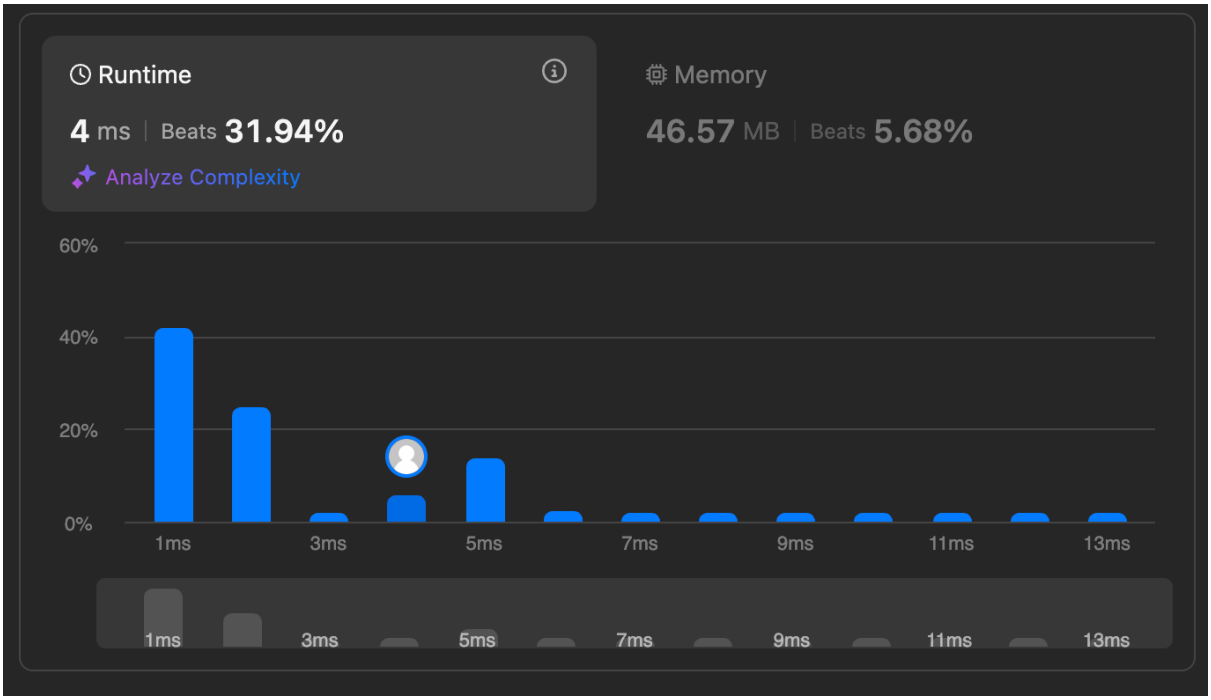
```
import java.util.Arrays;

class Solution {
    public double findMedianSortedArrays(int[] nums1, int[] nums2) {
        int m = nums1.length;
        int n = nums2.length;
        int[] result = new int[m + n];

        System.arraycopy(nums1, 0, result, 0, m);
        System.arraycopy(nums2, 0, result, m, n);

        Arrays.sort(result);

        int mid = result.length;
        if (mid % 2 == 0) {
            return ((double)result[mid / 2 - 1] + result[mid / 2]) / 2;
        } else {
            return result[mid / 2];
        }
    }
}
```


Runtime
4 ms | Beats 31.94%
Analyze Complexity
Memory
46.57 MB | Beats 5.68%
60%
40%
20%
0%
1ms
3ms
5ms
7ms
9ms
11ms
13ms
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