Experiment 4

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Semester: 6th **Date of Performance:20/2/25**
Subject Name: Advanced Programming - 2 **Subject Code: 22CSH-351**

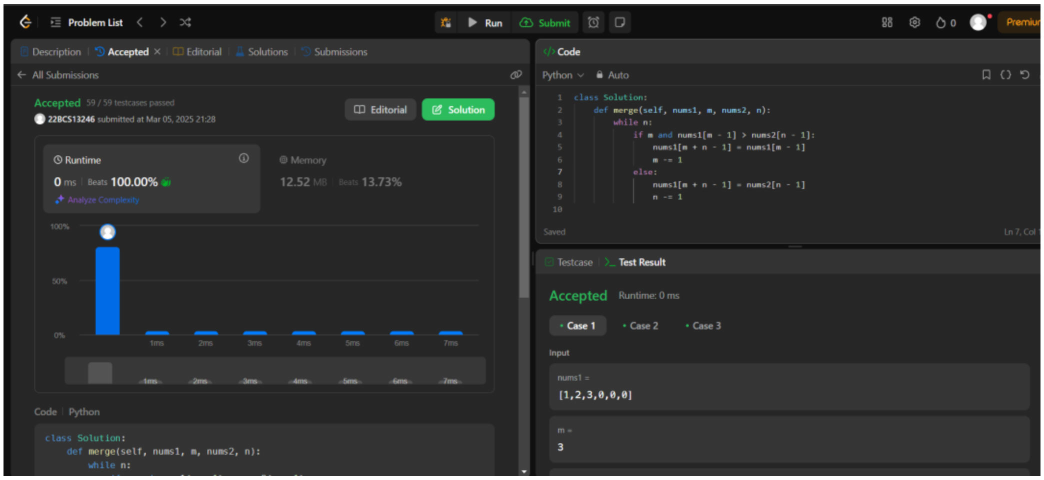
Ques 1:

Aim: Merge Sorted Array

Code:

```
class Solution:
    def merge(self, nums1, m, nums2, n):
        while n:
            if m and nums1[m - 1] > nums2[n - 1]:
                nums1[m + n - 1] = nums1[m - 1]
                m -= 1
            else:
                nums1[m + n - 1] = nums2[n - 1]
                n -= 1
```

Submission Screenshot:



Accepted 59 / 59 testcases passed
22BCS13246 submitted at Mar 05, 2025 21:28

Runtime
0 ms | Beats 100.00%

Memory
12.52 MB | Beats 13.73%

```
class Solution:
    def merge(self, nums1, m, nums2, n):
        while n:
            if m and nums1[m - 1] > nums2[n - 1]:
                nums1[m + n - 1] = nums1[m - 1]
                m -= 1
            else:
                nums1[m + n - 1] = nums2[n - 1]
                n -= 1
```

Accepted Runtime: 0 ms

Input

nums1 =
[1,2,3,0,0,0]

m =
3

Submission Link:

https://leetcode.com/problems/merge-sorted-array/submissions/1563911658/

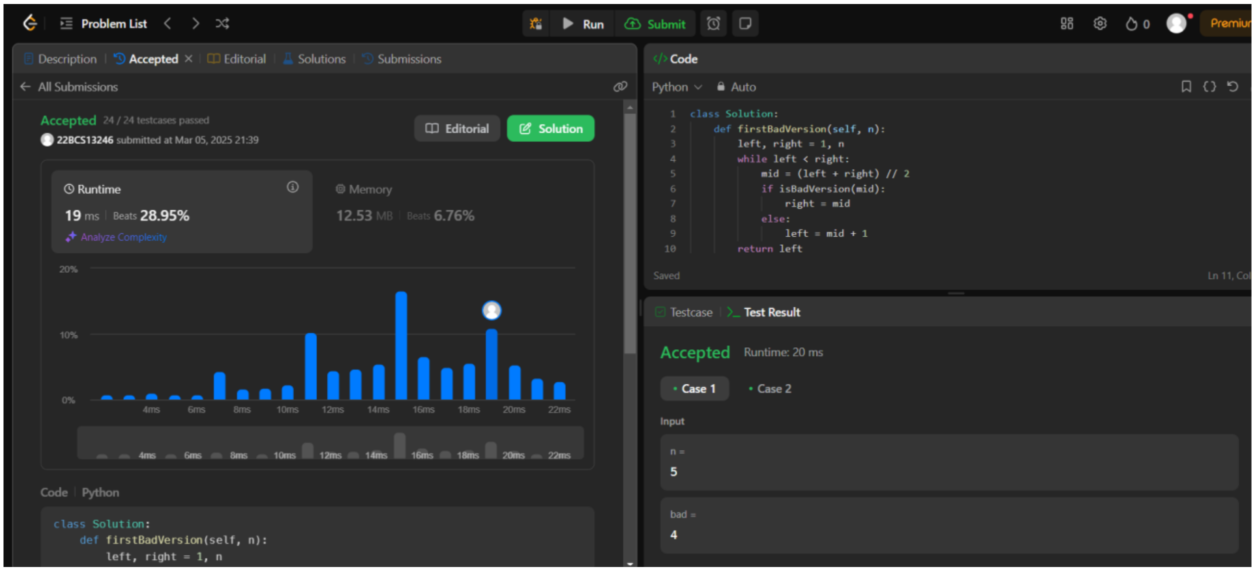
Ques 2:

Aim: First Bad Version

Code:

```
class Solution:
    def firstBadVersion(self, n):
        left, right = 1, n
        while left < right:
            mid = (left + right) // 2
            if isBadVersion(mid):
                right = mid
            else:
                left = mid + 1
        return left
```

Submission Screenshot:



Accepted 24 / 24 testcases passed
22BCS13246 submitted at Mar 05, 2025 21:39

Runtime
19 ms | Beats 28.95%

Memory
12.53 MB | Beats 6.76%

Code | Python

```
class Solution:
    def firstBadVersion(self, n):
        left, right = 1, n
```

```
class Solution:
    def firstBadVersion(self, n):
        left, right = 1, n
        while left < right:
            mid = (left + right) // 2
            if isBadVersion(mid):
                right = mid
            else:
                left = mid + 1
        return left
```

Saved
Ln 11, Col

Testcase | Test Result

Accepted Runtime: 20 ms

Case 1 Case 2

Input

n =
5

bad =
4

Submission Link:

https://leetcode.com/problems/first-bad-version/submissions/1563914056/

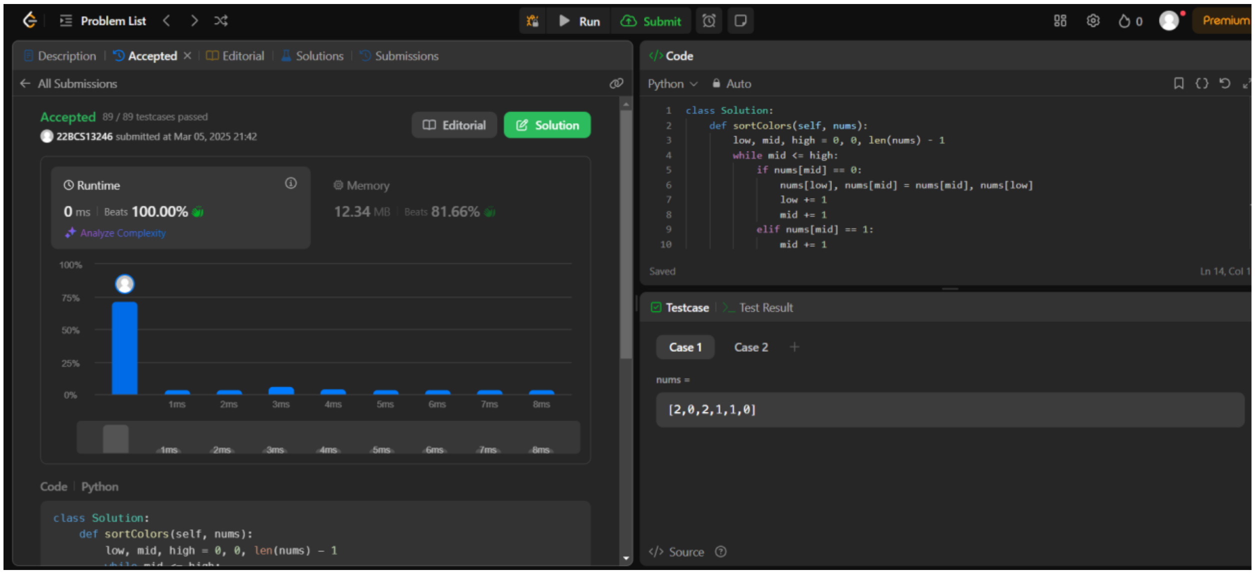
Ques 3:

Aim: Sort Colors

Code:

```
class Solution:
    def sortColors(self, nums):
        low, mid, high = 0, 0, len(nums) - 1
        while mid <= high:
            if nums[mid] == 0:
                nums[low], nums[mid] = nums[mid], nums[low]
                low += 1
                mid += 1
            elif nums[mid] == 1:
                mid += 1
            else:
                nums[mid], nums[high] = nums[high], nums[mid]
                high -= 1
```

Submission Screenshot:



Accepted 89 / 89 testcases passed

22BCS13246 submitted at Mar 05, 2025 21:42

Runtime

0 ms | Beats 100.00%

Memory

12.34 MB | Beats 81.66%

Code | Python

```
class Solution:
    def sortColors(self, nums):
        low, mid, high = 0, 0, len(nums) - 1
```

```
class Solution:
    def sortColors(self, nums):
        low, mid, high = 0, 0, len(nums) - 1
        while mid <= high:
            if nums[mid] == 0:
                nums[low], nums[mid] = nums[mid], nums[low]
                low += 1
                mid += 1
            elif nums[mid] == 1:
                mid += 1
```

Saved

Ln 14, Col 1

nums =

```
[2,0,2,1,1,0]
```

Submission Link:

https://leetcode.com/problems/sort-colors/submissions/1563916924/