Experiment - 5

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Semester: 6th
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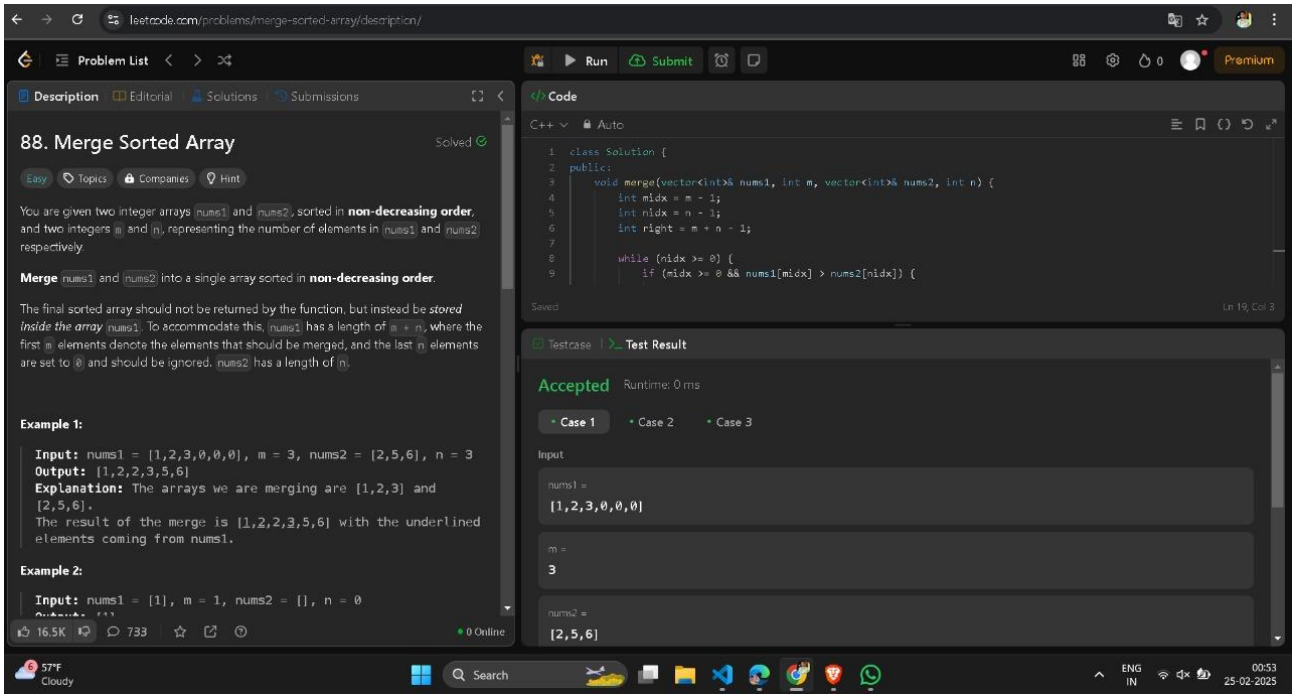
Subject Name: AP LAB-II
Subject Code: 22CSP-351

Problem 5.1: Merge Sorted Array.

1. Output:

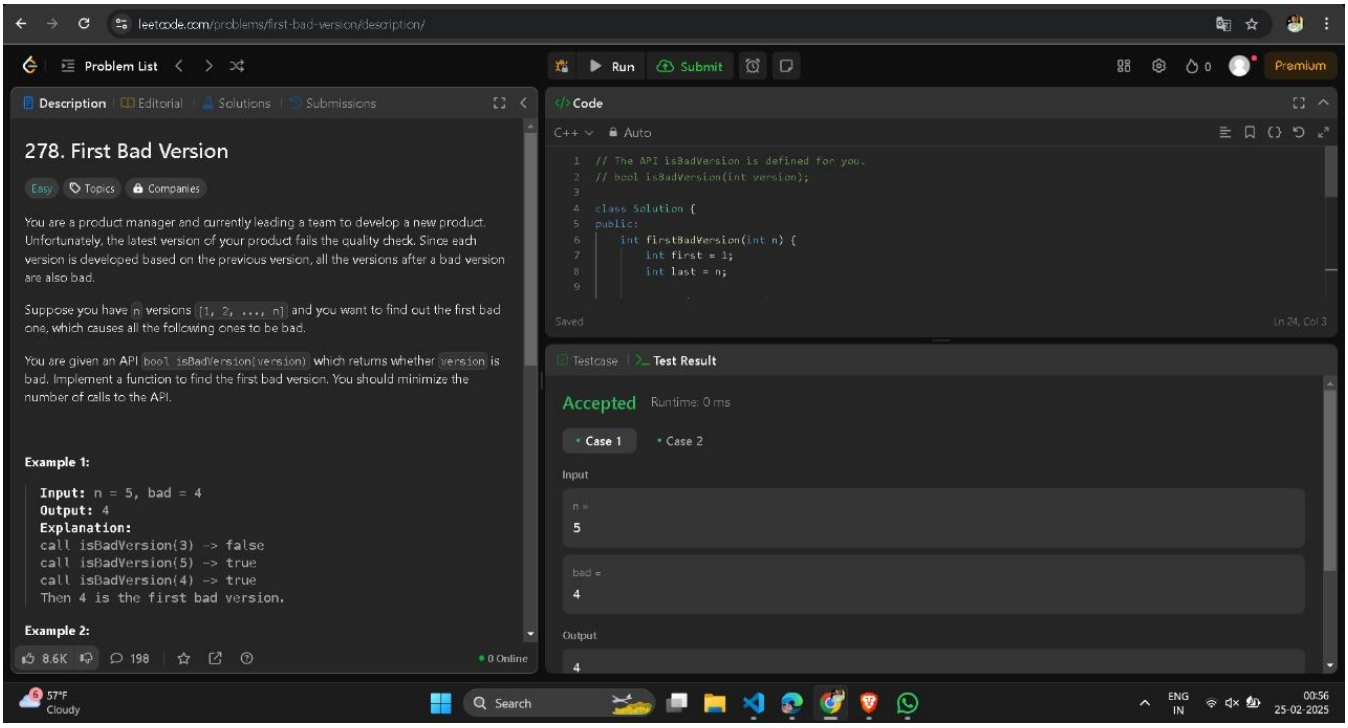


2. Learning outcomes:

1. Understanding the Two-Pointer Technique
2. Mastering In-Place Merging
3. Time Complexity Analysis
4. Handling Edge Cases

Problem 5.2: First Bad Version

1. Output:

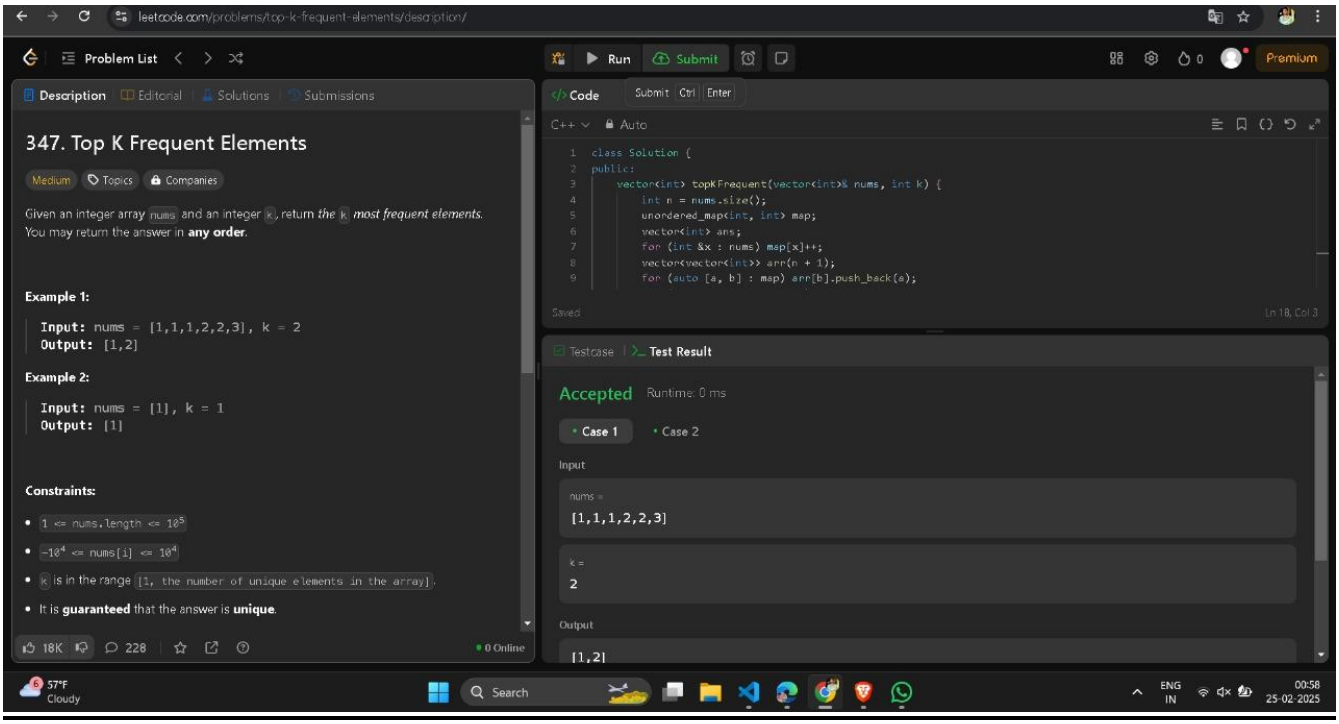


2. Learning Outcomes:

- Understanding Binary Search
- Reducing Time Complexity.
- Working with a Monotonic Condition.
- Implementing a Search with a Condition

Problem 5.3: Top K frequent elements

1. Output:

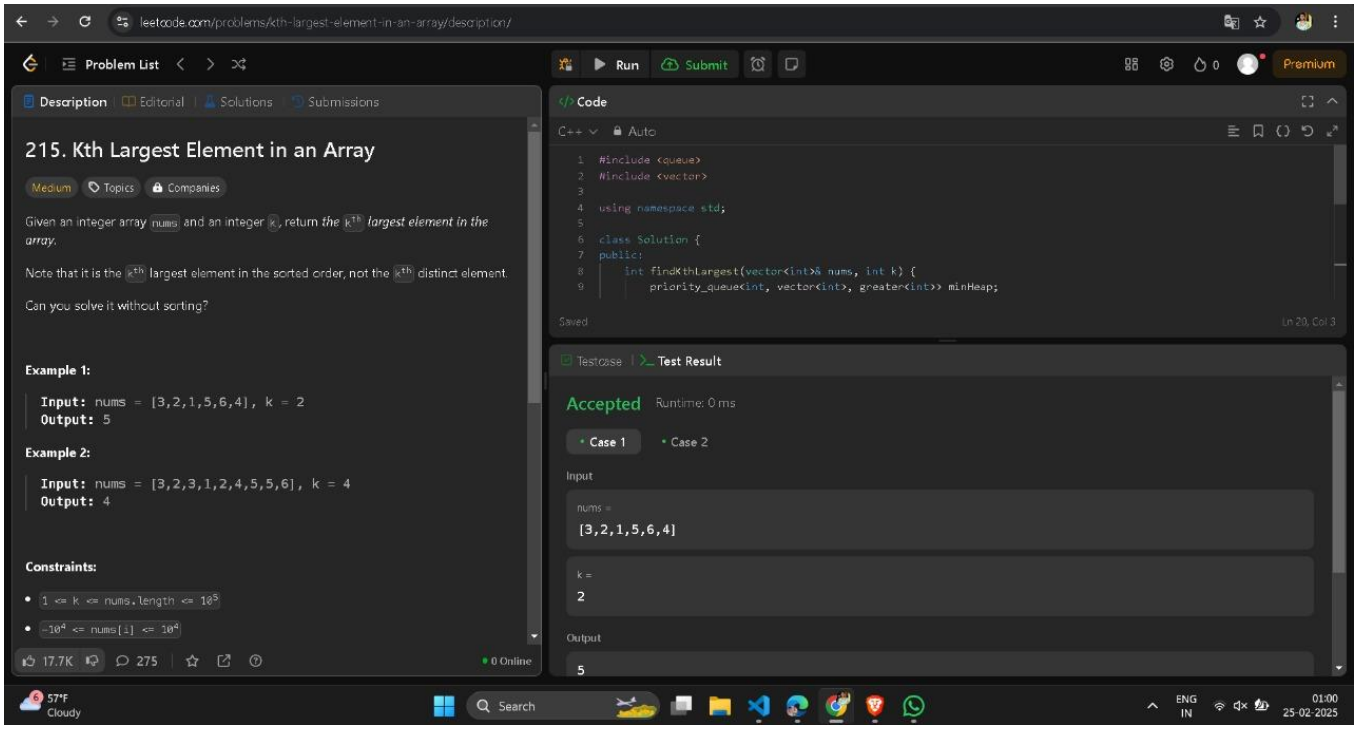


2. Learning Outcomes:

- Understanding Frequency Counting (Hash Maps)
- Priority Queues (Heaps)
- Sorting and Bucket Sort.
- QuickSelect Algorithm (Partitioning)

Problem 5.4: Kth Largest element in an array

1. Output:

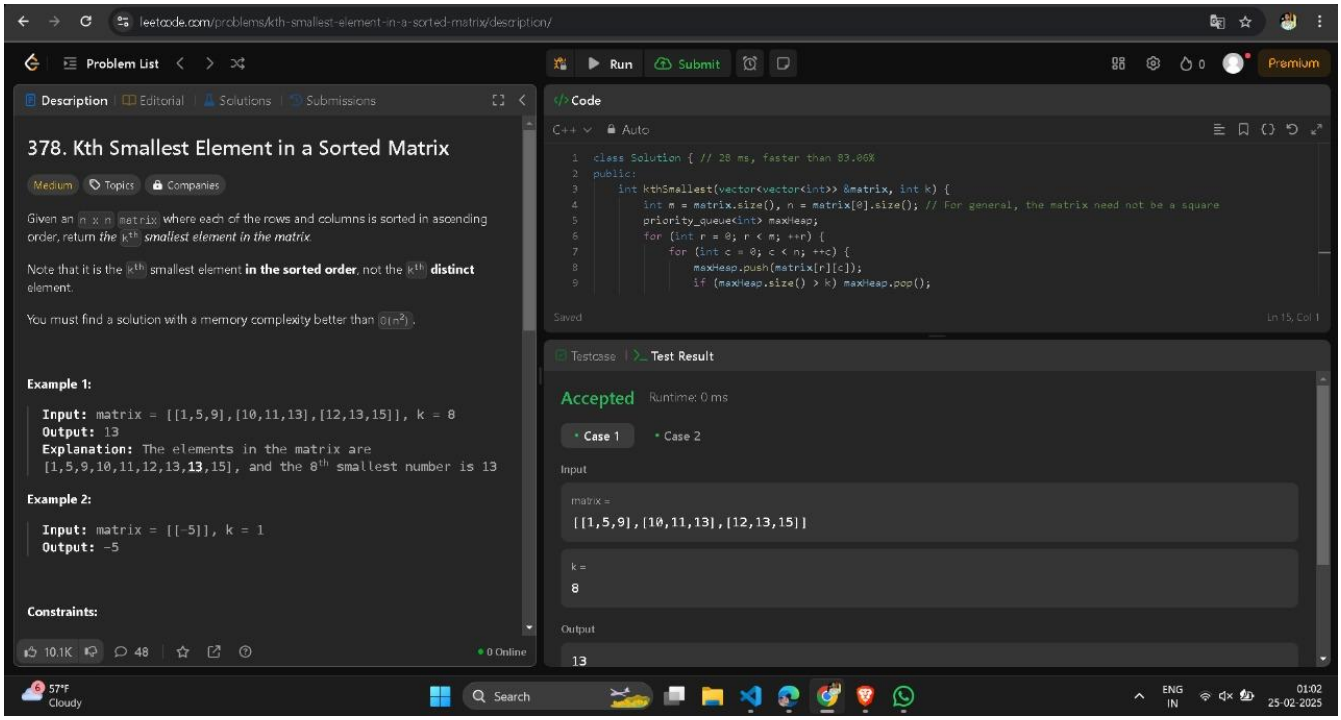


2. Learning Outcomes:

- Understanding Sorting and Its Complexity.
- Learning Efficient Selection Algorithms
- Working with Different Data Structures.
- Trade-offs Between Time and Space Complexity.

Problem 5.5: Kth smallest element in a sorted matrix

1. Output:



2. Learning Outcomes:

- Binary Search on Answer (Matrix Search Space)
- Heap (Priority Queue) Approach
- Matrix Traversal & Counting
- Time Complexity Trade-offs