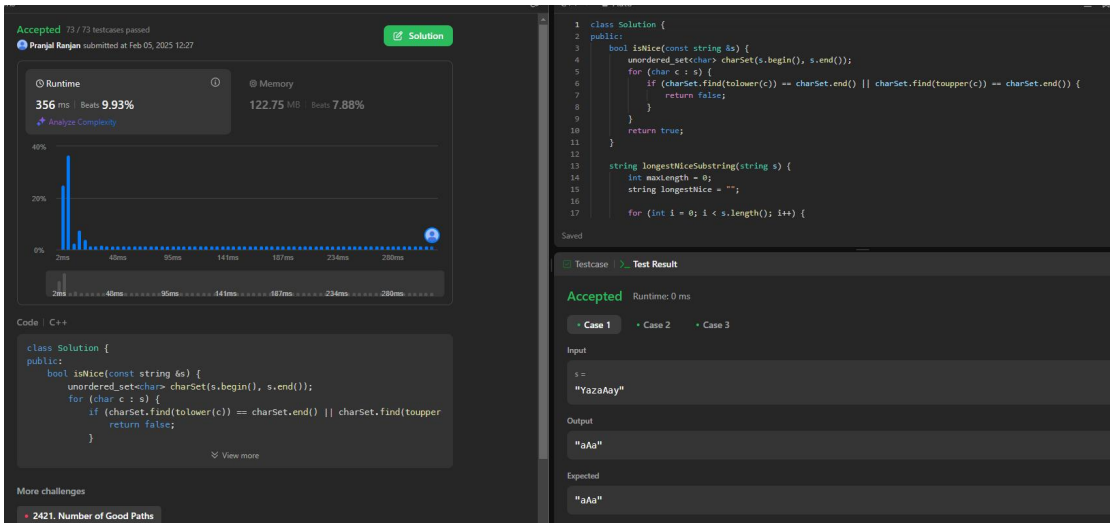
LEETCODE PROFILE - https://leetcode.com/u/pranjalranjan899/

1763. Longest Nice Substring

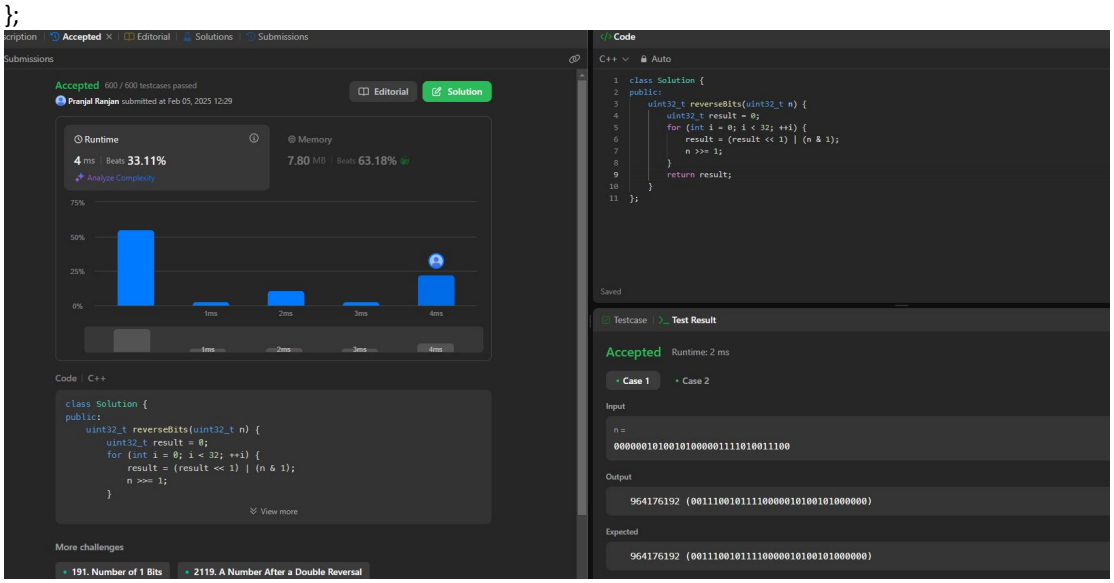
```
class Solution {
public:
bool isNice(const string &s) {
unordered_set<char> charSet(s.begin(), s.end());
for (char c : s) {
if (charSet.find(tolower(c)) == charSet.end() || charSet.find(toupper(c)) == charSet.end()) {
return false;
}
}
return true;
}

string longestNiceSubstring(string s) {
int maxLength = 0;
string longestNice = "";

for (int i = 0; i < s.length(); i++) {
for (int j = i + 1; j <= s.length(); j++) {
string substring = s.substr(i, j - i);
if (isNice(substring) && substring.length() > maxLength) {
maxLength = substring.length();
longestNice = substring;
}
}
}
return longestNice;
}
};
```



190. Reverse Bits

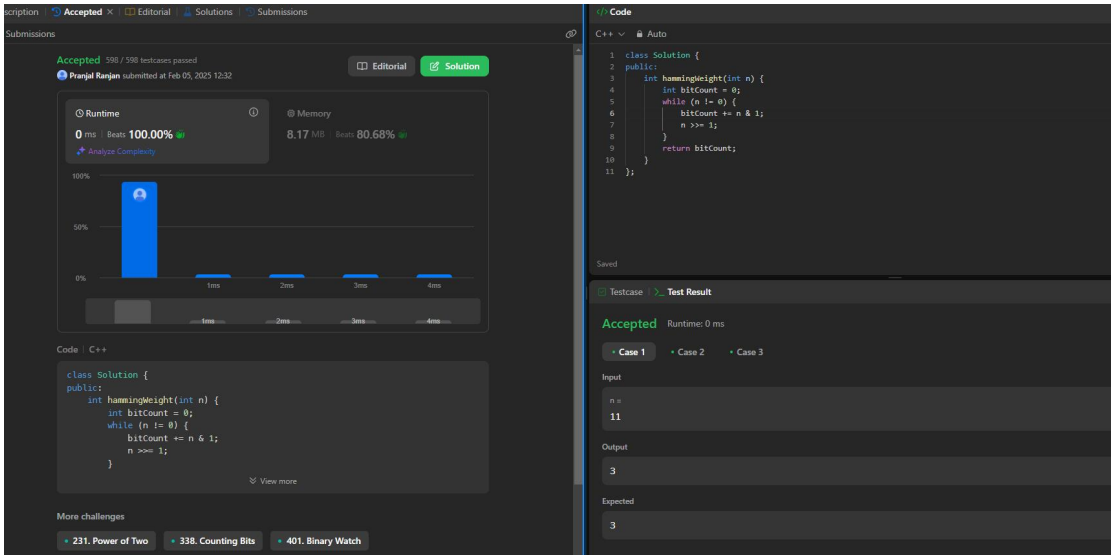
```
class Solution {
```

```
public:
uint32_t reverseBits(uint32_t n) {
uint32_t result = 0;
for (int i = 0; i < 32; ++i) {
result = (result << 1) | (n & 1);
n >>= 1;
}
return result;
}
};
```



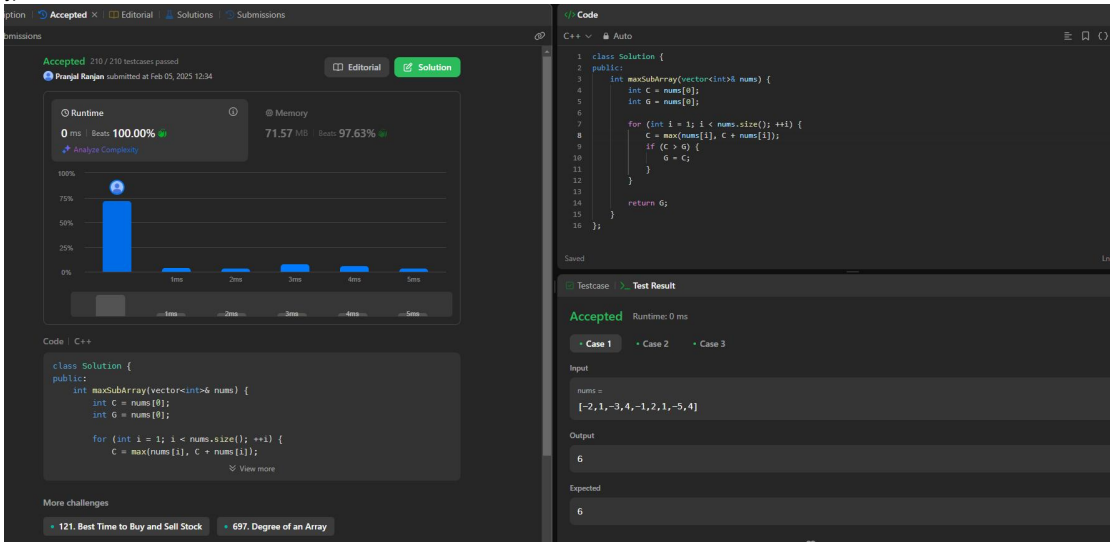
191. Number of 1 Bits

```
class Solution {
public:
int hammingWeight(int n) {
int bitCount = 0;
while (n != 0) {
bitCount += n & 1;
n >>= 1;
}
return bitCount;
}
};
```



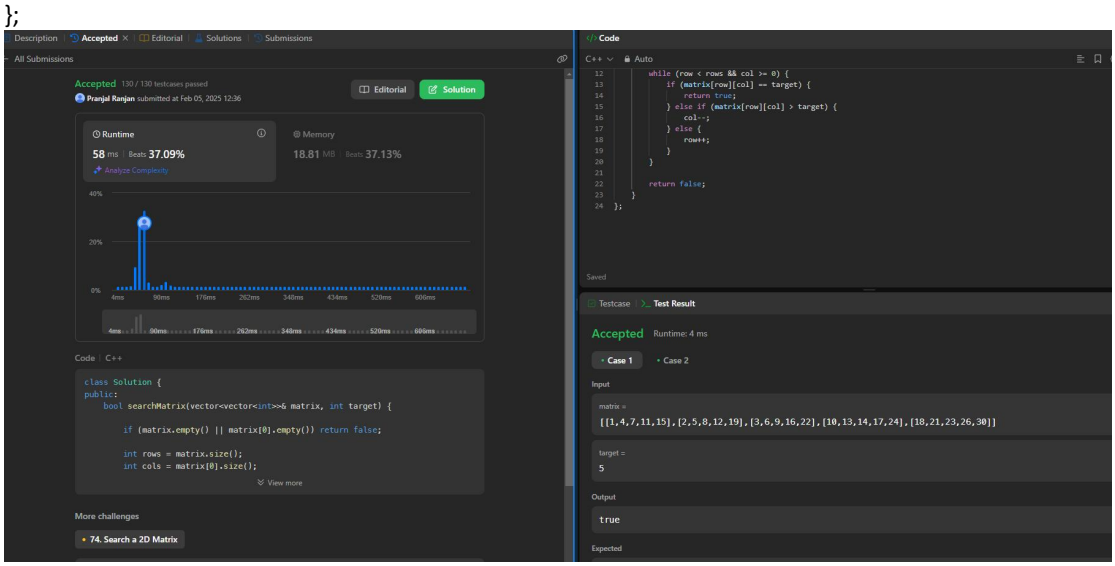
53. Maximum Subarray

```
class Solution {
public:
int maxSubArray(vector<int>& nums) {
int C = nums[0];
int G = nums[0];

for (int i = 1; i < nums.size(); ++i) {
C = max(nums[i], C + nums[i]);
if (C > G) {
G = C;
}
}

return G;
}
};
```



240. Search a 2D Matrix II

```
class Solution {
public:
bool searchMatrix(vector<vector<int>>& matrix, int target) {

if (matrix.empty() || matrix[0].empty()) return false;

int rows = matrix.size();
int cols = matrix[0].size();
int row = 0;
int col = cols - 1;

while (row < rows && col >= 0) {
if (matrix[row][col] == target) {
return true;
} else if (matrix[row][col] > target) {
col--;
} else {
row++;
}
}

return false;
}
};
```



932. Beautiful Array

```
class Solution {
public:
vector<int> beautifulArray(int n) {
vector<int> result = {1};

while (result.size() < n) {
vector<int> temp;
for (int num : result) {
if (num * 2 - 1 <= n) temp.push_back(num * 2 - 1);
}
for (int num : result) {
if (num * 2 <= n) temp.push_back(num * 2);
}
```

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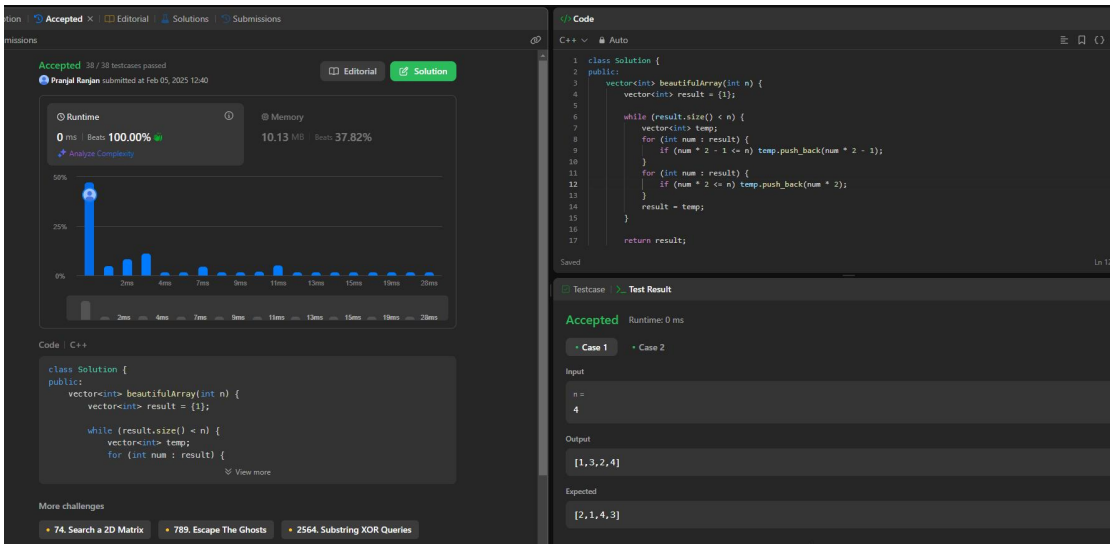
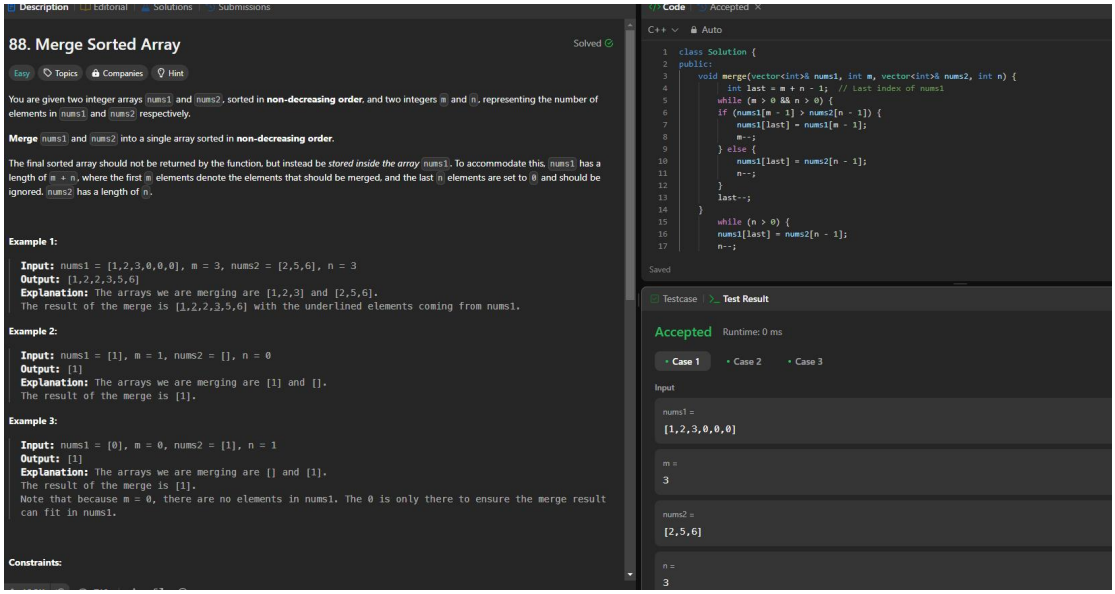
```
result = temp;
}

return result;
}
};
```



88. Merge Sorted Array

```
class Solution {
public:
void merge(vector<int>& nums1, int m, vector<int>& nums2, int n) {
int last = m + n - 1;  // Last index of nums1
while (m > 0 && n > 0) {
if (nums1[m - 1] > nums2[n - 1]) {
nums1[last] = nums1[m - 1];
m--;
} else {
nums1[last] = nums2[n - 1];
n--;
}
last--;
}
while (n > 0) {
nums1[last] = nums2[n - 1];
n--;
last--;
}}
};
```



278. First Bad Version

```
// The API isBadVersion is defined for you.
// bool isBadVersion(int version);

class Solution {
public:
int firstBadVersion(int n) {
int left = 1;
int right = n;

while (left < right) {
int mid = left + (right - left) / 2;
if (isBadVersion(mid)) {
right = mid;
} else {
left = mid + 1;
}
}

return left;
}
};
```

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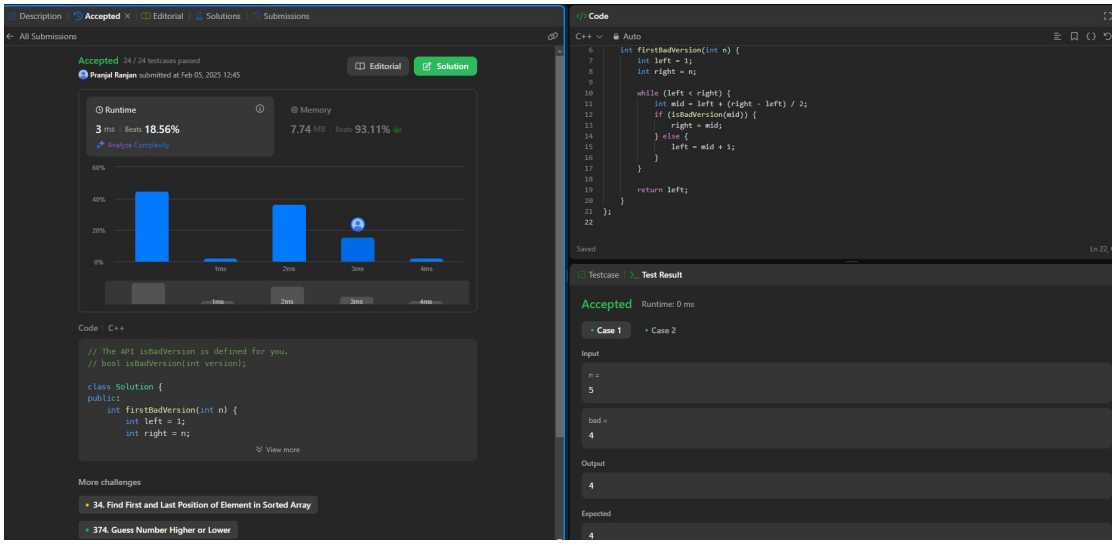
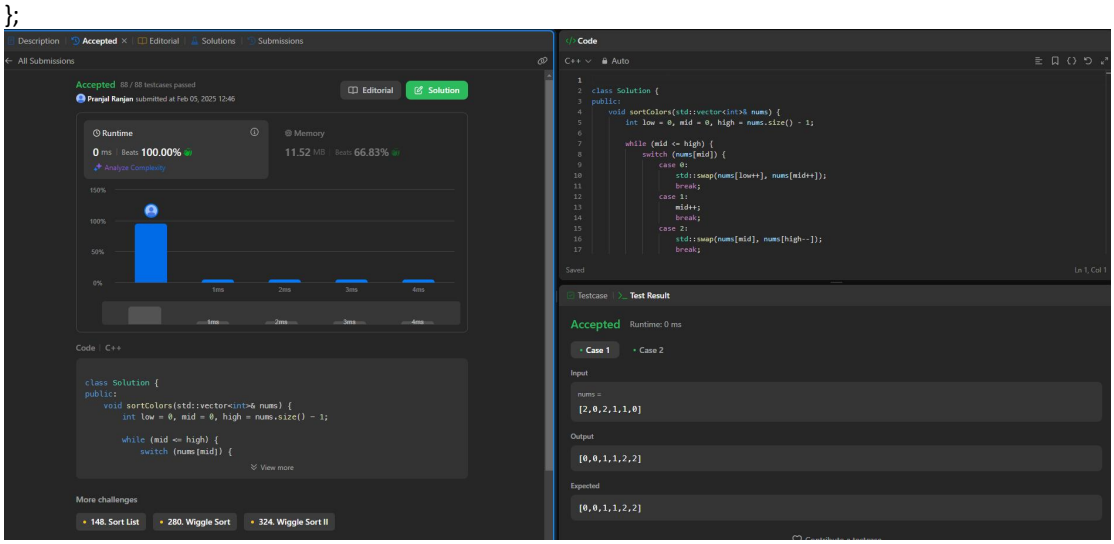


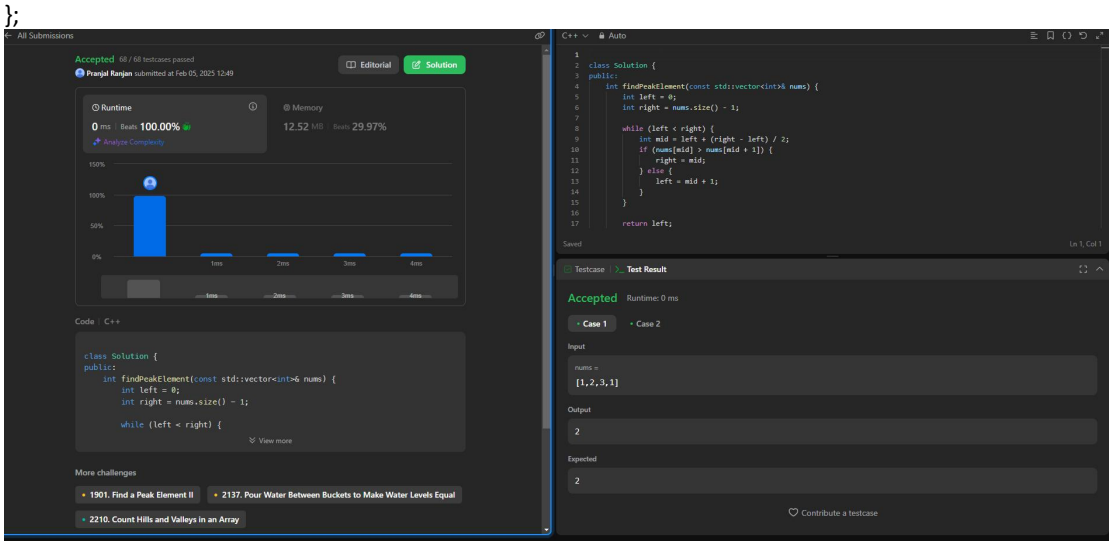
75. Sort Colors

```
class Solution {
public:
void sortColors(vector<int>& nums) {
int low = 0, mid = 0, high = nums.size() - 1;

while (mid <= high) {
switch (nums[mid]) {
case 0:
std::swap(nums[low++], nums[mid++]);
break;
case 1:
mid++;
break;
case 2:
std::swap(nums[mid], nums[high--]);
break;
}
}
}
};
```



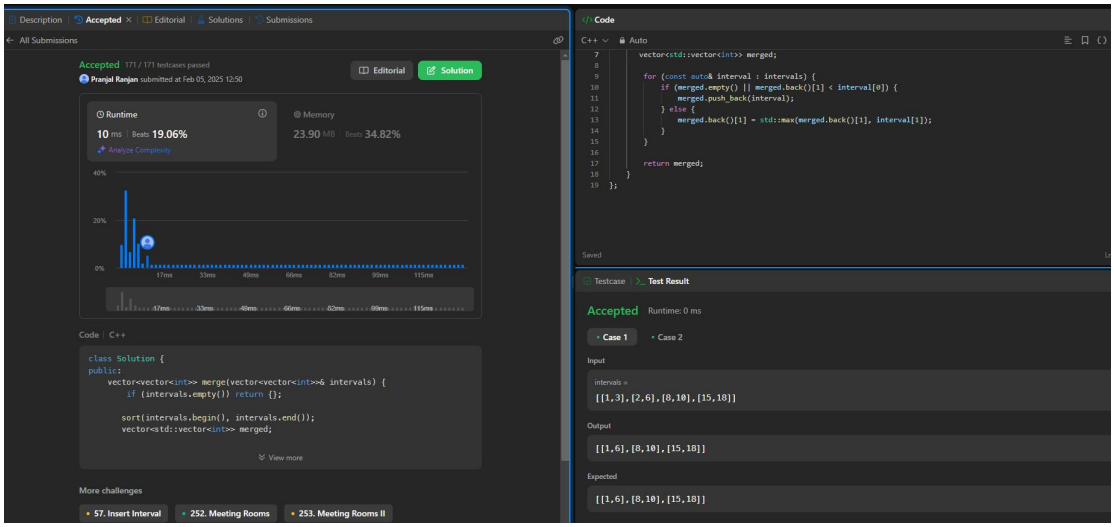
162. Find Peak Element

```
class Solution {
public:
int findPeakElement(const std::vector<int>& nums) {
int left = 0;
int right = nums.size() - 1;

while (left < right) {
int mid = left + (right - left) / 2;
if (nums[mid] > nums[mid + 1]) {
right = mid;
} else {
left = mid + 1;
}
}

return left;
}
};
```



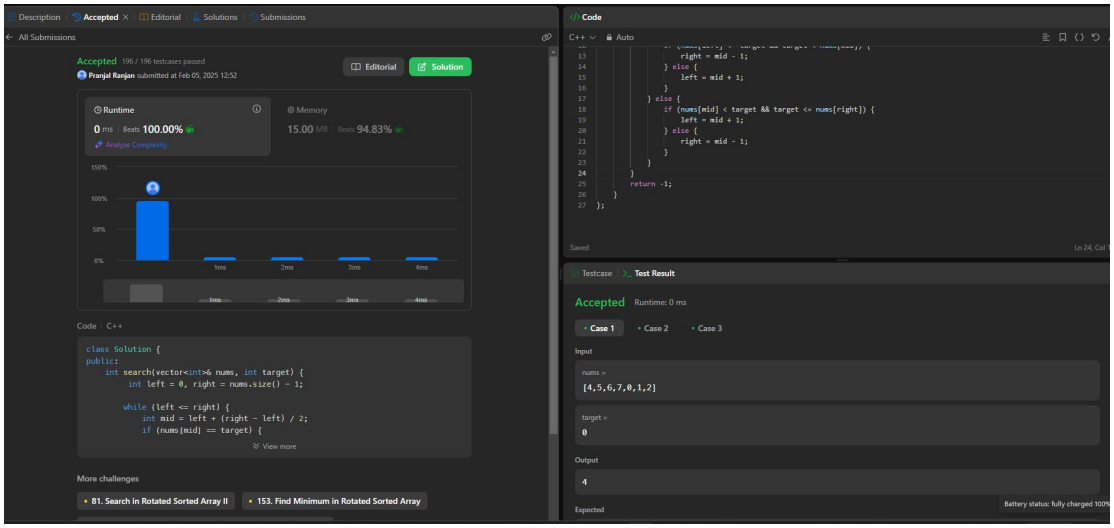
56. Merge Intervals

```
class Solution {
public:
vector<vector<int>> merge(vector<vector<int>>& intervals) {
if (intervals.empty()) return {};

sort(intervals.begin(), intervals.end());
vector<std::vector<int>> merged;

for (const auto& interval : intervals) {
if (merged.empty() || merged.back()[1] < interval[0]) {
merged.push_back(interval);
} else {
merged.back()[1] = std::max(merged.back()[1], interval[1]);
}
}

return merged;
}
};
```



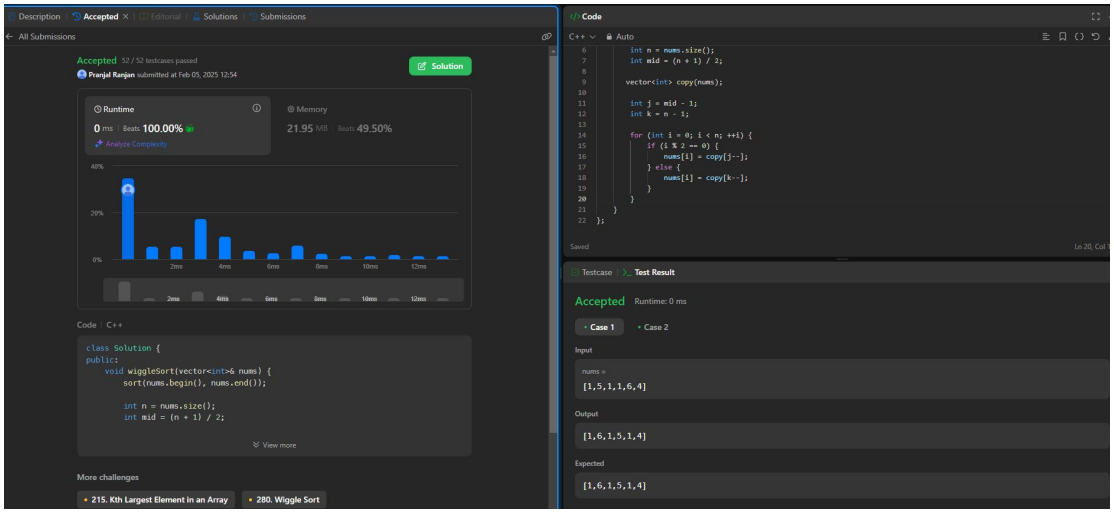
33. Search in Rotated Sorted Array

```
class Solution {
public:
int search(vector<int>& nums, int target) {
int left = 0, right = nums.size() - 1;

while (left <= right) {
int mid = left + (right - left) / 2;
if (nums[mid] == target) {
return mid;
}
if (nums[left] <= nums[mid]) {
if (nums[left] <= target && target < nums[mid]) {
right = mid - 1;
} else {
left = mid + 1;
}
} else {
if (nums[mid] < target && target <= nums[right]) {
left = mid + 1;
} else {
right = mid - 1;
}
}
}
return -1;
}
};
```



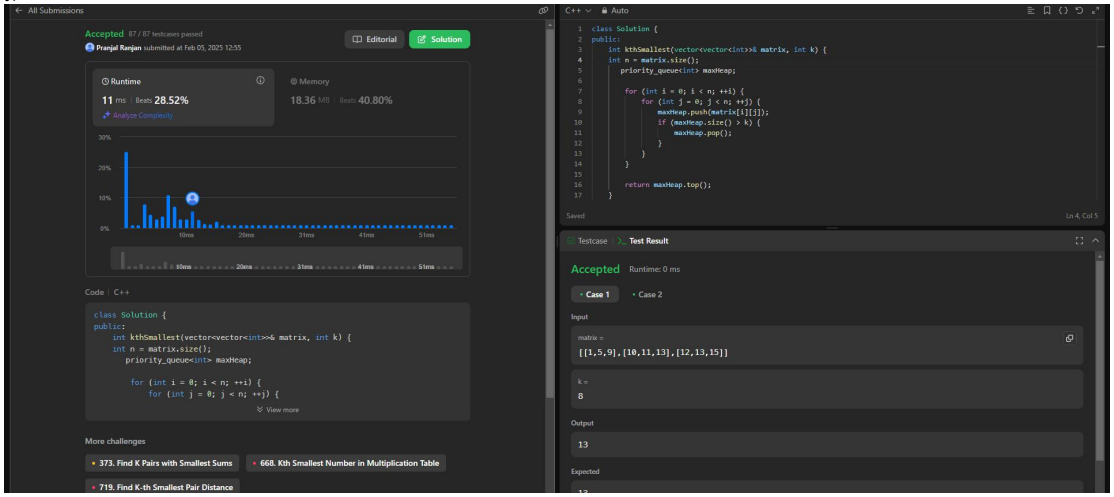
240. Search a 2D Matrix II

```
class Solution {
public:
bool searchMatrix(vector<vector<int>>& matrix, int target) {

if (matrix.empty() || matrix[0].empty()) return false;

int rows = matrix.size();
int cols = matrix[0].size();
int row = 0;
int col = cols - 1;

while (row < rows && col >= 0) {
if (matrix[row][col] == target) {
return true;
} else if (matrix[row][col] > target) {
col--;
} else {
row++;
}
}

return false;
}
};
```



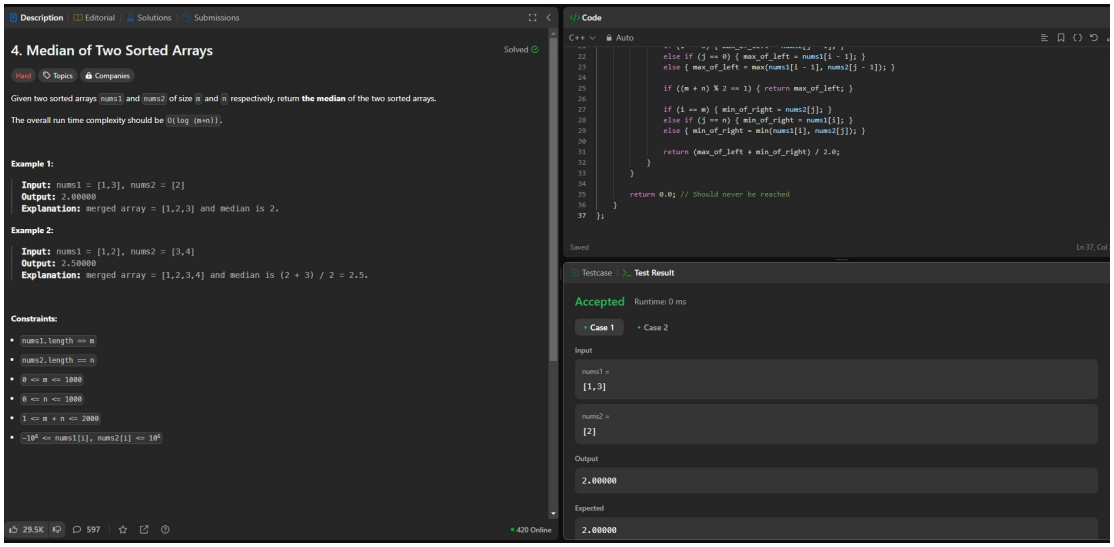
324. Wiggle Sort II

```
class Solution {
public:
void wiggleSort(vector<int>& nums) {
sort(nums.begin(), nums.end());

int n = nums.size();
int mid = (n + 1) / 2;

vector<int> copy(nums);

int j = mid - 1;
int k = n - 1;

for (int i = 0; i < n; ++i) {
if (i % 2 == 0) {
nums[i] = copy[j--];
} else {
nums[i] = copy[k--];
}
}
}
};
```



4. Median of Two Sorted Arrays

```
class Solution {
public:
double findMedianSortedArrays(vector<int>& nums1, vector<int>& nums2) {
if (nums1.size() > nums2.size()) {
return findMedianSortedArrays(nums2, nums1); // Ensure nums1 is the smaller array
}

int m = nums1.size();
int n = nums2.size();
int imin = 0, imax = m, half_len = (m + n + 1) / 2;
double max_of_left, min_of_right;

while (imin <= imax) {
int i = (imin + imax) / 2;
int j = half_len - i;
if (i < m && nums2[j - 1] > nums1[i]) {
imin = i + 1; // i is too small
} else if (i > 0 && nums1[i - 1] > nums2[j]) {
imax = i - 1; // i is too large
} else { // i is perfect
if (i == 0) { max_of_left = nums2[j - 1]; }
else if (j == 0) { max_of_left = nums1[i - 1]; }
else { max_of_left = max(nums1[i - 1], nums2[j - 1]); }

if ((m + n) % 2 == 1) { return max_of_left; }

if (i == m) { min_of_right = nums2[j]; }
else if (j == n) { min_of_right = nums1[i]; }
else { min_of_right = min(nums1[i], nums2[j]); }

return (max_of_left + min_of_right) / 2.0;
}
}

return 0.0; // Should never be reached
}
};
```



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