Assignment 4

Advanced Programming Lab – II

Submitted By – Ratnesh Tiwari

UID – 22BCS17201

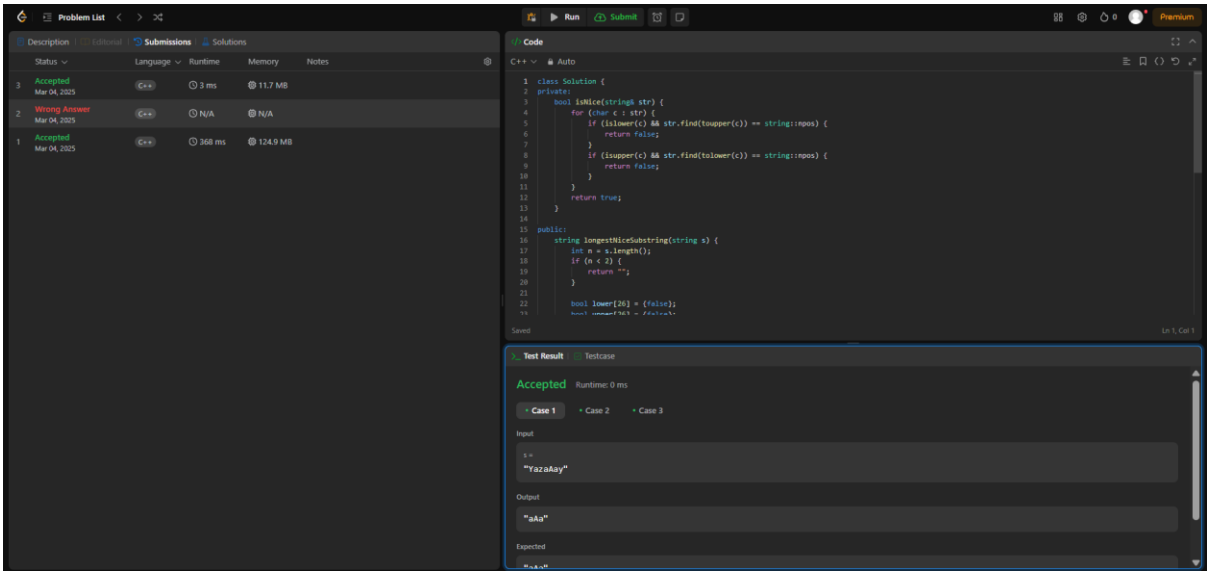
Section – 22BCS_IOT – 609

Submitted To – Pratima Sonali Horo (E18304)

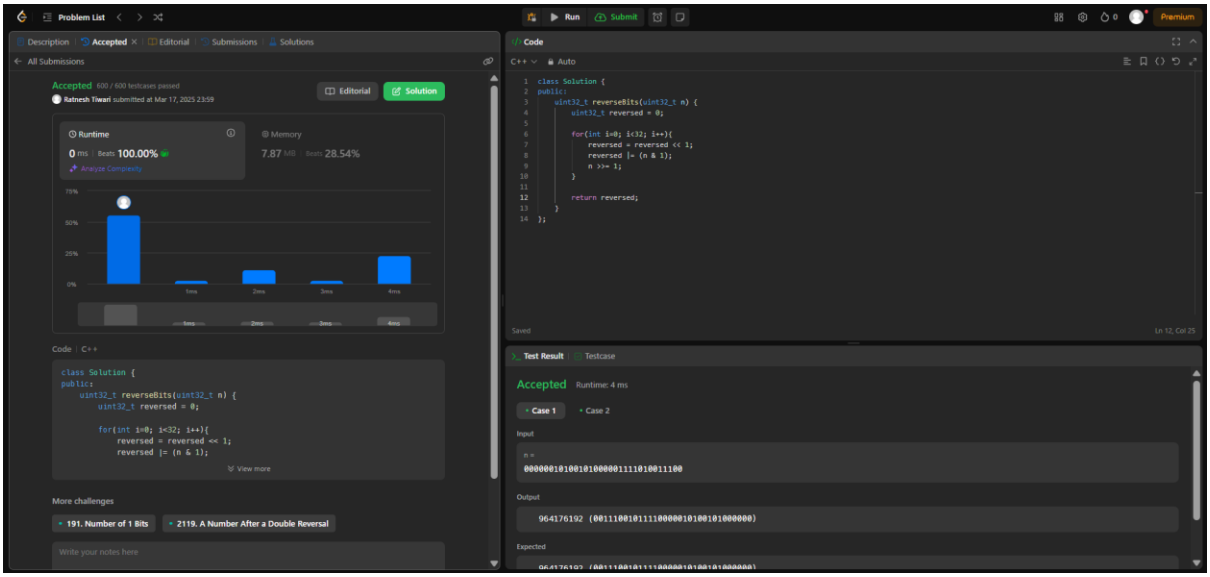
1. Longest Nice Substring: https://leetcode.com/problems/longest-nice-substring/description/

```
class Solution {
private:
    bool isNice(string& str) {
        for (char c : str) {
            if (islower(c) && str.find(toupper(c)) == string::npos) {
                return false;
            }
            if (isupper(c) && str.find(tolower(c)) == string::npos) {
                return false;
            }
        }
        return true;
    }

public:
    string longestNiceSubstring(string s) {
        int n = s.length();
        if (n < 2) {
            return "";
        }

        bool lower[26] = {false};
```

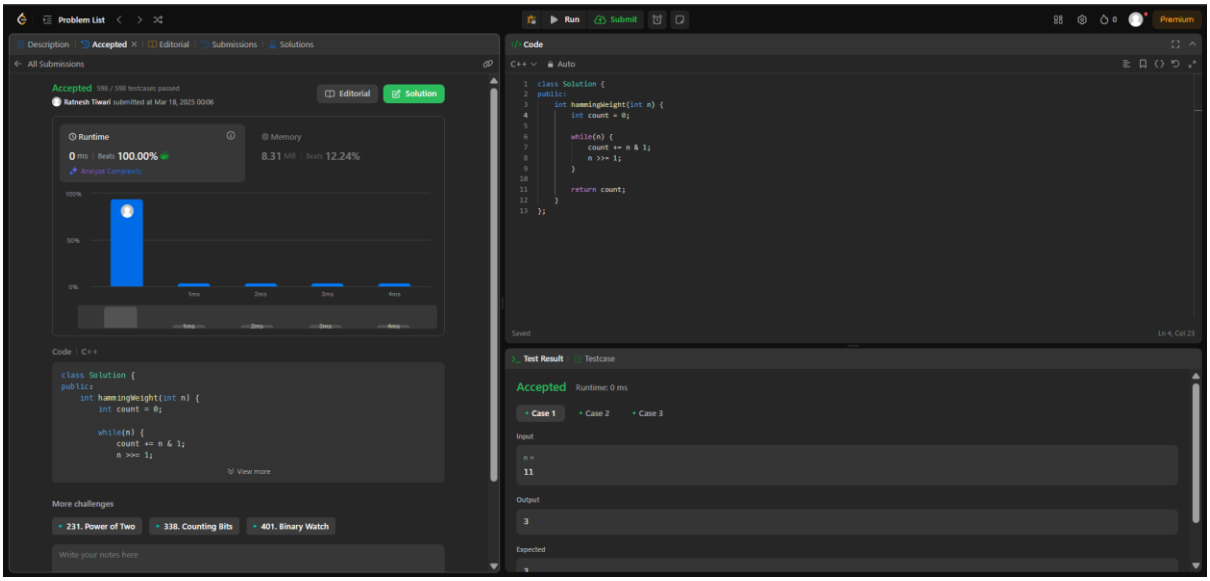
```
        bool upper[26] = {false};

        for (char c : s) {
            if (islower(c)) {
                lower[c - 'a'] = true;
            } else {
                upper[c - 'A'] = true;
            }
        }

        for (int i = 0; i < n; i++) {
            char c = s[i];
            if (islower(c) && !upper[c - 'a']) {
                string left = longestNiceSubstring(s.substr(0, i));
                string right = longestNiceSubstring(s.substr(i + 1));
                return left.length() >= right.length() ? left : right;
            }
            if (isupper(c) && !lower[c - 'A']) {
                string left = longestNiceSubstring(s.substr(0, i));
                string right = longestNiceSubstring(s.substr(i + 1));
                return left.length() >= right.length() ? left : right;
            }
        }

        return s;
    }
};
```



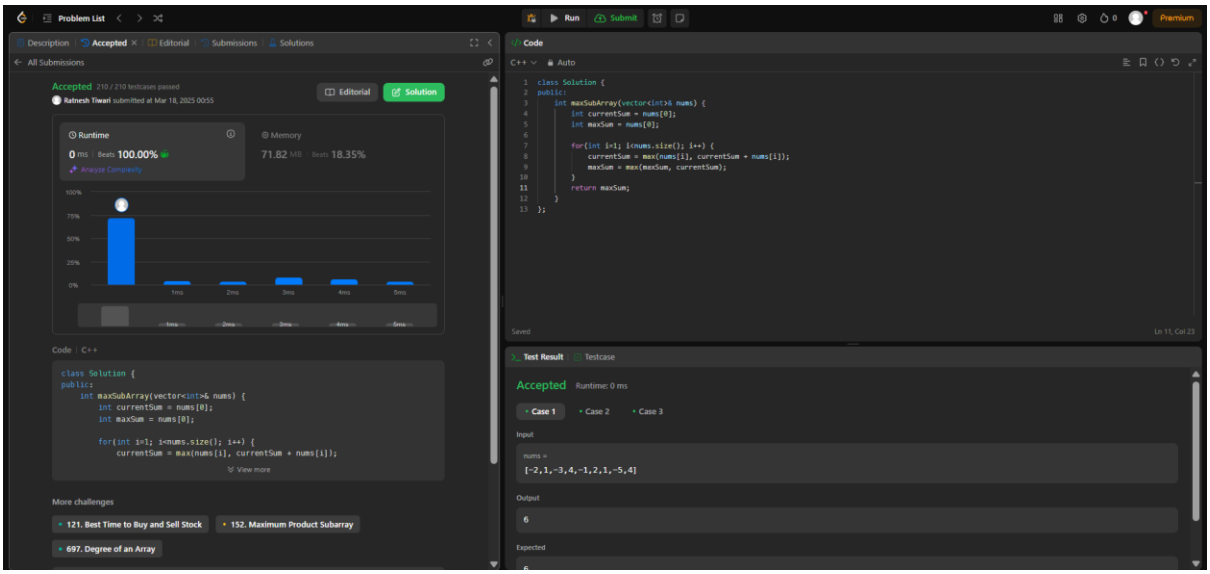
2. Reverse Bits: https://leetcode.com/problems/reverse-bits/description/



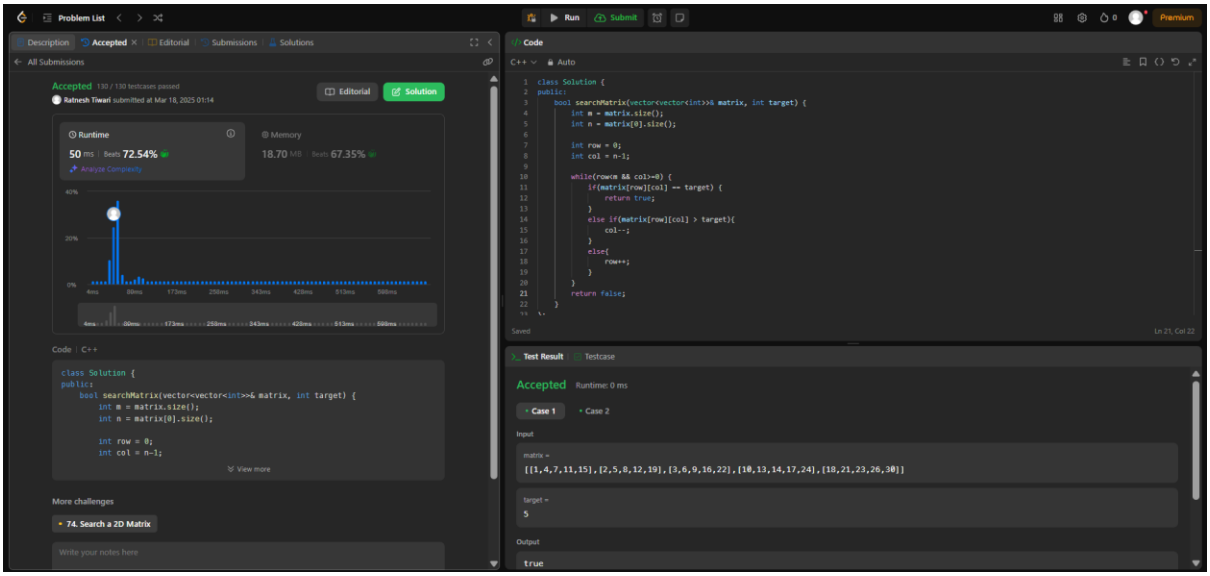
3. Number of 1 Bits: https://leetcode.com/problems/number-of-1-bits/description/



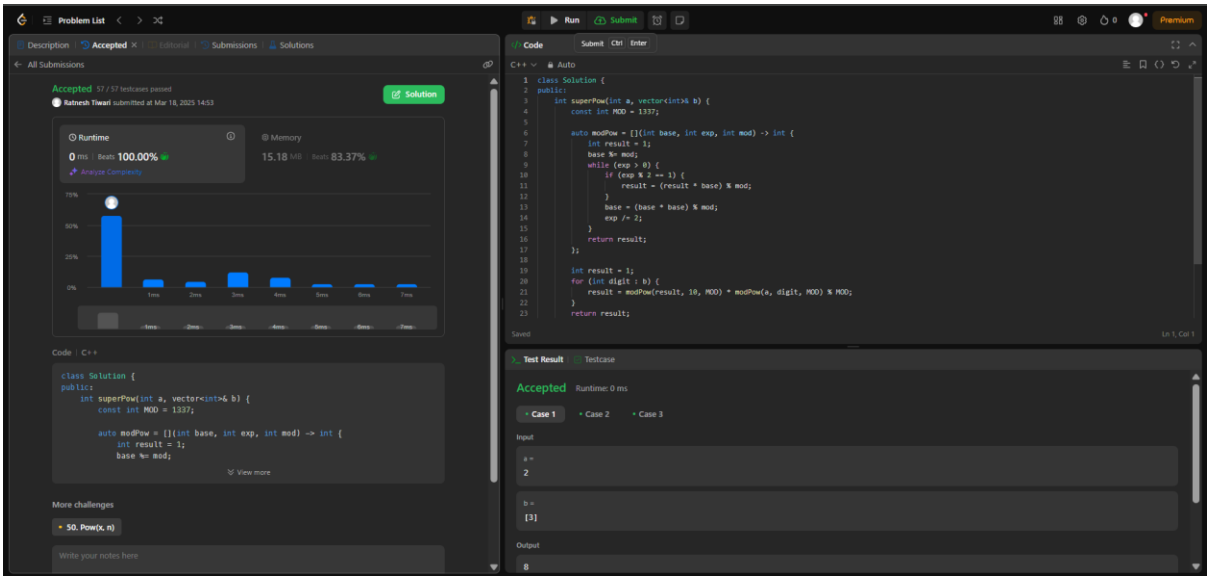
4. Maximum Subarray: https://leetcode.com/problems/maximum-subarray/description/



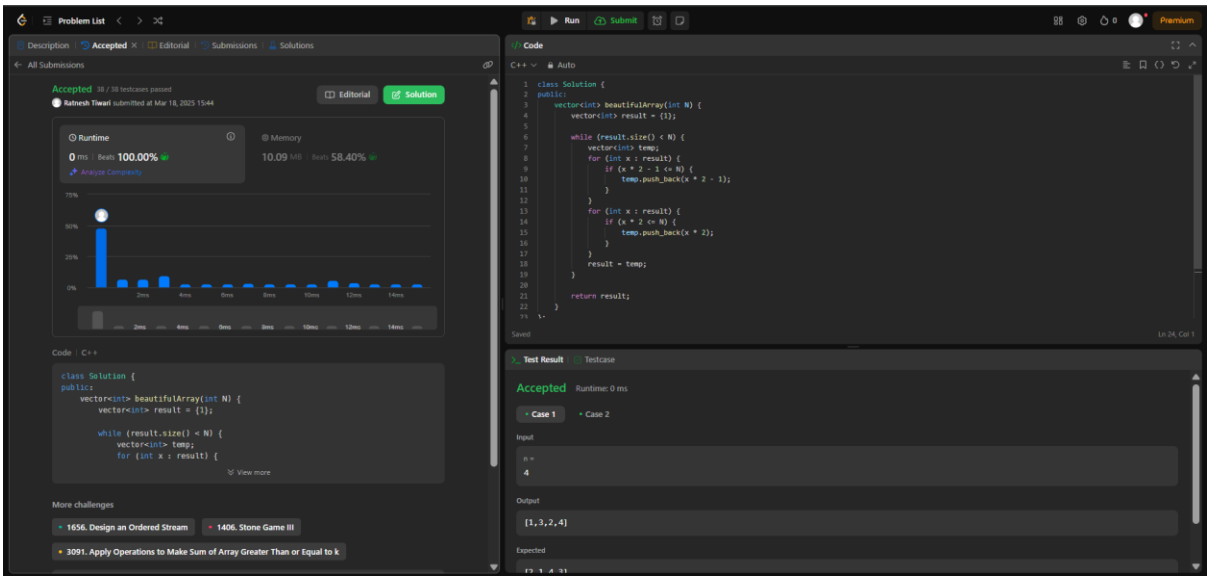
5. Search a 2D Matrix II: https://leetcode.com/problems/search-a-2d-matrix-ii/description/



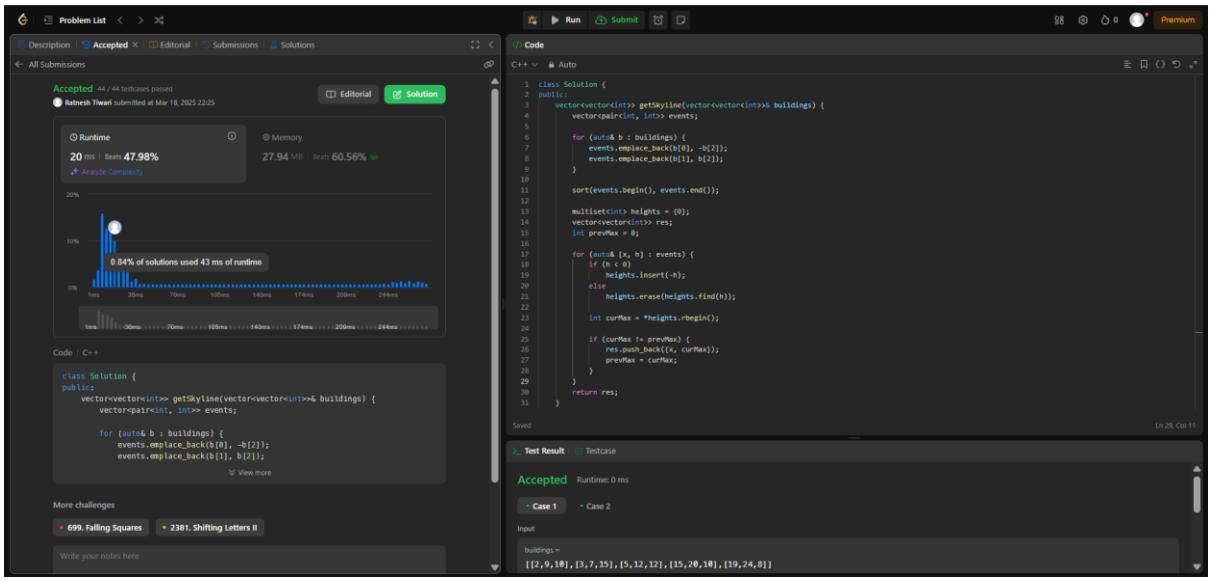
6. Super Pow: https://leetcode.com/problems/super-pow/description/



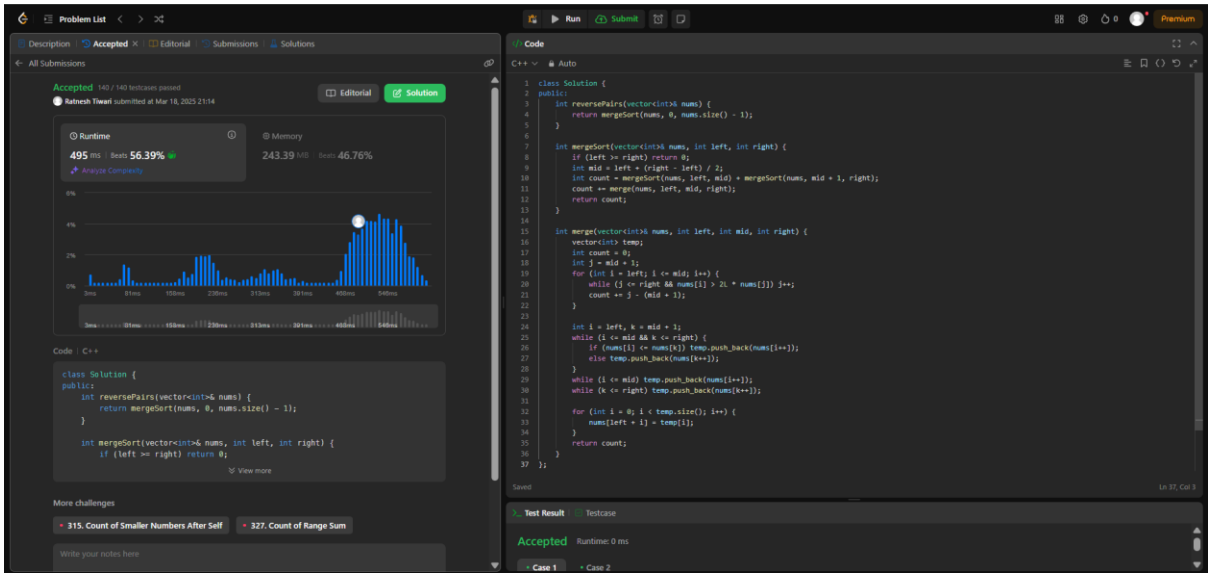
7. Beautiful Array: https://leetcode.com/problems/beautiful-array/description/



8. The Skyline Problem: https://leetcode.com/problems/the-skyline-problem/description/



9. Reverse Pairs: https://leetcode.com/problems/reverse-pairs/description/



10. Longest Increasing Subsequence II: https://leetcode.com/problems/longest-increasing-subsequence-ii/description/

    Unable to solve. Still trying.