Assignment 4

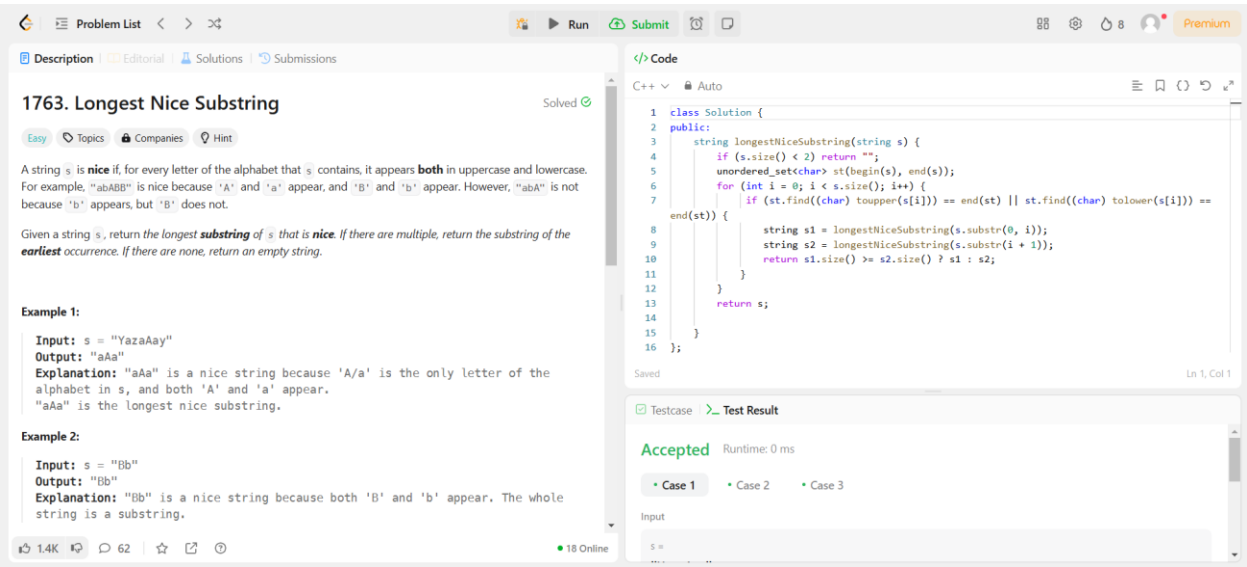
Rupesh Bansal

22BCS50190

FL_IOT_603 A

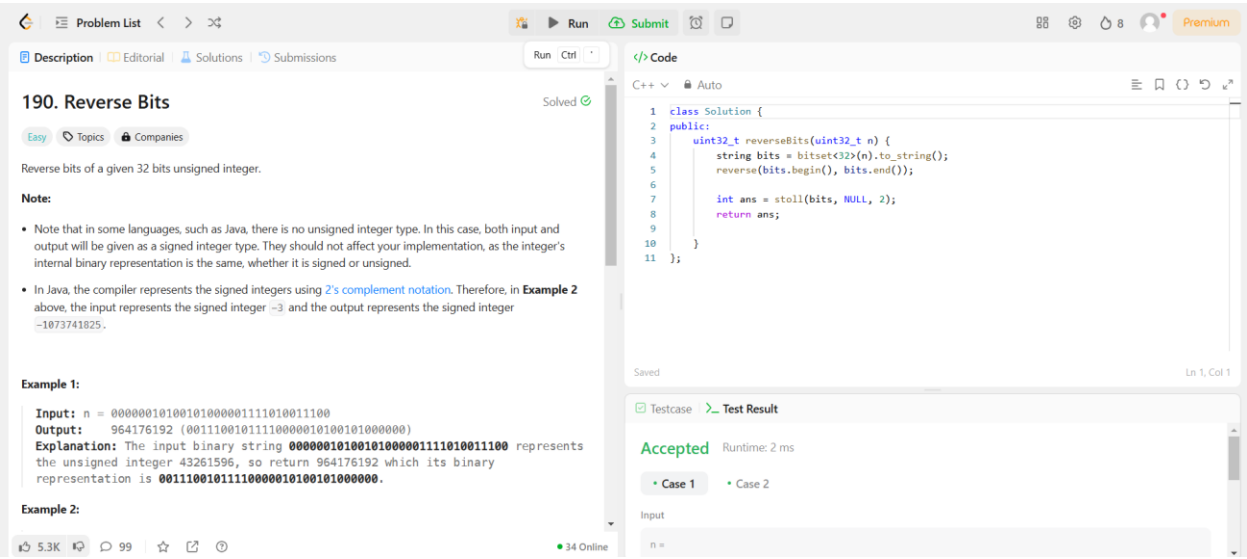
1763.Longest Nice Substring

```
class Solution {
public:
   string longestNiceSubstring(string s) {
      if (s.size() < 2) return "";
      unordered_set<char> st(begin(s), end(s));
      for (int i = 0; i < s.size(); i++) {
         if (st.find((char) toupper(s[i])) == end(st) || st.find((char) tolower(s[i])) == end(st)) {
            string s1 = longestNiceSubstring(s.substr(0, i));
            string s2 = longestNiceSubstring(s.substr(i + 1));
            return s1.size() >= s2.size() ? s1 : s2; } }
      return s;   }
};
```



190.Reverse Bits

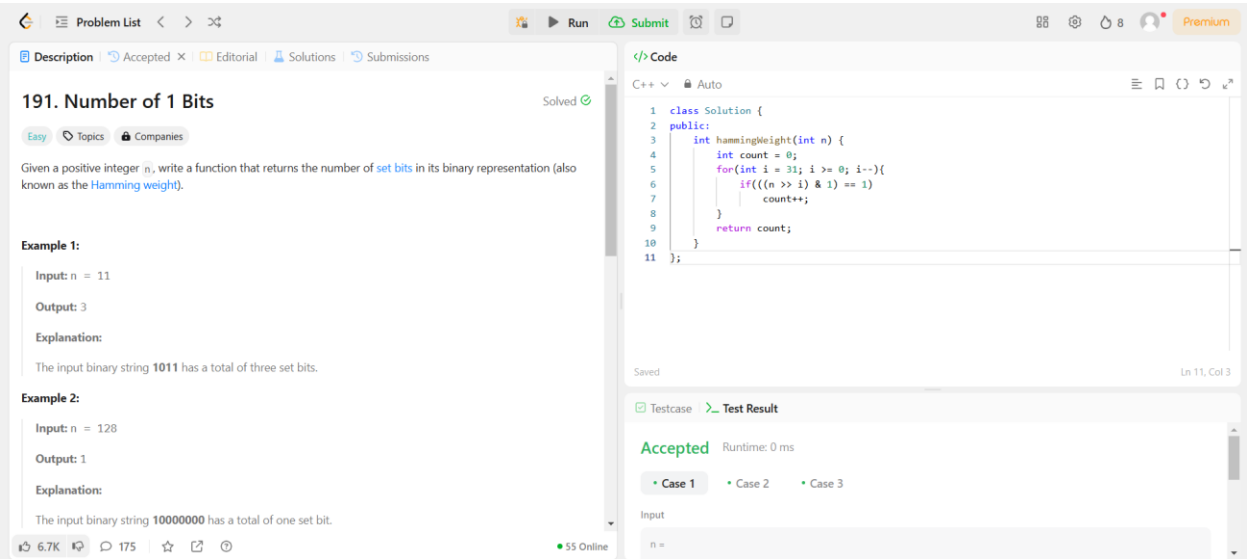
```
class Solution {
public:
    uint32_t reverseBits(uint32_t n) {
        string bits = bitset<32>(n).to_string();
        reverse(bits.begin(), bits.end());

        int ans = stoll(bits, NULL, 2);
        return ans;
    }
};
```



191.Number of 1 Bits

```
class Solution {
public:
    int hammingWeight(int n) {
        int count = 0;
```

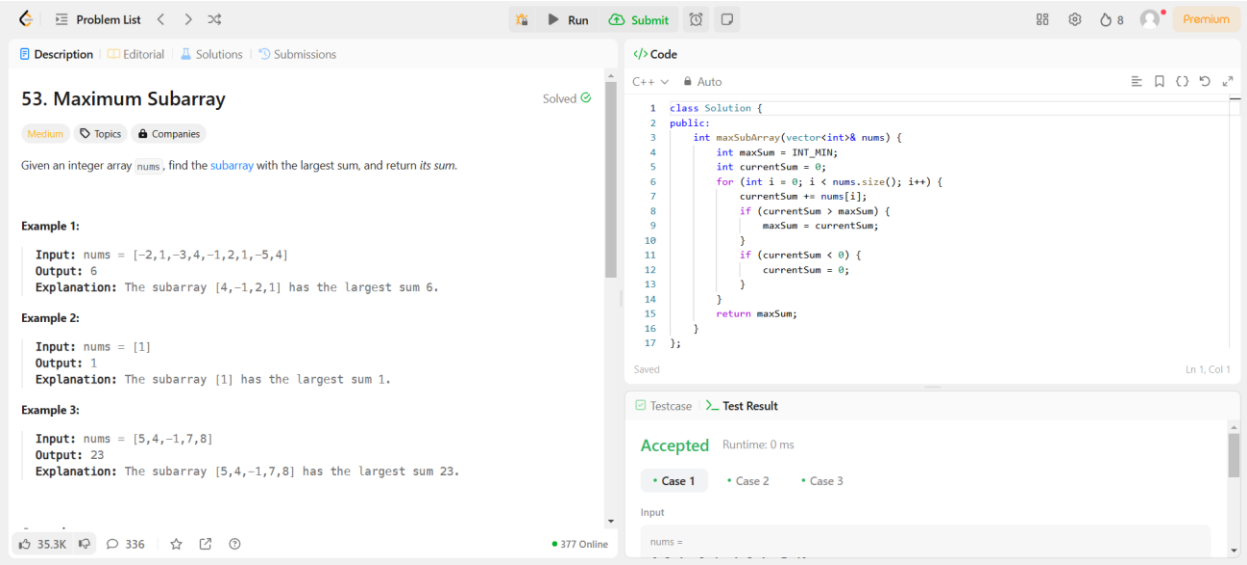
```
        for(int i = 31; i >= 0; i--){
            if(((n >> i) & 1) == 1)
                count++;
        }
        return count;
    }
};
```



53.Maximum Subarray

```
class Solution {
public:
    int maxSubArray(vector<int>& nums) {
        int maxSum = INT_MIN;
        int currentSum = 0;
        for (int i = 0; i < nums.size(); i++) {
            currentSum += nums[i];
            if (currentSum > maxSum) {
```

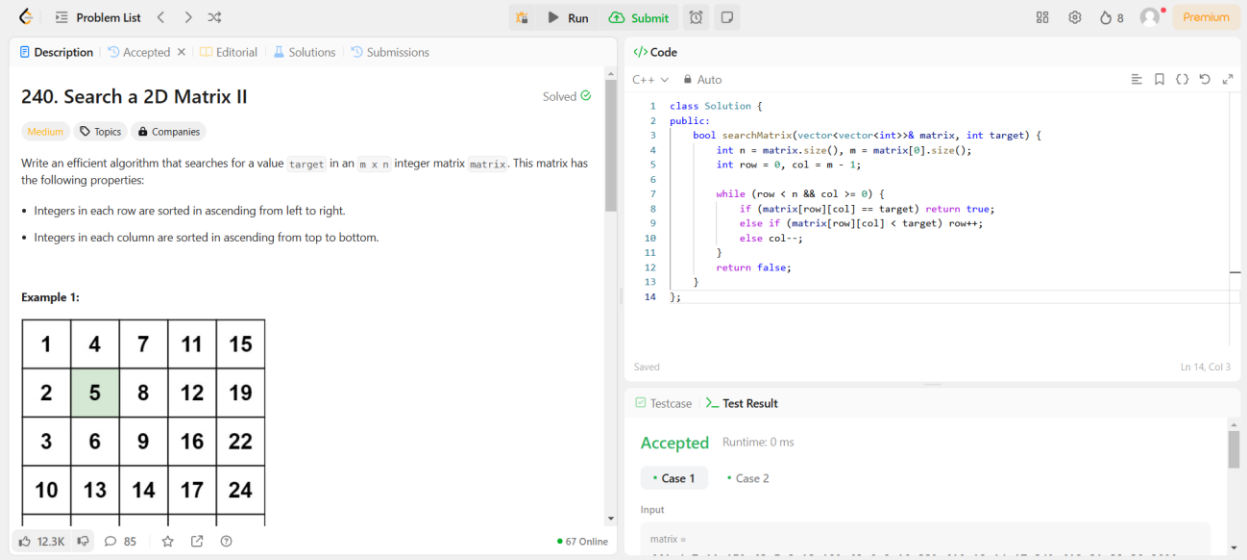
```
            maxSum = currentSum;
        }
        if (currentSum < 0) {
            currentSum = 0;
        }
    }
    return maxSum;
  }
};
```



240.[Search a 2D Matrix II]

```
class Solution {
public:
  bool searchMatrix(vector<vector<int>>& matrix, int target) {
    int n = matrix.size(), m = matrix[0].size();
    int row = 0, col = m - 1;
```

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



372.[Super Pow]

```
class Solution {
    const int base = 1337;
    int powmod(int a, int k)
    {
        a %= base;
        int result = 1;
        for (int i = 0; i < k; ++i)
```

```
        result = (result * a) % base;
    return result;
  }
public:
  int superPow(int a, vector<int>& b) {
    if (b.empty()) return 1;
    int last_digit = b.back();
    b.pop_back();
    return powmod(superPow(a, b), 10) * powmod(a, last_digit) % base;
  }
};
```