

question 1 :
longest nice string :

The screenshot displays the LeetCode interface for the 'Longest Nice String' problem. On the left, the 'Runtime' section shows a execution time of 6 ms, beating 51.71% of submissions, and a memory usage of 18.00 MB. The 'Code' section on the right shows a Python solution. The test case 'YazaAay' is listed with a result of 4.

```
from collections import defaultdict
```

```
class Solution:
```

```
    def longestNiceSubstring(self, s):
```

```
        len_s = len(s)
```

```
        if len_s <= 1:
```

```
            return ''
```

```
        char_to_freq_map = defaultdict(int)
```

```
        for c in s:
```

```
            char_to_freq_map[c] += 1
```

```
        is_broken = False
```

```
        i = 0
```

```
        while (i < len(s)):
```

```
            if s[i].islower() and s[i].upper() in char_to_freq_map.keys():
```

```
                pass
```

```
            elif s[i].isupper() and s[i].lower() in char_to_freq_map.keys():
```

```
                pass
```

```
            else:
```

```
                is_broken = True
```

code :

```
from collections import defaultdict
```

```
class Solution:
```

```
    def longestNiceSubstring(self, s):
```

```
        len_s = len(s)
```

```
        if len_s <= 1:
```

```
            return ''
```

```
        char_to_freq_map = defaultdict(int)
```

```
        for c in s:
```

```
            char_to_freq_map[c] += 1
```

```
        is_broken = False
```

```
        i = 0
```

```
        while (i < len(s)):
```

```
            if s[i].islower() and s[i].upper() in char_to_freq_map.keys():
```

```
                pass
```

```
            elif s[i].isupper() and s[i].lower() in char_to_freq_map.keys():
```

```
                pass
```

```
            else:
```

```
                is_broken = True
```

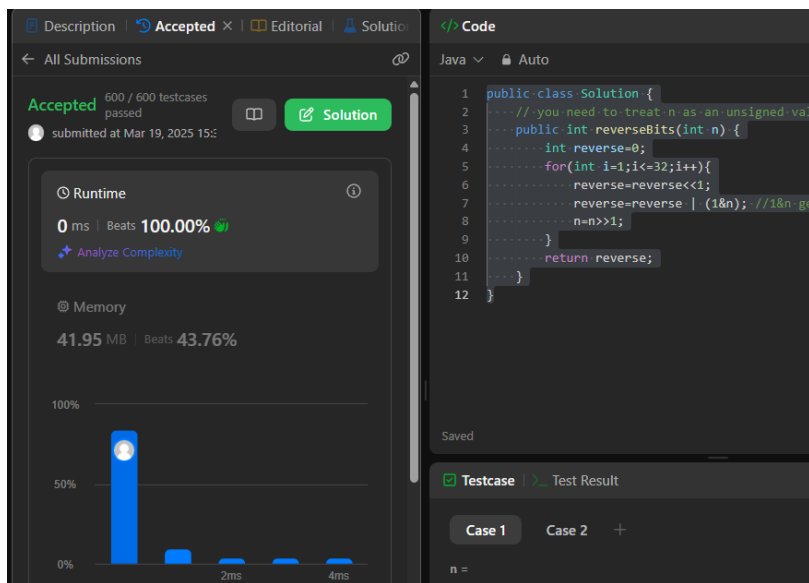
```
        break
    i += 1

if not is_broken:
    return s

longest_nice_substr_1 = self.longestNiceSubstring(s[:i])
longest_nice_substr_2 = self.longestNiceSubstring(s[i+1:])

if len(longest_nice_substr_1) >= len(longest_nice_substr_2):
    return longest_nice_substr_1
else:
    return longest_nice_substr_2
```

question 2:
reverse bits :

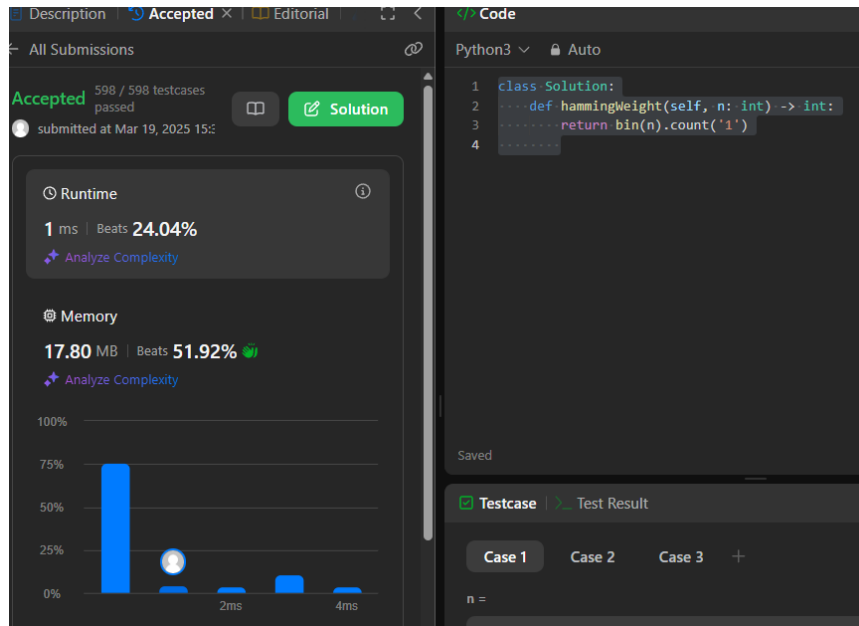


The screenshot displays the LeetCode submission interface for the 'Reverse Bits' problem. The left sidebar shows the submission status as 'Accepted' with 600/600 test cases passed. The runtime is 0 ms, and the memory usage is 41.95 MB. The right sidebar shows the Java code for the solution.

```
1 public class Solution {
2     // you need to treat n as an unsigned value
3     public int reverseBits(int n) {
4         int reverse=0;
5         for(int i=1;i<=32;i++){
6             reverse=reverse<<1;
7             reverse=reverse | (1&n); //1&n gets you the rightmost bit
8             n=n>>1;
9         }
10        return reverse;
11    }
12 }
```

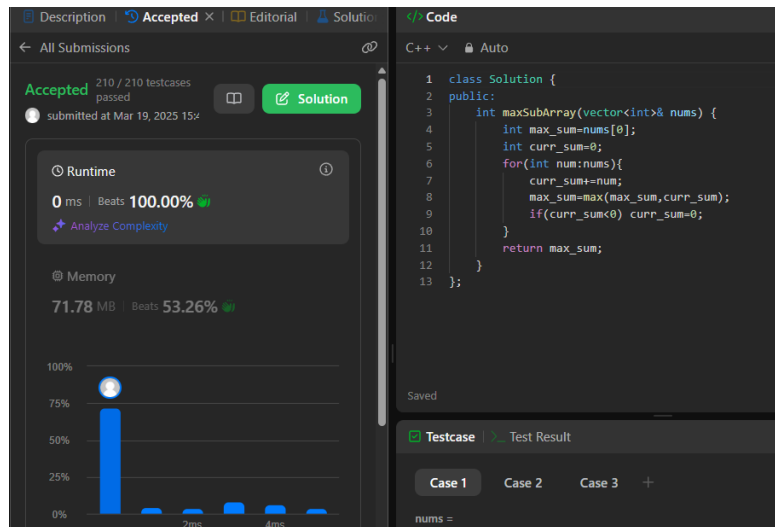
```
code : public class Solution {
    // you need to treat n as an unsigned value
    public int reverseBits(int n) {
        int reverse=0;
        for(int i=1;i<=32;i++){
            reverse=reverse<<1;
            reverse=reverse | (1&n); //1&n gets you the rightmost bit
            n=n>>1;
        }
        return reverse;
    }
}
```

question 2:
reverse bits :



```
code: class Solution:
    def hammingWeight(self, n: int) -> int:
        return bin(n).count('1')
}
```

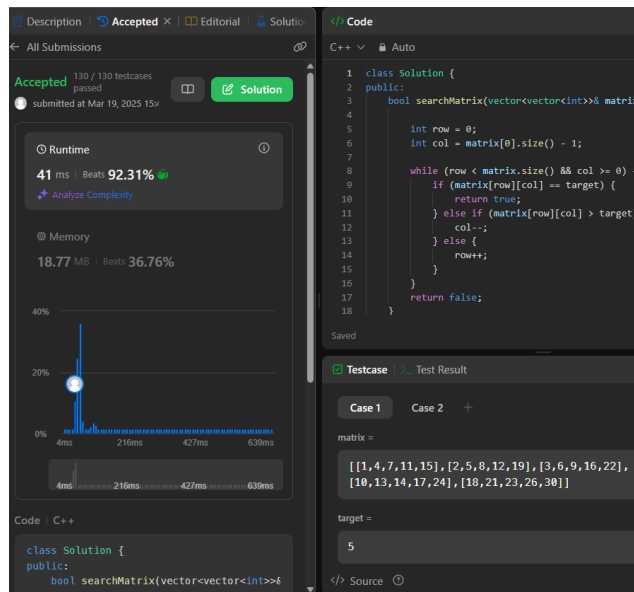
question 2:
reverse bits :



code:

```
class Solution {
public:
    int maxSubArray(vector<int>& nums) {
        int max_sum=nums[0];
        int curr_sum=0;
        for(int num:nums){
            curr_sum+=num;
            max_sum=max(max_sum,curr_sum);
            if(curr_sum<0) curr_sum=0;
        }
        return max_sum;
    }
};
```

question 2:
reverse bits :



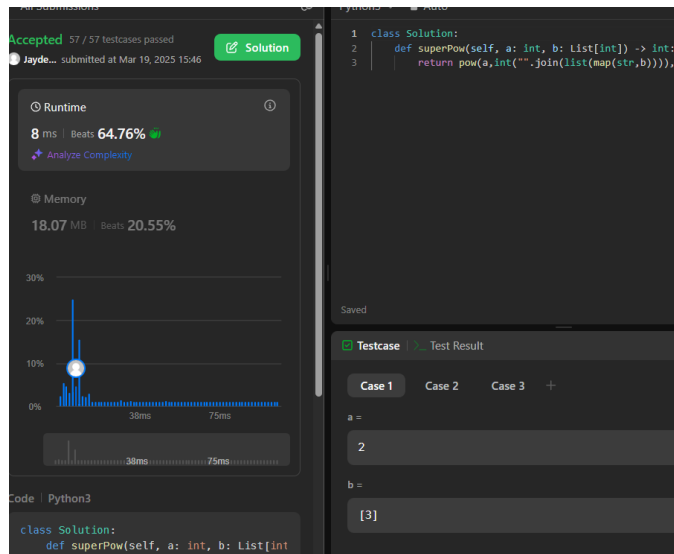
code:

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

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

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


question 2:
reverse bits :



code:

```
class Solution:
    def superPow(self, a: int, b: List[int]) -> int:
        return pow(a,int("".join(list(map(str,b)))),1337)
}
```


question 2:
reverse bits :

The screenshot shows the LeetCode interface for problem 932, 'Beautiful Array'. The problem is marked as 'Solved' and 'Medium'. The description states: 'An array `nums` of length `n` is **beautiful** if:

- `nums` is a permutation of the integers in the range `[1, n]`.
- For every $0 \leq i < j < n$, there is no index `k` with $i < k < j$ where $2 * \text{nums}[k] = \text{nums}[i] + \text{nums}[j]$.

 Given the integer `n`, return *any beautiful array* `nums` of length `n`. There will be at least one valid answer for the given `n`.

Example 1:
Input: `n = 4`
Output: `[2, 1, 4, 3]`

Example 2:
Input: `n = 5`
Output: `[3, 1, 2, 5, 4]`

Constraints:

- $1 \leq n \leq 1000$

The code editor on the right shows a Java solution:

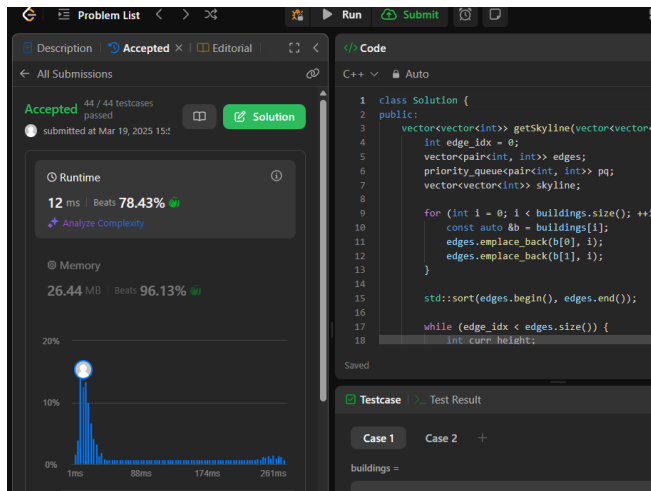
```
1 class Solution {
2     public int[] beautifulArray(int N) {
3         int[] res = new int[N];
4         if (N == 1)
5             return new int[] {1};
6         else if (N == 2)
7             return new int[] {1, 2};
8         else
9         {
10             int[] odds = beautifulArray((N + 1) / 2);
11             int[] even = beautifulArray(N / 2);
12             for (int i = 0; i < odds.length; i++)
13                 res[i] = odds[i] * 2 - 1;
14         }
15     }
16 }
```

Below the code editor, the 'Testcase' tab is active, showing a single test case with `n = 4`.

code:

```
class Solution {
    public int[] beautifulArray(int N) {
        int[] res = new int[N];
        if (N == 1)
        {
            return new int[] {1};
        }
        else if (N == 2)
        {
            return new int[] {1, 2};
        }
        else
        {
            int[] odds = beautifulArray((N + 1) / 2);
            int[] even = beautifulArray(N / 2);
            for (int i = 0; i < odds.length; i++)
            {
                res[i] = odds[i] * 2 - 1;
            }
        }
    }
}
```


question 2:
reverse bits :



code:

```
class Solution {
public:
    vector<vector<int>> getSkyline(vector<vector<int>>& buildings) {
        int edge_idx = 0;
        vector<pair<int, int>> edges;
        priority_queue<pair<int, int>> pq;
        vector<vector<int>> skyline;

        for (int i = 0; i < buildings.size(); ++i) {
            const auto &b = buildings[i];
            edges.emplace_back(b[0], i);
            edges.emplace_back(b[1], i);
        }

        std::sort(edges.begin(), edges.end());

        while (edge_idx < edges.size()) {
            int curr_height;
            const auto &[curr_x, _] = edges[edge_idx];
```

```

while (edge_idx < edges.size() &&
      curr_x == edges[edge_idx].first) {
    const auto &[_ , building_idx] = edges[edge_idx];
    const auto &b = buildings[building_idx];
    if (b[0] == curr_x)
        pq.emplace(b[2], b[1]);
    ++edge_idx;
}
while (!pq.empty() && pq.top().second <= curr_x)
    pq.pop();
curr_height = pq.empty() ? 0 : pq.top().first;
if (skyline.empty() || skyline.back()[1] != curr_height)
    skyline.push_back({curr_x, curr_height});
}
return skyline;
}
};

```

question 2:
reverse bits :

Accepted 140 / 140 testcases passed
submitted at Mar 19, 2025 15:55

Runtime
806 ms | Beats 5.03%
[Analyze Complexity](#)

Memory
53.12 MB | Beats 94.06%

6%
4%
2%
0%
3ms 197ms 392ms 586ms

Code | C++

```
class Solution
```

```
1 class Solution
2 {
3     int get_pairs(vector<int>& vct , long long int x)
4     {
5         //sort(vct.begin() , vct.end());
6         int size = vct.size();
7         int low = 0;
8         int high = size - 1;
9         int ans = -1;
10        while(low <= high)
11        {
12            int mid = high - (high - low) / 2;
13            int ele = vct[mid];
14            if(ele > x)
15            {
16                ans = mid;
17                high = mid - 1;
18            }
19        }
20    }
21 }
```

Testcase | [Test Result](#)

Case 1 Case 2 +

nums =

[1,3,2,3,1]

code:

```
class Solution
{
    int get_pairs(vector<int>& vct , long long int x)
    {
        //sort(vct.begin() , vct.end());
        int size = vct.size();
        int low = 0;
        int high = size - 1;
        int ans = -1;
        while(low <= high)
```

```

{
    int mid = high - (high - low) / 2;
    int ele = vct[mid];
    if(ele > x)
    {
        ans = mid;
        high = mid - 1;
    }
    else
    {
        low = mid + 1;
    }
}
if(ans == -1) return 0;
return vct.size() - ans;
}

```

```

// void print_vector(vector<int>& nums)
// {
//     cout<<endl;
//     for(auto it : nums)
//     {
//         cout<<" "<<it;
//     }
//     cout<<endl;
// }

```

public:

```

int reversePairs(vector<int>& nums)
{
    vector<int> vct;
    int counter = 0;
    for(auto it : nums)
    {

```

```

    long long int x = 1LL * 2 * it;
    counter += get_pairs(vct , x);
    int low = 0;
    int high = vct.size();
    int ans = vct.size();
    while(low < high)
    {
        int mid = low + (high - low) / 2;
        if(vct[mid] >= it)
        {
            ans = mid;
            high = mid;
        }
        else
        {
            low = mid + 1;
        }
    }
    vct.insert(vct.begin() + ans , it);
    //print_vector(vct);
}

return counter;
}
};

```

question 2:
reverse bits :

Accepted 84 / 84 testcases passed

Jayde... submitted at Mar 19, 2025 15:56

Runtime
34 ms | Beats 79.35%
[Analyze Complexity](#)

Memory
55.95 MB | Beats 86.64%
[Analyze Complexity](#)

Bar chart showing runtime distribution: 18ms, 133ms, 247ms, 361ms.

Code

```
class Solution {
    private int size;
    private int[] segment;
    public int lengthOfLIS(int[] nums, int k) {
        size = 0;
        for (int num : nums) {
            size = Math.max(size, num);
        }
        size++;
        segment = new int[2 * size];
        int longest = 0;
        for (int i = 0; i < nums.length; i++) {
            int left = Math.max(1, nums[i] - k);
            int right = nums[i] - 1;
            int curr = query(left, right) + 1;
            longest = Math.max(longest, curr);
            update(nums[i], curr);
        }
    }
}
```

Testcase

Case 1 Case 2 Case 3 +

nums =
[4, 2, 1, 4, 3, 4, 5, 8, 15]

k =
3

</> Source

code:

```
class Solution {
    private int size;
    private int[] segment;
    public int lengthOfLIS(int[] nums, int k) {
        size = 0;
        for (int num : nums) {
            size = Math.max(size, num);
        }
        size++;
        segment = new int[2 * size];
        int longest = 0;
        for (int i = 0; i < nums.length; i++) {
            int left = Math.max(1, nums[i] - k);
```



```

        int right = nums[i] - 1;
        int curr = query(left, right) + 1;
        longest = Math.max(longest, curr);
        update(nums[i], curr);
    }
    return longest;
}

private int query(int left, int right) {
    // edge cases
    if (left > right) {
        return 0;
    }
    // normal cases
    left += size;
    right += size;
    int result = 0;
    while (left <= right) {
        if ((left & 1) == 1) {
            result = Math.max(result, segment[left++]);
        }
        if ((right & 1) == 0) {
            result = Math.max(result, segment[right--]);
        }
        left /= 2;
        right /= 2;
    }
    return result;
}

private void update(int index, int value) {
    index += size;
    segment[index] = value;
    for (index /= 2; index >= 1; index /= 2) {
        segment[index] = Math.max(segment[2 * index], segment[2 * index + 1]);
    }
}
}

```

