



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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Assignment-10

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Branch: CSE

Semester: 6th

Subject: AP

UID: 22BCS11093

Section: IOT_640(B)

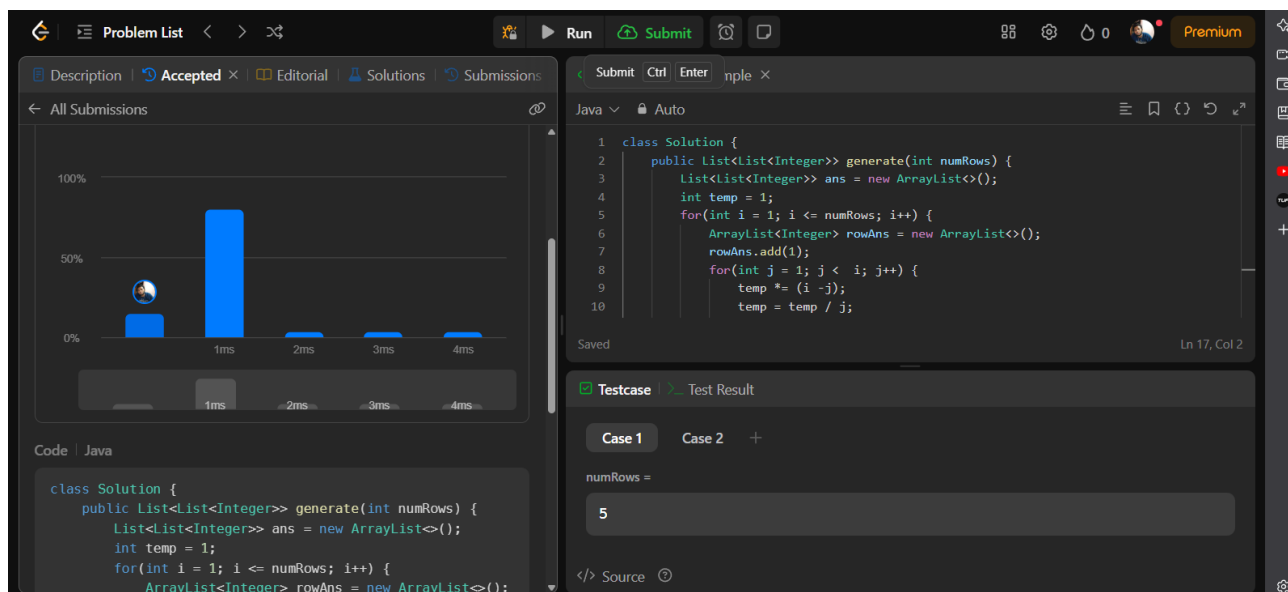
Date: 20/04/2025

Subject Code: 22CSP-351

Problem 1:

```
class Solution {  
    public List<List<Integer>> generate(int numRows) {  
        List<List<Integer>> ans = new ArrayList<>();  
        int temp = 1;  
        for(int i = 1; i <= numRows; i++) {  
            ArrayList<Integer> rowAns = new ArrayList<>();  
            rowAns.add(1);  
            for(int j = 1; j < i; j++) {  
                temp *= (i - j);  
                temp = temp / j;  
                rowAns.add(temp);  
            }  
            ans.add(rowAns);  
        }  
        return ans;  
    }  
}
```

Screenshot:





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Problem 2:

```
class Solution {
    public int divide(int dividend, int divisor) {

        if (dividend == Integer.MIN_VALUE && divisor == -1) {
            return Integer.MAX_VALUE;
        }

        long ldividend = Math.abs((long) dividend);
        long ldivisor = Math.abs((long) divisor);
        int result = 0;

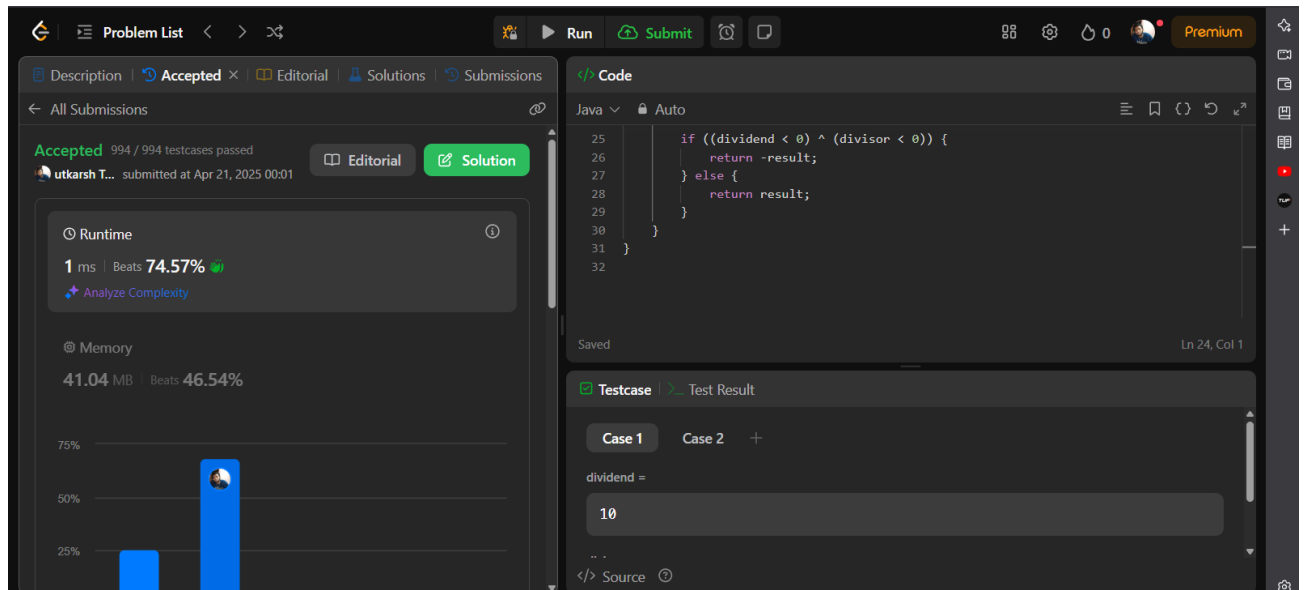
        while (ldividend >= ldivisor) {
            long temp = ldivisor, multiple = 1;

            while (ldividend >= (temp << 1)) {
                temp <<= 1;
                multiple <<= 1;
            }

            ldividend -= temp;
            result += multiple;
        }

        if ((dividend < 0) ^ (divisor < 0)) {
            return -result;
        } else {
            return result;
        }
    }
}
```

Screenshot:



Problem 3:

```
class Solution {
    public int trap(int[] height) {
        int left = 0, right = height.length - 1;
        int leftMax = 0, rightMax = 0;
        int water = 0;

        while (left < right) {
            if (height[left] < height[right]) {
                if (height[left] >= leftMax) {
                    leftMax = height[left];
                } else {
                    water += leftMax - height[left];
                }
                left++;
            } else {
                if (height[right] >= rightMax) {
                    rightMax = height[right];
                } else {
                    water += rightMax - height[right];
                }
                right--;
            }
        }

        return water;
    }
}
```



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Screenshot:

The screenshot displays a coding platform interface with the following components:

- Problem List:** Located at the top left, showing 'Description', 'Accepted', 'Editorial', 'Solutions', and 'Submissions' tabs.
- Runtime Statistics:** Shows '1 ms' and 'Beats 63.34%'. A link to 'Analyze Complexity' is available.
- Memory Statistics:** Shows '46.54 MB' and 'Beats 39.23%'.
- Bar Chart:** A chart showing performance across different time intervals (1ms to 5ms). The 1ms interval shows the highest performance, reaching approximately 63.34%.
- Code Editor:** Contains a Java solution for the 'trap' problem. The code is as follows:

```
1 class Solution {
2     public int trap(int[] height) {
3         int left = 0, right = height.length - 1;
4         int leftMax = 0, rightMax = 0;
5         int water = 0;
6
7         while (left < right) {
8             if (height[left] < height[right]) {
9                 if (height[left] >= leftMax) {
10                     leftMax = height[left];
11                 }
12             }
13             // Similar logic for the right side
14         }
15         return water;
16     }
17 }
```
- Testcase:** Shows 'Case 1' with the input 'height = [0,1,0,2,1,0,1,3,2,1,2,1]'.