



# DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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## Assignment-10

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**Branch: CSE**

**Semester: 6<sup>th</sup>**

**Subject: AP**

**UID: 22BCS14714**

**Section: IOT\_640(B)**

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**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:

The screenshot displays a code editor with the following components:

- Problem List:** A tab showing the current problem, with a bar chart indicating progress (100% for 1ms, 0% for 2ms, 3ms, and 4ms).
- Code Editor:** The Java code for the 'generate' method is visible, with line numbers 1 through 10. The code uses nested loops to calculate the values for each row of Pascal's triangle.
- Submit Button:** A green button labeled 'Submit' is located at the top right of the code editor.
- Testcase Section:** A section titled 'Testcase' with a 'Test Result' table. The table shows 'Case 1' with 'numRows = 5' and a 'Test Result' of '5'.



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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;

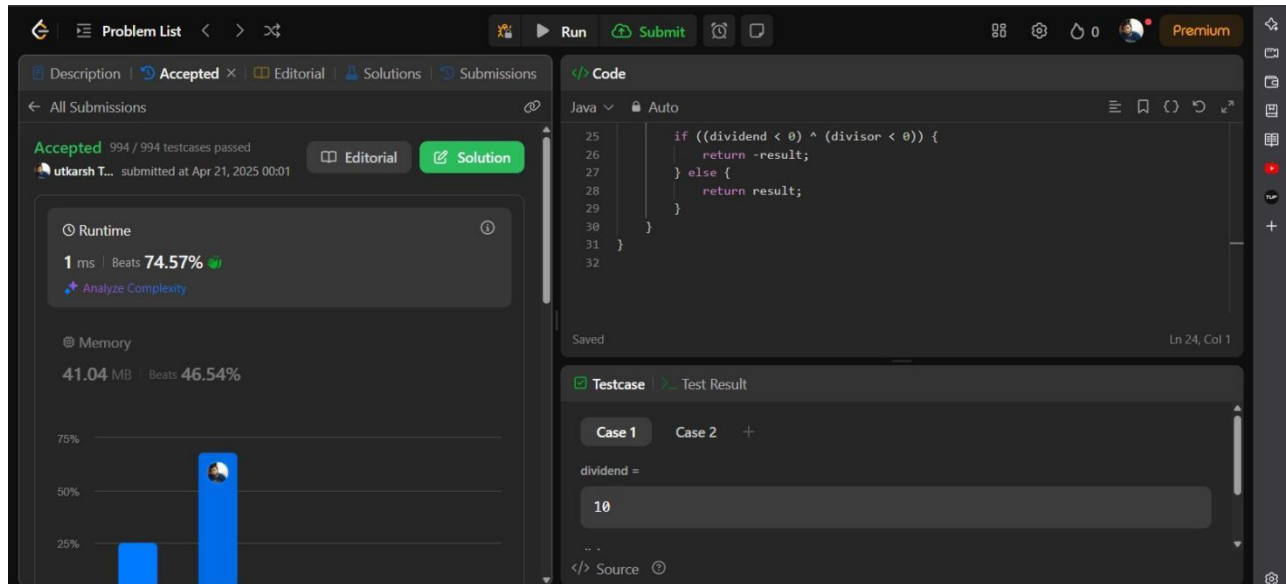
        while (ldividend >= ldivisor) {
            long temp = ldivisor, multiple = 1;

            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 environment with the following components:

- Top Bar:** Includes navigation icons, a "Problem List" tab, and buttons for "Run", "Submit", and "Enter". A "Premium" badge is visible on the right.
- Left Panel:**
  - Runtime:** Shows "1 ms" and "Beats 63.34%". A link to "Analyze Complexity" is present.
  - Memory:** Shows "46.54 MB" and "Beats 39.23%".
  - Bar Chart:** A chart showing performance across different time intervals (1ms to 5ms). The 1ms bar is the highest, reaching approximately 63%.
- Code Editor:** Contains a Java solution for a "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 right side
14         }
15     }
16 }
```
- Right Panel:**
  - Testcase:** Shows "Case 1" selected. The input is "height = [0,1,0,2,1,0,1,3,2,1,2,1]".
  - Test Result:** Currently empty.