DSA Assignment - 10 July

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Roll No: 23/11/EC/040

LeetCode ID: adityatiwari1305t

GeeksForGeeks ID: aditya1305t

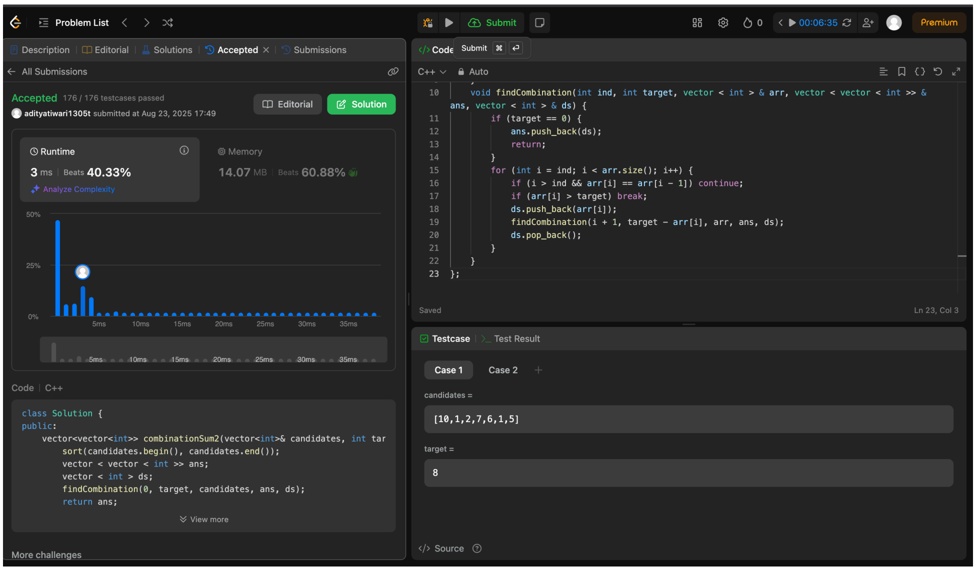
Github Repo Link:

https://github.com/Aditya1305T/SOE_Training_25

Question 1: Combination Sum II

Platform: LeetCode

Link: · https://leetcode.com/problems/combination-sum-ii/description/



Accepted 176 / 176 testcases passed

adityatiwari1305t submitted at Aug 23, 2025 17:49

Runtime 3 ms | Beats 40.33%

Memory 14.07 MB | Beats 60.88%

Code | C++

```
class Solution {
public:
    vector<vector<int>> combinationSum2(vector<int>& candidates, int tar
        sort(candidates.begin(), candidates.end());
        vector < vector < int >> ans;
        vector < int > ds;
        findCombination(0, target, candidates, ans, ds);
        return ans;
```

```
    void findCombination(int ind, int target, vector < int > & arr, vector < vector < int >> &
ans, vector < int > & ds) {
        if (target == 0) {
            ans.push_back(ds);
            return;
        }
        for (int i = ind; i < arr.size(); i++) {
            if (i > ind && arr[i] == arr[i - 1]) continue;
            if (arr[i] > target) break;
            ds.push_back(arr[i]);
            findCombination(i + 1, target - arr[i], arr, ans, ds);
            ds.pop_back();
        }
    }
};
```

candidates =

[10,1,2,7,6,1,5]

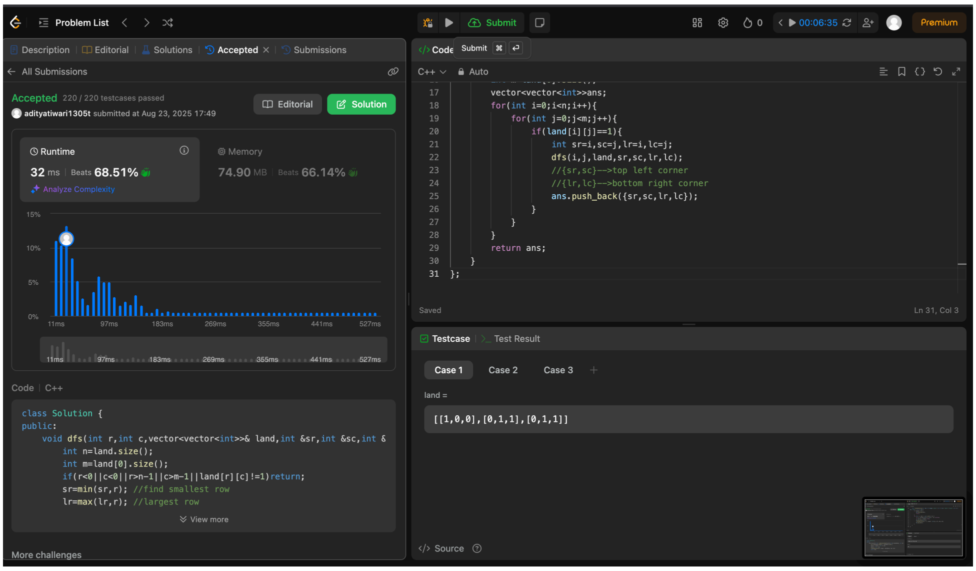
target =

8

Question 2: Find All Groups of Farmland

Platform: LeetCode

Link: · https://leetcode.com/problems/find-all-groups-of-farmland/description/



Accepted 220 / 220 testcases passed

adityatiwari1305t submitted at Aug 23, 2025 17:49

Runtime 32 ms | Beats 68.51%

Memory 74.90 MB | Beats 66.14%

Code | C++

```
class Solution {
public:
    void dfs(int r,int c,vector<vector<int>>& land,int &sr,int &sc,int &
        int n=land.size();
        int m=land[0].size();
        if(r<0||c<0||r>n-1||c>m-1||land[r][c]!=1)return;
        sr=min(sr,r); //find smallest row
        lr=max(lr,r); //largest row
```

```
        vector<vector<int>>ans;
        for(int i=0;i<n;i++){
            for(int j=0;j<m;j++){
                if(land[i][j]==1){
                    int sr=i,sc=j,lr=i,lc=j;
                    dfs(i,j,land,sr,sc,lr,lc);
                    //{sr,sc}-->top left corner
                    //{lr,lc}-->bottom right corner
                    ans.push_back({sr,sc,lr,lc});
                }
            }
        }
        return ans;
    }
};
```

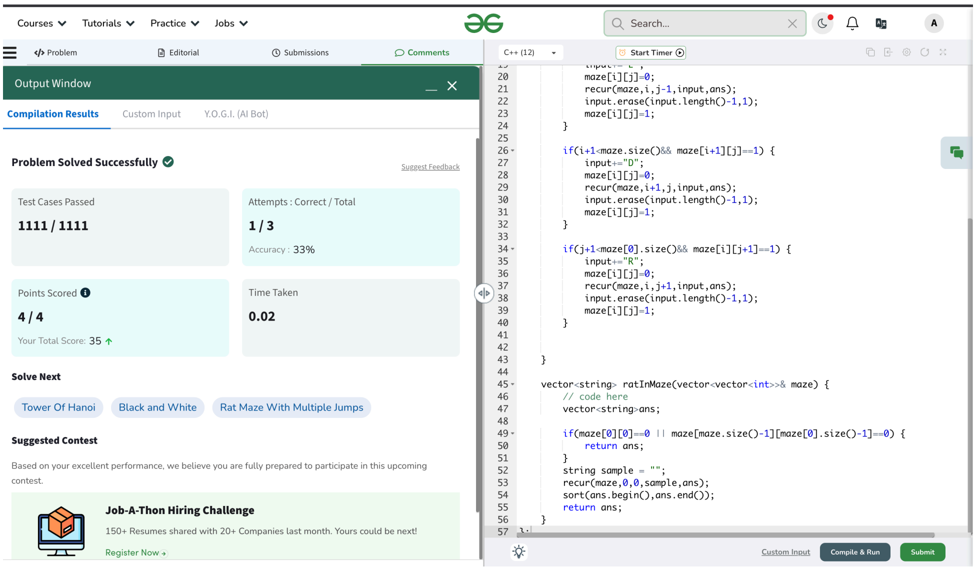
land =

[[1,0,0],[0,1,1],[0,1,1]]

Question 3: Rat in A Maze - I

Platform: GeeksForGeeks

Link: · https://www.geeksforgeeks.org/problems/rat-in-a-maze-problem/1&selectedLang



Problem Solved Successfully ✓

Test Cases Passed	Attempts : Correct / Total
1111 / 1111	1 / 3 Accuracy : 33%

Points Scored	Time Taken
4 / 4 Your Total Score: 35 ↑	0.02

Solve Next

Tower Of Hanoi · Black and White · Rat Maze With Multiple Jumps

Suggested Contest

Based on your excellent performance, we believe you are fully prepared to participate in this upcoming contest.

Job-A-Thon Hiring Challenge

150+ Resumes shared with 20+ Companies last month. Yours could be next!

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```
            maze[i][j]=0;
            recur(maze,i,j-1,input,ans);
            input.erase(input.length()-1,1);
            maze[i][j]=1;
        }

        if(i+1<maze.size()&& maze[i+1][j]==1) {
            input+="D";
            maze[i][j]=0;
            recur(maze,i+1,j,input,ans);
            input.erase(input.length()-1,1);
            maze[i][j]=1;
        }

        if(j+1<maze[0].size()&& maze[i][j+1]==1) {
            input+="R";
            maze[i][j]=0;
            recur(maze,i,j+1,input,ans);
            input.erase(input.length()-1,1);
            maze[i][j]=1;
        }


    }

    vector<string> ratInMaze(vector<vector<int>>& maze) {
        // code here
        vector<string>ans;

        if(maze[0][0]==0 || maze[maze.size()-1][maze[0].size()-1]==0) {
            return ans;
        }
        string sample = "";
        recur(maze,0,0,sample,ans);
        sort(ans.begin(),ans.end());
        return ans;
    }
};
```