DEPARTMENT OF
COMPUTER SCIENCE & ENGINEERING

EXPERIMENT 1.5

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Section/Group: 20BCS_DM_714_A
Semester: 06
Subject Name: Competitive Coding
Subject Code: 20CSP-351

1. **AIM:** To demonstrate the concept of trees

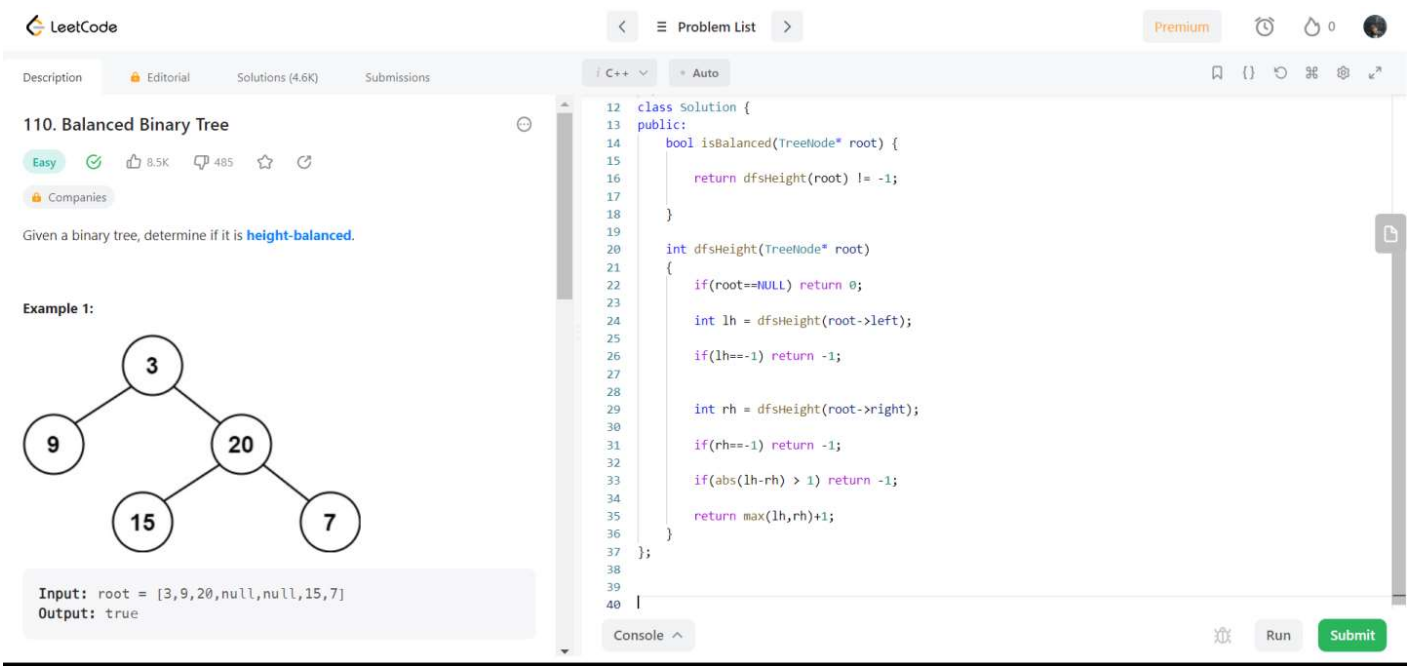
2. **OBJECTIVE 1:** Balanced Binary Tree.

3. **CODE:**

```
class Solution {
public:
    bool isBalanced(TreeNode* root) {

        return dfsHeight(root) != -1;

    }

    int dfsHeight(TreeNode* root)
    {
        if(root==NULL) return 0;

        int lh = dfsHeight(root->left);

        if(lh==-1) return -1;


        int rh = dfsHeight(root->right);
```

```
            if(rh==-1) return -1;

            if(abs(lh-rh) > 1) return -1;

            return max(lh,rh)+1;
        }
    };
```

4. OUTPUT:



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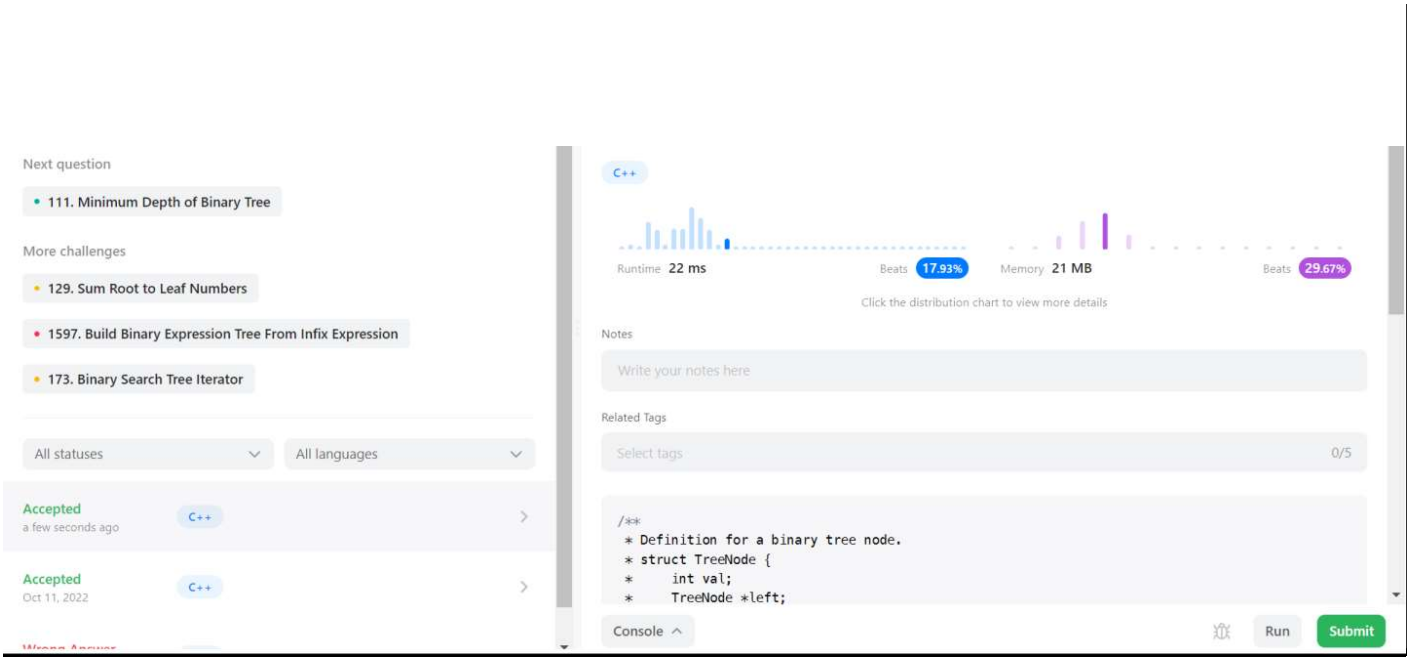


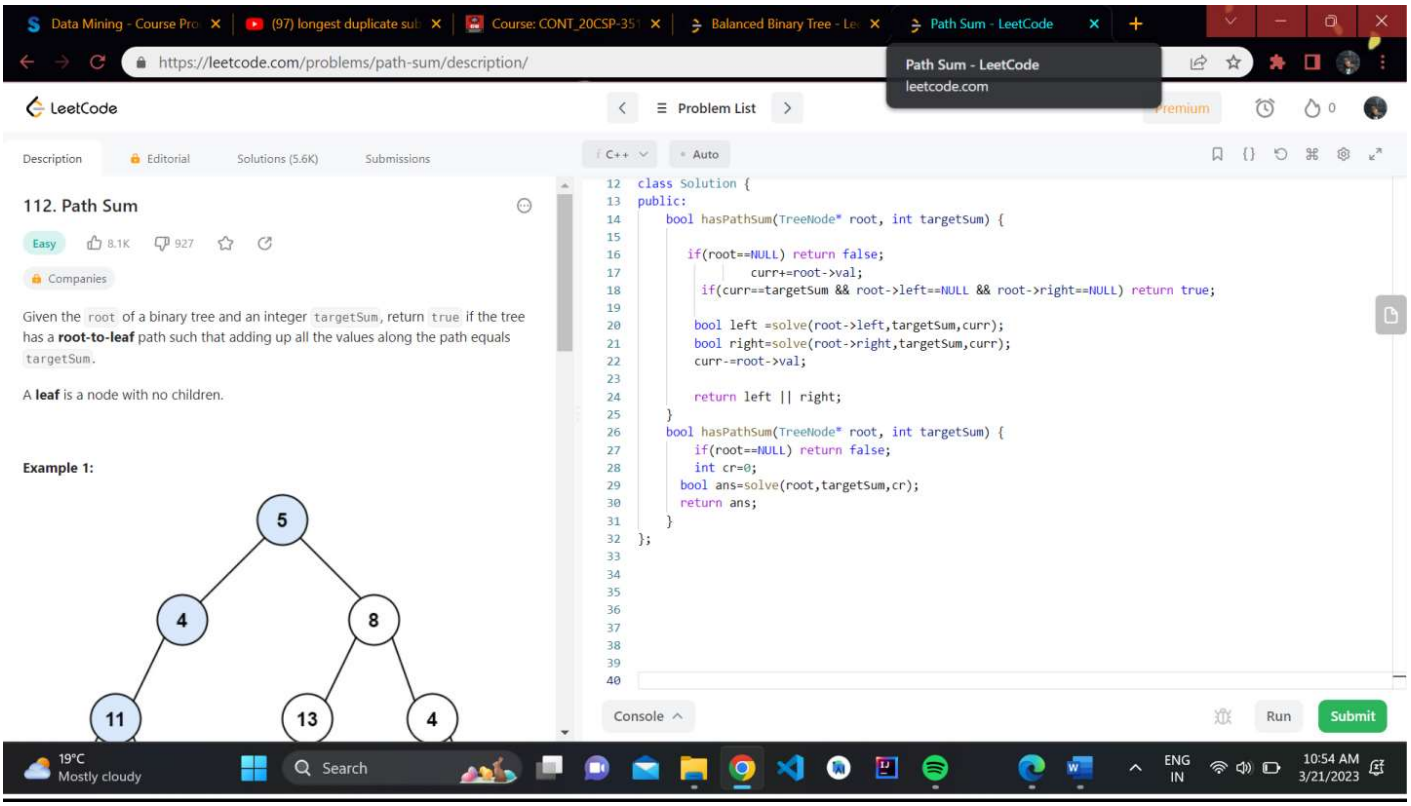
5. **OBJECTIVE 2:** Path Sum

6. **CODE:**

```
class Solution {
public:
    bool hasPathSum(TreeNode* root, int targetSum) {

       if(root==NULL) return false;
                curr+=root->val;
         if(curr==targetSum && root->left==NULL && root->right==NULL) return true;

         bool left =solve(root->left,targetSum,curr);
         bool right=solve(root->right,targetSum,curr);
         curr-=root->val;

         return left || right;
    }
    bool hasPathSum(TreeNode* root, int targetSum)
        { if(root==NULL) return false;
```

```
        int cr=0;
      bool ans=solve(root,targetSum,cr);
      return ans;
    }
};
```

7. OUTPUT



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