Experiment No. - 5

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Subject Name: Competitive coding - II **Subject Code: 20CSP-351**

Aim/Overview of the practical

Q.1 Balance Binary Tree.

https://leetcode.com/problems/balanced-binary-tree/

Apparatus / Simulator Used:

- Windows 7 or above
- Google Chrome

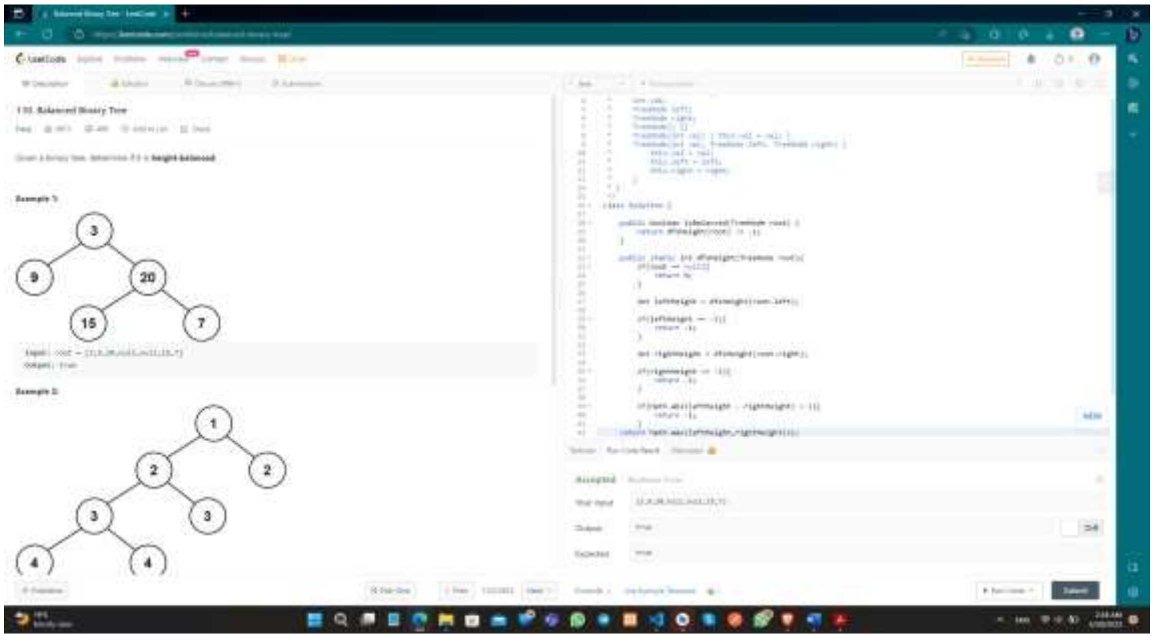
Objective:

- To understand the concept of Tree
- To implement the concept of Balance Binary Tree.

Code:

```
class Solution {

    public boolean isBalanced(TreeNode root) {
        return dfsHeight(root) != -1;
    }

    public static int dfsHeight(TreeNode root){
        if(root == null){
return 0;
        }

        int leftHeight = dfsHeight(root.left);

        if(leftHeight == -1){
            return -1;
        }

        int rightHeight = dfsHeight(root.right);

        if(rightHeight == -1){
            return -1;
        }
        if(Math.abs(leftHeight - rightHeight) > 1){
    return -1;
        }
      return Math.max(leftHeight,rightHeight)+1;
      } }
```

Result/Output/Writing Summary:



Aim/Overview of the practical:

Q.2 Path Sum

https://leetcode.com/problems/path-sum/

Apparatus / Simulator Used:

- Windows 7 or above
- Google Chrome

Objective:

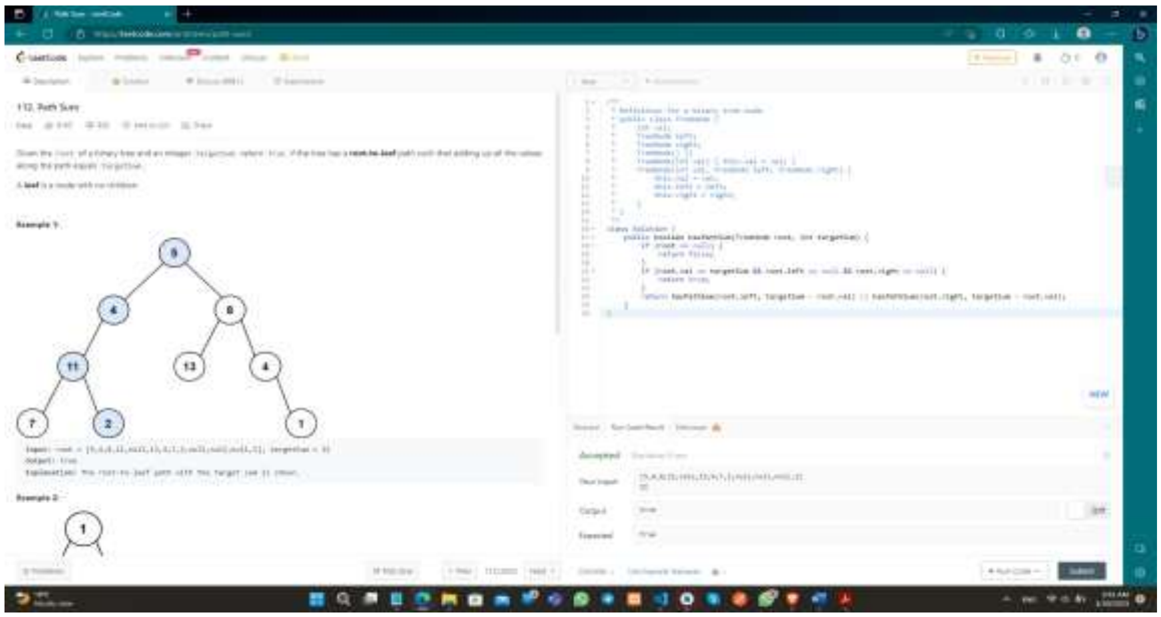
 To understand the concept of Tree traversal. To implement the concept of calculate the path sum.

Code:

```
class Solution {
   public boolean hasPathSum(TreeNode root, int targetSum) {
if (root == null) {            return false;
```

```
        }
        if (root.val == targetSum && root.left == null && root.right == null) {
    return true;
        }
        return hasPathSum(root.left, targetSum - root.val) || hasPathSum(root.right, targetSum - root.val);
    }
}
```

Result/Output/Writing Summary:



Learning outcomes (What I have learnt):

- Learned the concept of Balanced Binary Tree.
    - Learnt about Tree and Path Sum.