Experiment 6

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Branch: CSE **Section/Group:603-B**

Semester: 6

Subject Code: 22CSP-351

Subject Name: AP LAB-II

1. Aim:

a. To find and implement the maximum depth of Binary Tree.

b. To develop an algorithm for Binary Tree Inorder traversal.

2. Objective:

To implement and analyze maximum depth of Binary Tree.

To develop an algorithm for Binary Tree Inorder traversal.

3. Implementation/Code:

a.

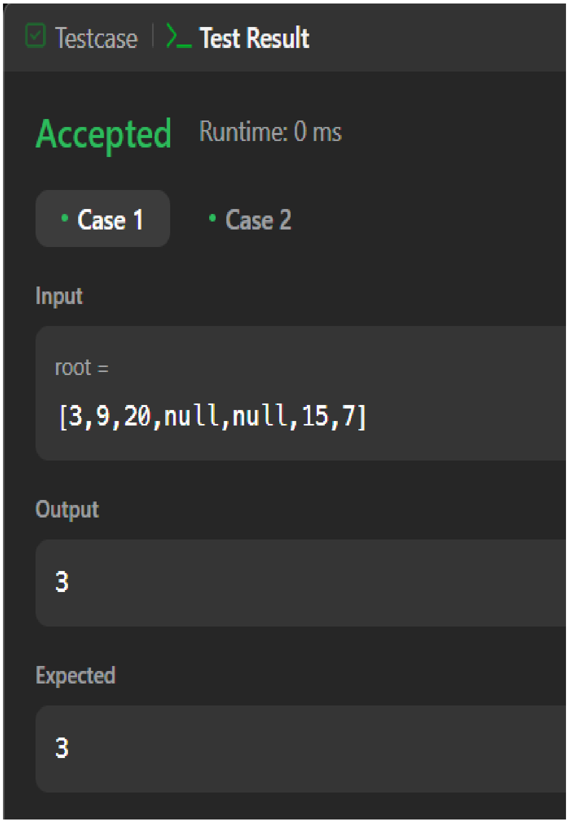
```
class Solution {
public:
    int maxDepth(TreeNode* root) {
        if (!root) return 0;
        int leftDepth = maxDepth(root->left);
        int rightDepth = maxDepth(root->right);
        return 1 + max(leftDepth, rightDepth);
    }
};
```

b.

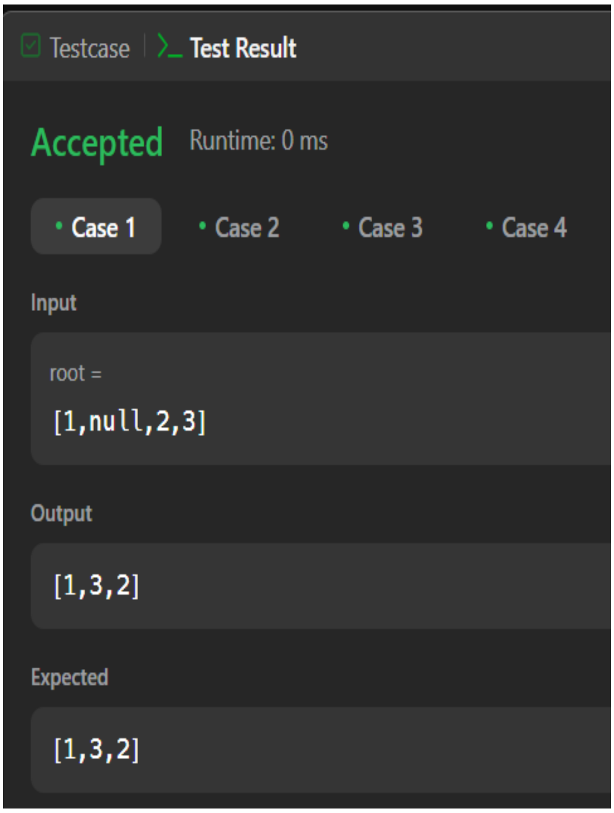
```
class Solution {
public:
    vector<int> inorderTraversal(TreeNode* root) {
        vector<int>ans;
        in(root,ans);
        return ans;
    }
    void in(TreeNode* root,vector<int>&ans)
    {
        if(root==NULL)
```

```
            return;
            in(root->left,ans);
            ans.push_back(root->val);
            in(root->right,ans);
        }
    };
```

4. Output:



```
Testcase | >_ Test Result

Accepted   Runtime: 0 ms

• Case 1   • Case 2

Input
root =
[3,9,20,null,null,15,7]

Output
3

Expected
3
```



```
Testcase | >_ Test Result

Accepted   Runtime: 0 ms

• Case 1   • Case 2   • Case 3   • Case 4

Input
root =
[1,null,2,3]

Output
[1,3,2]

Expected
[1,3,2]
```

5. Learning Outcome:

- Understand string manipulation techniques in C++.
- Implement efficient algorithms for detecting cyclic rotations.
- Apply mathematical approaches to solve missing number problems.
- Utilize standard library functions like accumulate and find.
- Enhance problem-solving skills through algorithm design and analysis.