



DEPARTMENT OF
COMPUTER SCIENCE & ENGINEERING
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Experiment 6

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Branch: CSE

Section/Group:641/A

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Date of Performance:

Subject Name: AP LAB-II

Subject Code: 22CSP-351

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)
```



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

4. Output:

This screenshot shows a test result interface for 'Case 1'. At the top, there are tabs for 'Testcase' and 'Test Result', with 'Test Result' being the active tab. Below the tabs, the word 'Accepted' is displayed in green, followed by 'Runtime: 0 ms'. Underneath, there are two buttons: 'Case 1' (selected) and 'Case 2'. The 'Input' section shows 'root =' followed by '[3,9,20,null,null,15,7]'. The 'Output' section shows the value '3'. The 'Expected' section also shows the value '3'.

Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2

Input

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

Output

3

Expected

3

This screenshot shows a test result interface for 'Case 1'. At the top, there are tabs for 'Testcase' and 'Test Result', with 'Test Result' being the active tab. Below the tabs, the word 'Accepted' is displayed in green, followed by 'Runtime: 0 ms'. Underneath, there are four buttons: 'Case 1' (selected), 'Case 2', 'Case 3', and 'Case 4'. The 'Input' section shows 'root =' followed by '[1,null,2,3]'. The 'Output' section shows the value '[1,3,2]'. The 'Expected' section also shows the value '[1,3,2]'.

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.