### 124. Binary Tree Maximum Path Sum

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\* Definition for a binary tree node.

\* struct TreeNode {

\* int val;

\* TreeNode \*left;

\* TreeNode \*right;

\* TreeNode() : val(0), left(nullptr), right(nullptr) {}

\* TreeNode(int x) : val(x), left(nullptr), right(nullptr) {}

\* TreeNode(int x, TreeNode \*left, TreeNode \*right) : val(x), left(left), right(right) {}

\* };

\*/

class Solution {

public:

int maxPathSum(TreeNode\* root) {

int mps = INT\_MIN;

dfs(root, mps);

return mps;

}

int dfs(TreeNode\* root, int& maximum)

{

if(root == nullptr) return 0;

int d1 = max(0, dfs(root->left, maximum));

int d2 = max(0, dfs(root->right, maximum));

maximum = max(maximum, d1 + d2 + root->val);

return max(d1,d2) + root->val;

}

};