AlgoExpert Quad Layout C++ 12px Sublime Monok

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Solution 1 Solution 2

```cpp
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using namespace std;

class BinaryTree {
public:
  int value;
  BinaryTree *left;
  BinaryTree *right;

  BinaryTree(int value) {
    this->value = value;
    left = NULL;
    right = NULL;
  }
};

struct Level {
  BinaryTree *root;
  int depth;
};

// Average case: when the tree is balanced
// O(n) time | O(h) space - where n is the number of nodes in
// the Binary Tree and h is the height of the Binary Tree
int nodeDepths(BinaryTree *root) {
  int sumOfDepths = 0;
  vector<Level> stack = {{root, 0}};
  while (stack.size() > 0) {
    BinaryTree *node = stack.back().root;
    int depth = stack.back().depth;
    stack.pop_back();
    if (node == NULL)
      continue;
    sumOfDepths += depth;
    stack.push_back(Level{node->left, depth + 1});
    stack.push_back(Level{node->right, depth + 1});
  }
  return sumOfDepths;
}
```