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[Awesome Compony]

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DSA – Binary Tree

A tree with many numbers

Description automatically generated

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# Diameter of a tree

## Intuition

### With global

Use a max variable and update it with

Recurse left and right

If null then return 0

Else

m = max(m, l + r)

return 1 + max(l, r)

### without global

if null return 0, 0 as root sum and as a branch sum

recurse l and r

to calc root sum, check what is max between current sum of l and r, root sum of l and root sum of r

to calc the branch sum check max of current l and r and 1 to it

## Complexity

TC – O(N)

SC – O(N)

## [Solution](https://leetcode.com/problems/diameter-of-binary-tree/solutions/4801536/easy-with-global-var-to-difficult-without-global-var-approaches-explaination)

# Sum root to leaf number

## Intuition

Use formula - ***(parentNumber \* 10) + currentNumber***

and use dfs

## Complexity

TC – O(N)

SC – O(1)

## [Solution](https://leetcode.com/problems/sum-root-to-leaf-numbers/solutions/5028575/simple-dfs-solution)