

124. Binary Tree Maximum Path Sum

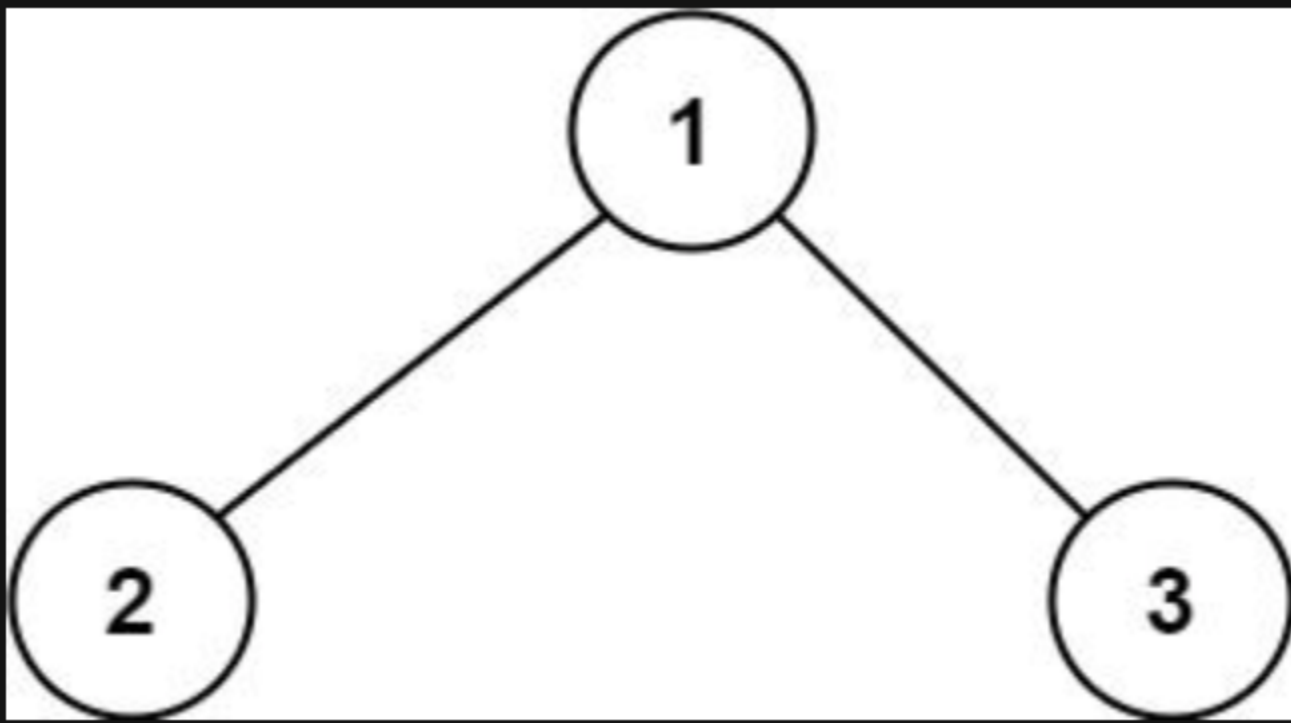
Description

A **path** in a binary tree is a sequence of nodes where each pair of adjacent nodes in the sequence has an edge connecting them. A node can only appear in the sequence **at most once** . Note that the path does not need to pass through the root.

The **path sum** of a path is the sum of the node's values in the path.

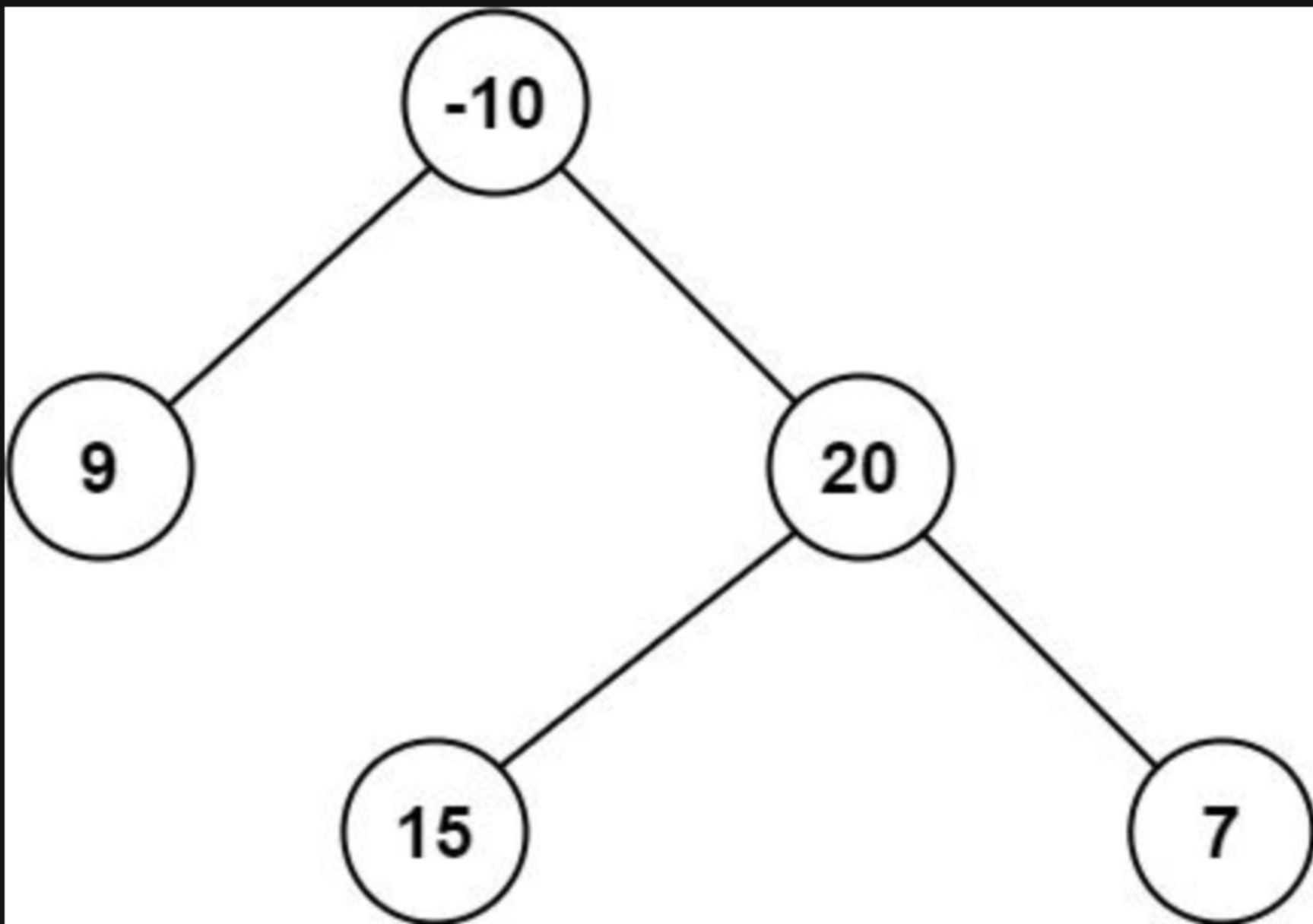
Given the `root` of a binary tree, return *the maximum path sum of any non-empty path* .

Example 1:



Input: `root = [1,2,3]`
Output: 6
Explanation: The optimal path is 2 -> 1 -> 3 with a path sum of 2 + 1 + 3 = 6.

Example 2:



Input: `root = [-10,9,20,null,null,15,7]`
Output: 42
Explanation: The optimal path is 15 -> 20 -> 7 with a path sum of 15 + 20 + 7 = 42.

Constraints:

- The number of nodes in the tree is in the range `[1, 3 * 104]` .
- `-1000 <= Node.val <= 1000`

