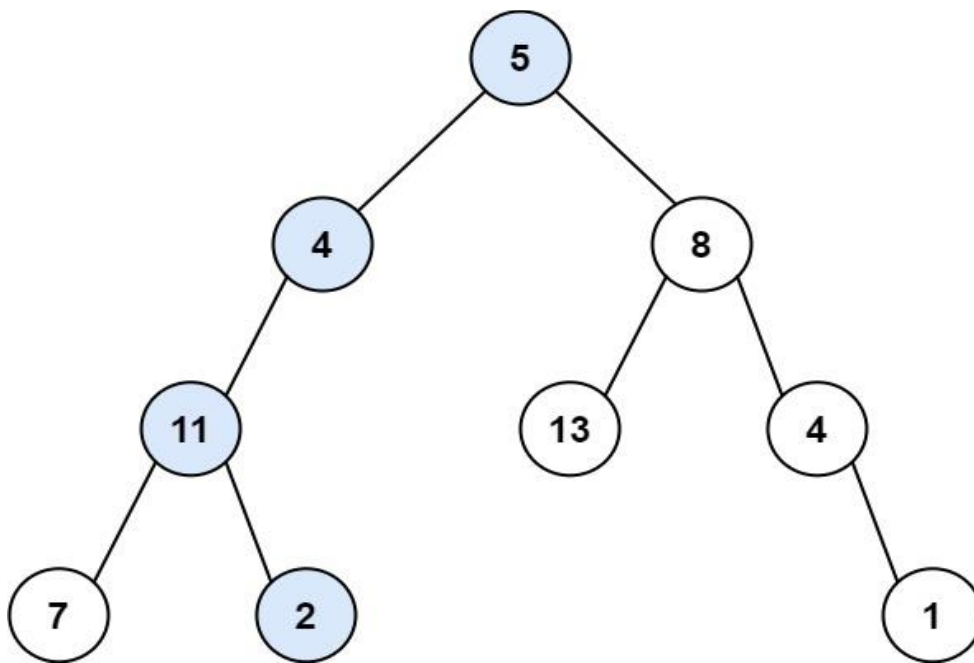


## **112. Path Sum**

Given the root of a binary tree and an integer targetSum, return true if the tree has a root-to-leaf path such that adding up all the values along the path equals targetSum.

A leaf is a node with no children.

### **Example 1:**

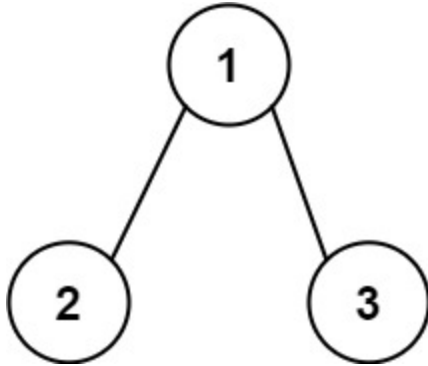


**Input:** root = [5,4,8,11,null,13,4,7,2,null,null,null,1], targetSum = 22

**Output:** true

**Explanation:** The root-to-leaf path with the target sum is shown.

### **Example 2:**



**Input:** root = [1,2,3], targetSum = 5

**Output:** false

**Explanation:** *There two root-to-leaf paths in the tree:*

- (1 --> 2): The sum is 3.
- (1 --> 3): The sum is 4.
- There is no root-to-leaf path with sum = 5.

### **Example 3:**

**Input:** root = [], targetSum = 0

**Output:** false

**Explanation:** Since the tree is empty, there are no root-to-leaf paths.

### **Constraints:**

- The number of nodes in the tree is in the range  $[0, 5000]$ .
- $-1000 \leq \text{Node.val} \leq 1000$
- $-1000 \leq \text{targetSum} \leq 1000$