

@LeetCode

Given a non-empty special binary tree consisting of nodes with the non-negative value, where each node in this tree has exactly `two` or `zero` sub-node. If the node has two sub-nodes, then this node's value is the smaller value among its two sub-nodes.

Given such a binary tree, you need to output the **second minimum** value in the set made of all the nodes' value in the whole tree.

If no such second minimum value exists, output `-1` instead.

**Example 1:**

**Input:**

```
    2
   / \
  2   5
   / \
  5   7
```

**Output:** 5

**Explanation:** The smallest value is 2, the second smallest value is 5.

**Example 2:**

**Input:**

```
    2
   / \
  2   2
```

**Output:** -1

**Explanation:** The smallest value is 2, but there isn't any second smallest value.