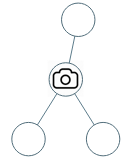
Given a binary tree, we install cameras on the nodes of the tree.

Each camera at a node can monitor **its parent, itself, and its immediate children**.

Calculate the minimum number of cameras needed to monitor all nodes of the tree.

**Example 1:**

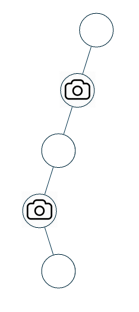


**Input:** [0,0,null,0,0]

**Output:** 1

**Explanation:** One camera is enough to monitor all nodes if placed as shown.

**Example 2:**



**Input:** [0,0,null,0,null,0,null,null,0]

**Output:** 2

**Explanation:** At least two cameras are needed to monitor all nodes of the tree. The above image shows one of the valid configurations of camera placement.

**Note:**

1. The number of nodes in the given tree will be in the range [1, 1000].
2. **Every** node has value 0.