

## Binary Tree Cameras

Input  $\rightarrow$  root = [0, 0, null, 0, 0]

Output  $\rightarrow$  1

### Intuition

Case 1  $\rightarrow$  return 0 if node is not monitored

Case 2  $\rightarrow$  return 1 if node is monitored

Case 3  $\rightarrow$  return 2 if node has camera

Use Depth First Search (DFS)

Base case 1  $\rightarrow$  If node == null  
return 1

int left = dfs(node, left, sum)

int right = dfs(node, right, sum)

$\rightarrow$  if (left == 2 || right == 2)

$\hookrightarrow$  // camera is at lower node

return 1

$\rightarrow$  if (left == 0 || right == 0)

$\hookrightarrow$  // node needs to be monitored  $\rightarrow$  sum++;

return 2;  $\rightarrow$  camera++;

$\rightarrow$  ~~if left~~ Other cases

return 0;

Base case 2 Only one node  
so not monitored  
return 1;