

1666. Change the Root of a Binary Tree Premium

Medium Topics Companies Hint

Given the `root` of a binary tree and a `leaf` node, reroot the tree so that the `leaf` is the new root.

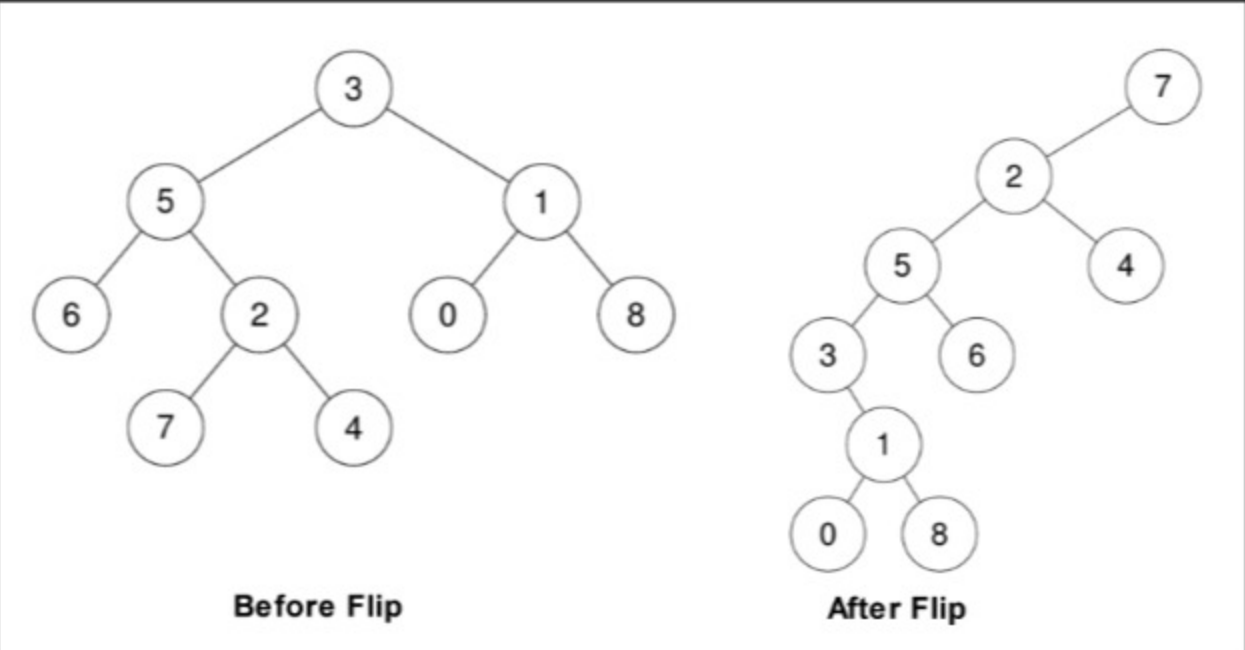
You can reroot the tree with the following steps for each node `cur` on the path **starting from the** `leaf` up to the `root` **excluding the root**:

- 1. If `cur` has a left child, then that child becomes `cur`'s right child.
- 2. `cur`'s original parent becomes `cur`'s left child. Note that in this process the original parent's pointer to `cur` becomes `null`, making it have at most one child.

Return *the new root of the rerooted tree*.

Note: Ensure that your solution sets the `Node.parent` pointers correctly after rerooting or you will receive "Wrong Answer".

Example 1:



Input: `root = [3,5,1,6,2,0,8,null,null,7,4]`, `leaf = 7`
Output: `[7,2,null,5,4,3,6,null,null,null,1,null,null,0,8]`

Example 2:

Input: `root = [3,5,1,6,2,0,8,null,null,7,4]`, `leaf = 0`
Output: `[0,1,null,3,8,5,null,null,null,6,2,null,null,7,4]`

Constraints:

- The number of nodes in the tree is in the range `[2, 100]`.
- `-10^9 <= Node.val <= 10^9`
- All `Node.val` are **unique**.
- `leaf` exist in the tree.

Seen this question in a real interview before? 1/5

Yes No

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Hint 1

Start traversing from the leaf. Always go up till you reach the root.

Hint 2

Change pointers as asked, make the current node's parent its left child, and make the left child the right one if needed.

Discussion (9)