1609. Even Odd Tree

Solved ●

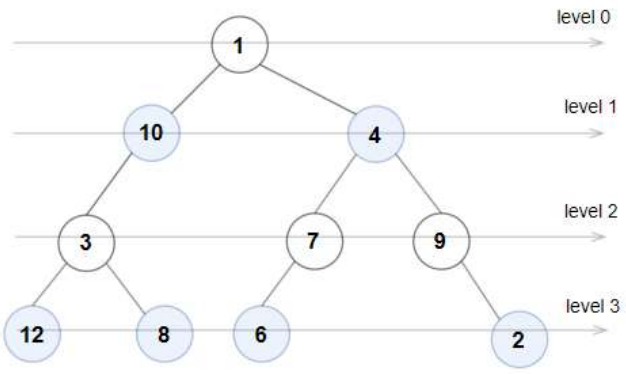
Medium Topics Companies Hint

A binary tree is named **Even-Odd** if it meets the following conditions:

- The root of the binary tree is at level index `0`, its children are at level index `1`, their children are at level index `2`, etc.
- For every **even-indexed** level, all nodes at the level have **odd** integer values in **strictly increasing** order (from left to right).
- For every **odd-indexed** level, all nodes at the level have **even** integer values in **strictly decreasing** order (from left to right).

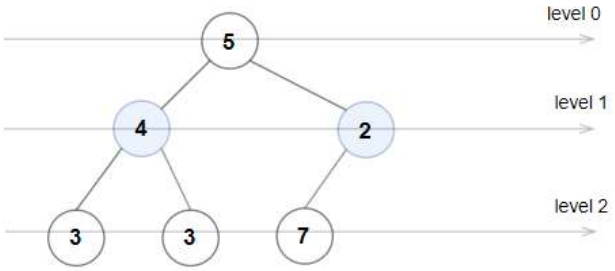
Given the `root` of a binary tree, *return* `true` *if the binary tree is* ***Even-Odd****, otherwise return* `false`.

Example 1:



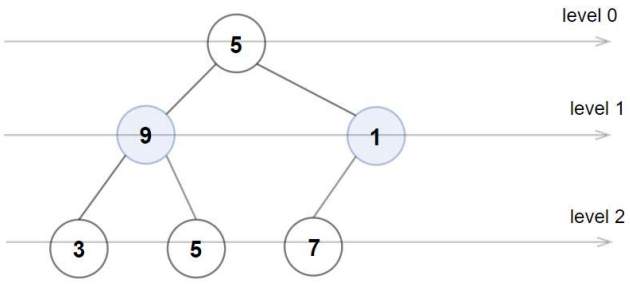
> **Input:** root = [1,10,4,3,null,7,9,12,8,6,null,null,2]
> **Output:** true
> **Explanation:** The node values on each level are:
> Level 0: [1]
> Level 1: [10,4]
> Level 2: [3,7,9]
> Level 3: [12,8,6,2]
> Since levels 0 and 2 are all odd and increasing and levels 1 and 3 are all even and decreasing, the tree is Even-Odd.

Example 2:



> **Input:** root = [5,4,2,3,3,7]
> **Output:** false
> **Explanation:** The node values on each level are:
> Level 0: [5]
> Level 1: [4,2]
> Level 2: [3,3,7]
> Node values in level 2 must be in strictly increasing order, so the tree is not Even-Odd.

Example 3:



> **Input:** root = [5,9,1,3,5,7]
> **Output:** false
> **Explanation:** Node values in the level 1 should be even integers.

Constraints:

- The number of nodes in the tree is in the range $[1, 10^5]$.
- $1 <= Node.val <= 10^6$

Seen this question in a real interview before? 1/4

Yes No

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Hint 1

Discussion (92)