

# 1483. Kth Ancestor of a Tree Node

## Description

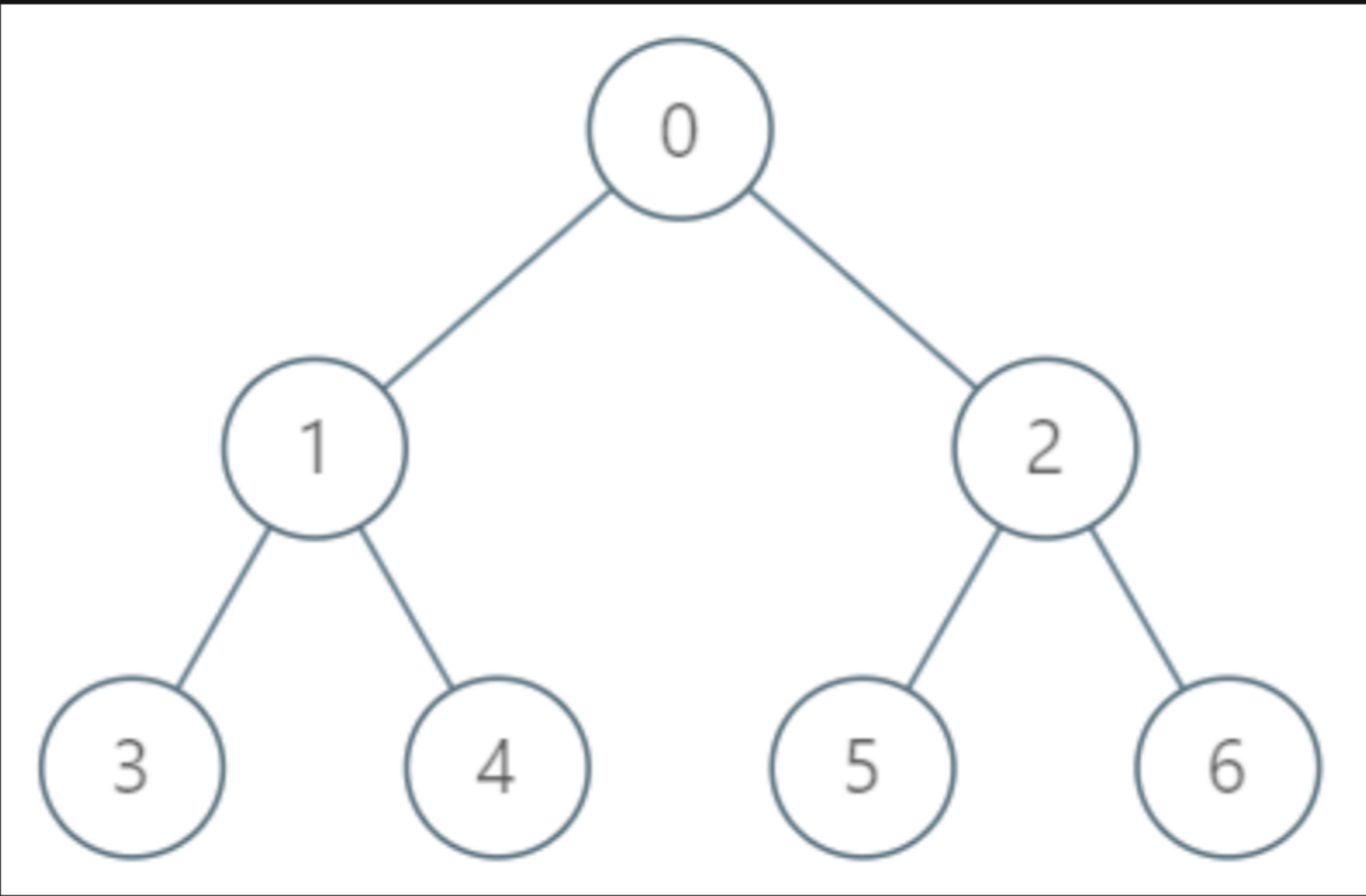
You are given a tree with `n` nodes numbered from `0` to `n - 1` in the form of a parent array `parent` where `parent[i]` is the parent of `ith` node. The root of the tree is node `0`. Find the `kth` ancestor of a given node.

The `kth` ancestor of a tree node is the `kth` node in the path from that node to the root node.

Implement the `TreeAncestor` class:

- `TreeAncestor(int n, int[] parent)` Initializes the object with the number of nodes in the tree and the parent array.
- `int getKthAncestor(int node, int k)` return the `kth` ancestor of the given node `node`. If there is no such ancestor, return `-1`.

### Example 1:



#### Input

```
["TreeAncestor", "getKthAncestor", "getKthAncestor", "getKthAncestor"]  
[[7, [-1, 0, 0, 1, 1, 2, 2]], [3, 1], [5, 2], [6, 3]]
```

#### Output

```
[null, 1, 0, -1]
```

#### Explanation

```
TreeAncestor treeAncestor = new TreeAncestor(7, [-1, 0, 0, 1, 1, 2, 2]);  
treeAncestor.getKthAncestor(3, 1); // returns 1 which is the parent of 3  
treeAncestor.getKthAncestor(5, 2); // returns 0 which is the grandparent of 5  
treeAncestor.getKthAncestor(6, 3); // returns -1 because there is no such ancestor
```

### Constraints:

- $1 \leq k \leq n \leq 5 * 10^4$
- `parent.length == n`
- `parent[0] == -1`
- $0 \leq parent[i] < n$  for all  $0 < i < n$
- $0 \leq node < n$
- There will be at most  $5 * 10^4$  queries.

