# Problem 3054: Binary Tree Nodes

## Problem Information

**Difficulty:** Medium
**Acceptance Rate:** 78.60%
**Paid Only:** Yes
**Tags:** Database

## Problem Description

Table: `Tree`

+-------------+------+ | Column Name | Type | +-------------+------+ | N | int | | P | int | +-------------+------+ N is the column of unique values for this table. Each row includes N and P, where N represents the value of a node in Binary Tree, and P is the parent of N.

Write a solution to find the node type of the Binary Tree. Output one of the following for each node:

* **Root** : if the node is the root node. * **Leaf** : if the node is the leaf node. * **Inner** : if the node is neither root nor leaf node.

Return _the result table ordered by node value in**ascending order**_.

The result format is in the following example.

**Example 1:**

**Input:** Tree table: +---+------+ | N | P | +---+------+ | 1 | 2 | | 3 | 2 | | 6 | 8 | | 9 | 8 | | 2 | 5 | | 8 | 5 | | 5 | null | +---+------+ **Output:** +---+-------+ | N | Type | +---+-------+ | 1 | Leaf | | 2 | Inner | | 3 | Leaf | | 5 | Root | | 6 | Leaf | | 8 | Inner | | 9 | Leaf | +---+-------+ **Explanation:** - Node 5 is the root node since it has no parent node. - Nodes 1, 3, 6, and 9 are leaf nodes because they don't have any child nodes. - Nodes 2, and 8 are inner nodes as they serve as parents to some of the nodes in the structure.

**Note:** This question is the same as [ 608: Tree Node.](https://leetcode.com/problems/tree-node/description/)

## Code Snippets

### MySQL:

```
# Write your MySQL query statement below
```

### MS SQL Server:

```
/* Write your T-SQL query statement below */
```

### PostgreSQL:

```
-- Write your PostgreSQL query statement below
```