Problem 608: Tree Node

Problem Information

Difficulty: Medium
Acceptance Rate: 0.00%
Paid Only: No

Problem Description

Table:

Tree

+-------------+------+ | Column Name | Type | +-------------+------+ | id | int | | p_id | int | +-------------+------+ id is the column with unique values for this table. Each row of this table contains information about the id of a node and the id of its parent node in a tree. The given structure is always a valid tree.

Each node in the tree can be one of three types:

"Leaf"

: if the node is a leaf node.

"Root"

: if the node is the root of the tree.

"Inner"

: If the node is neither a leaf node nor a root node.

Write a solution to report the type of each node in the tree.

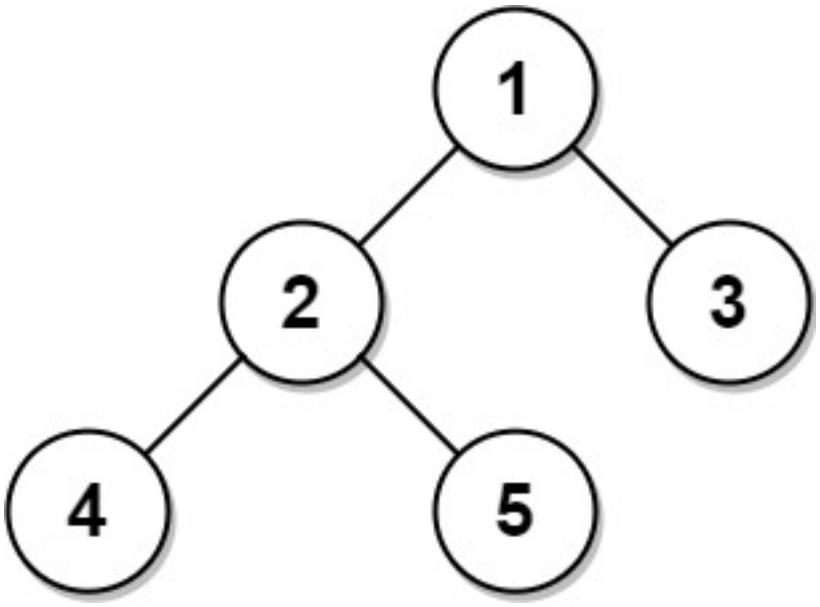
Return the result table in

any order

.

The result format is in the following example.

Example 1:



Input:

Tree table: +----+------+ | id | p_id | +----+------+ | 1 | null | | 2 | 1 | | 3 | 1 | | 4 | 2 | | 5 | 2 | +----+------+

Output:

+----+-------+ | id | type | +----+-------+ | 1 | Root | | 2 | Inner | | 3 | Leaf | | 4 | Leaf | | 5 | Leaf | +----+-------+

Explanation:

Node 1 is the root node because its parent node is null and it has child nodes 2 and 3. Node 2 is an inner node because it has parent node 1 and child node 4 and 5. Nodes 3, 4, and 5 are leaf nodes because they have parent nodes and they do not have child nodes.

Example 2:

Input:

Tree table: +----+------+ | id | p_id | +----+------+ | 1 | null | +----+------+

Output:

+----+-------+ | id | type | +----+-------+ | 1 | Root | +----+-------+

Explanation:

If there is only one node on the tree, you only need to output its root attributes.

Note:

This question is the same as

3054: Binary Tree Nodes.

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
```

Oracle:

```
/* Write your PL/SQL query statement below */
```

Pandas:

```
import pandas as pd

def tree_node(tree: pd.DataFrame) -> pd.DataFrame:
```

Solutions

MySQL Solution:

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