3236. CEO Subordinate Hierarchy Premium

Hard Topics

SQL Schema > Pandas Schema >

Table: `Employees`

```
+---------------+---------+
| Column Name   | Type    |
+---------------+---------+
| employee_id   | int     |
| employee_name | varchar |
| manager_id    | int     |
| salary        | int     |
+---------------+---------+
employee_id is the unique identifier for this table.
manager_id is the employee_id of the employee's manager. The CEO has a NULL manager_id.
```

Write a solution to find subordinates of the CEO (both **direct** and **indirect**), along with their **level in the hierarchy** and their **salary difference** from the CEO.

The result should have the following columns:

The query result format is in the following example.

- `subordinate_id`: The employee_id of the subordinate
- `subordinate_name`: The name of the subordinate
- `hierarchy_level`: The level of the subordinate in the hierarchy (`1` for **direct** reports, `2` for **their direct** reports, and **so on**)
- `salary_difference`: The difference between the subordinate's salary and the CEO's salary

Return *the result table ordered by* `hierarchy_level` ***ascending***, *and then by* `subordinate_id` ***ascending***.

The query result format is in the following example.

Example:

> **Input:**
>
> `Employees` table:
>
> ```
> +-------------+---------------+------------+---------+
> | employee_id | employee_name | manager_id | salary  |
> +-------------+---------------+------------+---------+
> | 1           | Alice         | NULL       | 150000  |
> | 2           | Bob           | 1          | 120000  |
> | 3           | Charlie       | 1          | 110000  |
> | 4           | David         | 2          | 105000  |
> | 5           | Eve           | 2          | 100000  |
> | 6           | Frank         | 3          | 95000   |
> | 7           | Grace         | 3          | 98000   |
> | 8           | Helen         | 5          | 90000   |
> +-------------+---------------+------------+---------+
> ```
>
> **Output:**
>
> ```
> +---------------+-----------------+-----------------+-------------------+
> | subordinate_id | subordinate_name | hierarchy_level | salary_difference |
> +---------------+-----------------+-----------------+-------------------+
> | 2             | Bob             | 1               | -30000            |
> | 3             | Charlie         | 1               | -40000            |
> | 4             | David           | 2               | -45000            |
> | 5             | Eve             | 2               | -50000            |
> | 6             | Frank           | 2               | -55000            |
> | 7             | Grace           | 2               | -52000            |
> | 8             | Helen           | 3               | -60000            |
> +---------------+-----------------+-----------------+-------------------+
> ```
>
> **Explanation:**
>
> - Bob and Charlie are direct subordinates of Alice (CEO) and thus have a hierarchy_level of 1.
> - David and Eve report to Bob, while Frank and Grace report to Charlie, making them second-level subordinates (hierarchy_level 2).
> - Helen reports to Eve, making Helen a third-level subordinate (hierarchy_level 3).
> - Salary differences are calculated relative to Alice's salary of 150000.
> - The result is ordered by hierarchy_level ascending, and then by subordinate_id ascending.
>
> **Note:** The output is ordered first by hierarchy_level in ascending order, then by subordinate_id in ascending order.

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

Yes No

Accepted 539 | Submissions 729 | Acceptance Rate 73.9%

Topics

Database

Discussion (0)