Problem 579: Find Cumulative Salary of an Employee

Problem Information

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

Problem Description

Table:

Employee

+-------------+------+ | Column Name | Type | +-------------+------+ | id | int | | month | int | | salary | int | +-------------+------+ (id, month) is the primary key (combination of columns with unique values) for this table. Each row in the table indicates the salary of an employee in one month during the year 2020.

Write a solution to calculate the

cumulative salary summary

for every employee in a single unified table.

The

cumulative salary summary

for an employee can be calculated as follows:

For each month that the employee worked,

sum

up the salaries in

that month

and the

previous two months

. This is their

3-month sum

for that month. If an employee did not work for the company in previous months, their effective salary for those months is

0

.

Do

not

include the 3-month sum for the

most recent month

that the employee worked for in the summary.

Do

not

include the 3-month sum for any month the employee

did not work

.

Return the result table ordered by

id

in

ascending order

. In case of a tie, order it by

month

in

descending order

.

The result format is in the following example.

Example 1:

Input:

Employee table: +----+-------+--------+ | id | month | salary | +----+-------+--------+ | 1 | 1 | 20 | | 2 | 1 | 20 | | 1 | 2 | 30 | | 2 | 2 | 30 | | 3 | 2 | 40 | | 1 | 3 | 40 | | 3 | 3 | 60 | | 1 | 4 | 60 | | 3 | 4 | 70 | | 1 | 7 | 90 | | 1 | 8 | 90 | +----+-------+--------+

Output:

+----+-------+--------+ | id | month | Salary | +----+-------+--------+ | 1 | 7 | 90 | | 1 | 4 | 130 | | 1 | 3 | 90 | | 1 | 2 | 50 | | 1 | 1 | 20 | | 2 | 1 | 20 | | 3 | 3 | 100 | | 3 | 2 | 40 | +----+-------+--------+

Explanation:

Employee '1' has five salary records excluding their most recent month '8': - 90 for month '7'. - 60 for month '4'. - 40 for month '3'. - 30 for month '2'. - 20 for month '1'. So the cumulative salary summary for this employee is: +----+-------+--------+ | id | month | salary | +----+-------+--------+ | 1 | 7 | 90 | (90 + 0 + 0) | 1 | 4 | 130 | (60 + 40 + 30) | 1 | 3 | 90 | (40 + 30 +

20) | 1 | 2 | 50 | (30 + 20 + 0) | 1 | 1 | 20 | (20 + 0 + 0) +----+-------+--------+ Note that the 3-month sum for month '7' is 90 because they did not work during month '6' or month '5'.

Employee '2' only has one salary record (month '1') excluding their most recent month '2'. +----+-------+--------+ | id | month | salary | +----+-------+--------+ | 2 | 1 | 20 | (20 + 0 + 0) +----+-------+--------+

Employee '3' has two salary records excluding their most recent month '4': - 60 for month '3'. - 40 for month '2'. So the cumulative salary summary for this employee is: +----+-------+--------+ | id | month | salary | +----+-------+--------+ | 3 | 3 | 100 | (60 + 40 + 0) | 3 | 2 | 40 | (40 + 0 + 0) +----+-------+--------+

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 cumulative_salary(employee: pd.DataFrame) -> pd.DataFrame:
```

Solutions

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