Problem 2051: The Category of Each Member in the Store

Problem Information

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

Problem Description

Table:

Members

+-------------+---------+ | Column Name | Type | +-------------+---------+ | member_id | int | | name | varchar | +-------------+---------+ member_id is the column with unique values for this table. Each row of this table indicates the name and the ID of a member.

Table:

Visits

+-------------+------+ | Column Name | Type | +-------------+------+ | visit_id | int | | member_id | int | | visit_date | date | +-------------+------+ visit_id is the column with unique values for this table. member_id is a foreign key (reference column) to member_id from the Members table. Each row of this table contains information about the date of a visit to the store and the member who visited it.

Table:

Purchases

+----------------+------+ | Column Name | Type | +----------------+------+ | visit_id | int | | charged_amount | int | +----------------+------+ visit_id is the column with unique values for this table. visit_id is a foreign key (reference column) to visit_id from the Visits table. Each row of this table contains information about the amount charged in a visit to the store.

A store wants to categorize its members. There are three tiers:

"Diamond"

: if the conversion rate is

greater than or equal to

80

.

"Gold"

: if the conversion rate is

greater than or equal to

50

and less than

80

.

"Silver"

: if the conversion rate is

less than

50

.

"Bronze"

: if the member never visited the store.

The

conversion rate

of a member is

(100 * total number of purchases for the member) / total number of visits for the member

.

Write a solution to report the id, the name, and the category of each member.

Return the result table in

any order

.

The result format is in the following example.

Example 1:

Input:

Members table: +-----------+---------+ | member_id | name | +-----------+---------+ | 9 | Alice | | 11 | Bob | | 3 | Winston | | 8 | Hercy | | 1 | Narihan | +-----------+---------+ Visits table: +----------+-----------+------------+ | visit_id | member_id | visit_date | +----------+-----------+------------+ | 22 | 11 | 2021-10-28 | | 16 | 11 | 2021-01-12 | | 18 | 9 | 2021-12-10 | | 19 | 3 | 2021-10-19 | | 12 | 11 | 2021-03-01 | | 17 | 8 | 2021-05-07 | | 21 | 9 | 2021-05-12 | +----------+-----------+------------+ Purchases table: +----------+----------------+ | visit_id | charged_amount | +----------+----------------+ | 12 | 2000 | | 18 | 9000 | | 17 | 7000 | +----------+----------------+

Output:

+-----------+---------+----------+ | member_id | name | category | +-----------+---------+----------+ | 1 | Narihan | Bronze | | 3 | Winston | Silver | | 8 | Hercy | Diamond | | 9 | Alice | Gold | | 11 | Bob | Silver | +-----------+---------+----------+

Explanation:

- User Narihan with id = 1 did not make any visits to the store. She gets a Bronze category. - User Winston with id = 3 visited the store one time and did not purchase anything. The conversion rate = (100 * 0) / 1 = 0. He gets a Silver category. - User Hercy with id = 8 visited the store one time and purchased one time. The conversion rate = (100 * 1) / 1 = 1. He gets a Diamond category. - User Alice with id = 9 visited the store two times and purchased one time. The conversion rate = (100 * 1) / 2 = 50. She gets a Gold category. - User Bob with id = 11 visited the store three times and purchased one time. The conversion rate = (100 * 1) / 3 = 33.33. He gets a Silver category.

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 find_categories(members: pd.DataFrame, visits: pd.DataFrame, purchases: pd.DataFrame) -> pd.DataFrame:
```

Solutions

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