Problem 1384: Total Sales Amount by Year

Problem Information

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

Problem Description

Table:

Product

+---------------+---------+ | Column Name | Type | +---------------+---------+ | product_id | int | | product_name | varchar | +---------------+---------+ product_id is the primary key (column with unique values) for this table. product_name is the name of the product.

Table:

Sales

+----------------------+---------+ | Column Name | Type | +----------------------+---------+ | product_id | int | | period_start | date | | period_end | date | | average_daily_sales | int | +----------------------+---------+ product_id is the primary key (column with unique values) for this table. period_start and period_end indicate the start and end date for the sales period, and both dates are inclusive. The average_daily_sales column holds the average daily sales amount of the items for the period. The dates of the sales years are between 2018 to 2020.

Write a solution to report the total sales amount of each item for each year, with corresponding

product_name

,

product_id

,

report_year

, and

total_amount

.

Return the result table

ordered

by

product_id

and

report_year

.

The result format is in the following example.

Example 1:

Input:

Product table: +------------+--------------+ | product_id | product_name | +------------+--------------+ | 1 | LC Phone | | 2 | LC T-Shirt | | 3 | LC Keychain | +------------+--------------+ Sales table: +------------+--------------+-------------+---------------------+ | product_id | period_start | period_end | average_daily_sales | +------------+--------------+-------------+---------------------+ | 1 | 2019-01-25 | 2019-02-28 | 100 | | 2 | 2018-12-01 | 2020-01-01 | 10 | | 3 | 2019-12-01 | 2020-01-31 | 1 | +------------+--------------+-------------+---------------------+

Output:

+------------+--------------+-------------+--------------+ | product_id | product_name | report_year | total_amount | +------------+--------------+-------------+--------------+ | 1 | LC Phone | 2019 | 3500 | | 2 | LC T-Shirt | 2018 | 310 | | 2 | LC T-Shirt | 2019 | 3650 | | 2 | LC T-Shirt | 2020 | 10 | | 3 | LC Keychain | 2019 | 31 | | 3 | LC Keychain | 2020 | 31 | +------------+--------------+-------------+--------------+

Explanation:

LC Phone was sold for the period of 2019-01-25 to 2019-02-28, and there are 35 days for this period. Total amount 35*100 = 3500. LC T-shirt was sold for the period of 2018-12-01 to 2020-01-01, and there are 31, 365, 1 days for years 2018, 2019 and 2020 respectively. LC Keychain was sold for the period of 2019-12-01 to 2020-01-31, and there are 31, 31 days for years 2019 and 2020 respectively.

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 total_sales(product: pd.DataFrame, sales: pd.DataFrame) -> pd.DataFrame:
```

Solutions

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