Problem 3166: Calculate Parking Fees and Duration

Problem Information

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

Problem Description

Table:

ParkingTransactions

+--------------+-----------+ | Column Name | Type | +--------------+-----------+ | lot_id | int | | car_id | int | | entry_time | datetime | | exit_time | datetime | | fee_paid | decimal | +--------------+-----------+ (lot_id, car_id, entry_time) is the primary key (combination of columns with unique values) for this table. Each row of this table contains the ID of the parking lot, the ID of the car, the entry and exit times, and the fee paid for the parking duration.

Write a solution to find the

total parking fee

paid by each car

across all parking lots

, and the

average hourly fee

(rounded to

decimal places) paid by

each

car. Also, find the

parking lot

where each car spent the

most total time

.

Return

the result table ordered by

car_id

in

ascending

order.

Note:

Test cases are generated in such a way that an individual car cannot be in multiple parking lots at the same time.

The result format is in the following example.

Example:

Input:

ParkingTransactions table:

+--------+--------+---------------------+---------------------+----------+ | lot_id | car_id | entry_time | exit_time | fee_paid | +--------+--------+---------------------+---------------------+----------+ | 1 | 1001 | 2023-06-01 08:00:00 | 2023-06-01 10:30:00 | 5.00 | | 1 | 1001 | 2023-06-02 11:00:00 | 2023-06-02 12:45:00 | 3.00 | | 2 | 1001 | 2023-06-01 10:45:00 | 2023-06-01 12:00:00 | 6.00 | | 2 | 1002 | 2023-06-01 09:00:00 | 2023-06-01 11:30:00 | 4.00 | | 3 | 1001 | 2023-06-03 07:00:00 | 2023-06-03 09:00:00 | 4.00 | | 3 | 1002 | 2023-06-02 12:00:00 | 2023-06-02 14:00:00 | 2.00 | +--------+--------+---------------------+---------------------+----------+

Output:

+--------+---------------+---------------+---------------+ | car_id | total_fee_paid | avg_hourly_fee | most_time_lot | +--------+---------------+---------------+---------------+ | 1001 | 18.00 | 2.40 | 1 | | 1002 | 6.00 | 1.33 | 2 | +--------+---------------+---------------+---------------+

Explanation:

For car ID 1001:

From 2023-06-01 08:00:00 to 2023-06-01 10:30:00 in lot 1: 2.5 hours, fee 5.00

From 2023-06-02 11:00:00 to 2023-06-02 12:45:00 in lot 1: 1.75 hours, fee 3.00

From 2023-06-01 10:45:00 to 2023-06-01 12:00:00 in lot 2: 1.25 hours, fee 6.00

From 2023-06-03 07:00:00 to 2023-06-03 09:00:00 in lot 3: 2 hours, fee 4.00

Total fee paid: 18.00, total hours: 7.5, average hourly fee: 2.40, most time spent in lot 1: 4.25 hours.

For car ID 1002:

From 2023-06-01 09:00:00 to 2023-06-01 11:30:00 in lot 2: 2.5 hours, fee 4.00

From 2023-06-02 12:00:00 to 2023-06-02 14:00:00 in lot 3: 2 hours, fee 2.00

Total fee paid: 6.00, total hours: 4.5, average hourly fee: 1.33, most time spent in lot 2: 2.5 hours.

Note:

Output table is ordered by car_id in ascending order.

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 calculate_fees_and_duration(parking_transactions: pd.DataFrame) ->
pd.DataFrame:
```

Solutions

MySQL Solution:

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