Problem 3262: Find Overlapping Shifts

Problem Information

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

Problem Description

Table:

EmployeeShifts

+------------------+---------+ | Column Name | Type | +------------------+---------+ | employee_id | int | | start_time | time | | end_time | time | +------------------+---------+ (employee_id, start_time) is the unique key for this table. This table contains information about the shifts worked by employees, including the start and end times on a specific date.

Write a solution to count the number of

overlapping shifts

for each employee. Two shifts are considered overlapping if one shift's

end_time

is

later than

another shift's

start_time

.

Return the result table ordered by

employee_id

in

ascending

order

.

The query result format is in the following example.

Example:

Input:

EmployeeShifts

table:

+-------------+------------+----------+ | employee_id | start_time | end_time |
+-------------+------------+----------+ | 1 | 08:00:00 | 12:00:00 | | 1 | 11:00:00 | 15:00:00 | | 1 |
14:00:00 | 18:00:00 | | 2 | 09:00:00 | 17:00:00 | | 2 | 16:00:00 | 20:00:00 | | 3 | 10:00:00 |
12:00:00 | | 3 | 13:00:00 | 15:00:00 | | 3 | 16:00:00 | 18:00:00 | | 4 | 08:00:00 | 10:00:00 | | 4 |
09:00:00 | 11:00:00 | +-------------+------------+----------+

Output:

+-------------+--------------------+ | employee_id | overlapping_shifts |
+-------------+--------------------+ | 1 | 2 | | 2 | 1 | | 4 | 1 | +-------------+--------------------+

Explanation:

Employee 1 has 3 shifts:

08:00:00 to 12:00:00

11:00:00 to 15:00:00

14:00:00 to 18:00:00

The first shift overlaps with the second, and the second overlaps with the third, resulting in 2 overlapping shifts.

Employee 2 has 2 shifts:

09:00:00 to 17:00:00

16:00:00 to 20:00:00

These shifts overlap with each other, resulting in 1 overlapping shift.

Employee 3 has 3 shifts:

10:00:00 to 12:00:00

13:00:00 to 15:00:00

16:00:00 to 18:00:00

None of these shifts overlap, so Employee 3 is not included in the output.

Employee 4 has 2 shifts:

08:00:00 to 10:00:00

09:00:00 to 11:00:00

These shifts overlap with each other, resulting in 1 overlapping shift.

The output shows the employee_id and the count of overlapping shifts for each employee who has at least one overlapping shift, ordered by employee_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 find_overlapping_shifts(employee_shifts: pd.DataFrame) -> pd.DataFrame:
```

Solutions

MySQL Solution:

```
# Write your MySQL query statement below
```

MS SQL Server Solution:

```
/* Write your T-SQL query statement below */
```

PostgreSQL Solution:

```
-- Write your PostgreSQL query statement below
```

Oracle Solution:

```
/* Write your PL/SQL query statement below */
```

Pandas Solution:

```
import pandas as pd

def find_overlapping_shifts(employee_shifts: pd.DataFrame) -> pd.DataFrame:
```