Problem 2153: The Number of Passengers in Each Bus II

Problem Information

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

Problem Description

Table:

Buses

+--------------+------+ | Column Name | Type | +--------------+------+ | bus_id | int | | arrival_time | int | | capacity | int | +--------------+------+ bus_id contains unique values. Each row of this table contains information about the arrival time of a bus at the LeetCode station and its capacity (the number of empty seats it has). No two buses will arrive at the same time and all bus capacities will be positive integers.

Table:

Passengers

+--------------+------+ | Column Name | Type | +--------------+------+ | passenger_id | int | | arrival_time | int | +--------------+------+ passenger_id contains unique values. Each row of this table contains information about the arrival time of a passenger at the LeetCode station.

Buses and passengers arrive at the LeetCode station. If a bus arrives at the station at a time

t

bus

and a passenger arrived at a time

$t_{passenger}$

where

$t_{passenger} <= t_{bus}$

and the passenger did not catch any bus, the passenger will use that bus. In addition, each bus has a capacity. If at the moment the bus arrives at the station there are more passengers waiting than its capacity $capacity$, only $capacity$ passengers will use the bus.

Write a solution to report the number of users that used each bus.

Return the result table ordered by bus_id in ascending order.

The result format is in the following example.

Example 1:

Input:

Buses table: +--------+-------------+----------+ | bus_id | arrival_time | capacity | +--------+-------------+----------+ | 1 | 2 | 1 | | 2 | 4 | 10 | | 3 | 7 | 2 | +--------+-------------+----------+
Passengers table: +--------------+--------------+ | passenger_id | arrival_time | +--------------+--------------+ | 11 | 1 | | 12 | 1 | | 13 | 5 | | 14 | 6 | | 15 | 7 | +--------------+--------------+

Output:

+--------+----------------+ | bus_id | passengers_cnt | +--------+----------------+ | 1 | 1 | | 2 | 1 | | 3 | 2 | +--------+----------------+

Explanation:

- Passenger 11 arrives at time 1. - Passenger 12 arrives at time 1. - Bus 1 arrives at time 2 and collects passenger 11 as it has one empty seat.

- Bus 2 arrives at time 4 and collects passenger 12 as it has ten empty seats.

- Passenger 12 arrives at time 5. - Passenger 13 arrives at time 6. - Passenger 14 arrives at time 7. - Bus 3 arrives at time 7 and collects passengers 12 and 13 as it has two empty seats.

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:

```python
import pandas as pd

def number_of_passengers(buses: pd.DataFrame, passengers: pd.DataFrame) ->
pd.DataFrame:
```

Solutions

MySQL Solution:

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