Problem 3328: Find Cities in Each State II

Problem Information

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

Problem Description

Table:

cities

+-------------+---------+ | Column Name | Type | +-------------+---------+ | state | varchar | | city | varchar | +-------------+---------+ (state, city) is the combination of columns with unique values for this table. Each row of this table contains the state name and the city name within that state.

Write a solution to find

all the cities

in

each state

and analyze them based on the following requirements:

Combine all cities into a

comma-separated

string for each state.

Only include states that have

at least

3

cities.

Only include states where

at least one city

starts with the

same letter as the state name

.

Return

the result table ordered by

the count of matching-letter cities in

descending

order

and then by state name in

ascending

order

.

The result format is in the following example.

Example:

Input:

cities table:

state	city
New York	New York City
New York	Newark
New York	Buffalo
New York	Rochester
California	San Francisco
California	Sacramento
California	San Diego
California	Los Angeles
Texas	Tyler
Texas	Temple
Texas	Taylor
Texas	Dallas
Pennsylvania	Philadelphia
Pennsylvania	Pittsburgh
Pennsylvania	Pottstown

Output:

state	cities	matching_letter_count
Pennsylvania	Philadelphia, Pittsburgh, Pottstown	3
Texas	Dallas, Taylor, Temple, Tyler	3
New York	Buffalo, Newark, New York City, Rochester	2

Explanation:

Pennsylvania

:

Has 3 cities (meets minimum requirement)

All 3 cities start with 'P' (same as state)

matching_letter_count = 3

Texas

:

Has 4 cities (meets minimum requirement)

3 cities (Taylor, Temple, Tyler) start with 'T' (same as state)

matching_letter_count = 3

New York

:

Has 4 cities (meets minimum requirement)

2 cities (Newark, New York City) start with 'N' (same as state)

matching_letter_count = 2

California

is not included in the output because:

Although it has 4 cities (meets minimum requirement)

No cities start with 'C' (doesn't meet the matching letter requirement)

Note:

Results are ordered by matching_letter_count in descending order

When matching_letter_count is the same (Texas and New York both have 2), they are ordered by state name alphabetically

Cities in each row are ordered alphabetically

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 state_city_analysis(cities: pd.DataFrame) -> pd.DataFrame:
```

Solutions

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