3328. Find Cities in Each State II Premium

Medium 🏷 Topics

SQL Schema > Pandas Schema >

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

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Database

💬 Discussion (1) ⌄