Problem 3451: Find Invalid IP Addresses

Problem Information

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

Problem Description

Table:

logs

+-------------+---------+ | Column Name | Type | +-------------+---------+ | log_id | int | | ip | varchar | | status_code | int | +-------------+---------+ log_id is the unique key for this table. Each row contains server access log information including IP address and HTTP status code.

Write a solution to find

invalid IP addresses

. An IPv4 address is invalid if it meets any of these conditions:

Contains numbers

greater than

255

in any octet

Has

leading zeros

in any octet (like

01.02.03.04

)

Has

less or more

than

4

octets

Return

the result table

ordered by

invalid_count

,

ip

in

descending

order respectively

.

The result format is in the following example.

Example:

Input:

logs table:

+--------+---------------+-------------+ | log_id | ip | status_code | +--------+---------------+-------------+ | 1 | 192.168.1.1 | 200 | | 2 | 256.1.2.3 | 404 | | 3 | 192.168.001.1 | 200 | | 4 | 192.168.1.1 | 200 | | 5 | 192.168.1 | 500 | | 6 | 256.1.2.3 | 404 | | 7 | 192.168.001.1 | 200 | +--------+---------------+-------------+

Output:

+---------------+--------------+ | ip | invalid_count| +---------------+--------------+ | 256.1.2.3 | 2 | | 192.168.001.1 | 2 | | 192.168.1 | 1 | +---------------+--------------+

Explanation:

256.1.2.3 is invalid because 256 > 255

192.168.001.1 is invalid because of leading zeros

192.168.1 is invalid because it has only 3 octets

The output table is ordered by invalid_count, ip in descending order respectively.

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_invalid_ips(logs: pd.DataFrame) -> pd.DataFrame:
```

Solutions

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