Problem 3451: Find Invalid IP Addresses

Problem Information

Difficulty: Hard
Acceptance Rate: 53.29%
Paid Only: No
Tags: Database

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
```