Problem 3204: Bitwise User Permissions Analysis

Problem Information

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

Problem Description

Table:

user_permissions

+-------------+---------+ | Column Name | Type | +-------------+---------+ | user_id | int | | permissions | int | +-------------+---------+ user_id is the primary key. Each row of this table contains the user ID and their permissions encoded as an integer.

Consider that each bit in the

permissions

integer represents a different access level or feature that a user has.

Write a solution to calculate the following:

common_perms: The access level granted to

all users

. This is computed using a

bitwise AND

operation on the

permissions

column.

any_perms: The access level granted to

any user

. This is computed using a

bitwise OR

operation on the

permissions

column.

Return

the result table in

any

order

.

The result format is shown in the following example.

Example:

Input:

user_permissions table:

+---------+-------------+ | user_id | permissions | +---------+-------------+ | 1 | 5 | | 2 | 12 | | 3 | 7 | | 4 | 3 | +---------+-------------+

Output:

+-------------+--------------+ | common_perms | any_perms | +--------------+-------------+ | 0 | 15 | +--------------+-------------+

Explanation:

common_perms:

Represents the bitwise AND result of all permissions:

For user 1 (5): 5 (binary 0101)

For user 2 (12): 12 (binary 1100)

For user 3 (7): 7 (binary 0111)

For user 4 (3): 3 (binary 0011)

Bitwise AND: 5 & 12 & 7 & 3 = 0 (binary 0000)

any_perms:

Represents the bitwise OR result of all permissions:

Bitwise OR: 5 | 12 | 7 | 3 = 15 (binary 1111)

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 analyze_permissions(user_permissions: pd.DataFrame) -> pd.DataFrame:
```

Solutions

MySQL Solution:

```
# Write your MySQL query statement below
```

MS SQL Server Solution:

```
/* Write your T-SQL query statement below */
```

PostgreSQL Solution:

```
-- Write your PostgreSQL query statement below
```

Oracle Solution:

```
/* Write your PL/SQL query statement below */
```

Pandas Solution:

```
import pandas as pd

def analyze_permissions(user_permissions: pd.DataFrame) -> pd.DataFrame:
```