# Problem 1322: Ads Performance

## Problem Information

**Difficulty:** Easy
**Acceptance Rate:** 0.00%
**Paid Only:** No

## Problem Description

Table:

Ads

+---------------+---------+ | Column Name | Type | +---------------+---------+ | ad_id | int | | user_id | int | | action | enum | +---------------+---------+ (ad_id, user_id) is the primary key (combination of columns with unique values) for this table. Each row of this table contains the ID of an Ad, the ID of a user, and the action taken by this user regarding this Ad. The action column is an ENUM (category) type of ('Clicked', 'Viewed', 'Ignored').

A company is running Ads and wants to calculate the performance of each Ad.

Performance of the Ad is measured using Click-Through Rate (CTR) where:

$$CTR = \begin{cases} 0, & \text{if Ad total clicks + Ad total views = 0} \\ \frac{\text{Ad total clicks}}{\text{Ad total clicks + Ad total views}} \times 100, & \text{otherwise} \end{cases}$$

Write a solution to find the

ctr

of each Ad.

Round

ctr

to

two decimal points

.

Return the result table ordered by

ctr

in

descending order

and by

ad_id

in

ascending order

in case of a tie.

The result format is in the following example.

Example 1:

Input:

Ads table: +-------+---------+---------+ | ad_id | user_id | action | +-------+---------+---------+ | 1 | 1 | Clicked | | 2 | 2 | Clicked | | 3 | 3 | Viewed | | 5 | 5 | Ignored | | 1 | 7 | Ignored | | 2 | 7 | Viewed | | 3 | 5 | Clicked | | 1 | 4 | Viewed | | 2 | 11 | Viewed | | 1 | 2 | Clicked | +-------+---------+---------+

Output:

+-------+-------+ | ad_id | ctr | +-------+-------+ | 1 | 66.67 | | 3 | 50.00 | | 2 | 33.33 | | 5 | 0.00 | +-------+-------+

Explanation:

for ad_id = 1, ctr = (2/(2+1)) * 100 = 66.67 for ad_id = 2, ctr = (1/(1+2)) * 100 = 33.33 for ad_id = 3, ctr = (1/(1+1)) * 100 = 50.00 for ad_id = 5, ctr = 0.00, Note that ad_id = 5 has no clicks or views. Note that we do not care about Ignored Ads.

## 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 ads_performance(ads: pd.DataFrame) -> pd.DataFrame:
```

## Solutions

**MySQL Solution:**

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