Problem 1867: Orders With Maximum Quantity Above Average

Problem Information

Difficulty: Medium
Acceptance Rate: 70.64%
Paid Only: Yes
Tags: Database

Problem Description

Table: `OrdersDetails`

+-------------+------+ | Column Name | Type | +-------------+------+ | order_id | int | | product_id | int | | quantity | int | +-------------+------+ (order_id, product_id) is the primary key (combination of columns with unique values) for this table. A single order is represented as multiple rows, one row for each product in the order. Each row of this table contains the quantity ordered of the product product_id in the order order_id.

You are running an e-commerce site that is looking for **imbalanced orders**. An **imbalanced order** is one whose **maximum** quantity is **strictly greater** than the **average** quantity of **every order (including itself)**.

The **average** quantity of an order is calculated as `(total quantity of all products in the order) / (number of different products in the order)`. The **maximum** quantity of an order is the highest `quantity` of any single product in the order.

Write a solution to find the `order_id` of all **imbalanced orders**.

Return the result table in **any order**.

The result format is in the following example.

Example 1:

Input: OrdersDetails table: +----------+------------+----------+ | order_id | product_id | quantity | +----------+------------+----------+ | 1 | 1 | 12 | | 1 | 2 | 10 | | 1 | 3 | 15 | | 2 | 1 | 8 | | 2 | 4 | 4 | | 2 | 5 | 6 | | 3 | 3 | 5 | | 3 | 4 | 18 | | 4 | 5 | 2 | | 4 | 6 | 8 | | 5 | 7 | 9 | | 5 | 8 | 9 | | 3 | 9 | 20 | | 2 | 9 | 4 | +----------+------------+----------+ **Output:** +----------+ | order_id | +----------+ | 1 | | 3 | +----------+ **Explanation:** The average quantity of each order is: - order_id=1: (12+10+15)/3 = 12.3333333 - order_id=2: (8+4+6+4)/4 = 5.5 - order_id=3: (5+18+20)/3 = 14.333333 - order_id=4: (2+8)/2 = 5 - order_id=5: (9+9)/2 = 9 The maximum quantity of each order is: - order_id=1: max(12, 10, 15) = 15 - order_id=2: max(8, 4, 6, 4) = 8 - order_id=3: max(5, 18, 20) = 20 - order_id=4: max(2, 8) = 8 - order_id=5: max(9, 9) = 9 Orders 1 and 3 are imbalanced because they have a maximum quantity that exceeds the average quantity of every order.

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
```