



Compressed Mode (Alibaba)

QUESTION

You're given a table containing the item count for each order on Alibaba, along with the frequency of orders that have the same item count. Write a query to retrieve the mode of the order occurrences. Additionally, if there are multiple item counts with the same mode, the results should be sorted in ascending order.

Clarifications:

- `item_count` : Represents the number of items sold in each order.
- `order_occurrences` : Represents the frequency of orders with the corresponding number of items sold per order.
- For example, if there are 800 orders with 3 items sold in each order, the record would have an `item_count` of 3 and an `order_occurrences` of 800.

Effective June 14th, 2023, the problem statement has been revised and additional clarification have been added for clarity.

`items_per_order` Table:

Column Name	Type
<code>item_count</code>	integer

order_occurrences	integer
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items_per_order Example Input:

item_count	order_occurrences
1	500
2	1000
3	800

Step 1: Identify the problem of the case

MODE is the most frequent value in a sample. Case gives a table showing the item count for each order on Alibaba, as well as the frequency of orders with the same item quantity. Create a query to get the order occurrence mode. Also, if there are numerous counts with the same mode, the results will be sorted in ascending order, and the output will look like this:

Column Name	Type
mode	integer

Step 2 : Analyze and solve problems

The first approach is to use the `MAX()` function, which gives us the maximum value in the `order_occurrences` field. This value represents the mode.

Another approach is to utilize the `MODE() WITHIN GROUP ()` function which determines the mode within a group of values.

```
SELECT MAX(order_occurrences)
FROM items_per_order
```

Let's see which `item_count` matches to which `order_occurrences` mode. To do this, add `item_count` in the `SELECT` statement when filtering the results with the `MAX()` or `MODE() WITHIN GROUP ()` methods.

Since the result already returns the incremented value of `item_count` we can use the ORDER BY command or not

```
SELECT item_count AS mode
FROM items_per_order
WHERE order_occurrences = (
    SELECT MAX(order_occurrences)
    FROM items_per_order)
```

output:

mode

2

4

Another Solution

```
SELECT item_count AS mode
FROM items_per_order
WHERE order_occurrences = (
    SELECT MODE() WITHIN GROUP (ORDER BY order_occurrences DESC)
    FROM items_per_order
)
ORDER BY item_count;
```