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Compressed Mean (Alibaba)

QUESTION

You're trying to find the mean number of items per order on Alibaba, rounded to 1 decimal place using tables which includes information on the count of items in each order (`item_count` table) and the corresponding number of orders for each item count (`order_occurrences` table).

`items_per_order` Table:

Column Name	Type
item_count	integer
order_occurrences	integer

`items_per_order` Example Input:

item_count	order_occurrences
1	500
2	1000
3	800
4	1000

There are a total of 500 orders with one item per order, 1000 orders with two items per order, and 800 orders with three items per order."

Step 1: Identify the problem of the case

To calculate the mean number of items per order on Alibaba, we must use tables that include information on the number of items in each order (item_count table) and the number of orders for each amount. The items in the order_occurrences table are rounded to one decimal point. The final result looks like this:

Column Name	Type
item_count	integer
order_occurrences	integer

Formular of MEAN calculation:

Mean = (Sum of all data points) ÷ (Number of data points)

Step 2 : Analyze and solve problems

Sum of all data points Sum of all data points, we multiply the item_count field by order_occurrences:

```
SELECT order_occurrences
      , order_occurrences * item_count total_items
FROM items_per_order
```

Next calculate `Sum()` of all data points and Number of data points

```
SELECT SUM(order_occurrences) total_orders
      , SUM(order_occurrences * item_count) total_items
FROM items_per_order
```

Finally calculate the division of the two quantities just calculated and then round the result to 1 decimal place.

```
SELECT ROUND(1.0*total_items/total_orders,1) mean
FROM  (
SELECT SUM(order_occurrences) total_orders
      , SUM(order_occurrences * item_count) total_items
FROM items_per_order) sub
```

The output:

mean

3.87