Question:

Day 9 of SQL Advent Calendar

Today's Question:

A community is hosting a series of festive feasts, and they want to ensure a balanced menu. Write a query to identify the top 3 most calorie-dense dishes (calories per gram) served for each event. Include the dish_name, event_name, and the calculated calorie density in your results.

Table name: events

event_id	event_name
1	Christmas Eve Dinner
2	New Years Feast
3	Winter Solstice Potluck

Table name: menu

dish_id	dish_name	event_id	calories	weight_g
1	Roast Turkey	1	3500	5000
2	Chocolate Yule Log	1	2200	1000
3	Cheese Fondue	2	1500	800
4	Holiday Fruitcake	3	4000	1200
5	Honey Glazed Ham	2	2800	3500

Question level of difficulty: Hard 

SQL Query:

```sql
WITH DishDensity AS (
    SELECT
        dish_name,
        event_name,
        (calories * 1.0 / weight_g) AS calorie_density
    FROM
        events e
    JOIN menu m
    ON   e.event_id = m.event_id
),
RankedDishes AS (
    SELECT
        dish_name,
        event_name,
        calorie_density,
        RANK() OVER (PARTITION BY event_name ORDER BY calorie_density DESC)
            AS rank
    FROM
        DishDensity
)
SELECT
    dish_name,
    event_name,
    calorie_density
FROM
    RankedDishes
WHERE
    rank <= 3
ORDER BY
    event_name, rank;
```

Output:

DISH_NAME	EVENT_NAME	CALORIE_DENSITY
Chocolate Yule Log	Christmas Eve Dinner	2.2
Roast Turkey	Christmas Eve Dinner	0.7
Cheese Fondue	New Years Feast	1.875
Honey Glazed Ham	New Years Feast	0.8
Holiday Fruitcake	Winter Solstice Potluck	3.3333333333333335

Correct!! 🎉 Great work!