Pizza Sales Analysis Using SQL

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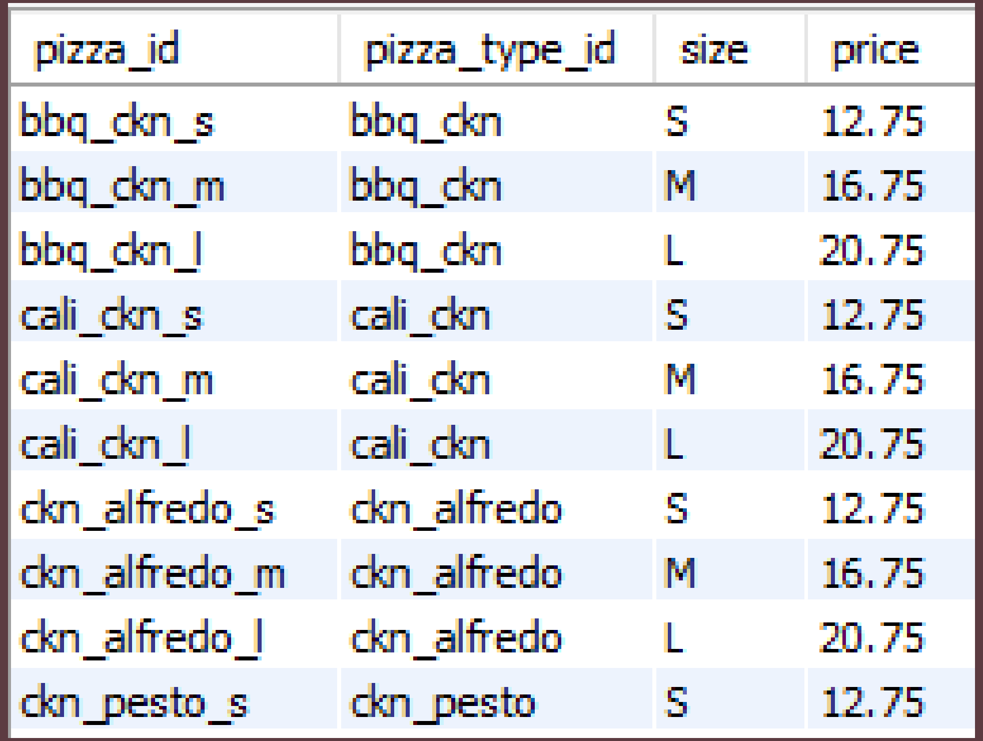
ABOUT THE PROJECT

This SQL project analyzes the complete sales performance of a pizza store using a relational database consisting of four interconnected tables: orders, order_details, pizzas, and pizza_types. The objective of the project is to explore business insights related to order volume, revenue, pizza category trends, and time-based purchasing patterns.

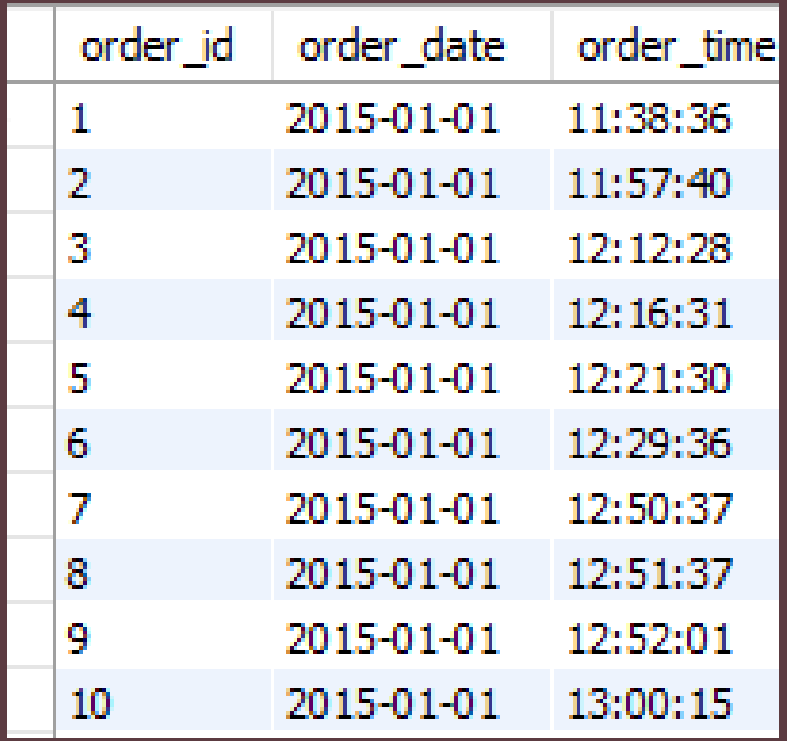
TABLES

pizzas



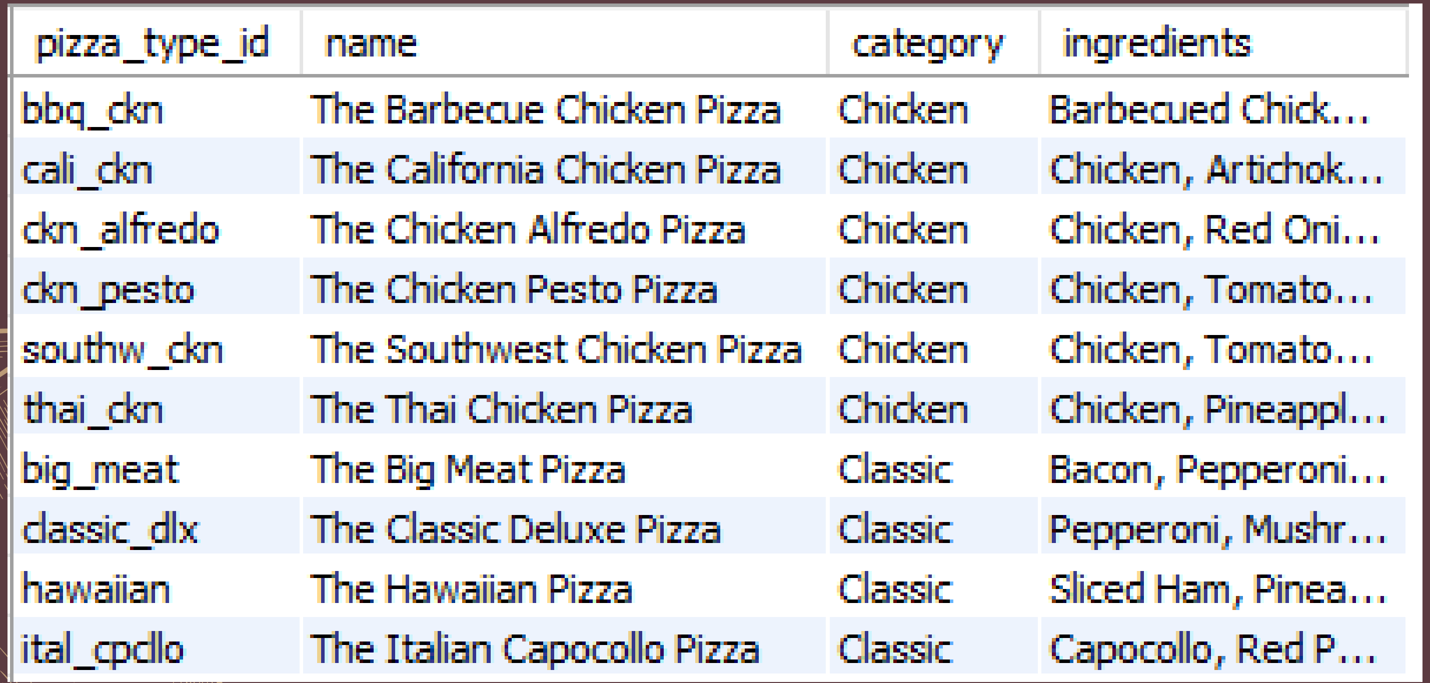
pizza_id	pizza_type_id	size	price
bbq_ckn_s	bbq_ckn	S	12.75
bbq_ckn_m	bbq_ckn	M	16.75
bbq_ckn_l	bbq_ckn	L	20.75
cali_ckn_s	cali_ckn	S	12.75
cali_ckn_m	cali_ckn	M	16.75
cali_ckn_l	cali_ckn	L	20.75
ckn_alfredo_s	ckn_alfredo	S	12.75
ckn_alfredo_m	ckn_alfredo	M	16.75
ckn_alfredo_l	ckn_alfredo	L	20.75
ckn_pesto_s	ckn_pesto	S	12.75

orders



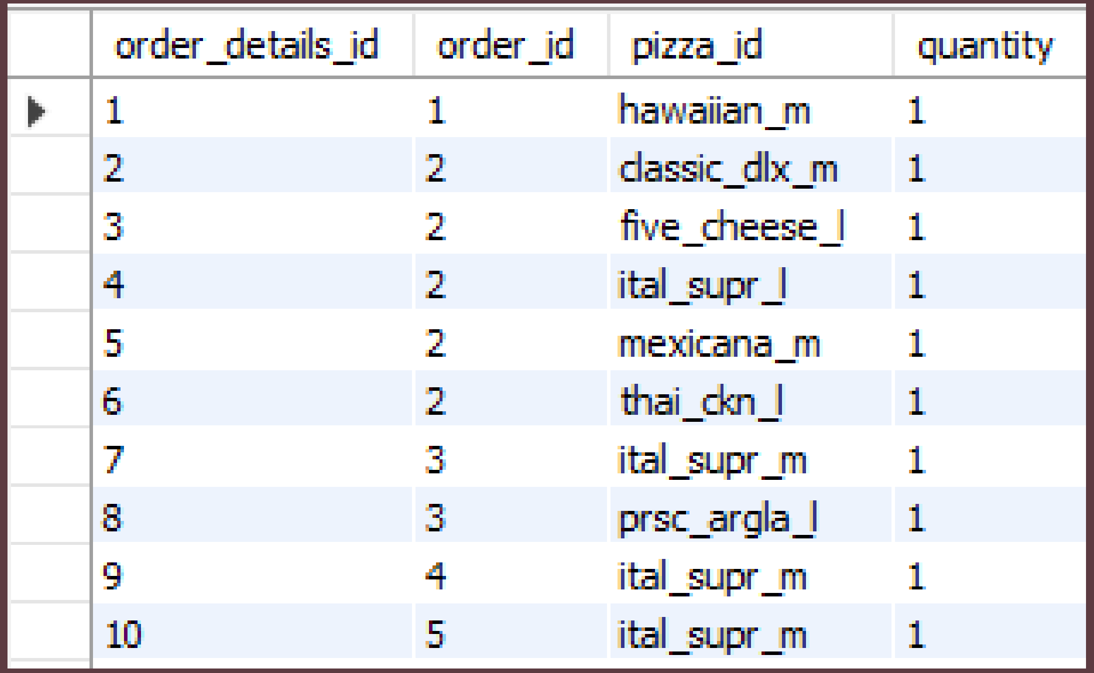
order_id	order_date	order_time
1	2015-01-01	11:38:36
2	2015-01-01	11:57:40
3	2015-01-01	12:12:28
4	2015-01-01	12:16:31
5	2015-01-01	12:21:30
6	2015-01-01	12:29:36
7	2015-01-01	12:50:37
8	2015-01-01	12:51:37
9	2015-01-01	12:52:01
10	2015-01-01	13:00:15

pizza_types



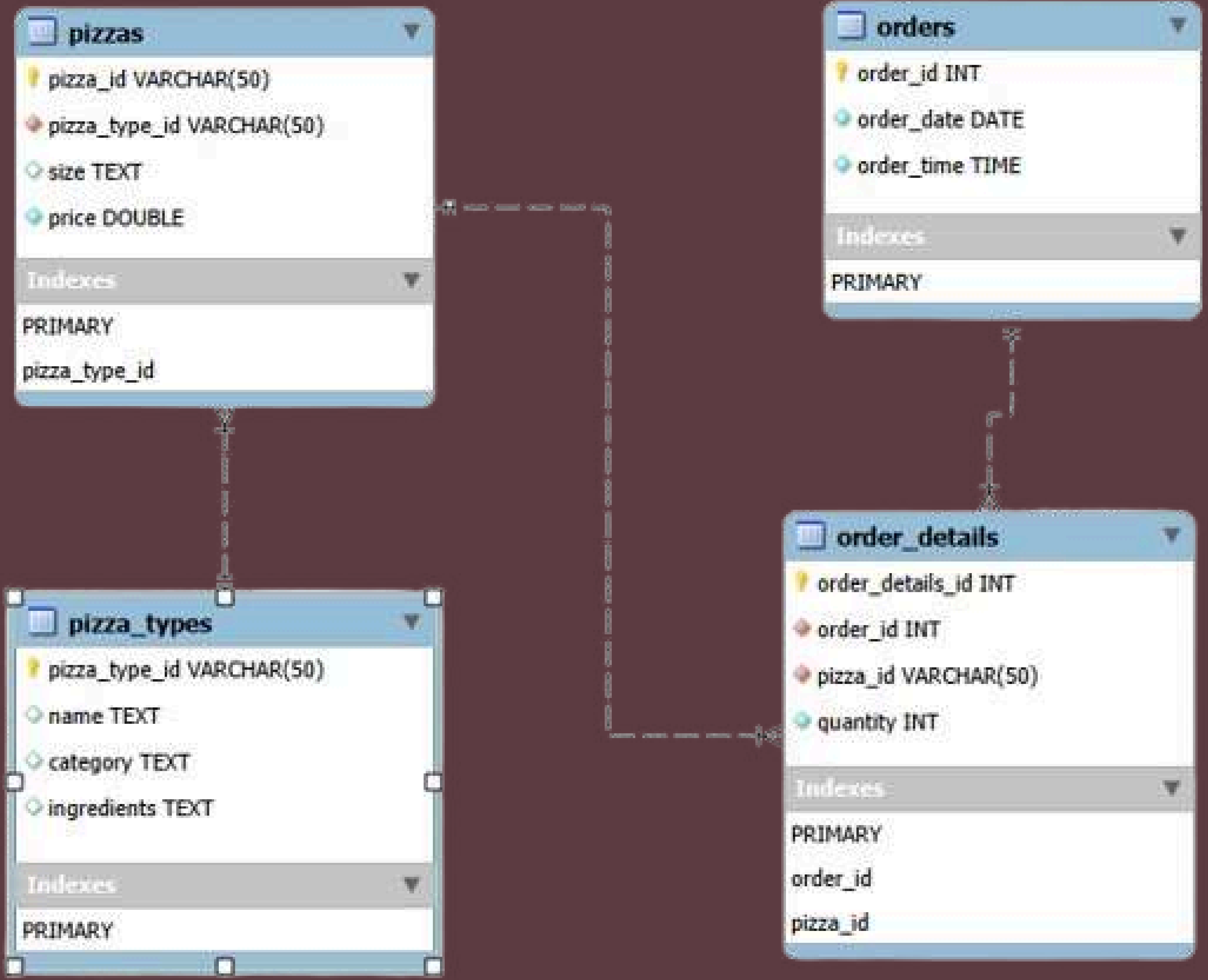
pizza_type_id	name	category	ingredients
bbq_ckn	The Barbecue Chicken Pizza	Chicken	Barbecued Chick...
cali_ckn	The California Chicken Pizza	Chicken	Chicken, Artichok...
ckn_alfredo	The Chicken Alfredo Pizza	Chicken	Chicken, Red Oni...
ckn_pesto	The Chicken Pesto Pizza	Chicken	Chicken, Tomato...
southw_ckn	The Southwest Chicken Pizza	Chicken	Chicken, Tomato...
thai_ckn	The Thai Chicken Pizza	Chicken	Chicken, Pineappl...
big_meat	The Big Meat Pizza	Classic	Bacon, Pepperoni...
classic_dlx	The Classic Deluxe Pizza	Classic	Pepperoni, Mushr...
hawaiian	The Hawaiian Pizza	Classic	Sliced Ham, Pinea...
ital_cpcllo	The Italian Capocollo Pizza	Classic	Capocollo, Red P...

order_details



order_details_id	order_id	pizza_id	quantity
1	1	hawaiian_m	1
2	2	classic_dlx_m	1
3	2	five_cheese_l	1
4	2	ital_supr_l	1
5	2	mexicana_m	1
6	2	thai_ckn_l	1
7	3	ital_supr_m	1
8	3	prsc_argla_l	1
9	4	ital_supr_m	1
10	5	ital_supr_m	1

DATA MODEL VIEW



Business Questions We Aim to Answer Using SQL

Basic:

- Retrieve the total number of orders placed.
- Calculate the total revenue generated from pizza sales.
- Identify the highest-priced pizza.
- Identify the most common pizza size ordered.
- List the top 5 most ordered pizza types along with their quantities.

Intermediate:

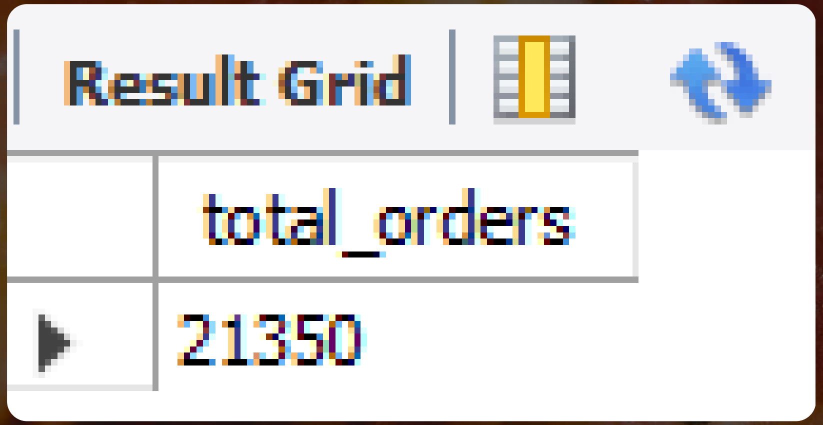
- Join the necessary tables to find the total quantity of each pizza category ordered.
- Determine the distribution of orders by hour of the day.
- Join relevant tables to find the category-wise distribution of pizzas.
- Group the orders by date and calculate the average number of pizzas ordered per day.
- Determine the top 3 most ordered pizza types based on revenue.

Advanced:

- Calculate the percentage contribution of each pizza type to total revenue.
- Analyze the cumulative revenue generated over time.
- Determine the top 3 most ordered pizza types based on revenue for each pizza category.

Q1. RETRIEVE THE TOTAL NUMBER OF ORDERS PLACED.

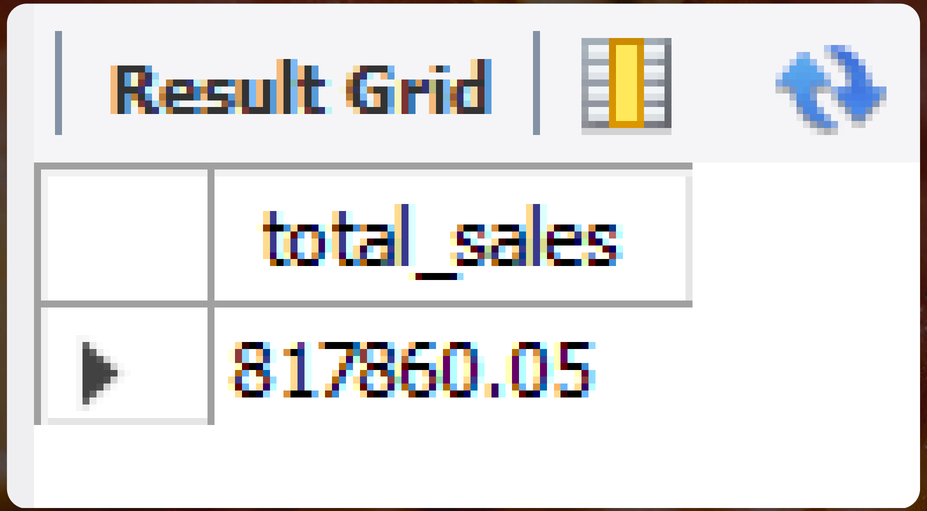
```sql
SELECT
    COUNT(order_id) AS total_orders
FROM
    orders;
```



```
Result Grid
  total_orders
▶ 21350
```

Q2. CALCULATE THE TOTAL REVENUE GENERATED FROM PIZZA SALES.

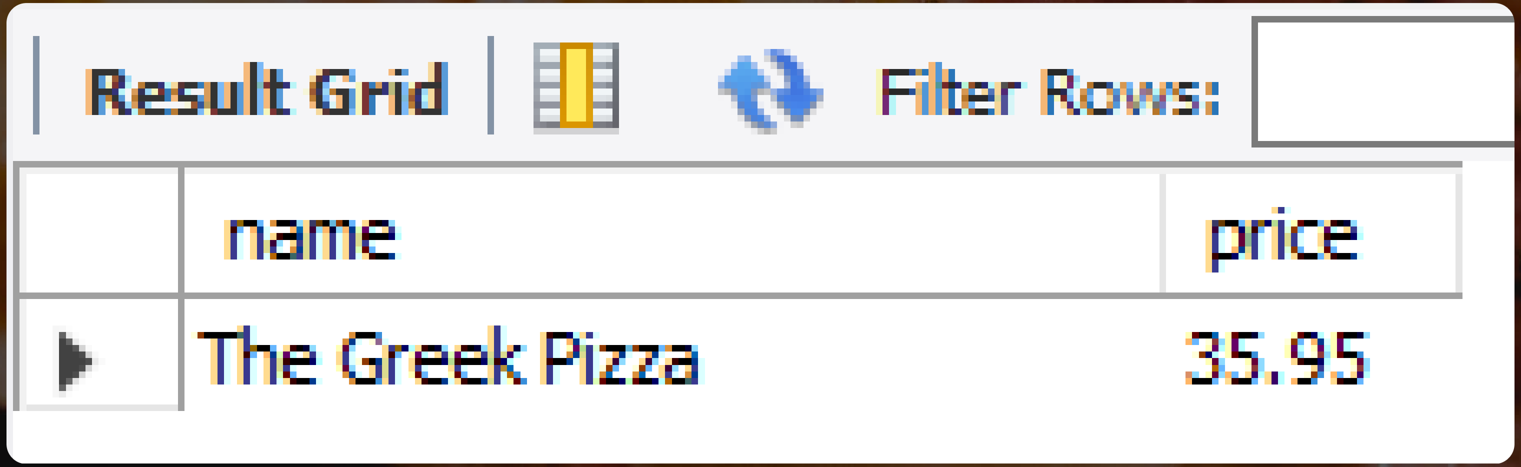
```
SELECT
    ROUND(SUM(pizzas.price * order_details.quantity), 2) AS total_sales
FROM
    pizzas
        JOIN
    order_details ON pizzas.pizza_id = order_details.pizza_id;
```



```
total_sales
817860.05
```

Q3. IDENTIFY THE HIGHEST-PRICED PIZZA.

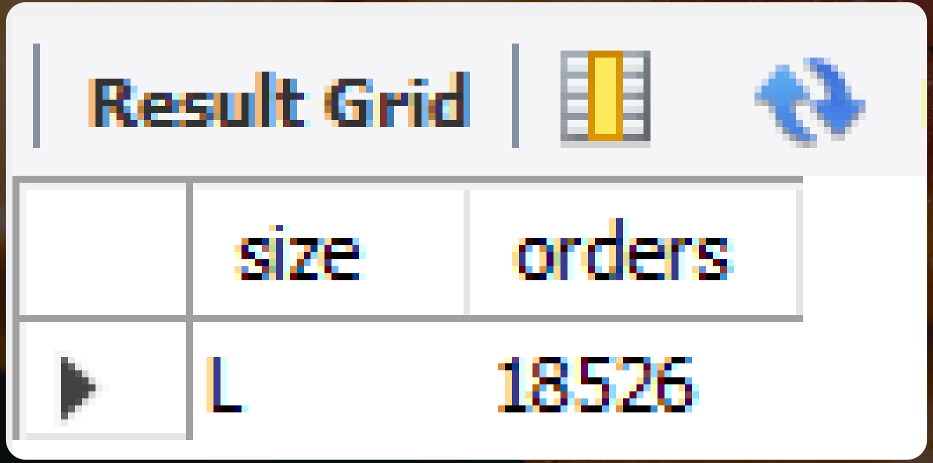
```
SELECT
    pizza_types.name , pizzas.price
FROM
    pizzas
        JOIN
    pizza_types ON pizzas.pizza_type_id = pizza_types.pizza_type_id
ORDER BY pizzas.price DESC
LIMIT 1;
```



name	price
The Greek Pizza	35.95

Q4. IDENTIFY THE MOST COMMON PIZZA SIZE ORDERED.

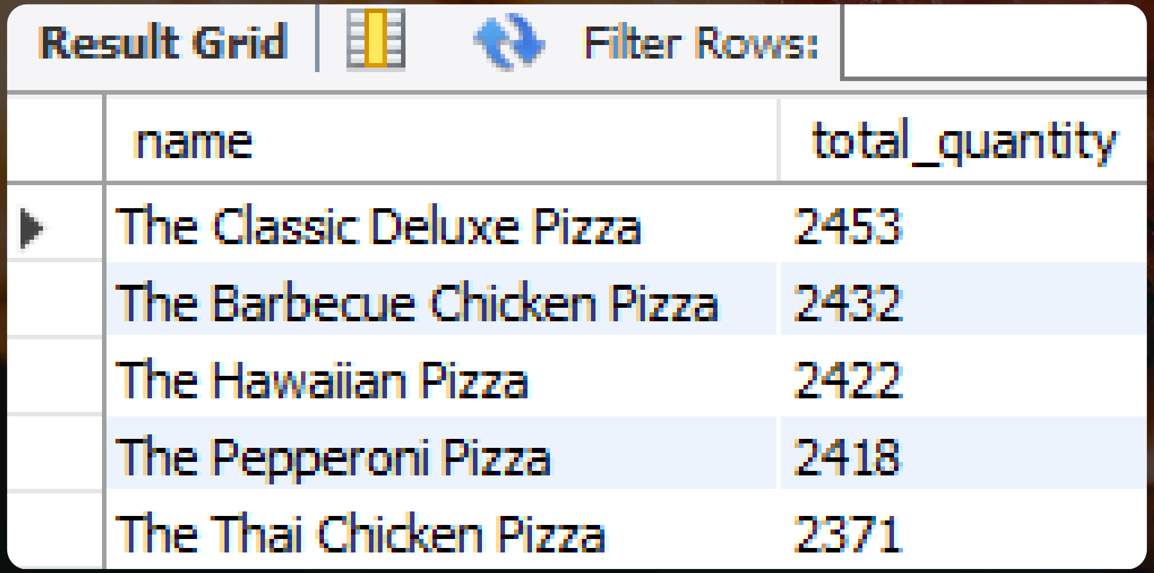
```
SELECT
    pizzas.size, COUNT(order_details.order_details_id) AS orders
FROM
    pizzas
        JOIN
    order_details ON pizzas.pizza_id = order_details.pizza_id
GROUP BY pizzas.size
ORDER BY orders DESC
LIMIT 1;
```


Result Grid

size	orders
L	18526

Q5. LIST THE TOP 5 MOST ORDERED PIZZA TYPES ALONG WITH THEIR QUANTITIES.

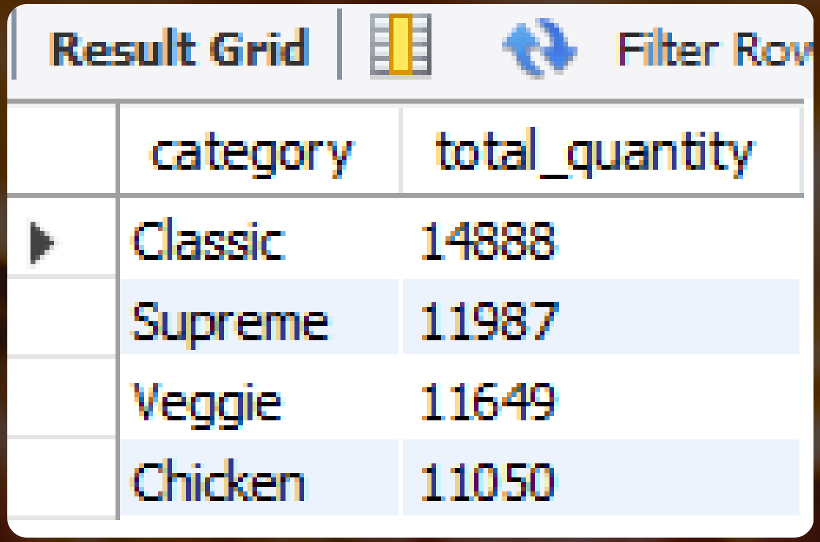
```
SELECT
    pizza_types.name,
    SUM(order_details.quantity) AS total_quantity
FROM
    pizzas
        JOIN
    order_details ON order_details.pizza_id = pizzas.pizza_id
        JOIN
    pizza_types ON pizza_types.pizza_type_id = pizzas.pizza_type_id
GROUP BY pizza_types.name
ORDER BY total_quantity DESC
LIMIT 5;
```



name	total_quantity
The Classic Deluxe Pizza	2453
The Barbecue Chicken Pizza	2432
The Hawaiian Pizza	2422
The Pepperoni Pizza	2418
The Thai Chicken Pizza	2371

Q6. JOIN THE NECESSARY TABLES TO FIND THE TOTAL QUANTITY OF EACH PIZZA CATEGORY ORDERED.

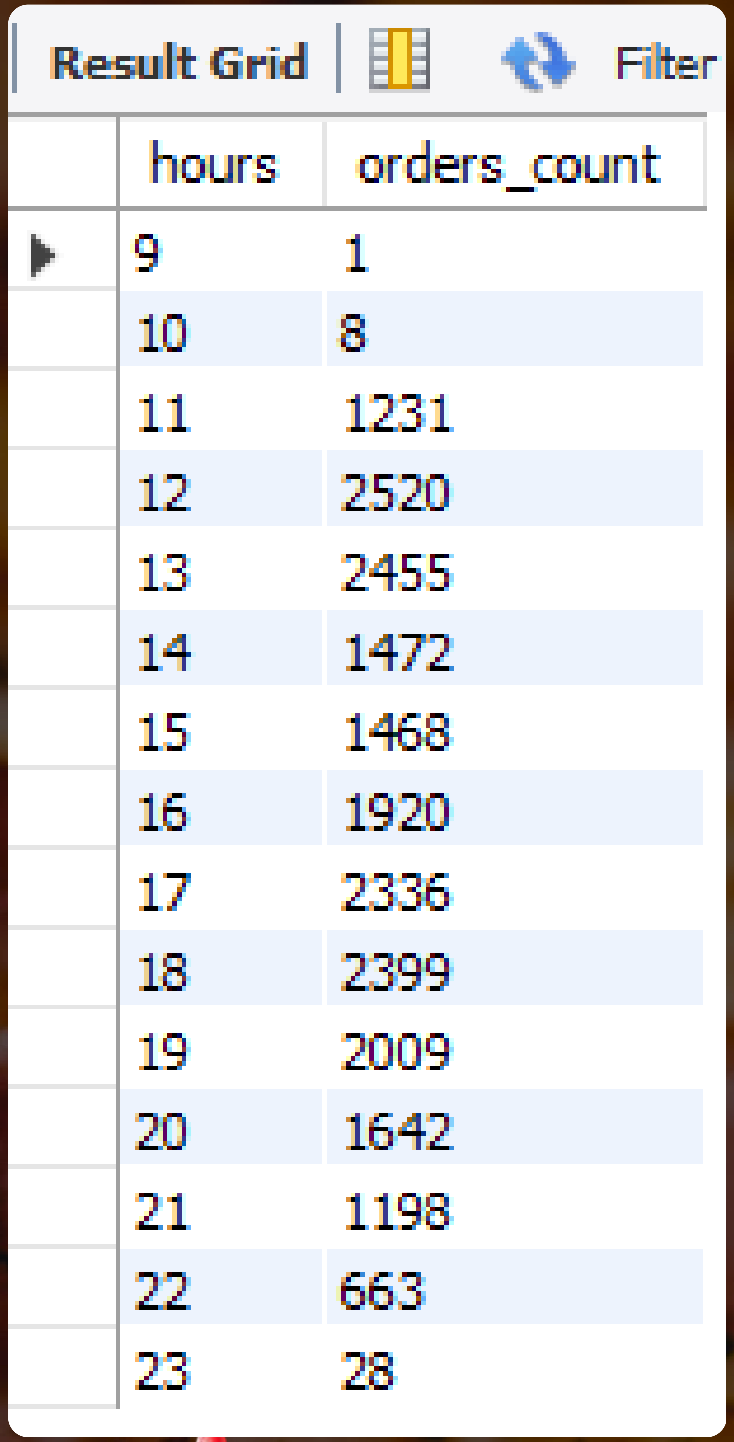
```
SELECT
    pizza_types.category,
    SUM(order_details.quantity) AS total_quantity
FROM
    pizza_types
        JOIN
    pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
        JOIN
    order_details ON pizzas.pizza_id = order_details.pizza_id
GROUP BY pizza_types.category
ORDER BY total_quantity DESC;
```



category	total_quantity
Classic	14888
Supreme	11987
Veggie	11649
Chicken	11050

Q7. DETERMINE THE DISTRIBUTION OF ORDERS BY HOUR OF THE DAY.

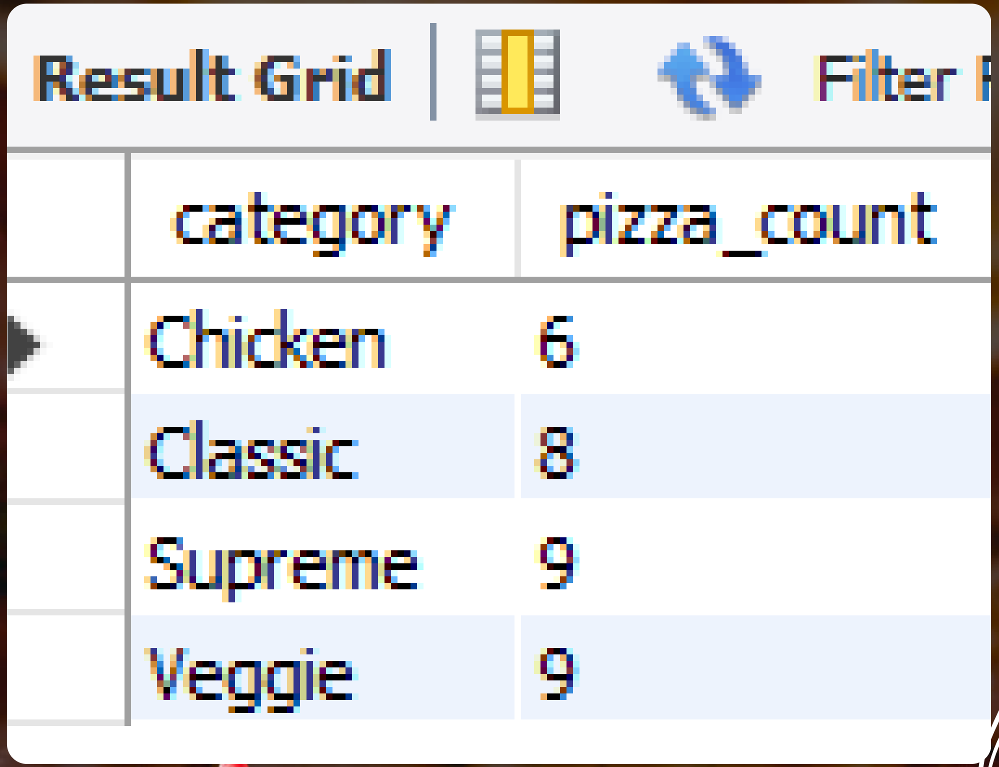
```
SELECT
    HOUR(order_time) AS hours,
    COUNT(order_id) AS orders_count
FROM
    orders
GROUP BY hours
ORDER BY hours;
```



hours	orders_count
9	1
10	8
11	1231
12	2520
13	2455
14	1472
15	1468
16	1920
17	2336
18	2399
19	2009
20	1642
21	1198
22	663
23	28

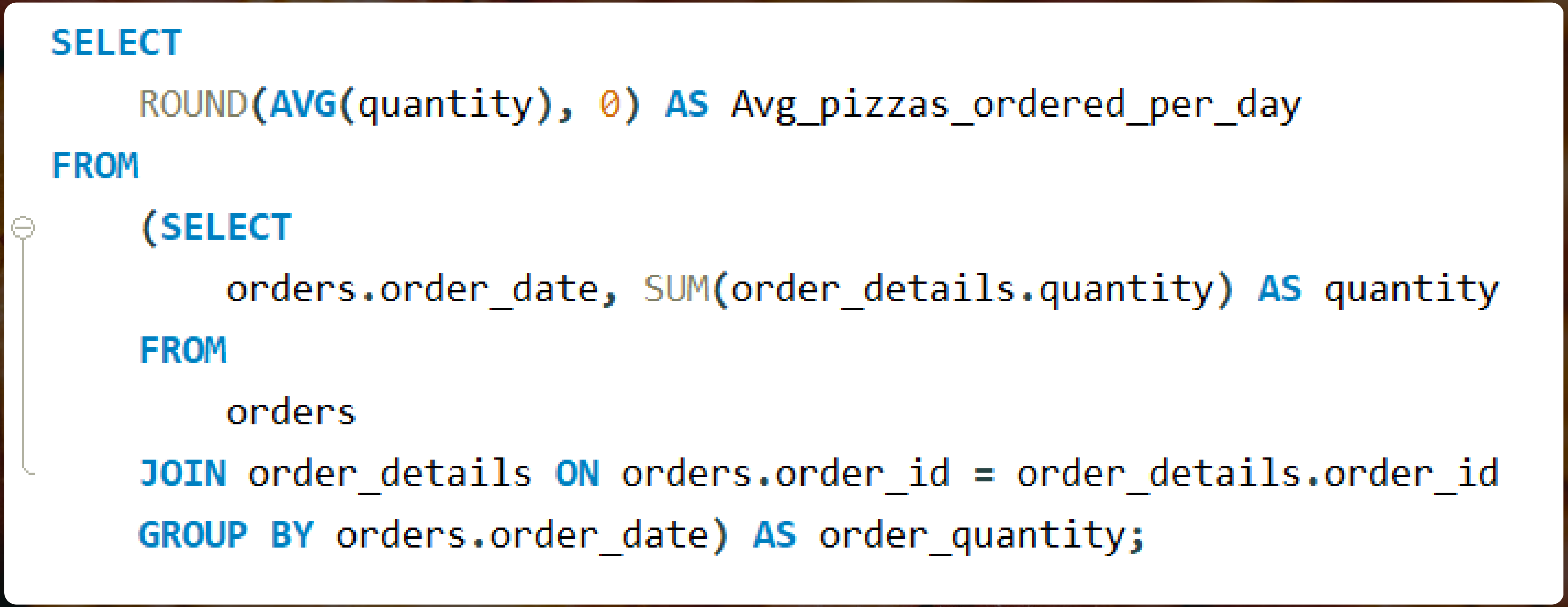
Q8. JOIN RELEVANT TABLES TO FIND THE CATEGORY-WISE DISTRIBUTION OF PIZZAS.

```
SELECT
    category,
    COUNT(name) AS pizza_count
FROM
    pizza_types
GROUP BY category;
```

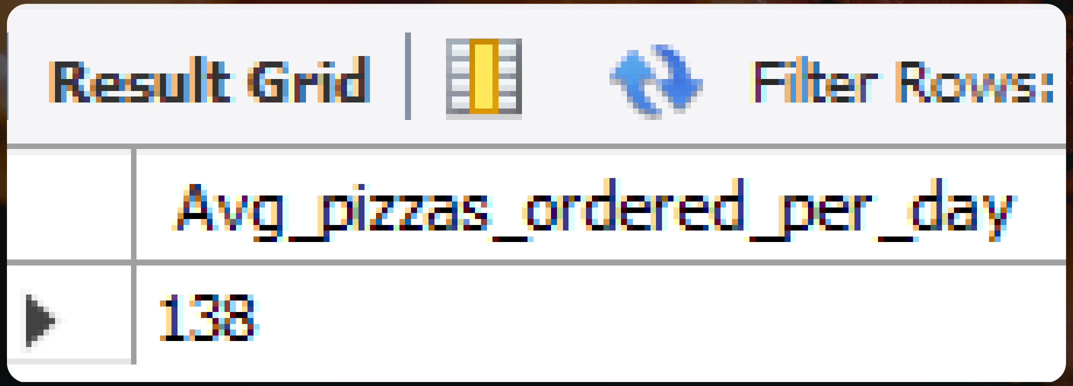

Result Grid | Filter

category	pizza_count
Chicken	6
Classic	8
Supreme	9
Veggie	9

Q9. GROUP THE ORDERS BY DATE AND CALCULATE THE AVERAGE NUMBER OF PIZZAS ORDERED PER DAY.



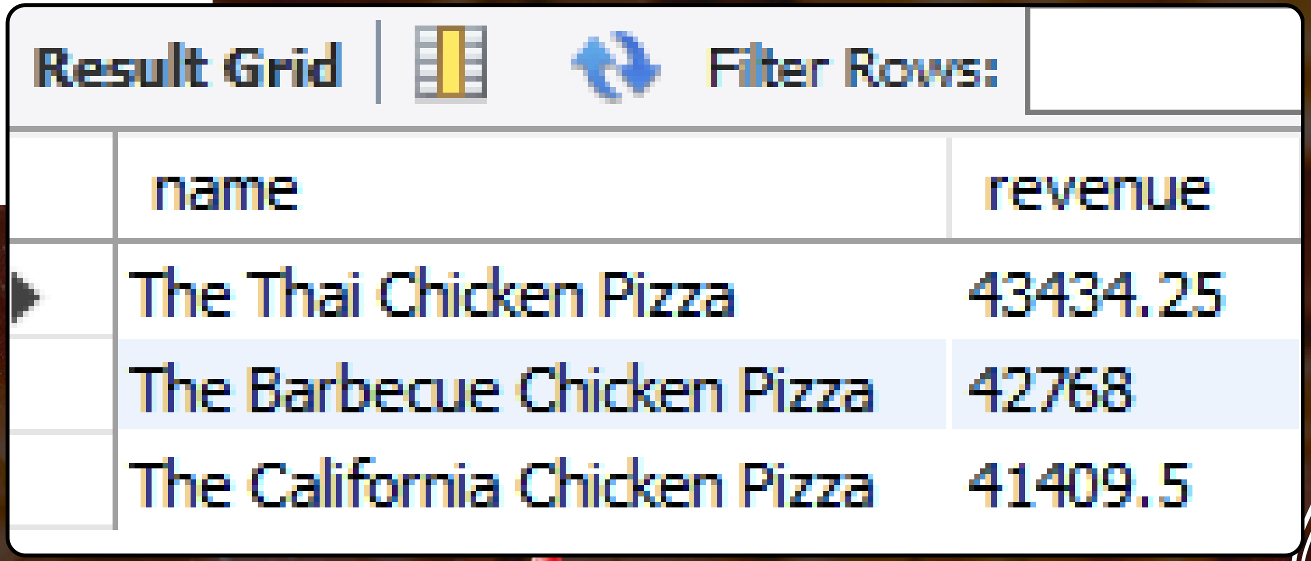
```
SELECT
    ROUND(AVG(quantity), 0) AS Avg_pizzas_ordered_per_day
FROM
    (SELECT
        orders.order_date, SUM(order_details.quantity) AS quantity
    FROM
        orders
    JOIN order_details ON orders.order_id = order_details.order_id
    GROUP BY orders.order_date) AS order_quantity;
```



```
Avg_pizzas_ordered_per_day
138
```

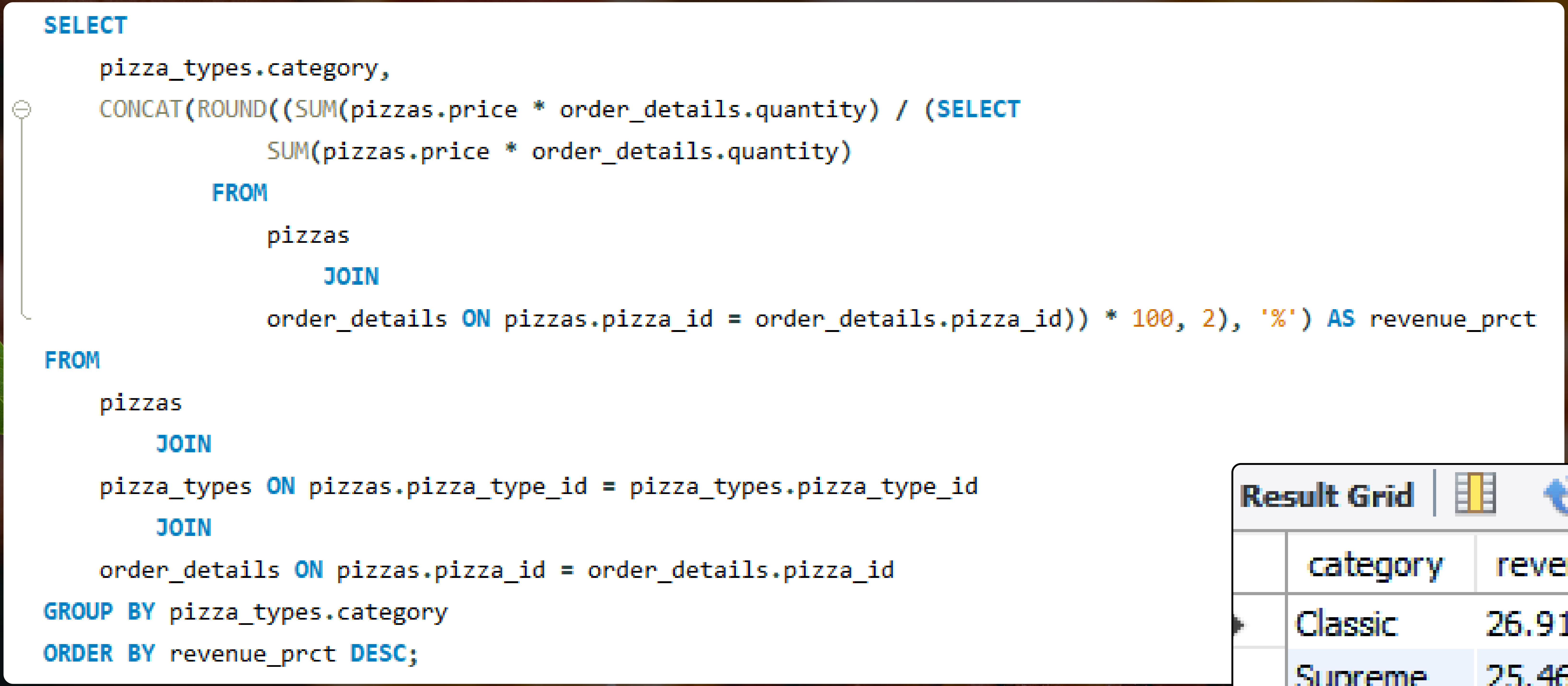
Q10. DETERMINE THE TOP 3 MOST ORDERED PIZZA TYPES BASED ON REVENUE.

```
SELECT
    pizza_types.name,
    SUM(pizzas.price * order_details.quantity) AS revenue
FROM
    pizzas
        JOIN
    pizza_types ON pizzas.pizza_type_id = pizza_types.pizza_type_id
        JOIN
    order_details ON pizzas.pizza_id = order_details.pizza_id
GROUP BY pizza_types.name
ORDER BY revenue DESC
LIMIT 3;
```

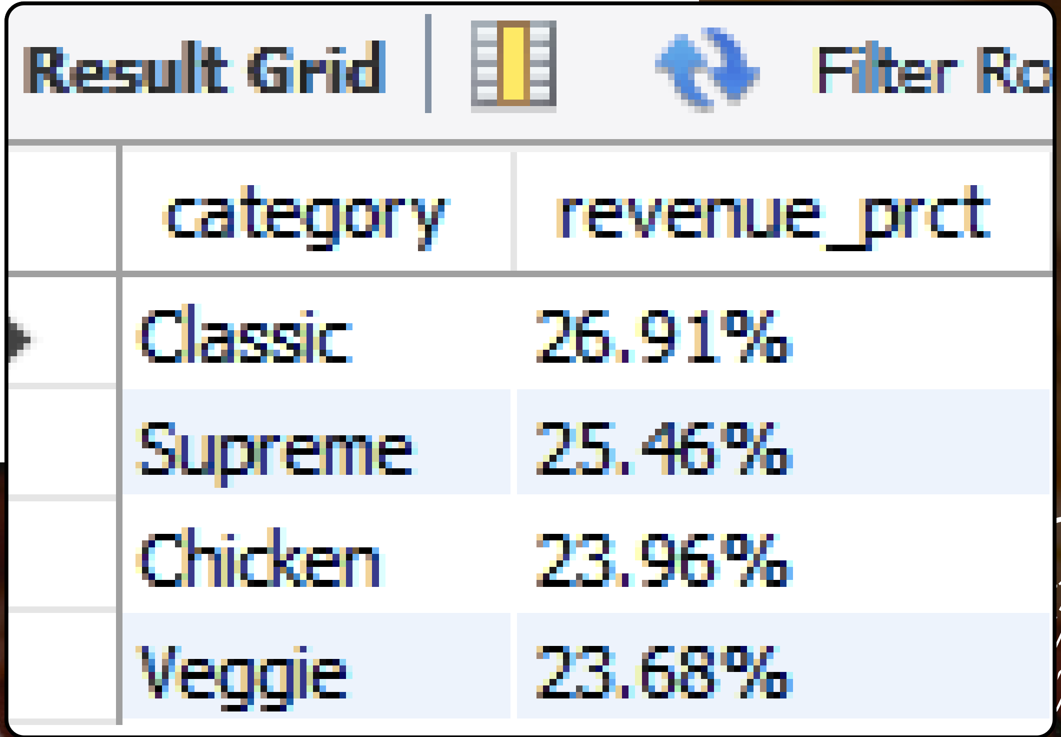


name	revenue
The Thai Chicken Pizza	43434.25
The Barbecue Chicken Pizza	42768
The California Chicken Pizza	41409.5

Q11. CALCULATE THE PERCENTAGE CONTRIBUTION OF EACH PIZZA TYPE TO TOTAL REVENUE.

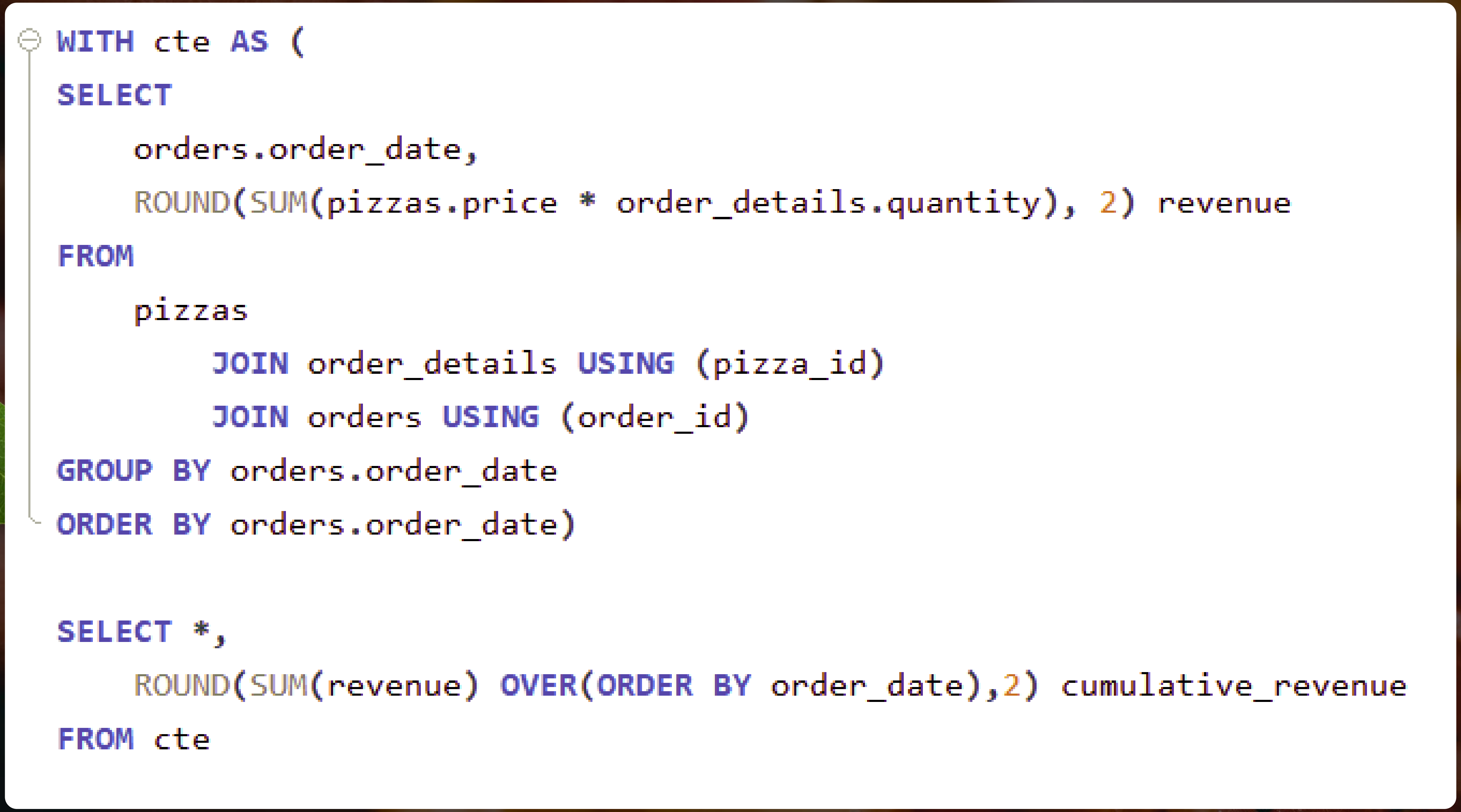


```sql
SELECT
    pizza_types.category,
    CONCAT(ROUND((SUM(pizzas.price * order_details.quantity) / (SELECT
                SUM(pizzas.price * order_details.quantity)
            FROM
                pizzas
                    JOIN
                order_details ON pizzas.pizza_id = order_details.pizza_id)) * 100, 2), '%') AS revenue_prct
FROM
    pizzas
        JOIN
    pizza_types ON pizzas.pizza_type_id = pizza_types.pizza_type_id
        JOIN
    order_details ON pizzas.pizza_id = order_details.pizza_id
GROUP BY pizza_types.category
ORDER BY revenue_prct DESC;
```

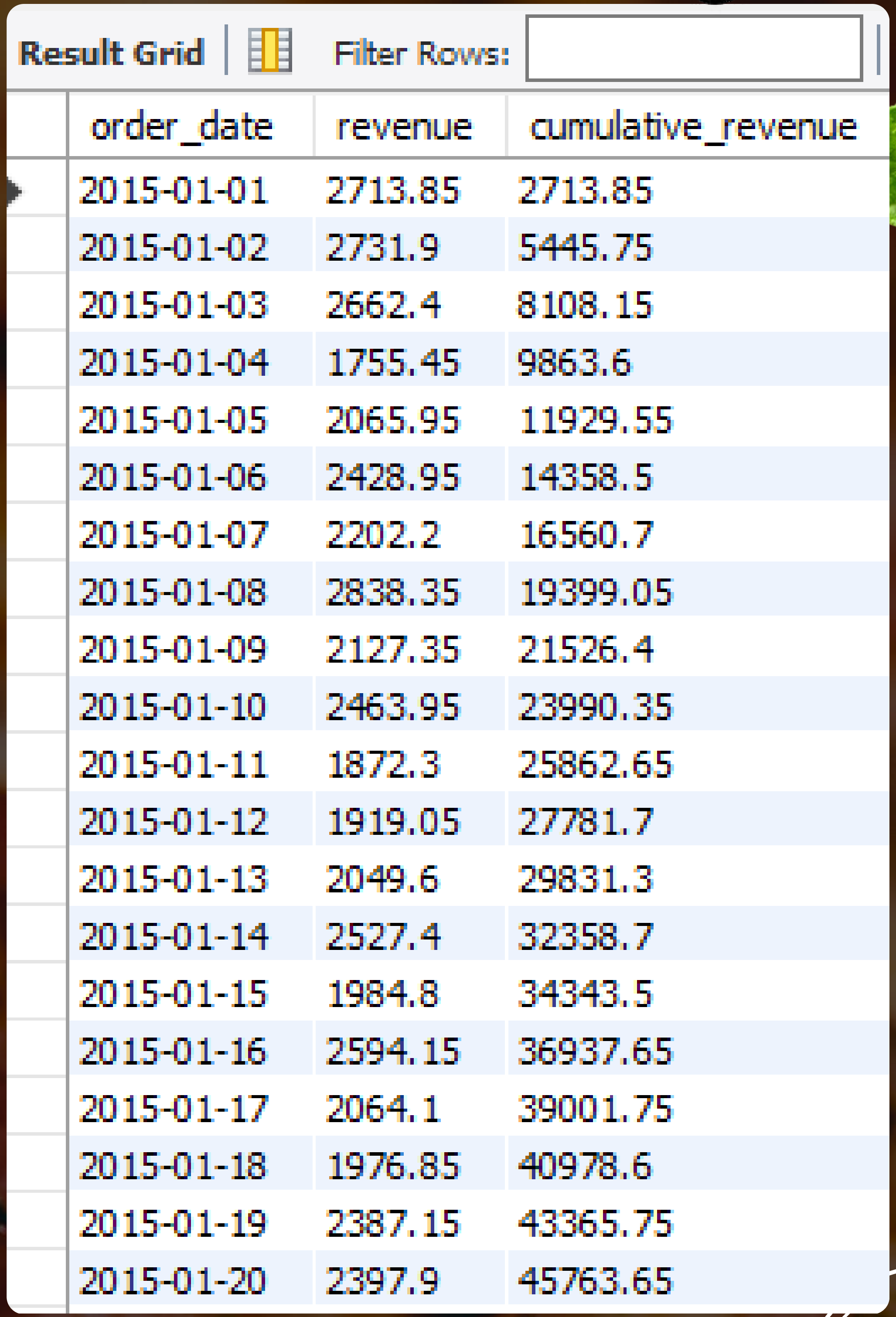


category	revenue_prct
Classic	26.91%
Supreme	25.46%
Chicken	23.96%
Veggie	23.68%

Q12. ANALYZE THE CUMULATIVE REVENUE GENERATED OVER TIME.



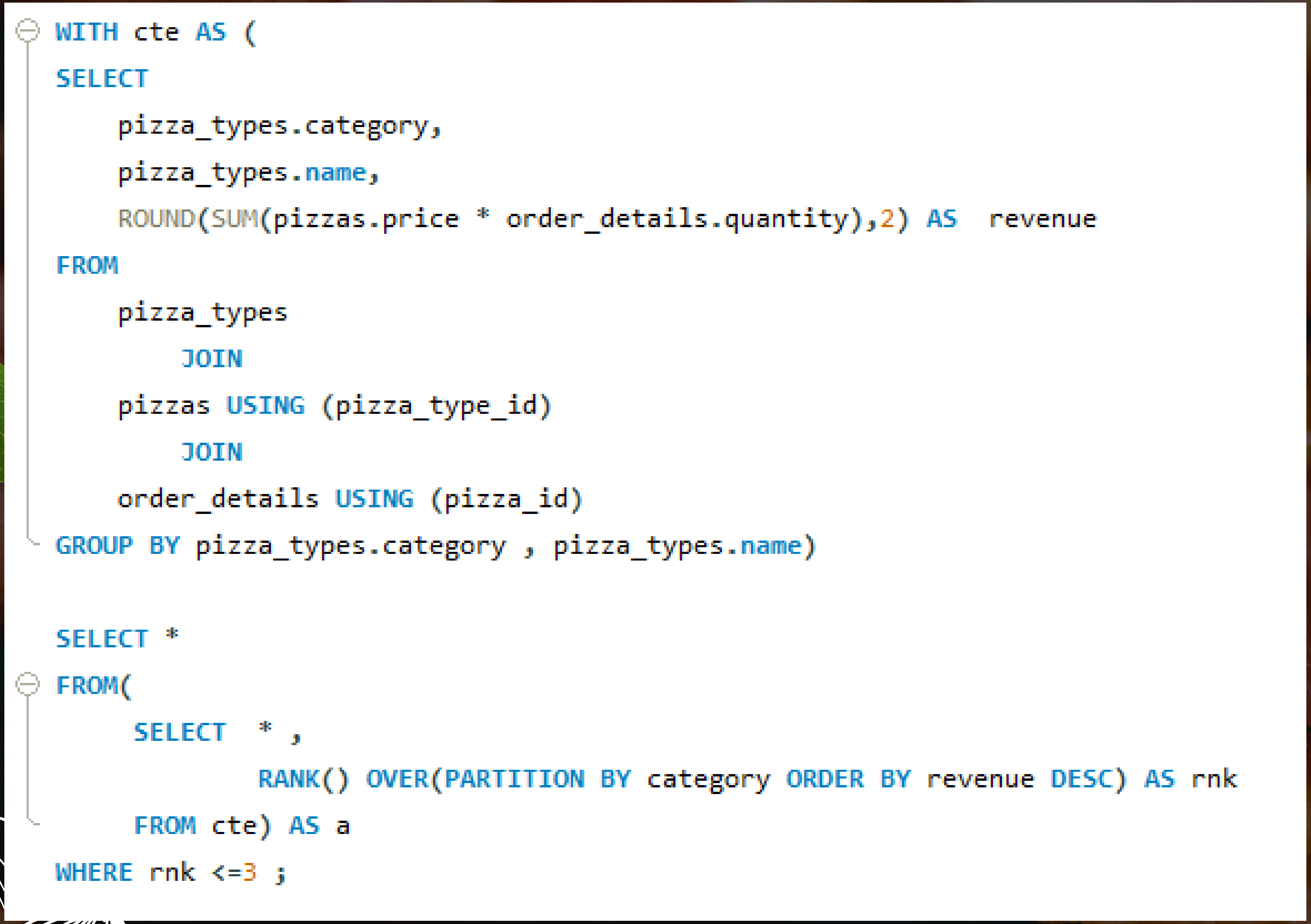
```sql
WITH cte AS (
SELECT
    orders.order_date,
    ROUND(SUM(pizzas.price * order_details.quantity), 2) revenue
FROM
    pizzas
        JOIN order_details USING (pizza_id)
        JOIN orders USING (order_id)
GROUP BY orders.order_date
ORDER BY orders.order_date)

SELECT *,
    ROUND(SUM(revenue) OVER(ORDER BY order_date),2) cumulative_revenue
FROM cte
```



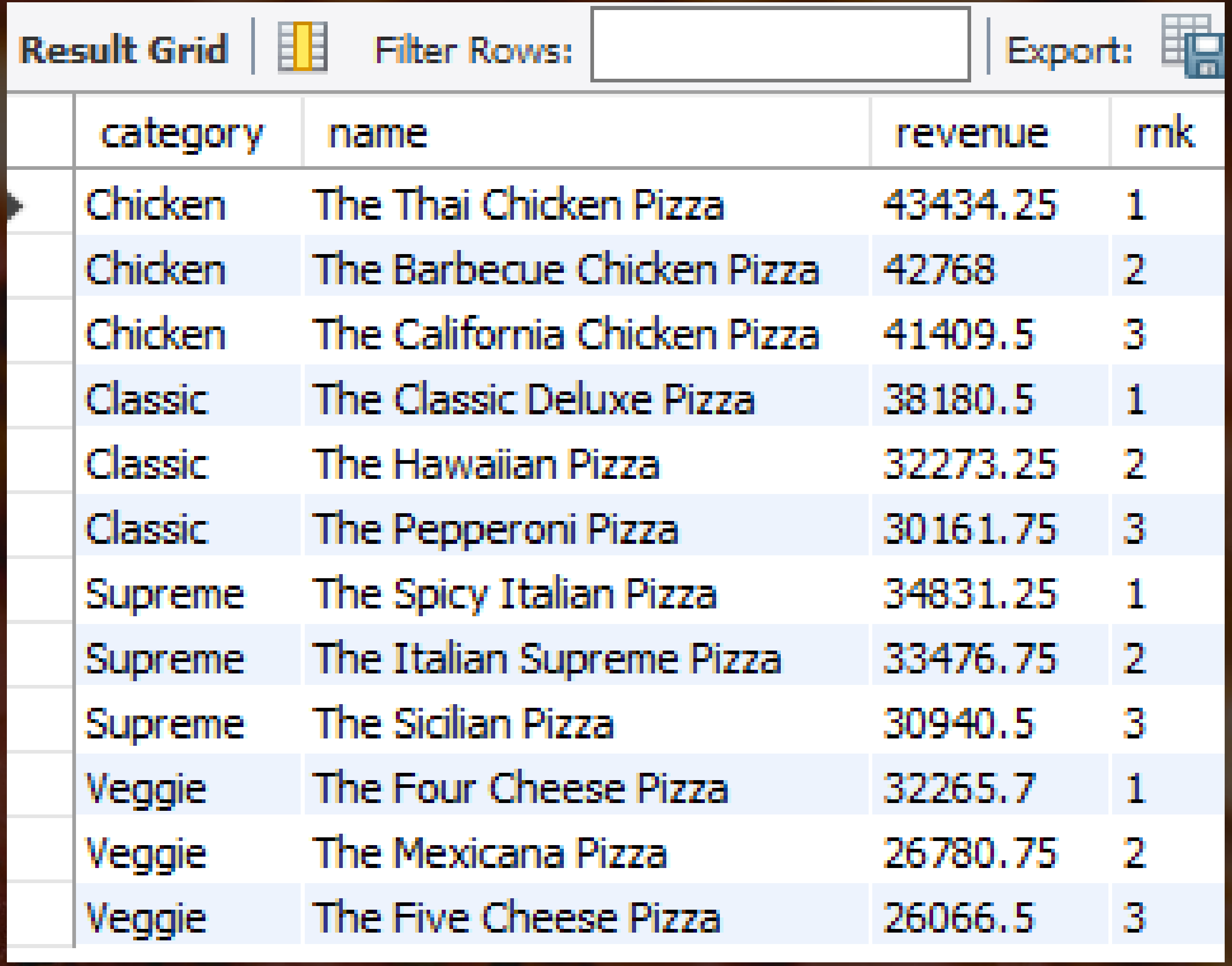
Result Grid | Filter Rows:

```
order_date  revenue   cumulative_revenue
2015-01-01  2713.85   2713.85
2015-01-02  2731.9    5445.75
2015-01-03  2662.4    8108.15
2015-01-04  1755.45   9863.6
2015-01-05  2065.95   11929.55
2015-01-06  2428.95   14358.5
2015-01-07  2202.2    16560.7
2015-01-08  2838.35   19399.05
2015-01-09  2127.35   21526.4
2015-01-10  2463.95   23990.35
2015-01-11  1872.3    25862.65
2015-01-12  1919.05   27781.7
2015-01-13  2049.6    29831.3
2015-01-14  2527.4    32358.7
2015-01-15  1984.8    34343.5
2015-01-16  2594.15   36937.65
2015-01-17  2064.1    39001.75
2015-01-18  1976.85   40978.6
2015-01-19  2387.15   43365.75
2015-01-20  2397.9    45763.65
```

Q13. DETERMINE THE TOP 3 MOST ORDERED PIZZA TYPES BASED ON REVENUE FOR EACH PIZZA CATEGORY.



```
WITH cte AS (
SELECT
    pizza_types.category,
    pizza_types.name,
    ROUND(SUM(pizzas.price * order_details.quantity),2) AS  revenue
FROM
    pizza_types
        JOIN
    pizzas USING (pizza_type_id)
        JOIN
    order_details USING (pizza_id)
GROUP BY pizza_types.category , pizza_types.name)

SELECT *
FROM(
     SELECT  * ,
             RANK() OVER(PARTITION BY category ORDER BY revenue DESC) AS rnk
     FROM cte) AS a
WHERE rnk <=3 ;
```



Result Grid | Filter Rows: | Export:

category	name	revenue	rnk
Chicken	The Thai Chicken Pizza	43434.25	1
Chicken	The Barbecue Chicken Pizza	42768	2
Chicken	The California Chicken Pizza	41409.5	3
Classic	The Classic Deluxe Pizza	38180.5	1
Classic	The Hawaiian Pizza	32273.25	2
Classic	The Pepperoni Pizza	30161.75	3
Supreme	The Spicy Italian Pizza	34831.25	1
Supreme	The Italian Supreme Pizza	33476.75	2
Supreme	The Sicilian Pizza	30940.5	3
Veggie	The Four Cheese Pizza	32265.7	1
Veggie	The Mexicana Pizza	26780.75	2
Veggie	The Five Cheese Pizza	26066.5	3

github.com/KhamkarTejas

KEY INSIGHTS

- Large pizzas dominate sales, indicating customers prefer bigger meals.
- Classic pizzas lead customers' choices, but Chicken pizzas lead revenue.
- Sales peak around lunch (12–2 PM) and early dinner (5–7 PM).
- The business has a balanced category performance, reducing dependency on a single segment.
- Daily revenue growth is consistent, showing healthy customer flow.
- The top-selling pizzas are a mix of Classic and Chicken, suggesting varied customer taste preferences.

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THANK YOU