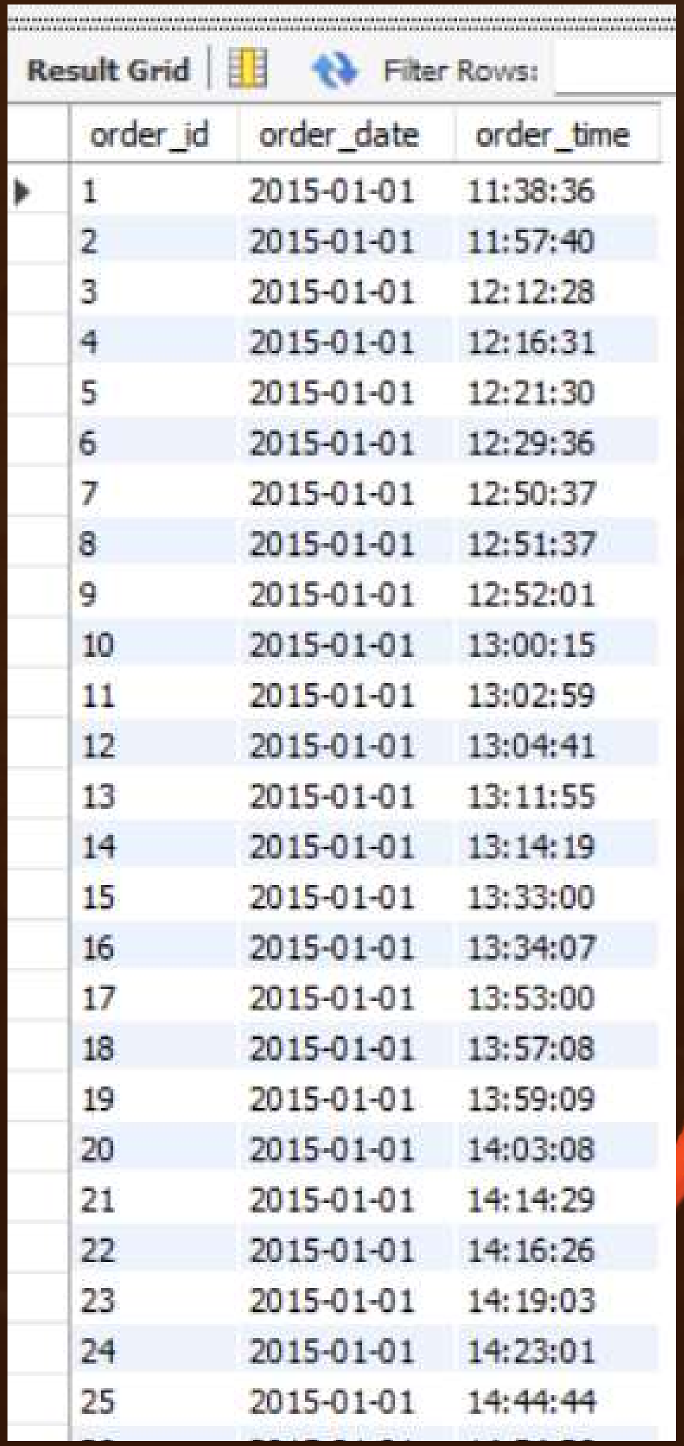
A SQL Project

# PIZZA SALES ANALYSIS

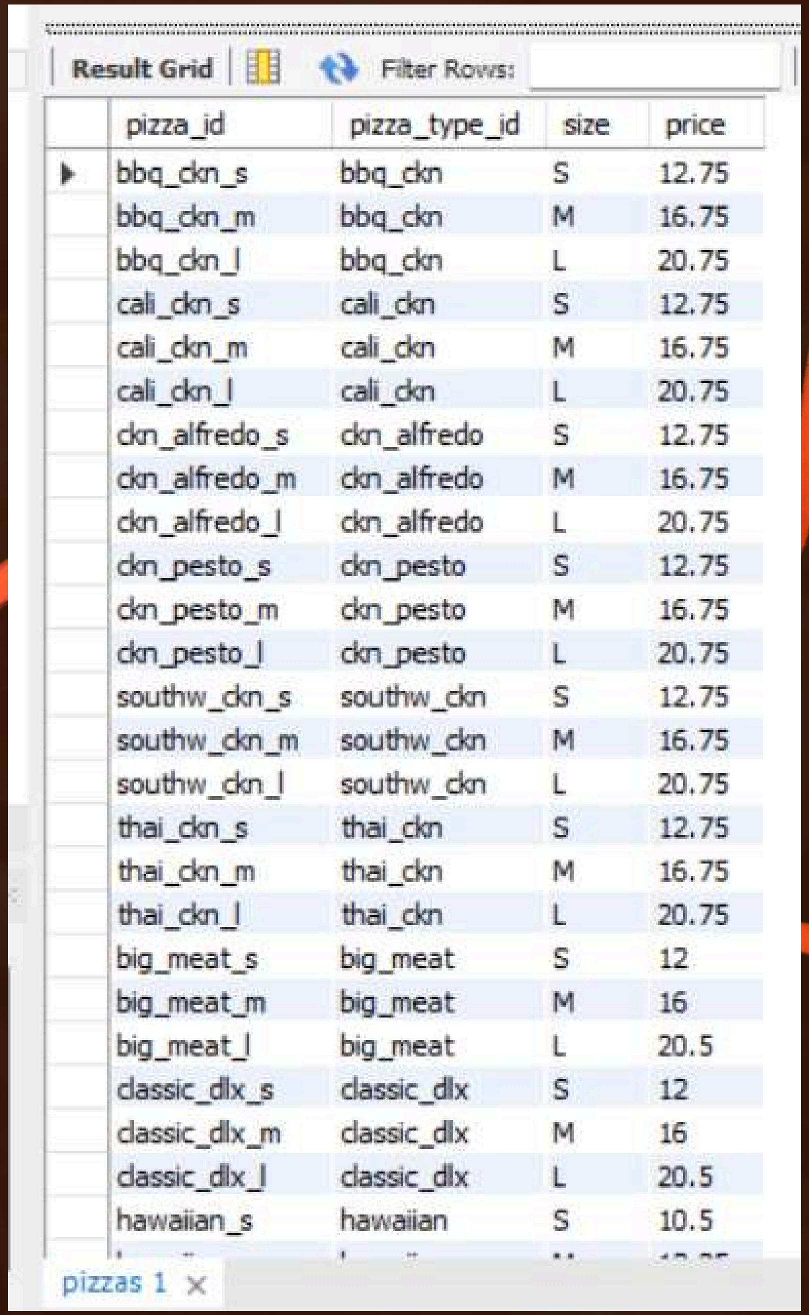
# ABOUT THE PROJECT

The aim of this project is to analyze pizza orders data to uncover insights about customer preferences, order trends, and operational efficiency. By leveraging SQL, we can derive meaningful conclusions that can inform business strategies.

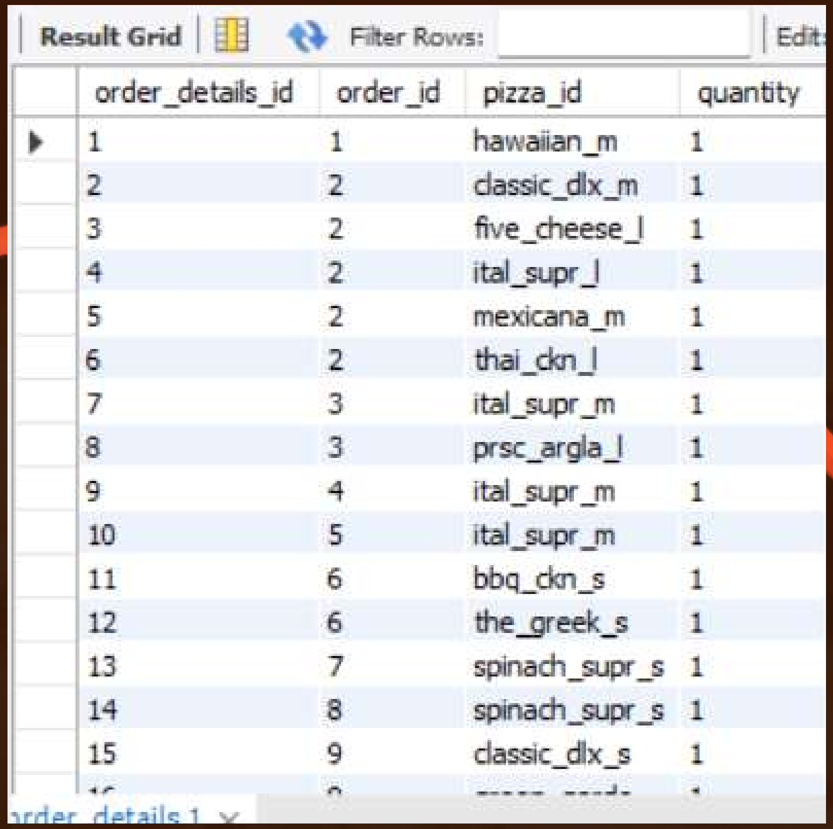
# RAW DATA



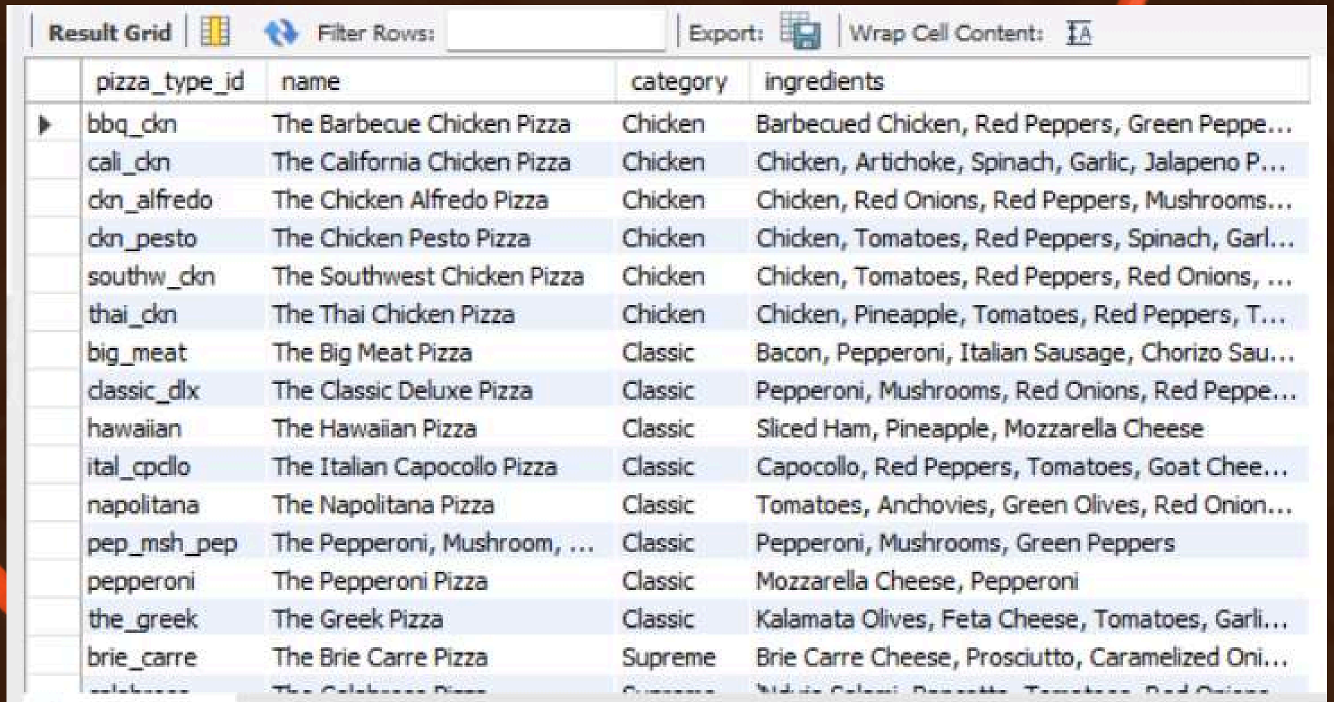
| order_id | order_date | order_time |
|---|---|---|
| 1 | 2015-01-01 | 11:38:36 |
| 2 | 2015-01-01 | 11:57:40 |
| 3 | 2015-01-01 | 12:12:28 |
| 4 | 2015-01-01 | 12:16:31 |
| 5 | 2015-01-01 | 12:21:30 |
| 6 | 2015-01-01 | 12:29:36 |
| 7 | 2015-01-01 | 12:50:37 |
| 8 | 2015-01-01 | 12:51:37 |
| 9 | 2015-01-01 | 12:52:01 |
| 10 | 2015-01-01 | 13:00:15 |
| 11 | 2015-01-01 | 13:02:59 |
| 12 | 2015-01-01 | 13:04:41 |
| 13 | 2015-01-01 | 13:11:55 |
| 14 | 2015-01-01 | 13:14:19 |
| 15 | 2015-01-01 | 13:33:00 |
| 16 | 2015-01-01 | 13:34:07 |
| 17 | 2015-01-01 | 13:53:00 |
| 18 | 2015-01-01 | 13:57:08 |
| 19 | 2015-01-01 | 13:59:09 |
| 20 | 2015-01-01 | 14:03:08 |
| 21 | 2015-01-01 | 14:14:29 |
| 22 | 2015-01-01 | 14:16:26 |
| 23 | 2015-01-01 | 14:19:03 |
| 24 | 2015-01-01 | 14:23:01 |
| 25 | 2015-01-01 | 14:44:44 |



| 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 |
| ckn_pesto_m | ckn_pesto | M | 16.75 |
| ckn_pesto_l | ckn_pesto | L | 20.75 |
| southw_ckn_s | southw_ckn | S | 12.75 |
| southw_ckn_m | southw_ckn | M | 16.75 |
| southw_ckn_l | southw_ckn | L | 20.75 |
| thai_ckn_s | thai_ckn | S | 12.75 |
| thai_ckn_m | thai_ckn | M | 16.75 |
| thai_ckn_l | thai_ckn | L | 20.75 |
| big_meat_s | big_meat | S | 12 |
| big_meat_m | big_meat | M | 16 |
| big_meat_l | big_meat | L | 20.5 |
| classic_dlx_s | classic_dlx | S | 12 |
| classic_dlx_m | classic_dlx | M | 16 |
| classic_dlx_l | classic_dlx | L | 20.5 |
| hawaiian_s | hawaiian | S | 10.5 |

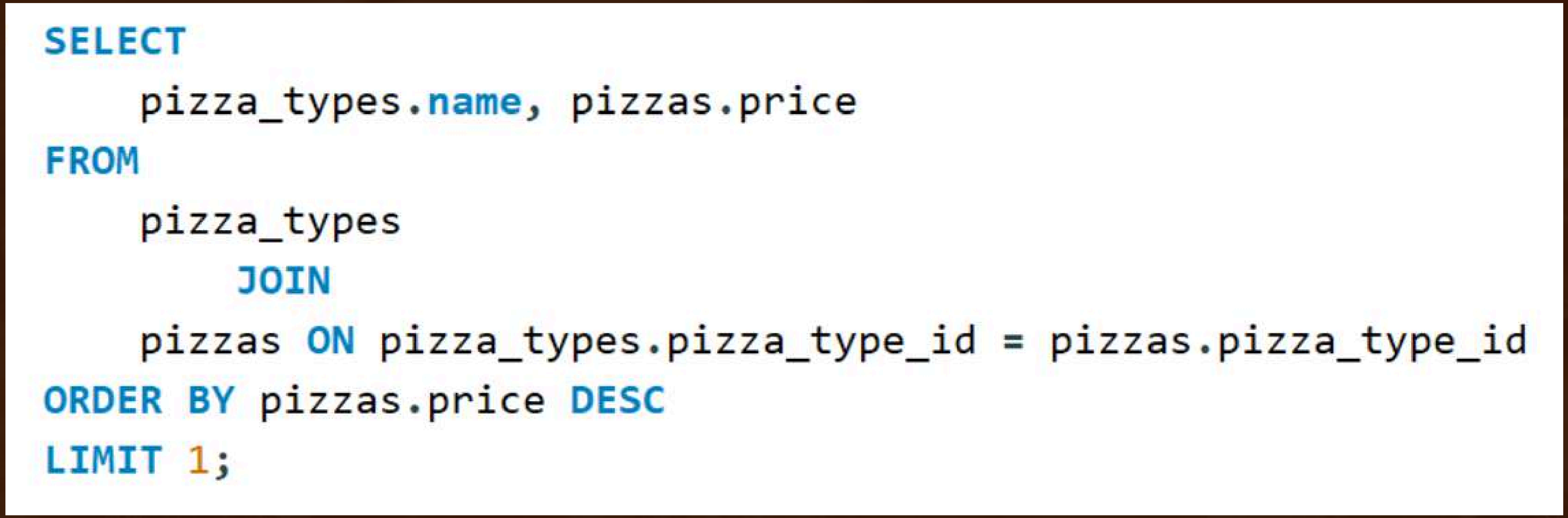


| order_details_id | order_id | pizza_id | quantity |
|---|---|---|---|
| 1 | 1 | hawaiian_m | 1 |
| 2 | 2 | classic_dlx_m | 1 |
| 3 | 2 | five_cheese_l | 1 |
| 4 | 2 | ital_supr_l | 1 |
| 5 | 2 | mexicana_m | 1 |
| 6 | 2 | thai_ckn_l | 1 |
| 7 | 3 | ital_supr_m | 1 |
| 8 | 3 | prsc_argla_l | 1 |
| 9 | 4 | ital_supr_m | 1 |
| 10 | 5 | ital_supr_m | 1 |
| 11 | 6 | bbq_ckn_s | 1 |
| 12 | 6 | the_greek_s | 1 |
| 13 | 7 | spinach_supr_s | 1 |
| 14 | 8 | spinach_supr_s | 1 |
| 15 | 9 | classic_dlx_s | 1 |

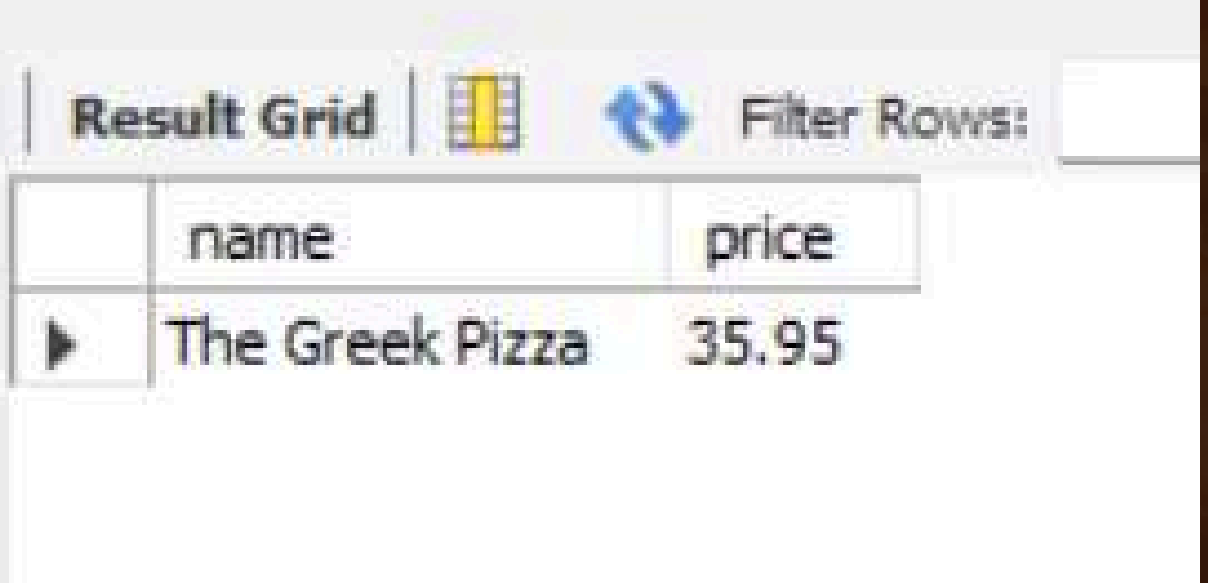


| pizza_type_id | name | category | ingredients |
|---|---|---|---|
| bbq_ckn | The Barbecue Chicken Pizza | Chicken | Barbecued Chicken, Red Peppers, Green Peppe... |
| cali_ckn | The California Chicken Pizza | Chicken | Chicken, Artichoke, Spinach, Garlic, Jalapeno P... |
| ckn_alfredo | The Chicken Alfredo Pizza | Chicken | Chicken, Red Onions, Red Peppers, Mushrooms... |
| ckn_pesto | The Chicken Pesto Pizza | Chicken | Chicken, Tomatoes, Red Peppers, Spinach, Garl... |
| southw_ckn | The Southwest Chicken Pizza | Chicken | Chicken, Tomatoes, Red Peppers, Red Onions, ... |
| thai_ckn | The Thai Chicken Pizza | Chicken | Chicken, Pineapple, Tomatoes, Red Peppers, T... |
| big_meat | The Big Meat Pizza | Classic | Bacon, Pepperoni, Italian Sausage, Chorizo Sau... |
| classic_dlx | The Classic Deluxe Pizza | Classic | Pepperoni, Mushrooms, Red Onions, Red Peppe... |
| hawaiian | The Hawaiian Pizza | Classic | Sliced Ham, Pineapple, Mozzarella Cheese |
| ital_cpcllo | The Italian Capocollo Pizza | Classic | Capocollo, Red Peppers, Tomatoes, Goat Chee... |
| napolitana | The Napolitana Pizza | Classic | Tomatoes, Anchovies, Green Olives, Red Onion... |
| pep_msh_pep | The Pepperoni, Mushroom, ... | Classic | Pepperoni, Mushrooms, Green Peppers |
| pepperoni | The Pepperoni Pizza | Classic | Mozzarella Cheese, Pepperoni |
| the_greek | The Greek Pizza | Classic | Kalamata Olives, Feta Cheese, Tomatoes, Garli... |
| brie_carre | The Brie Carre Pizza | Supreme | Brie Carre Cheese, Prosciutto, Caramelized Oni... |

# IDENTIFY THE HIGHEST PRIZED PIZZA

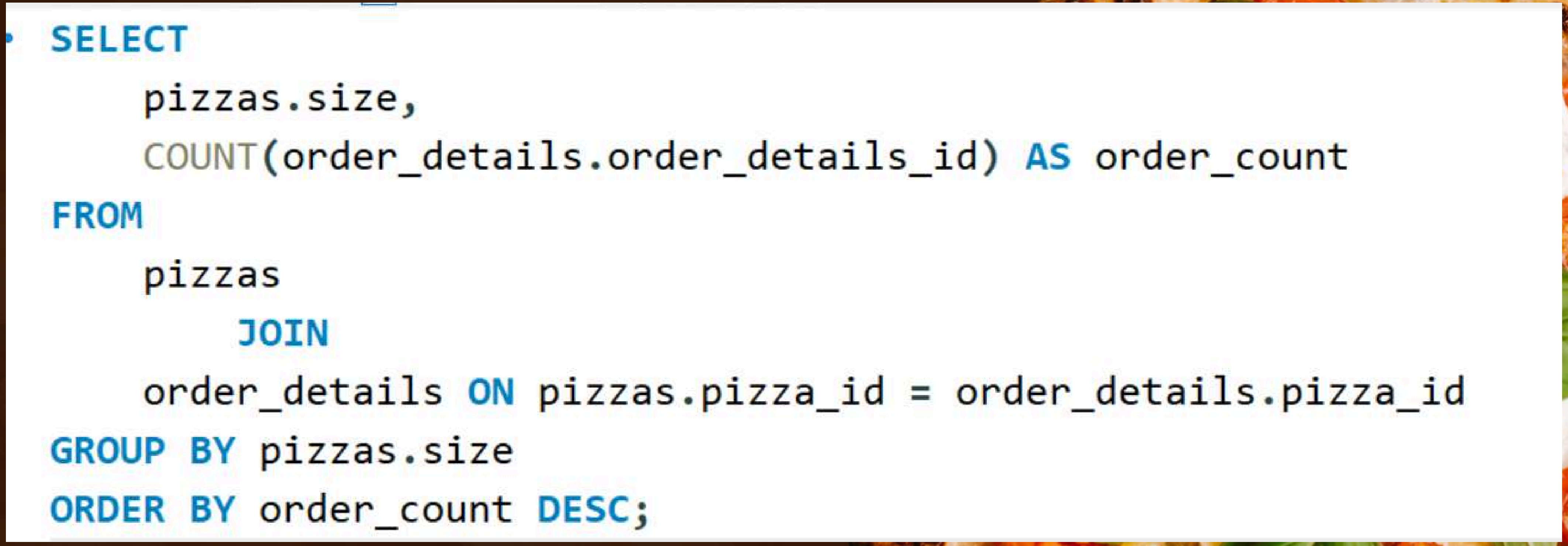


```sql
SELECT
    pizza_types.name, pizzas.price
FROM
    pizza_types
        JOIN
    pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
ORDER BY pizzas.price DESC
LIMIT 1;
```

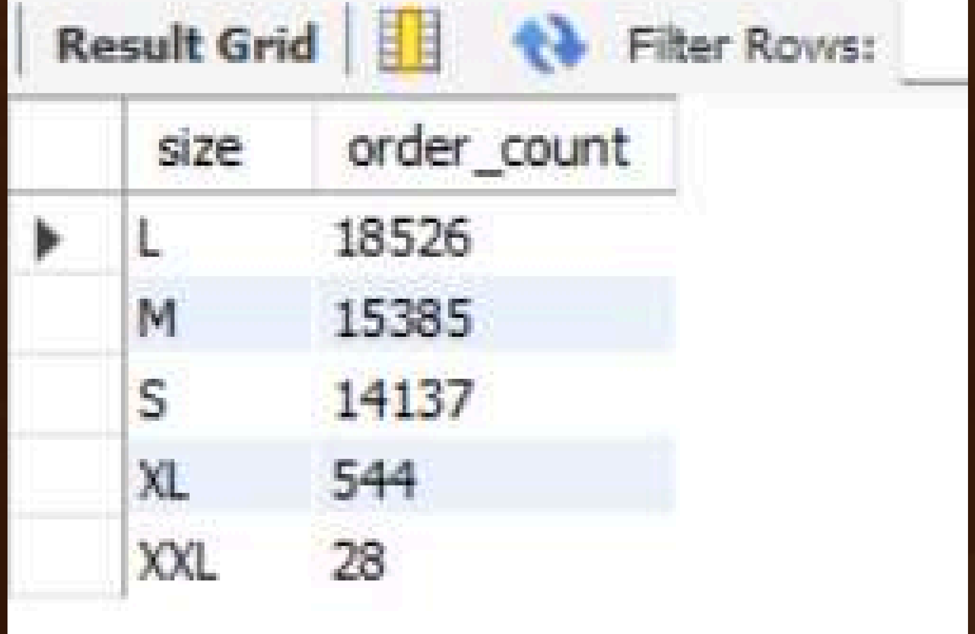


| name | price |
|---|---|
| The Greek Pizza | 35.95 |

# IDENTIFY THE MOST COMMON PIZZA SIZE ORDERED

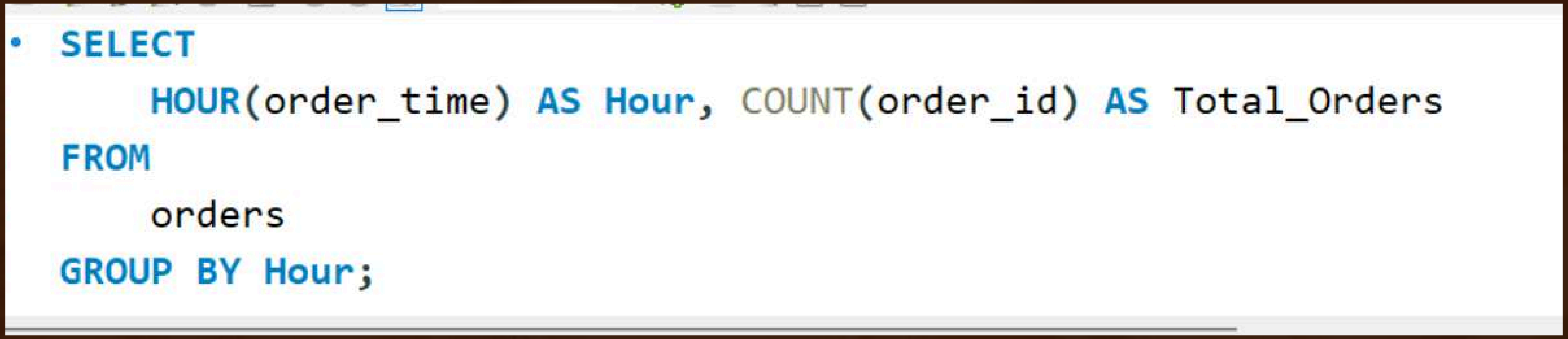


```
SELECT
    pizzas.size,
    COUNT(order_details.order_details_id) AS order_count
FROM
    pizzas
        JOIN
    order_details ON pizzas.pizza_id = order_details.pizza_id
GROUP BY pizzas.size
ORDER BY order_count DESC;
```

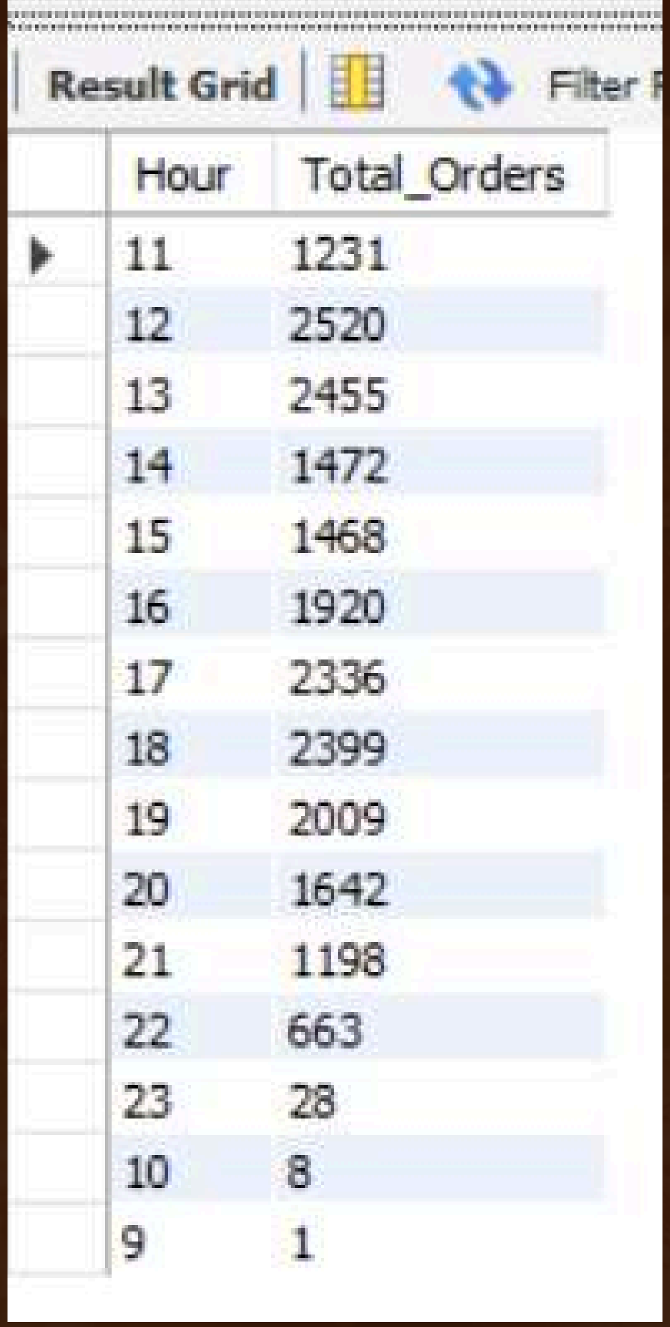


| size | order_count |
|---|---|
| L | 18526 |
| M | 15385 |
| S | 14137 |
| XL | 544 |
| XXL | 28 |

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

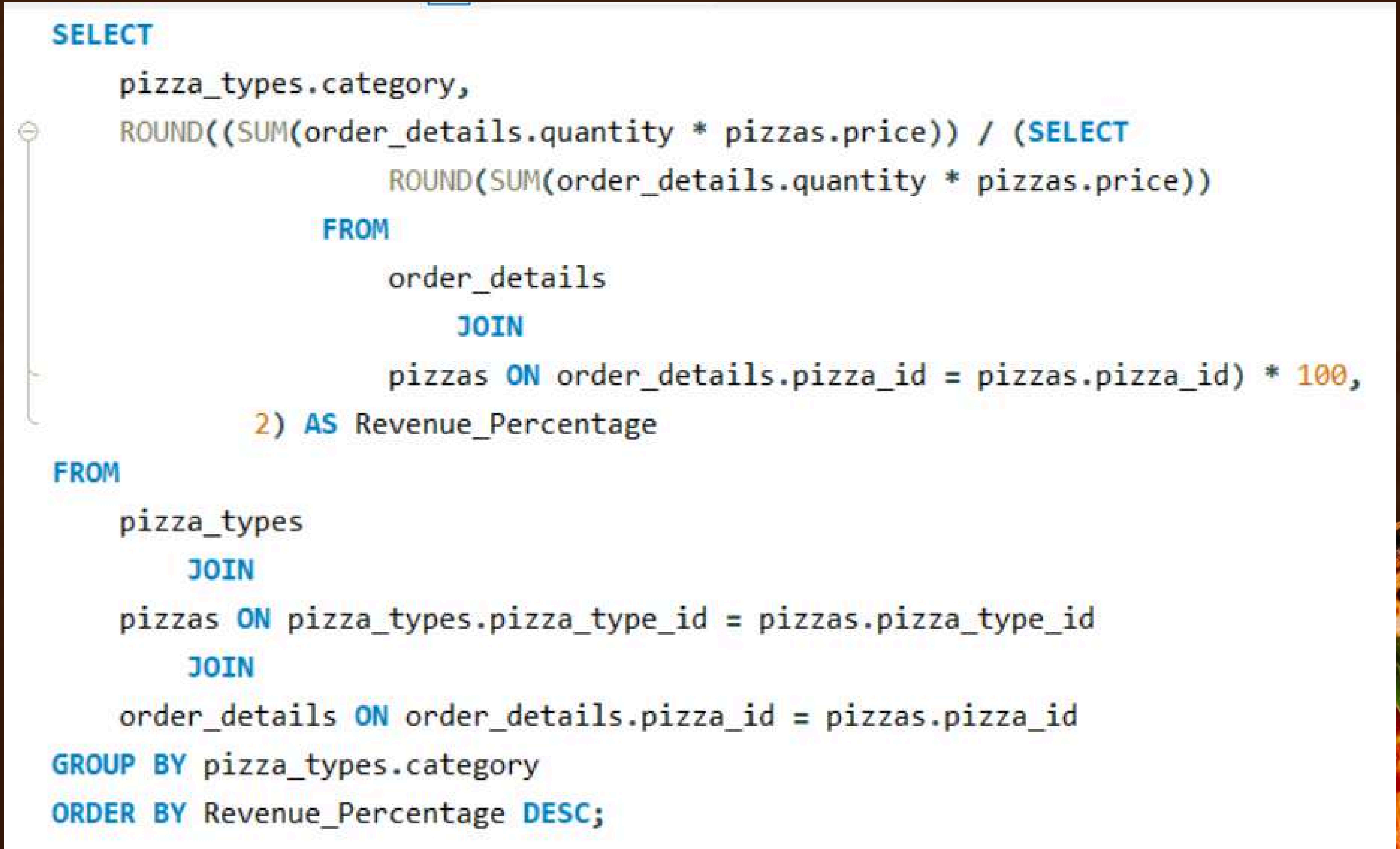


```
SELECT
    HOUR(order_time) AS Hour, COUNT(order_id) AS Total_Orders
FROM
    orders
GROUP BY Hour;
```

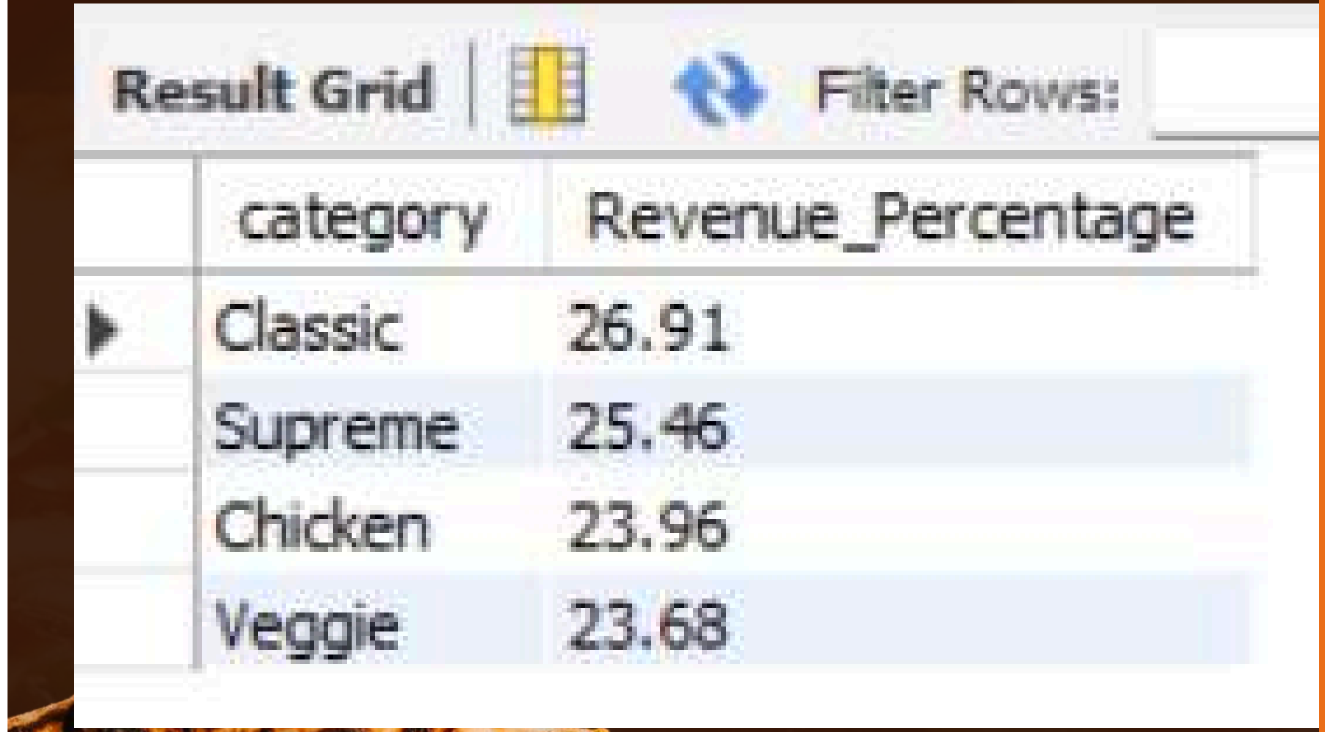


| Hour | Total_Orders |
|---|---|
| 11 | 1231 |
| 12 | 2520 |
| 13 | 2455 |
| 14 | 1472 |
| 15 | 1468 |
| 16 | 1920 |
| 17 | 2336 |
| 18 | 2399 |
| 19 | 2009 |
| 20 | 1642 |
| 21 | 1198 |
| 22 | 663 |
| 23 | 28 |
| 10 | 8 |
| 9 | 1 |

# CALCULATE THE PERCENTAGE CONTRIBUTION OF EACH PIZZA TYPE TO TOTAL REVENUE

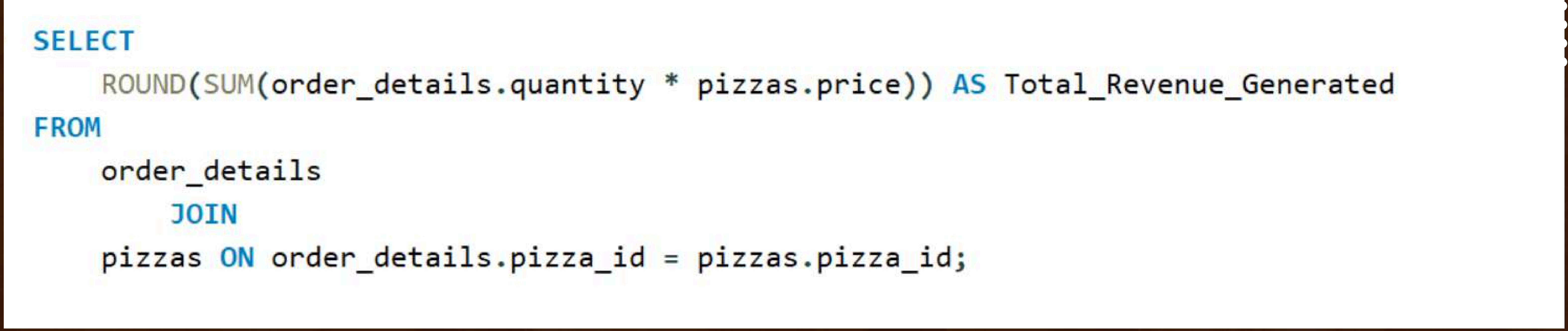


```
SELECT
    pizza_types.category,
    ROUND((SUM(order_details.quantity * pizzas.price)) / (SELECT
                ROUND(SUM(order_details.quantity * pizzas.price))
            FROM
                order_details
                    JOIN
                pizzas ON order_details.pizza_id = pizzas.pizza_id)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

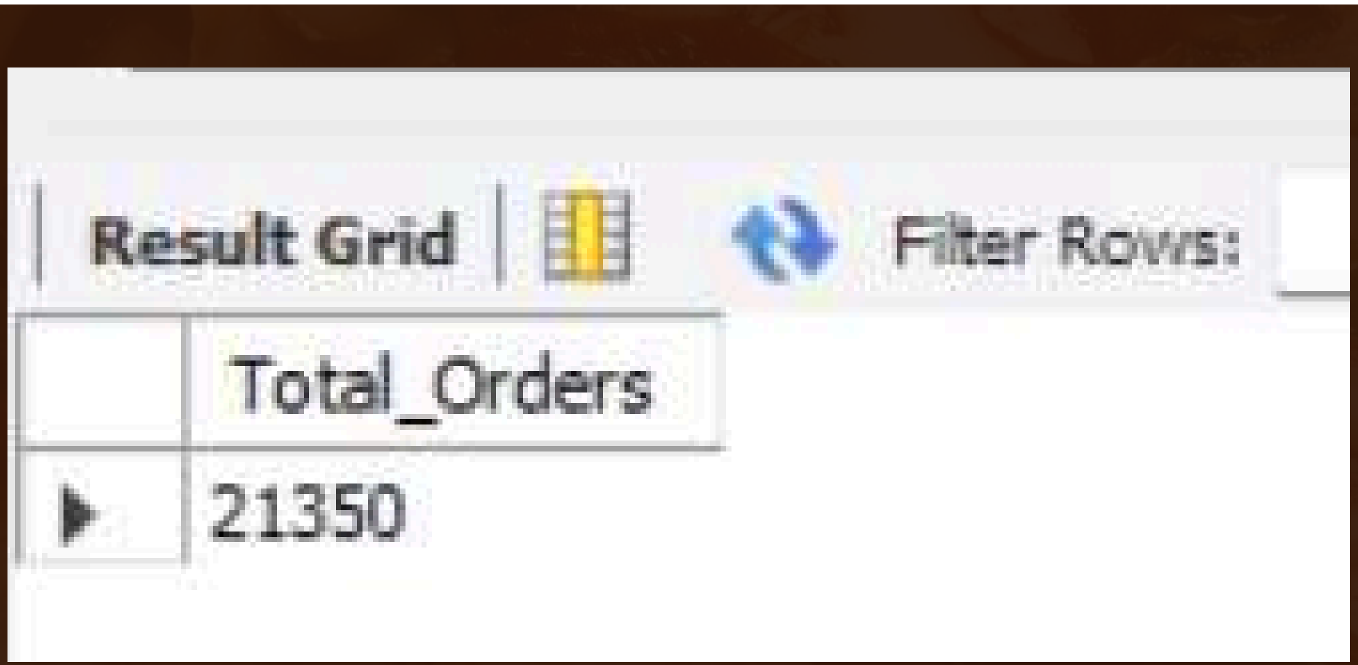


| category | Revenue_Percentage |
|---|---|
| Classic | 26.91 |
| Supreme | 25.46 |
| Chicken | 23.96 |
| Veggie | 23.68 |

# CALCULATE THE TOTAL REVENUE GENERATED FROM PIZZA SALES.

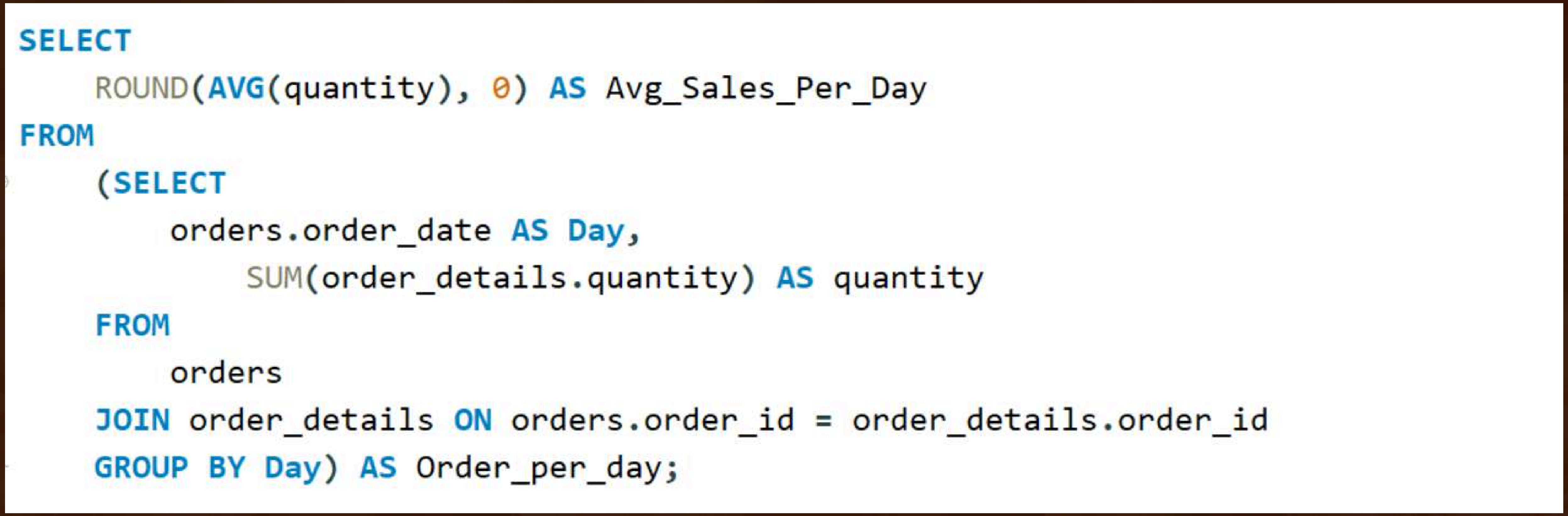


```sql
SELECT
    ROUND(SUM(order_details.quantity * pizzas.price)) AS Total_Revenue_Generated
FROM
    order_details
        JOIN
    pizzas ON order_details.pizza_id = pizzas.pizza_id;
```

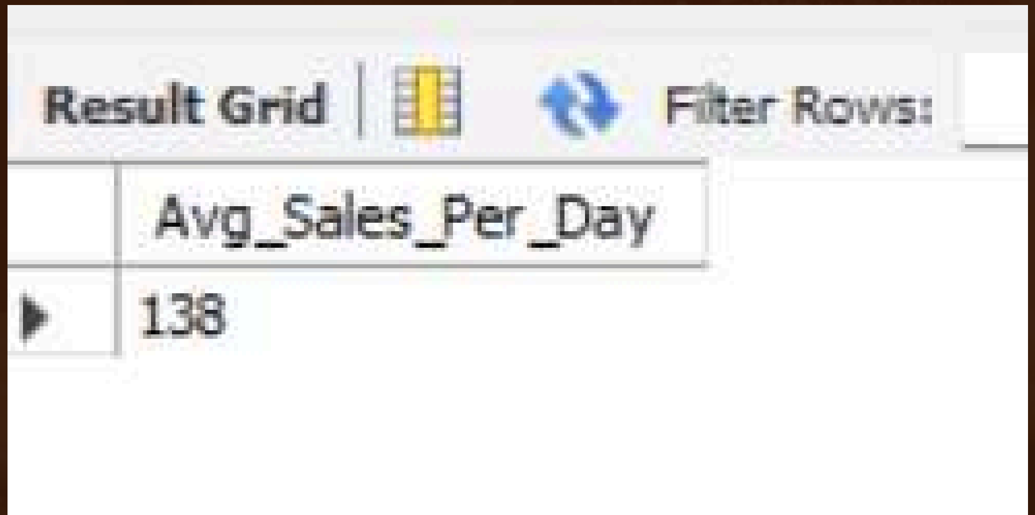


| | Total_Orders |
|---|---|
| ▶ | 21350 |

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

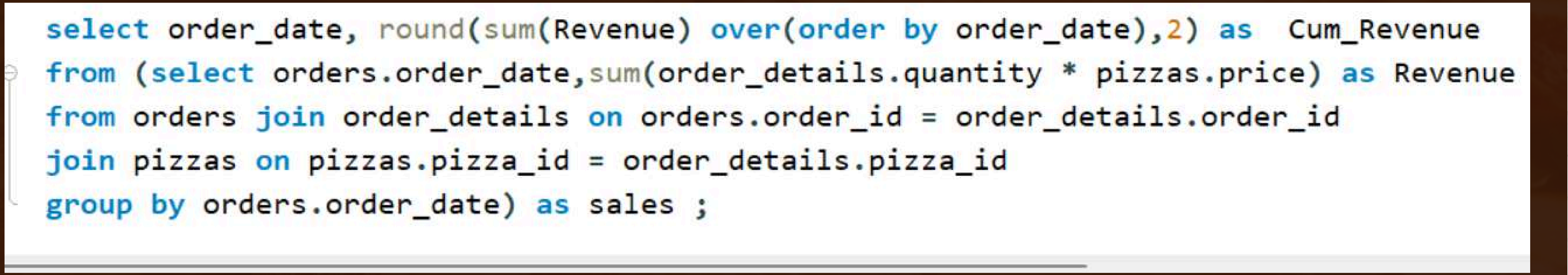


```sql
SELECT
    ROUND(AVG(quantity), 0) AS Avg_Sales_Per_Day
FROM
    (SELECT
        orders.order_date AS Day,
            SUM(order_details.quantity) AS quantity
    FROM
        orders
    JOIN order_details ON orders.order_id = order_details.order_id
    GROUP BY Day) AS Order_per_day;
```

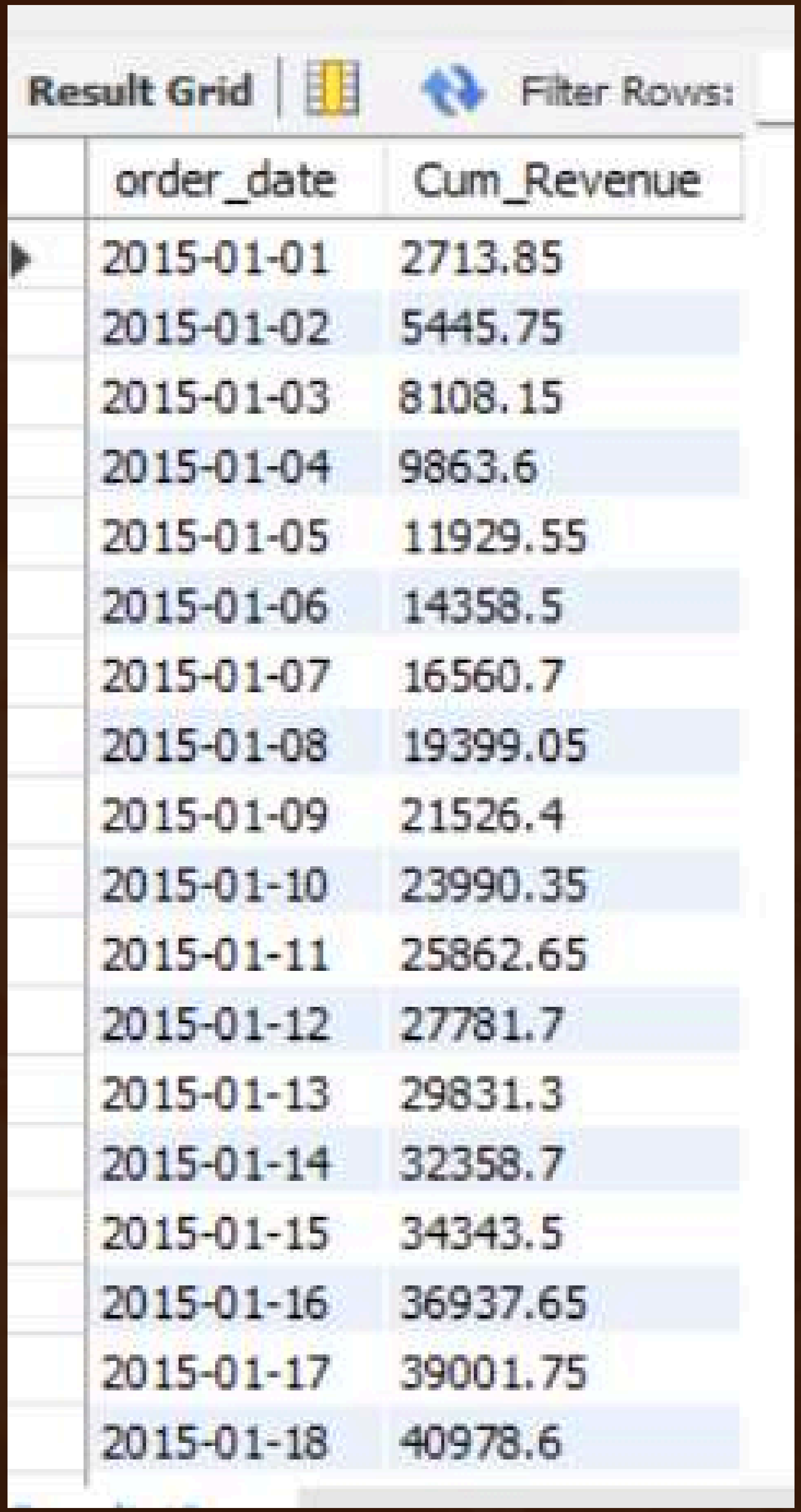


```
Avg_Sales_Per_Day
138
```

# ANALYZE THE CUMULATIVE REVENUE GENERATED OVER TIME

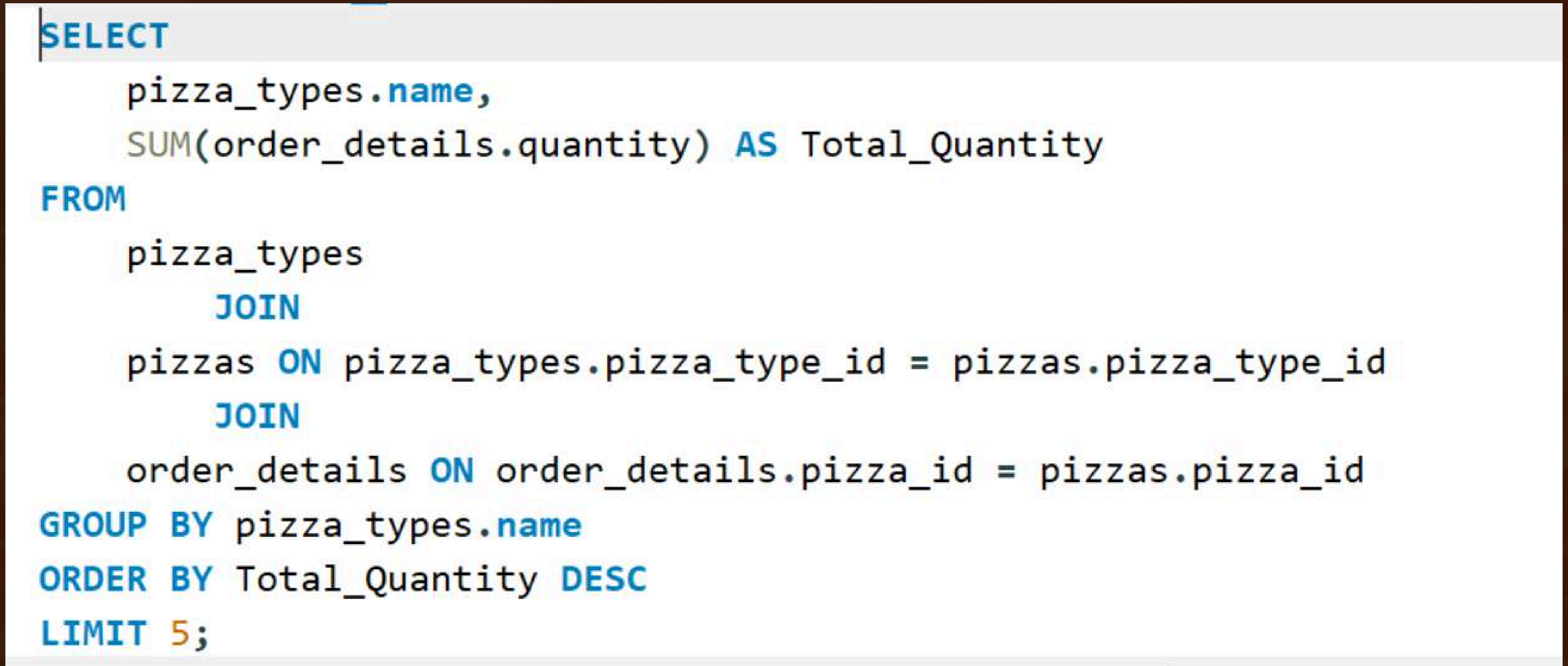


```
select order_date, round(sum(Revenue) over(order by order_date),2) as  Cum_Revenue
from (select orders.order_date,sum(order_details.quantity * pizzas.price) as Revenue
from orders join order_details on orders.order_id = order_details.order_id
join pizzas on pizzas.pizza_id = order_details.pizza_id
group by orders.order_date) as sales ;
```

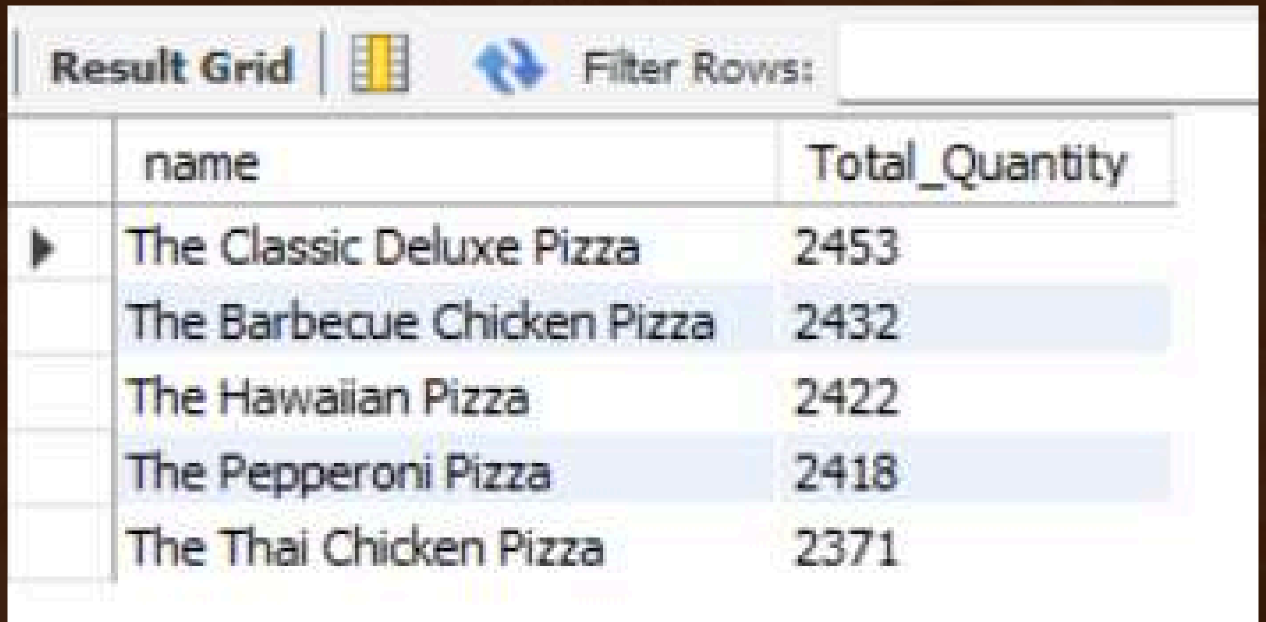


| order_date | Cum_Revenue |
|---|---|
| 2015-01-01 | 2713.85 |
| 2015-01-02 | 5445.75 |
| 2015-01-03 | 8108.15 |
| 2015-01-04 | 9863.6 |
| 2015-01-05 | 11929.55 |
| 2015-01-06 | 14358.5 |
| 2015-01-07 | 16560.7 |
| 2015-01-08 | 19399.05 |
| 2015-01-09 | 21526.4 |
| 2015-01-10 | 23990.35 |
| 2015-01-11 | 25862.65 |
| 2015-01-12 | 27781.7 |
| 2015-01-13 | 29831.3 |
| 2015-01-14 | 32358.7 |
| 2015-01-15 | 34343.5 |
| 2015-01-16 | 36937.65 |
| 2015-01-17 | 39001.75 |
| 2015-01-18 | 40978.6 |

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

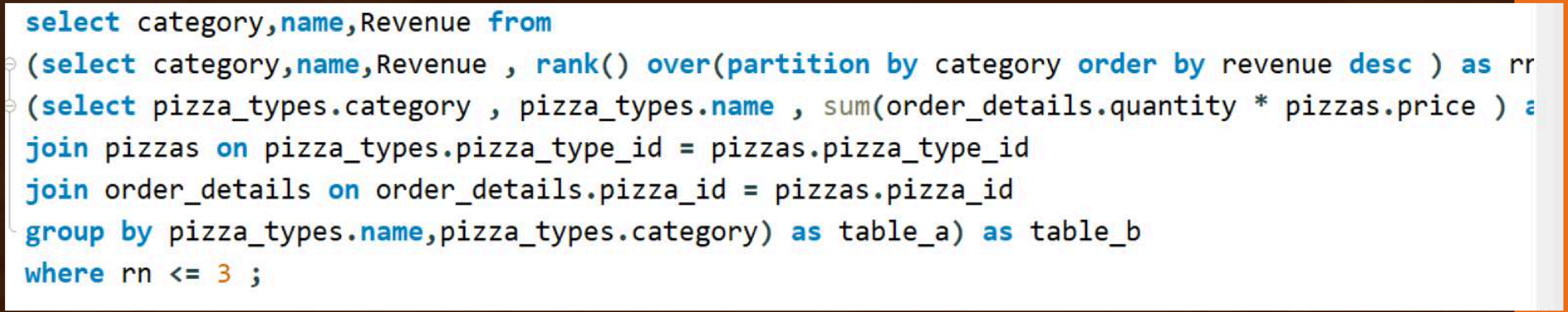


```
SELECT
    pizza_types.name,
    SUM(order_details.quantity) AS Total_Quantity
FROM
    pizza_types
        JOIN
    pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
        JOIN
    order_details ON order_details.pizza_id = pizzas.pizza_id
GROUP BY pizza_types.name
ORDER BY Total_Quantity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

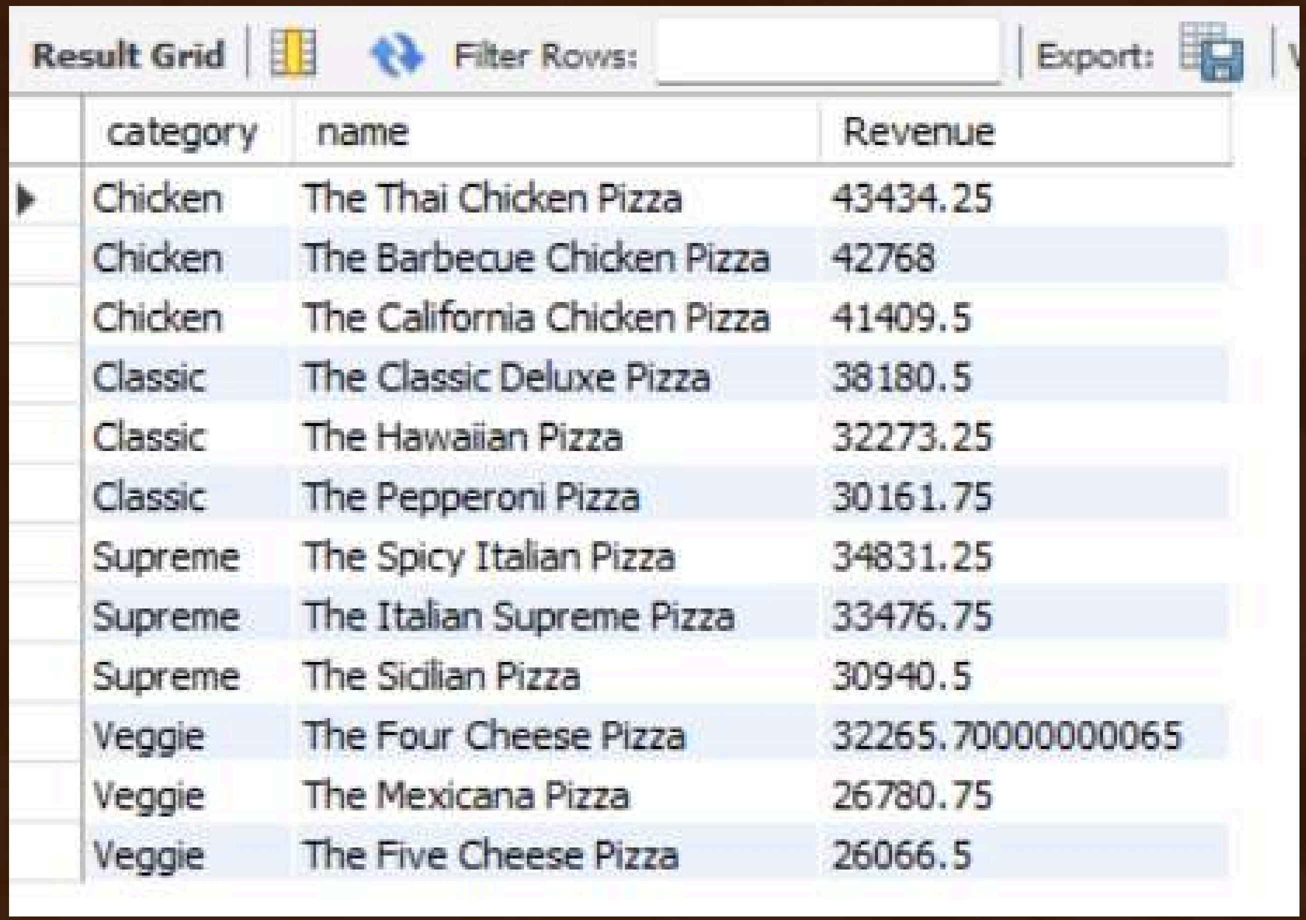


| name | Total_Quantity |
|---|---|
| The Classic Deluxe Pizza | 2453 |
| The Barbecue Chicken Pizza | 2432 |
| The Hawaiian Pizza | 2422 |
| The Pepperoni Pizza | 2418 |
| The Thai Chicken Pizza | 2371 |

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

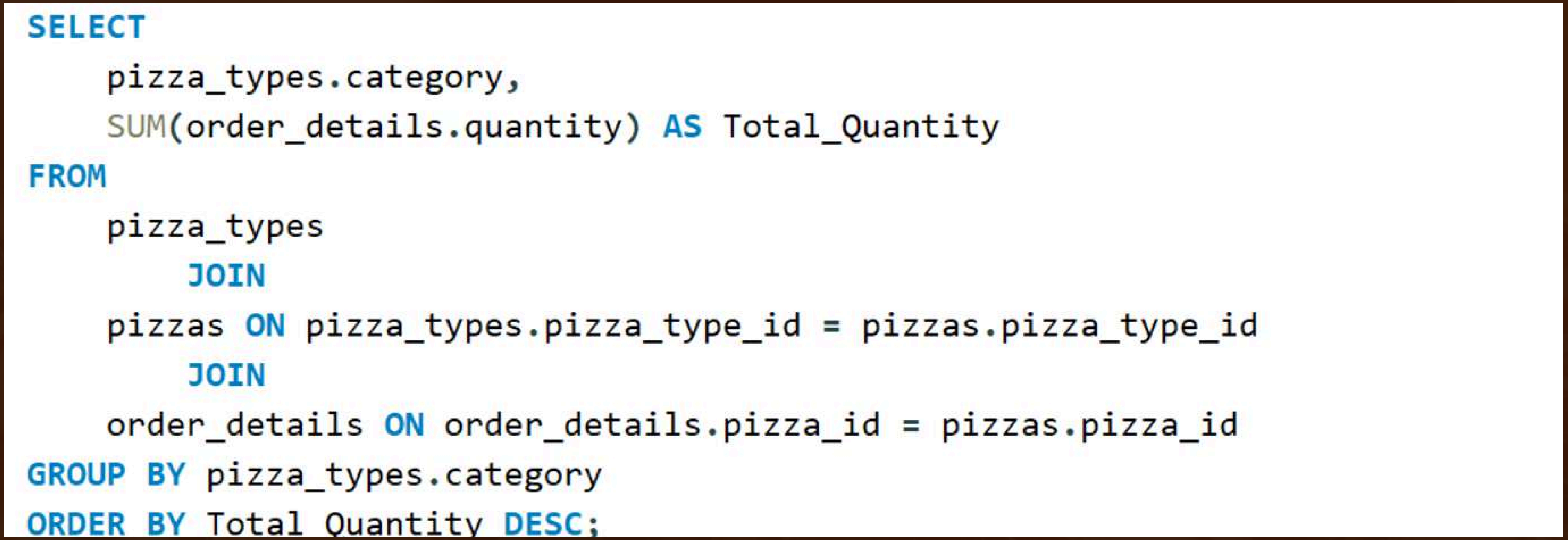


```
select category,name,Revenue from
(select category,name,Revenue , rank() over(partition by category order by revenue desc ) as rr
(select pizza_types.category , pizza_types.name , sum(order_details.quantity * pizzas.price ) a
join pizzas on pizza_types.pizza_type_id = pizzas.pizza_type_id
join order_details on order_details.pizza_id = pizzas.pizza_id
group by pizza_types.name,pizza_types.category) as table_a) as table_b
where rn <= 3 ;
```

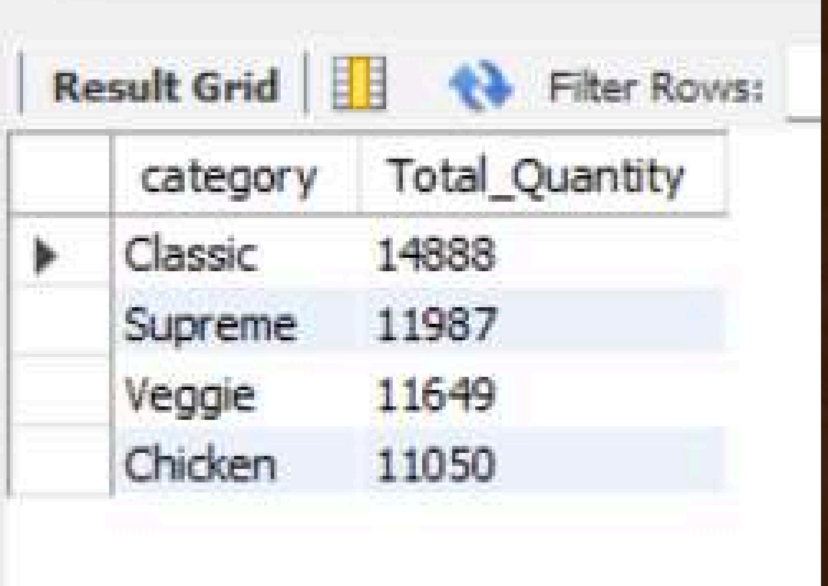


| category | name | Revenue |
|---|---|---|
| Chicken | The Thai Chicken Pizza | 43434.25 |
| Chicken | The Barbecue Chicken Pizza | 42768 |
| Chicken | The California Chicken Pizza | 41409.5 |
| Classic | The Classic Deluxe Pizza | 38180.5 |
| Classic | The Hawaiian Pizza | 32273.25 |
| Classic | The Pepperoni Pizza | 30161.75 |
| Supreme | The Spicy Italian Pizza | 34831.25 |
| Supreme | The Italian Supreme Pizza | 33476.75 |
| Supreme | The Sicilian Pizza | 30940.5 |
| Veggie | The Four Cheese Pizza | 32265.70000000065 |
| Veggie | The Mexicana Pizza | 26780.75 |
| Veggie | The Five Cheese Pizza | 26066.5 |

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

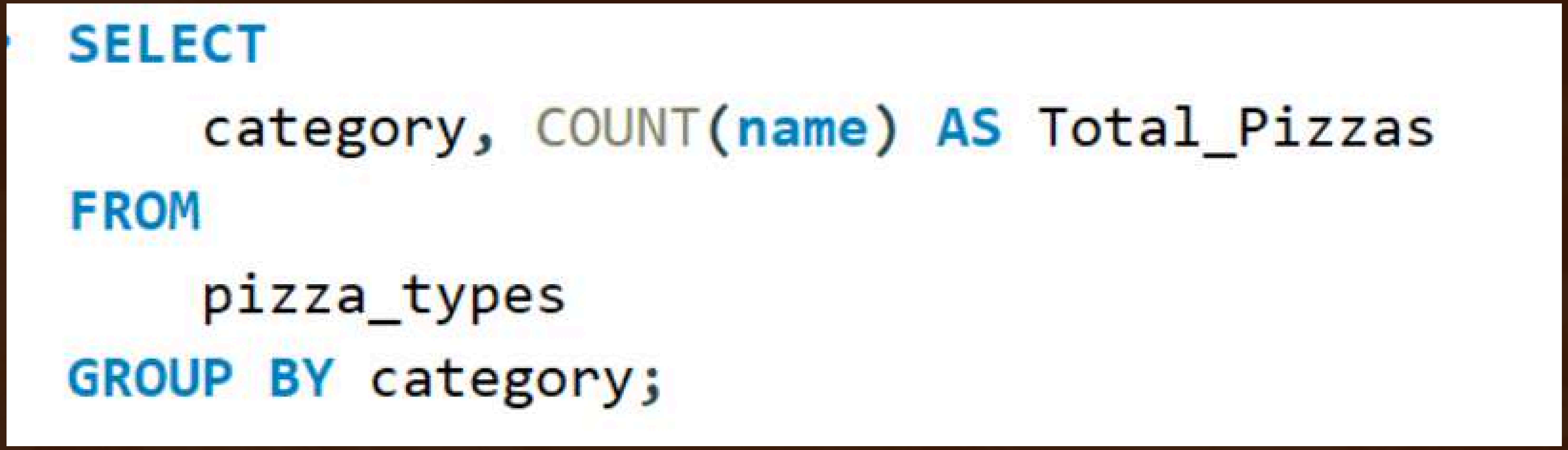


```
SELECT
    pizza_types.category,
    SUM(order_details.quantity) AS Total_Quantity
FROM
    pizza_types
        JOIN
    pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
        JOIN
    order_details ON order_details.pizza_id = pizzas.pizza_id
GROUP BY pizza_types.category
ORDER BY Total_Quantity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

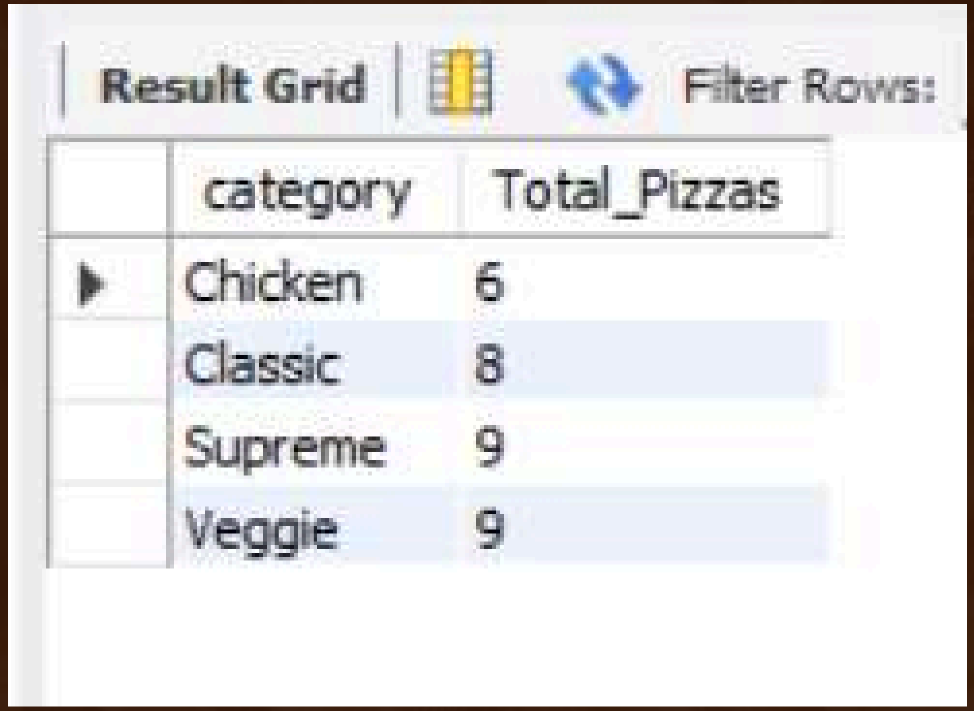


| category | Total_Quantity |
|---|---|
| Classic | 14888 |
| Supreme | 11987 |
| Veggie | 11649 |
| Chicken | 11050 |

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

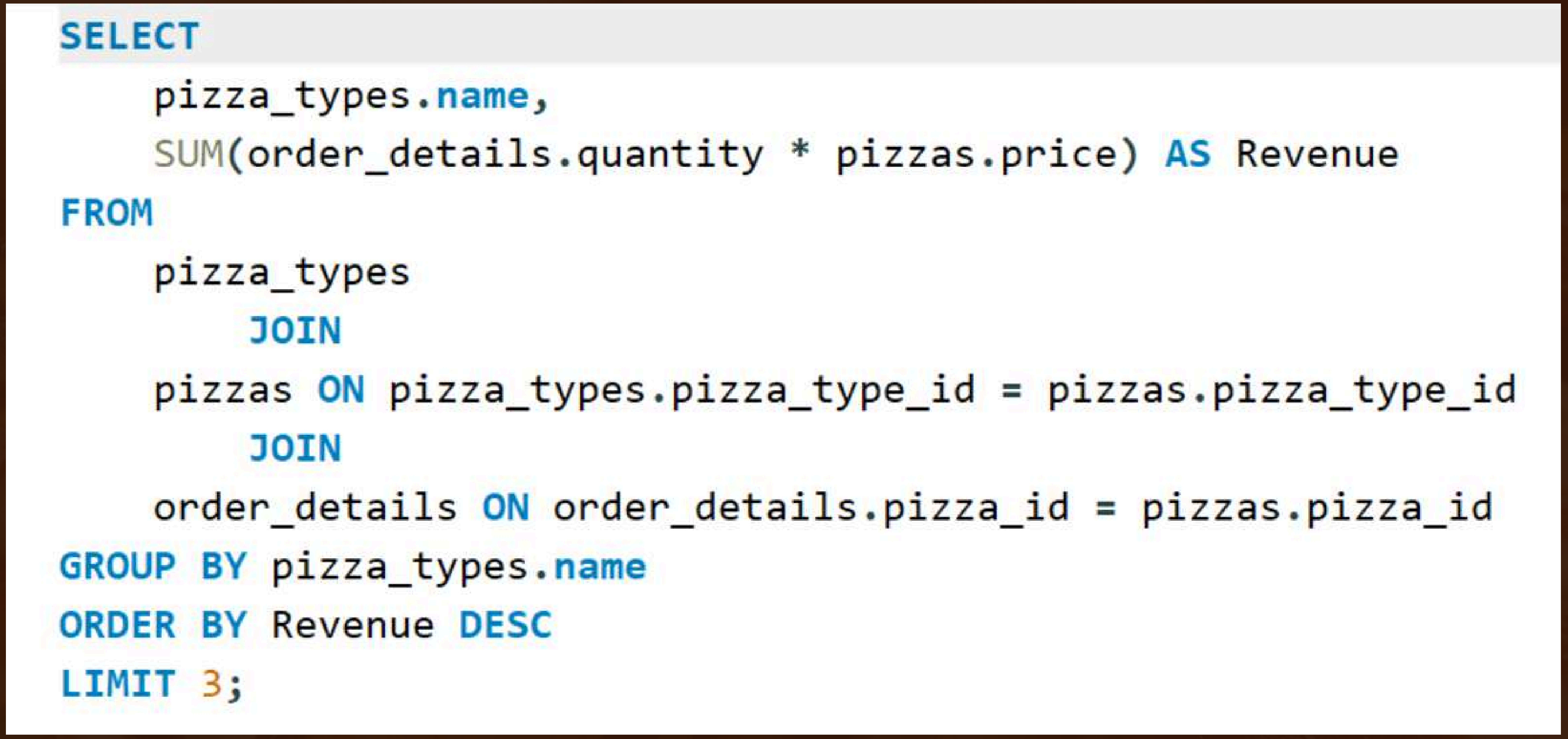


```
SELECT
    category, COUNT(name) AS Total_Pizzas
FROM
    pizza_types
GROUP BY category;
```

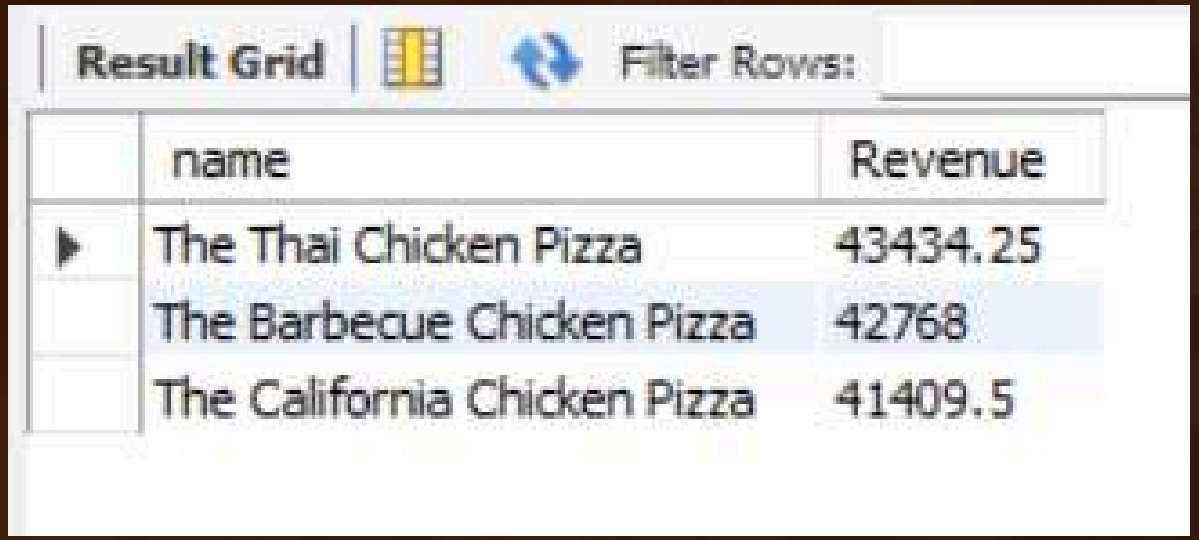


| category | Total_Pizzas |
|---|---|
| Chicken | 6 |
| Classic | 8 |
| Supreme | 9 |
| Veggie | 9 |

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



```
SELECT
    pizza_types.name,
    SUM(order_details.quantity * pizzas.price) AS Revenue
FROM
    pizza_types
        JOIN
    pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
        JOIN
    order_details ON order_details.pizza_id = pizzas.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 |

# THANK YOU