PIZZA SALES ANALYSIS

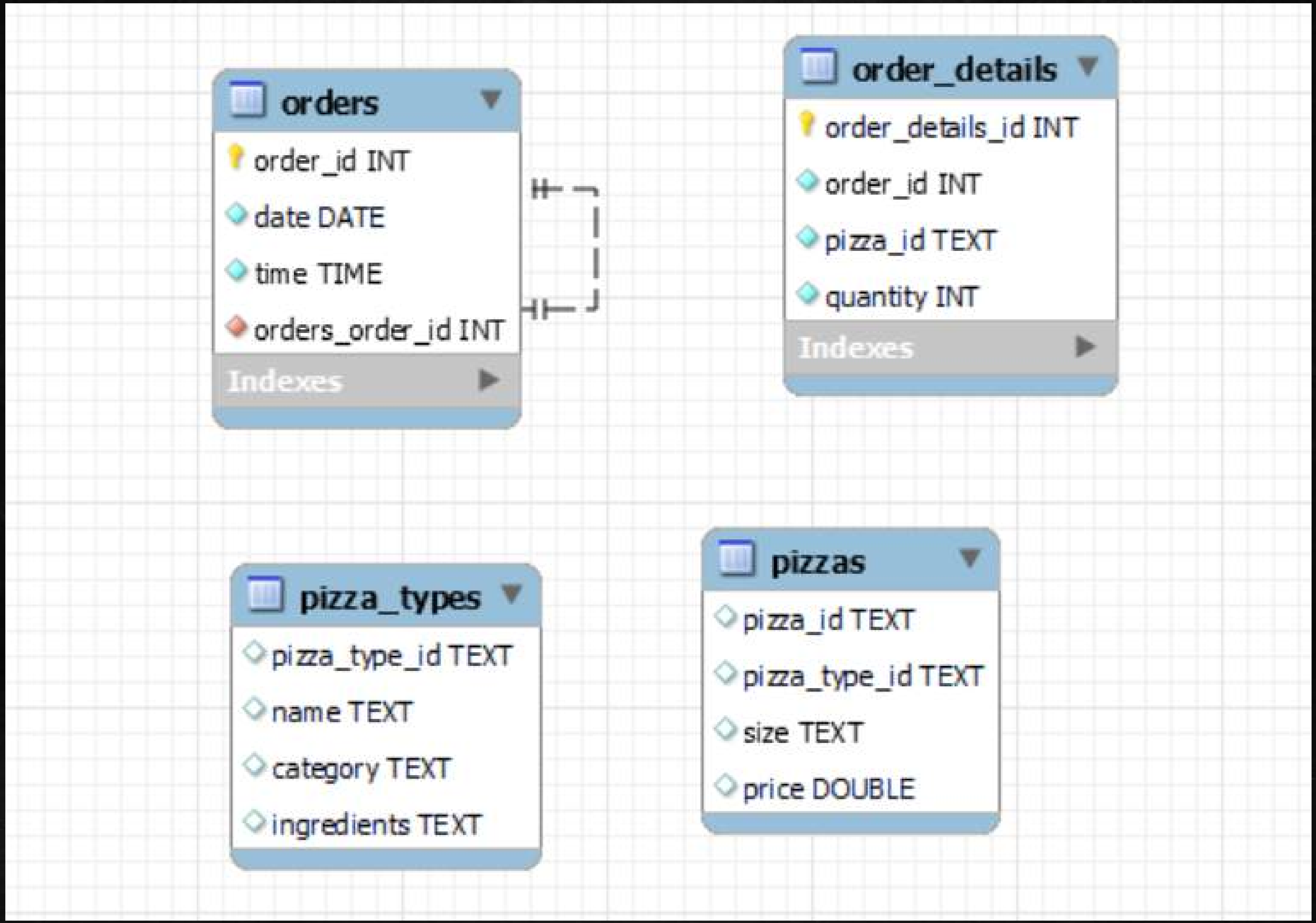
USING SQL

-BY RIYA SHUKLA

OBJECTIVE

By crafting SQL queries, this project delves into crucial aspects of pizza sales, such as revenue generation and popular pizza categories. Through these queries, we aim to pinpoint trends, identify top-performing items, and unveil opportunities for enhancing sales strategies and customer satisfaction.

EER DIAGRAM



orders
order_id INT
date DATE
time TIME
orders_order_id INT
Indexes

order_details
order_details_id INT
order_id INT
pizza_id TEXT
quantity INT
Indexes

pizza_types
pizza_type_id TEXT
name TEXT
category TEXT
ingredients TEXT

pizzas
pizza_id TEXT
pizza_type_id TEXT
size TEXT
price DOUBLE

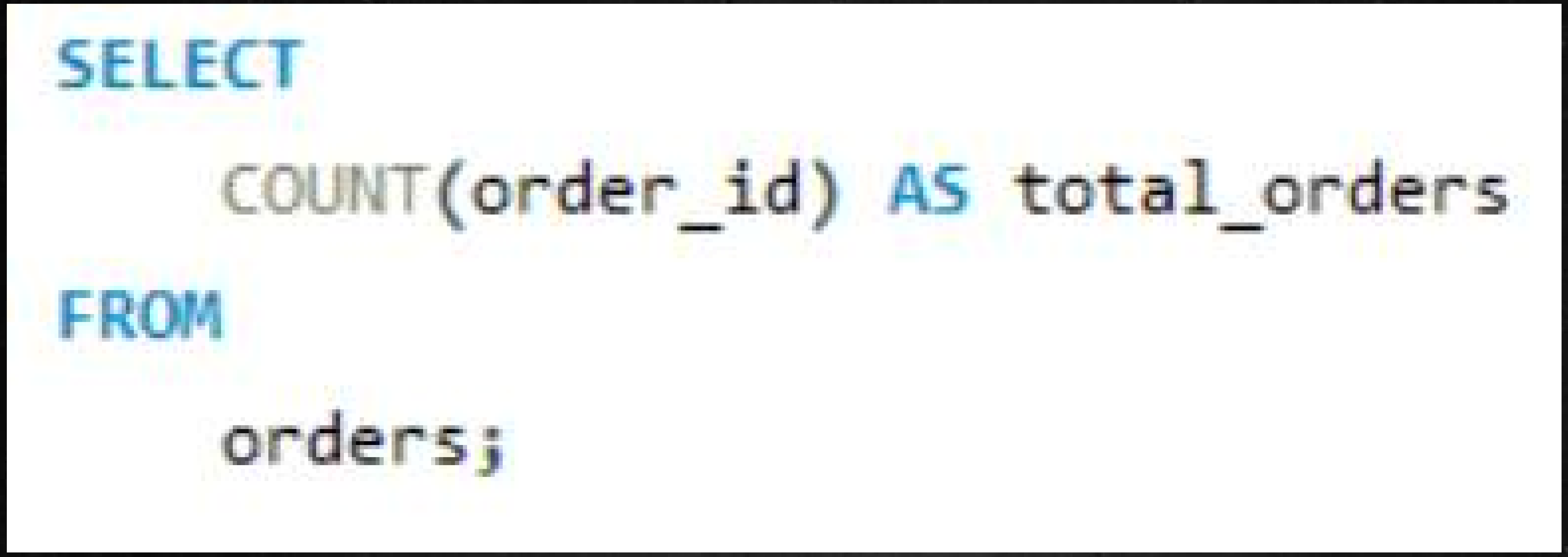
QUESTIONS

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.

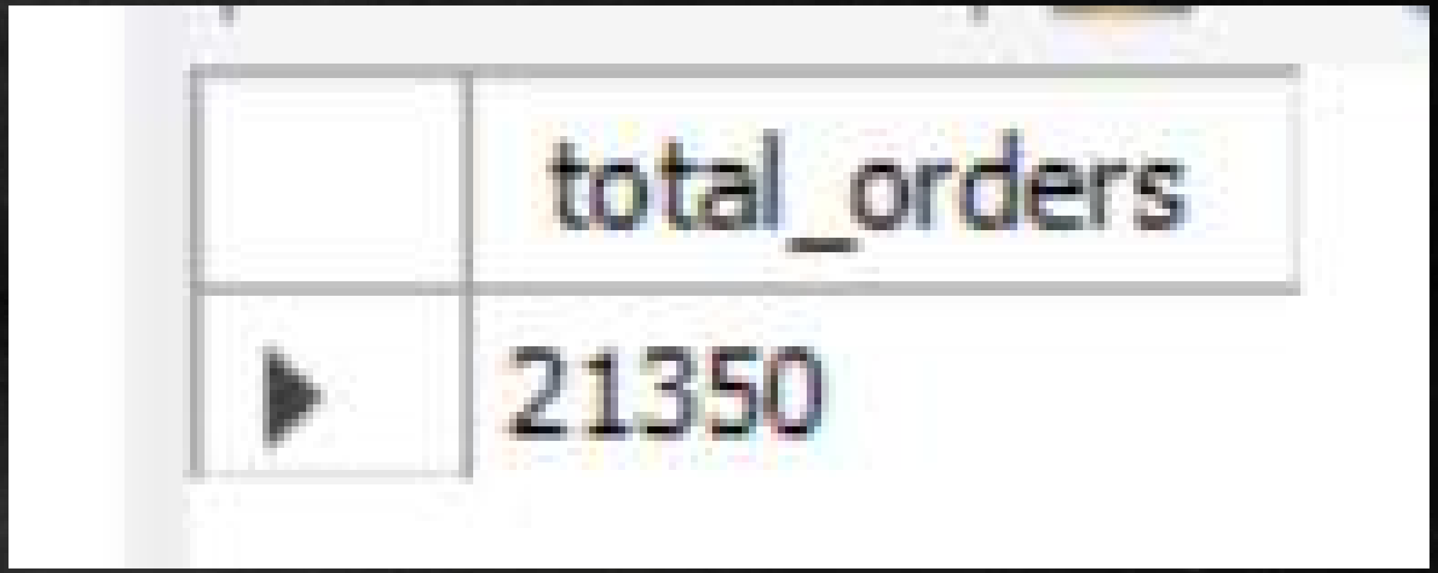
Intermediate:
Join the necessary tables to find the total quantity of each pizza category ordered.
Determine the distribution of orders by hour of the day.
Join relevant tables to find the category-wise distribution of pizzas.
Group the orders by date and calculate the average number of pizzas ordered 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.

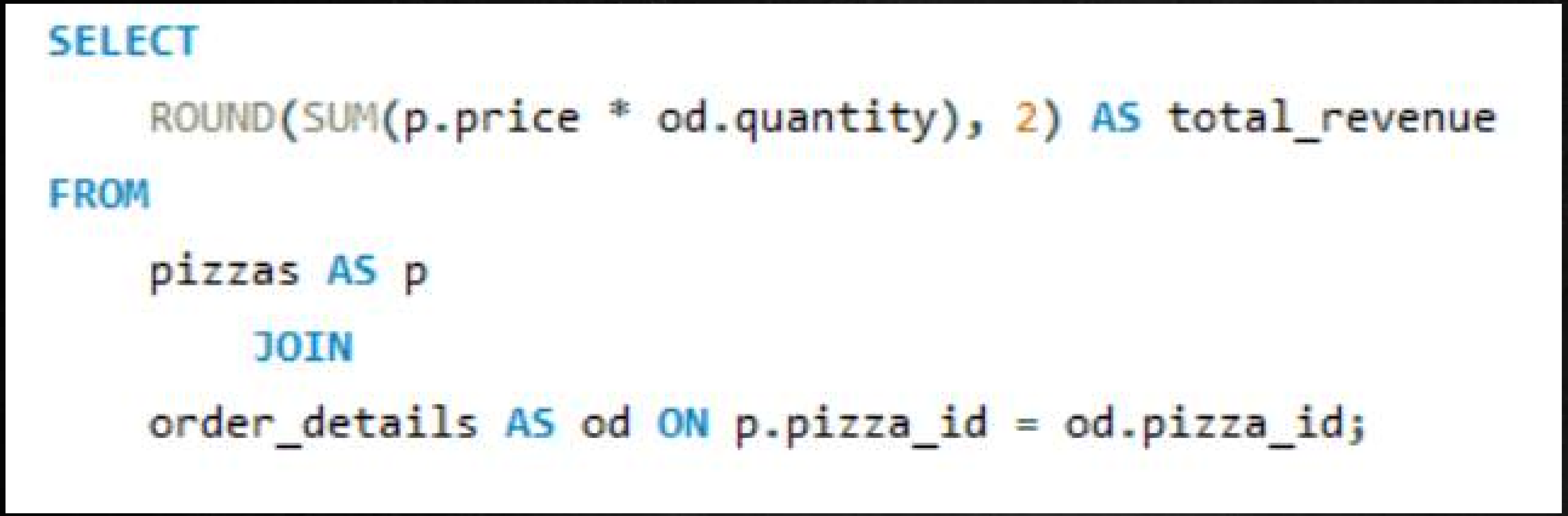


```sql
SELECT
    COUNT(order_id) AS total_orders
FROM
    orders;
```

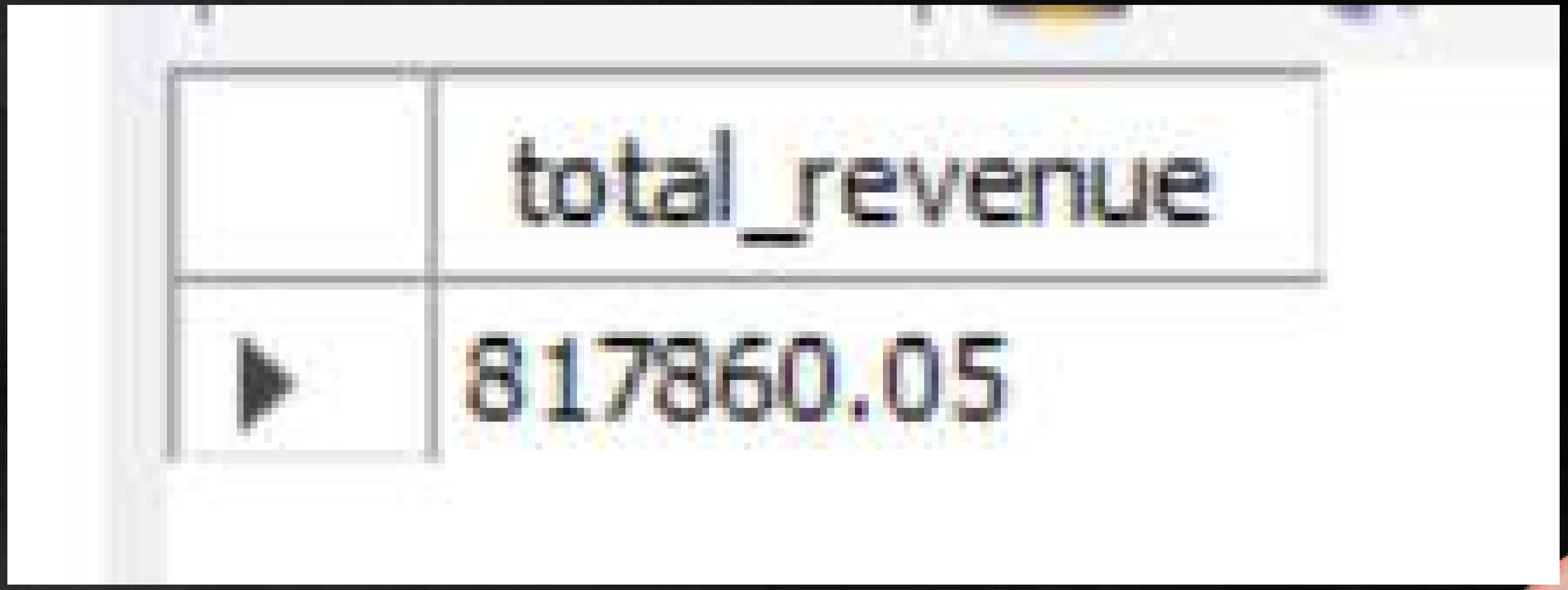


```
total_orders
21350
```

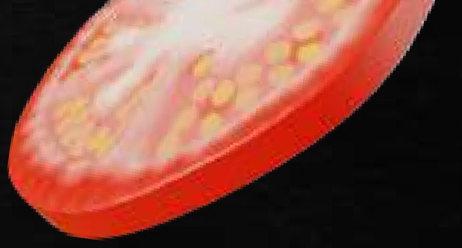
Q2.Calculate the total revenue generated from pizza sales.



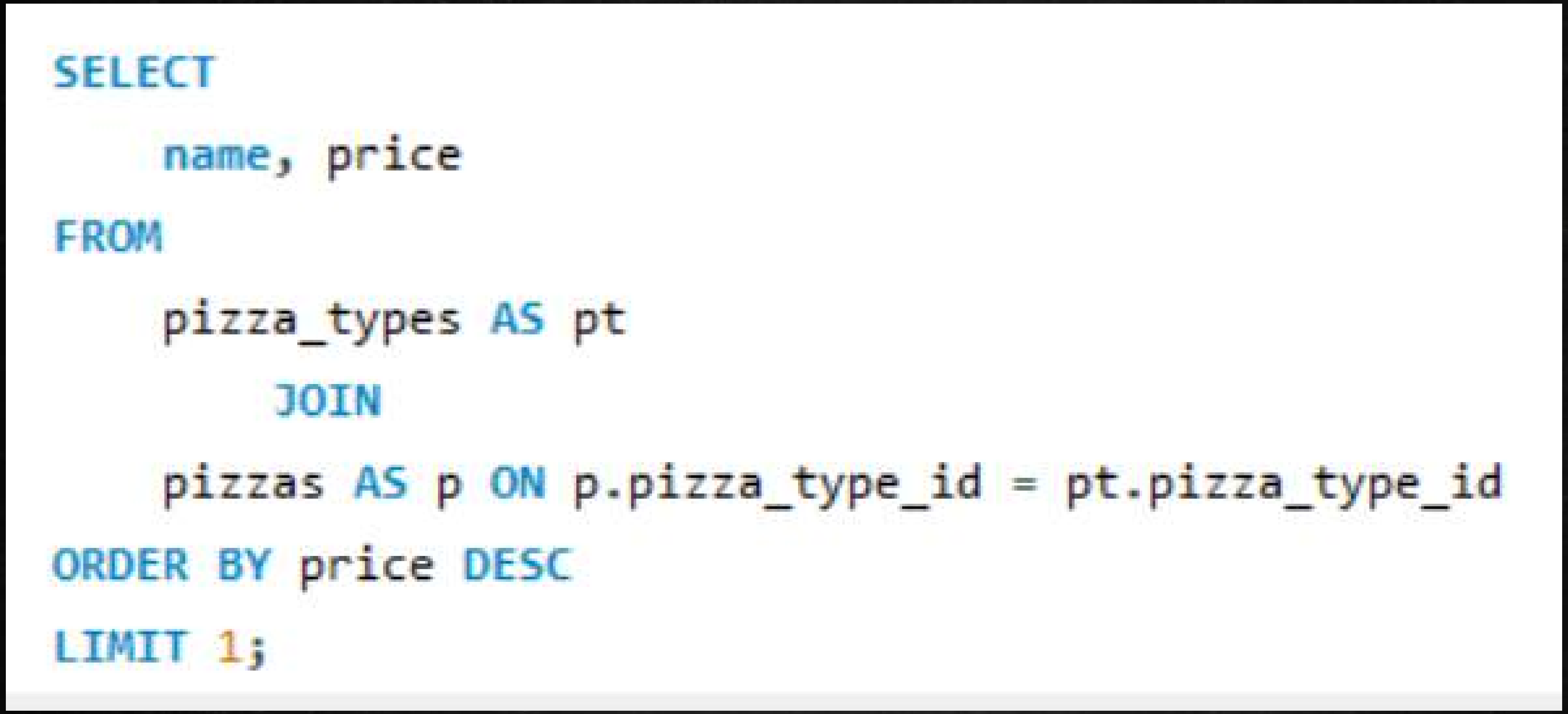
```
SELECT
    ROUND(SUM(p.price * od.quantity), 2) AS total_revenue
FROM
    pizzas AS p
        JOIN
    order_details AS od ON p.pizza_id = od.pizza_id;
```



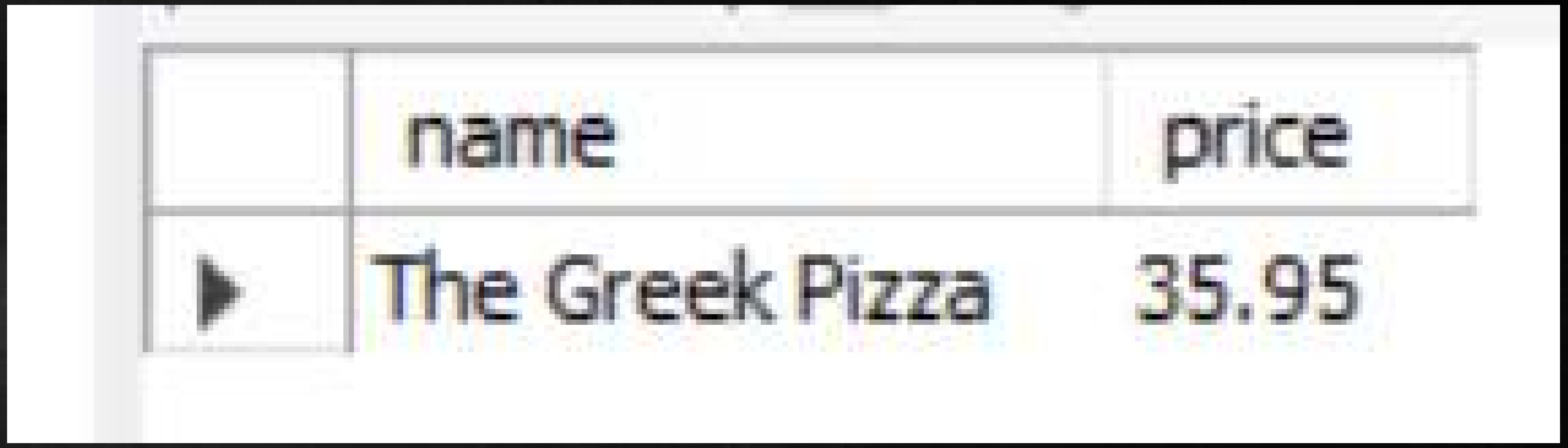
	total_revenue
▶	817860.05



Q3. Identify the highest-priced pizza.

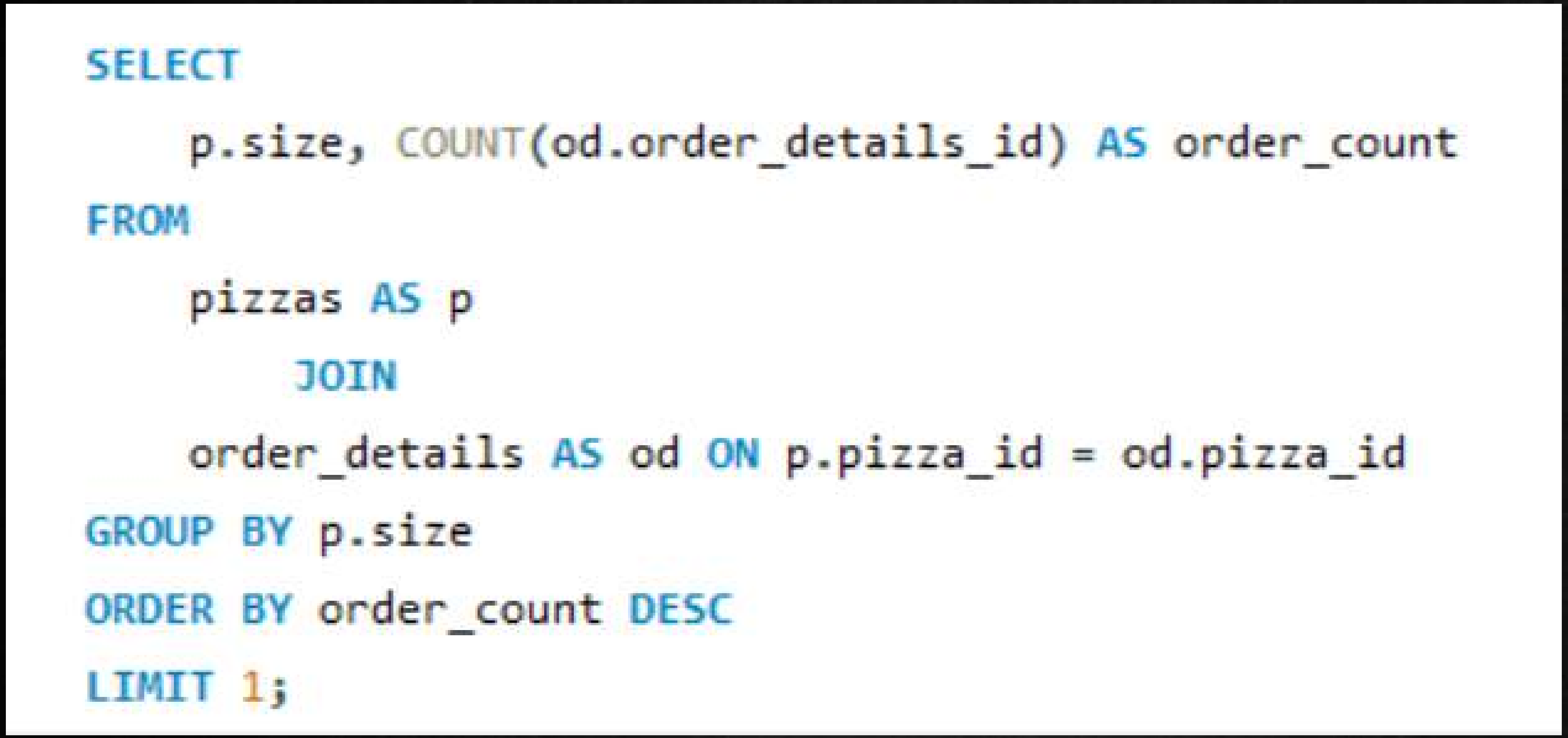


```
SELECT
    name, price
FROM
    pizza_types AS pt
        JOIN
    pizzas AS p ON p.pizza_type_id = pt.pizza_type_id
ORDER BY price DESC
LIMIT 1;
```

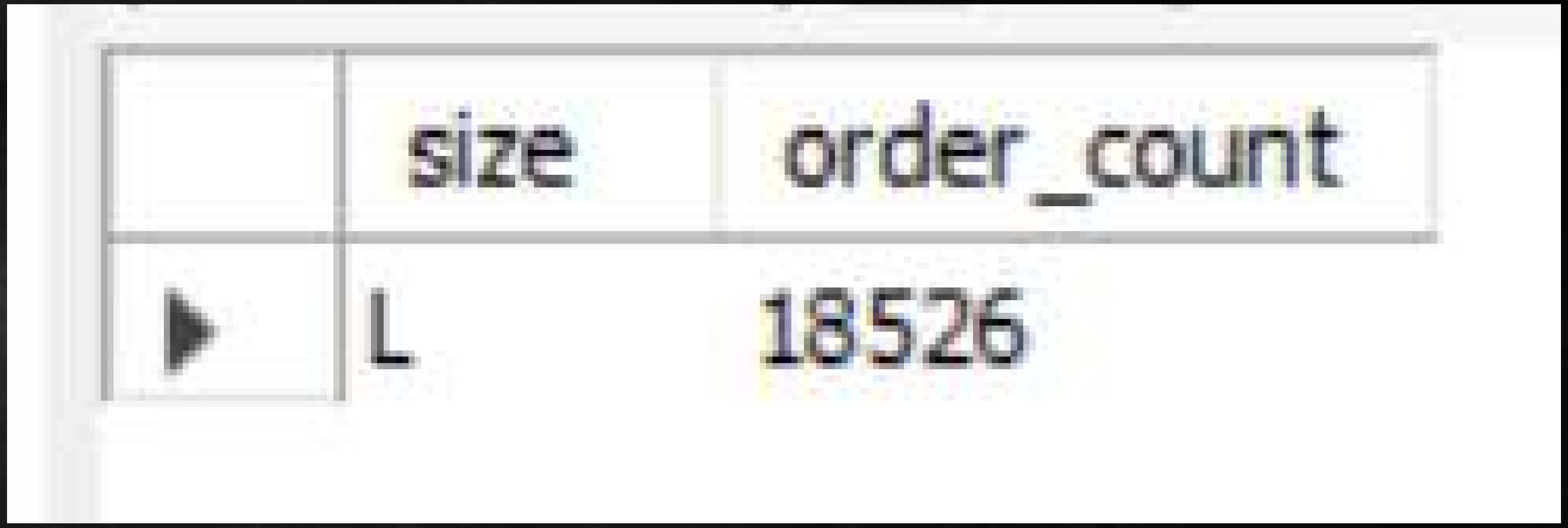


	name	price
▶	The Greek Pizza	35.95

Q4. Identify the most common pizza size ordered.

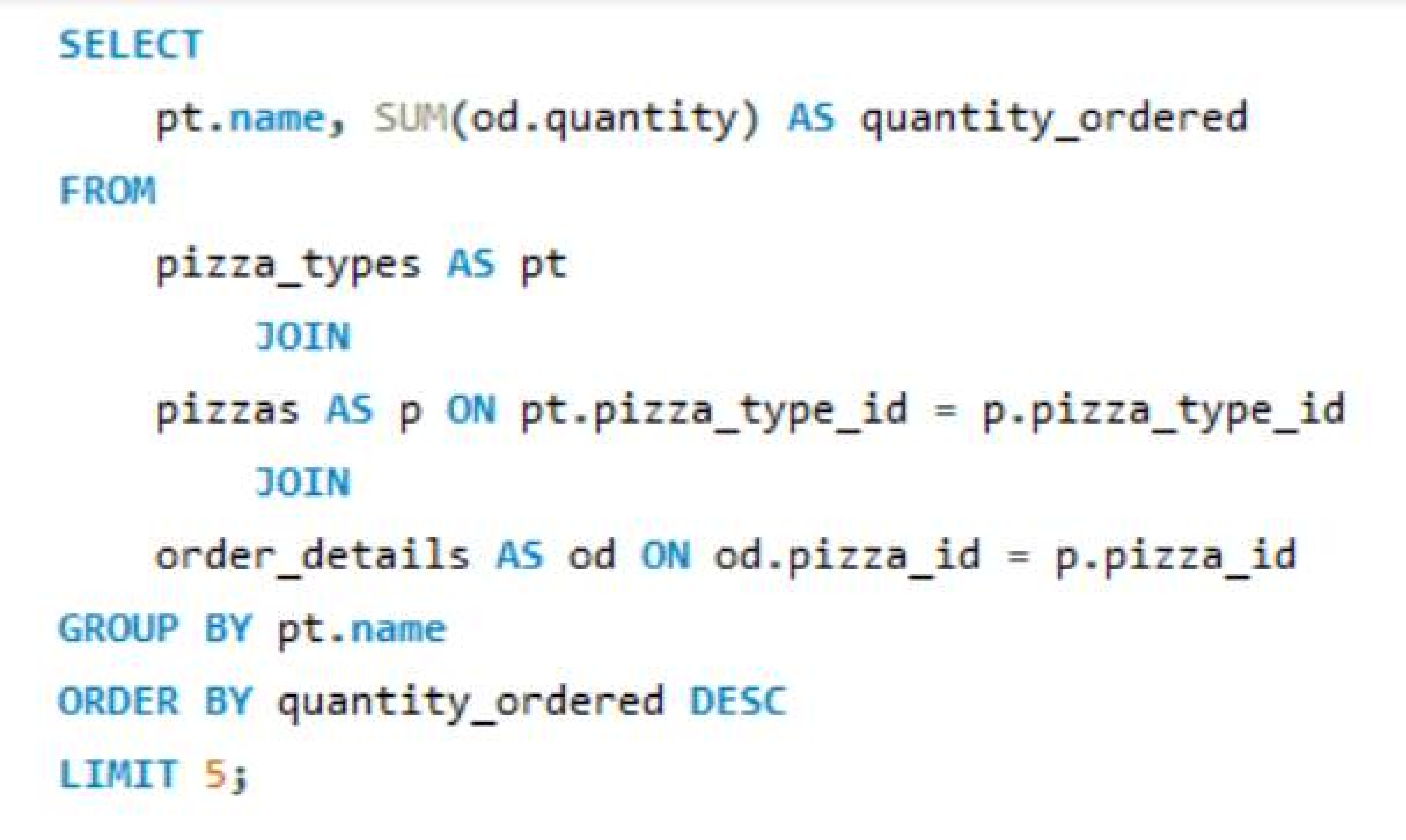


```sql
SELECT
    p.size, COUNT(od.order_details_id) AS order_count
FROM
    pizzas AS p
        JOIN
    order_details AS od ON p.pizza_id = od.pizza_id
GROUP BY p.size
ORDER BY order_count DESC
LIMIT 1;
```

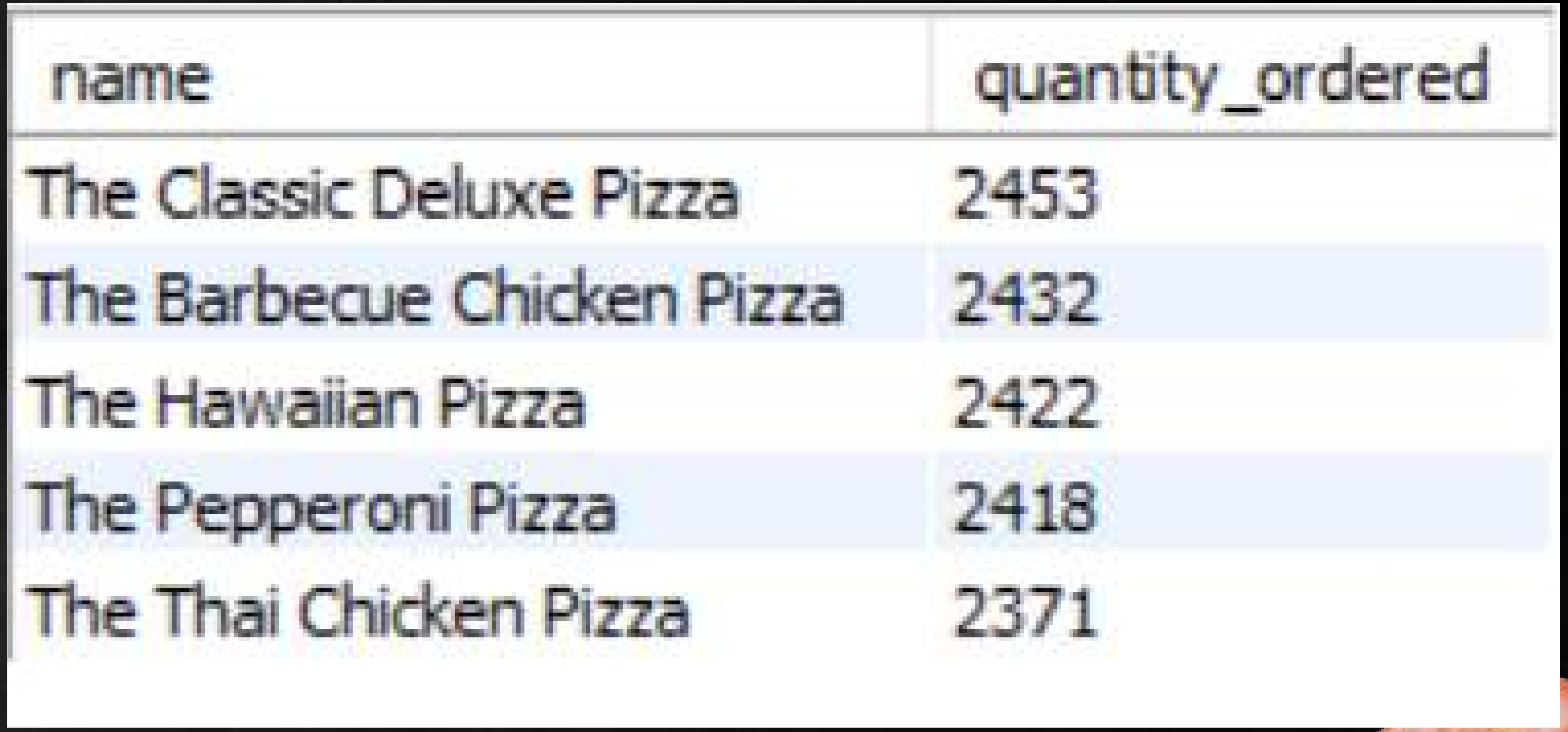


	size	order_count
▶	L	18526

Q5. List the top 5 most ordered pizza types along with their quantities.

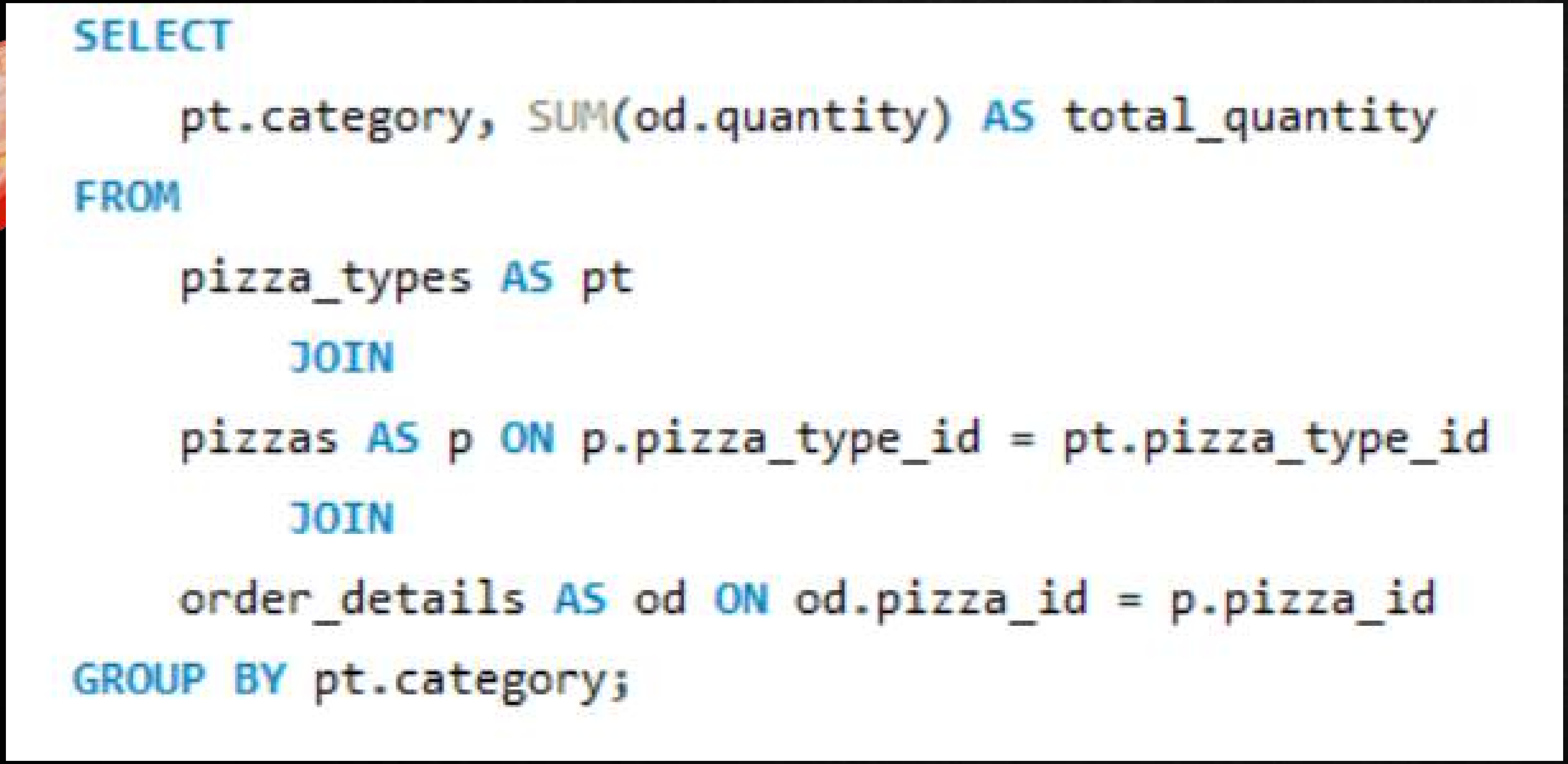


```
SELECT
    pt.name, SUM(od.quantity) AS quantity_ordered
FROM
    pizza_types AS pt
        JOIN
    pizzas AS p ON pt.pizza_type_id = p.pizza_type_id
        JOIN
    order_details AS od ON od.pizza_id = p.pizza_id
GROUP BY pt.name
ORDER BY quantity_ordered DESC
LIMIT 5;
```

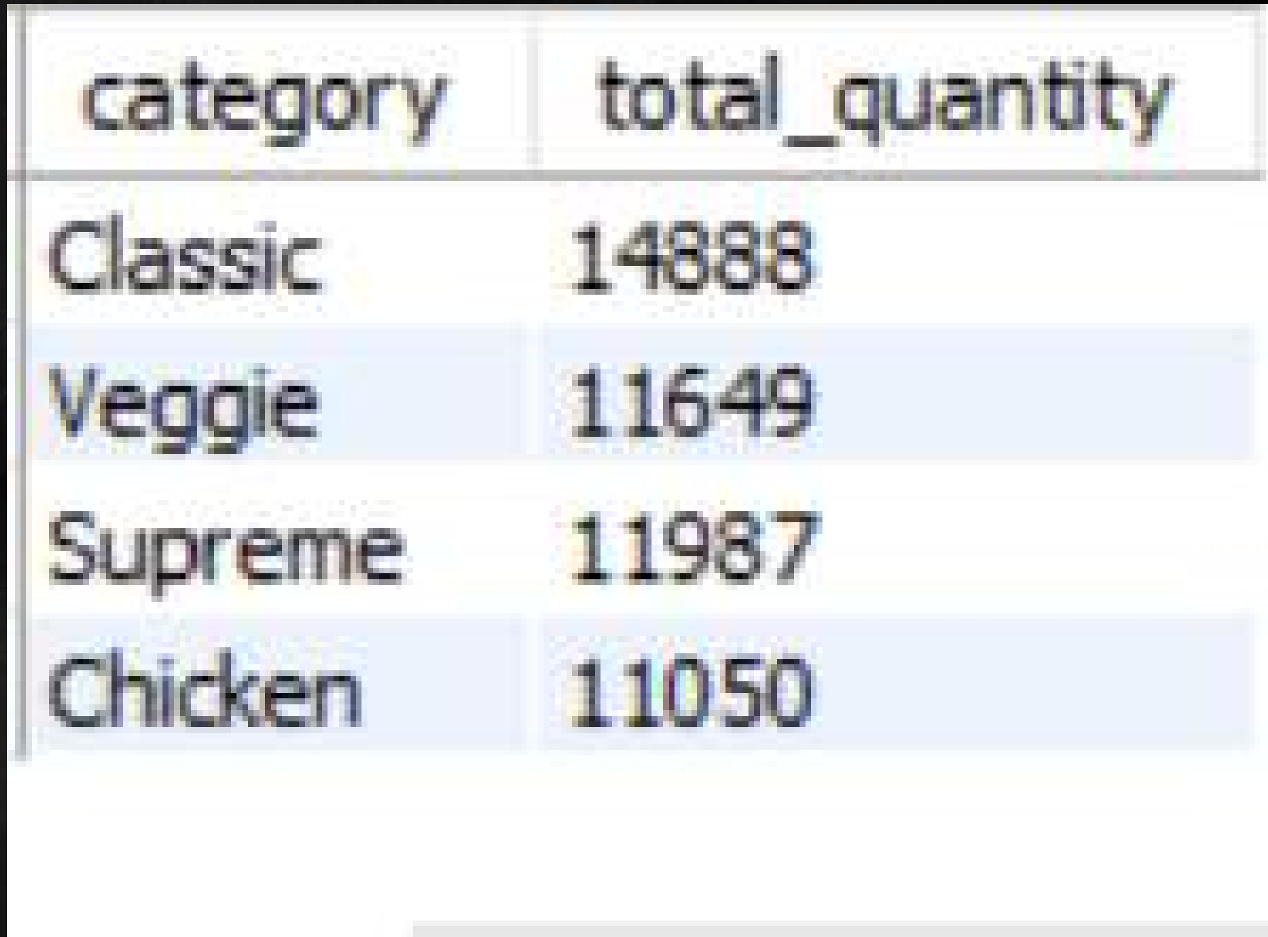


name	quantity_ordered
The Classic Deluxe Pizza	2453
The Barbecue Chicken Pizza	2432
The Hawaiian Pizza	2422
The Pepperoni Pizza	2418
The Thai Chicken Pizza	2371

Q6. Join the necessary tables to find the total quantity of each pizza category ordered.

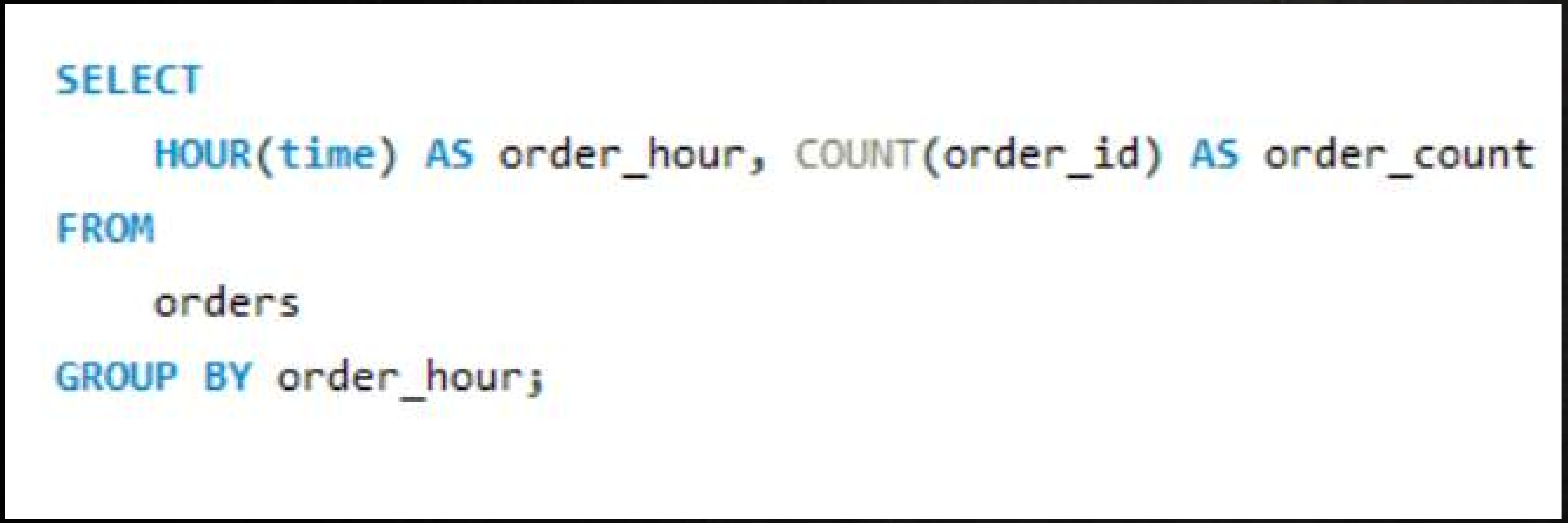


```sql
SELECT
    pt.category, SUM(od.quantity) AS total_quantity
FROM
    pizza_types AS pt
        JOIN
    pizzas AS p ON p.pizza_type_id = pt.pizza_type_id
        JOIN
    order_details AS od ON od.pizza_id = p.pizza_id
GROUP BY pt.category;
```

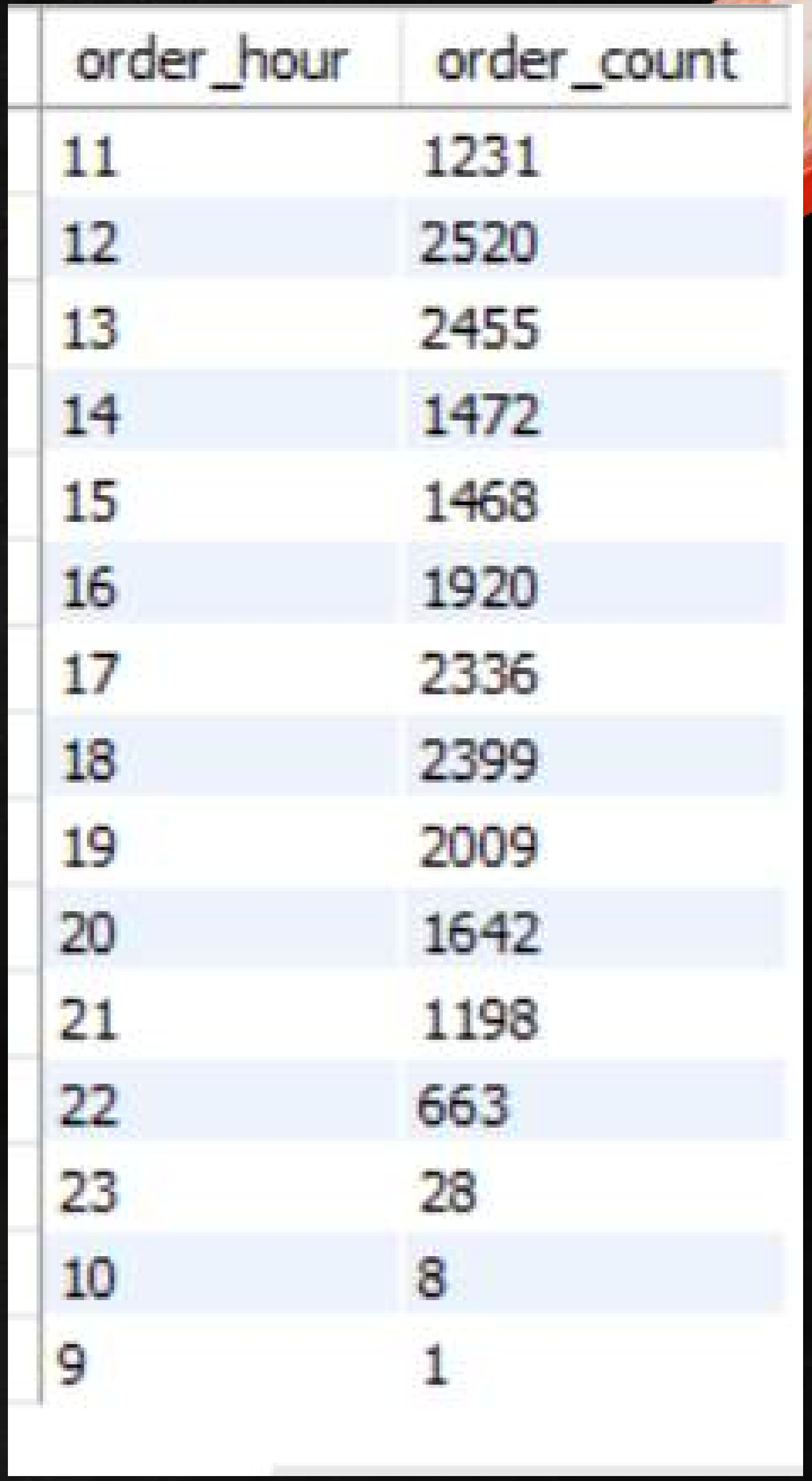


category	total_quantity
Classic	14888
Veggie	11649
Supreme	11987
Chicken	11050

Q7. Determine the distribution of orders by hour of the day.

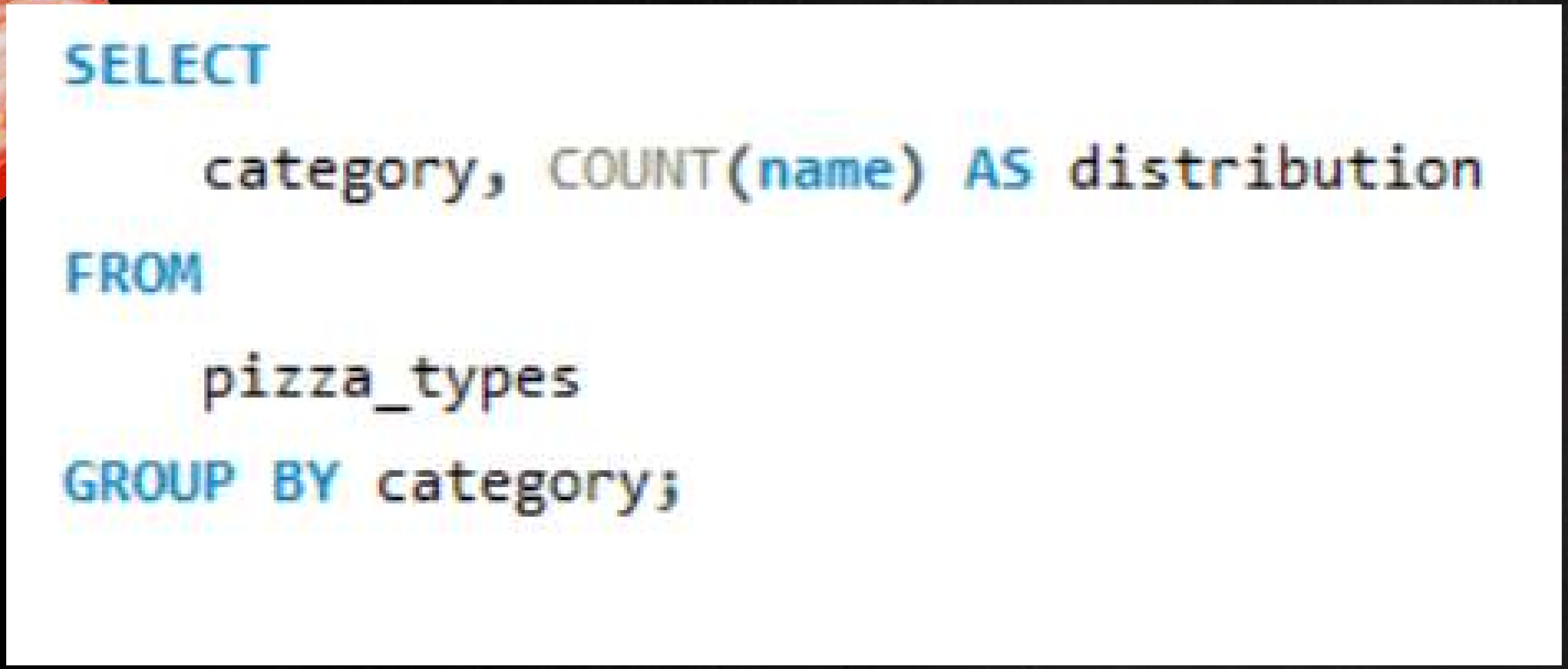


```
SELECT
    HOUR(time) AS order_hour, COUNT(order_id) AS order_count
FROM
    orders
GROUP BY order_hour;
```

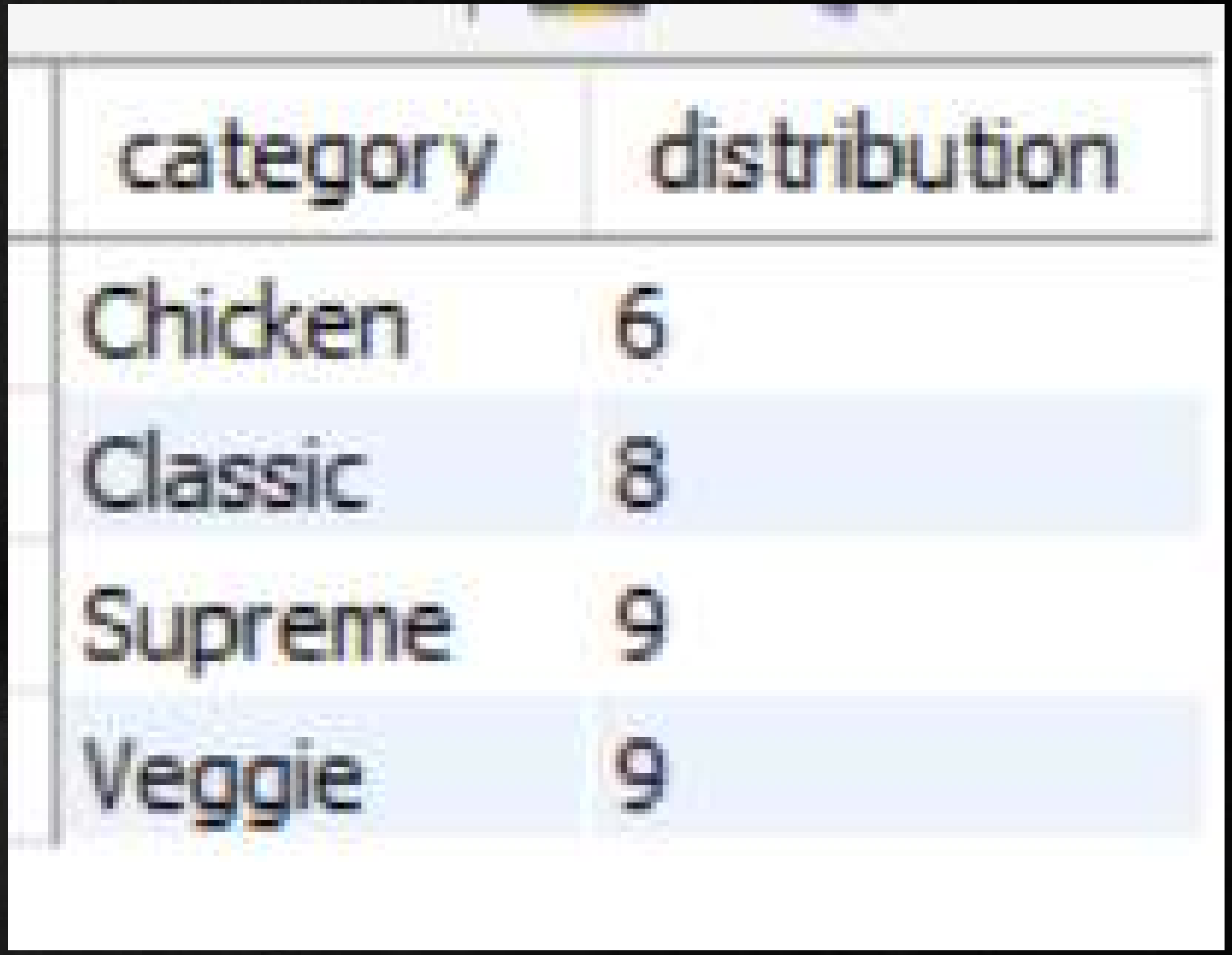


order_hour	order_count
11	1231
12	2520
13	2455
14	1472
15	1468
16	1920
17	2336
18	2399
19	2009
20	1642
21	1198
22	663
23	28
10	8
9	1

Q8. Join relevant tables to find the category-wise distribution of pizzas.

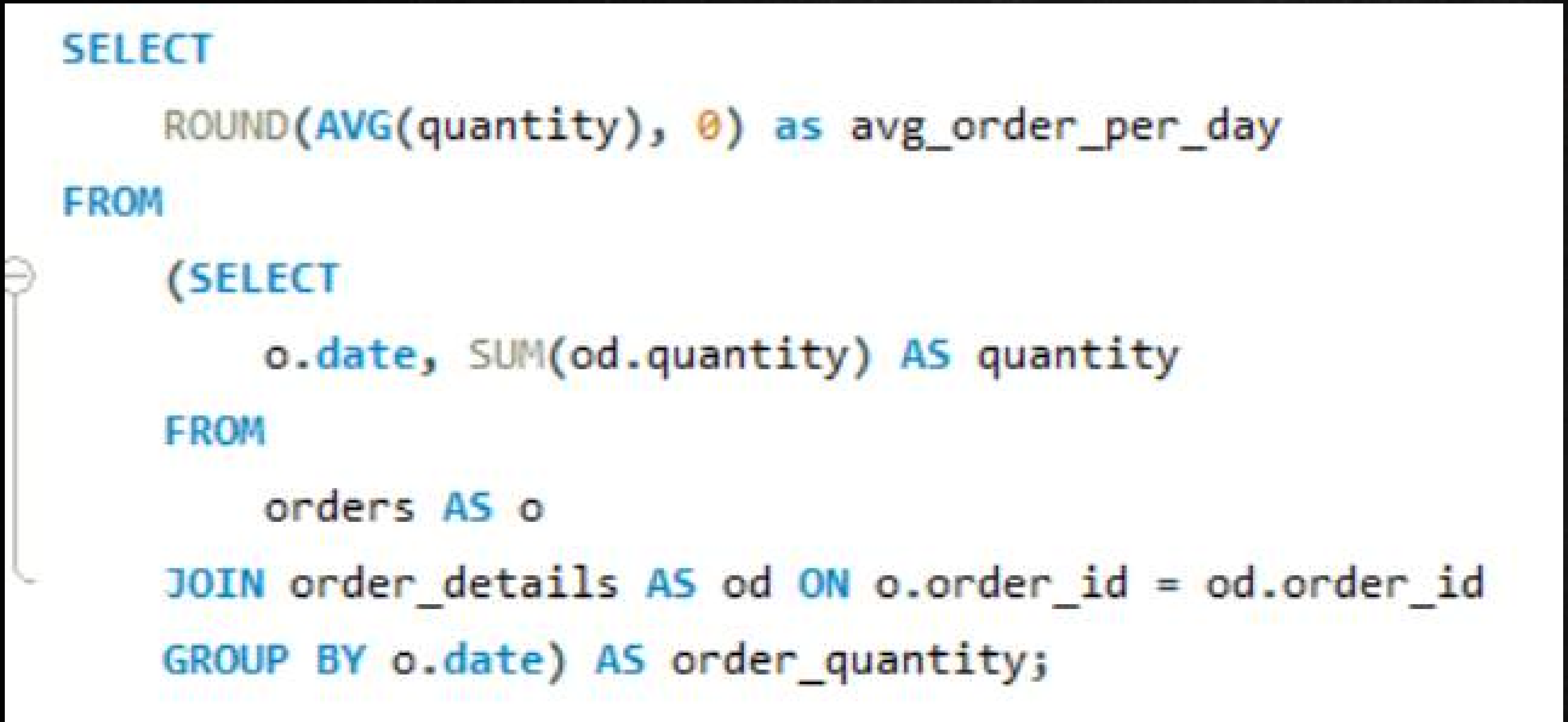


```sql
SELECT
    category, COUNT(name) AS distribution
FROM
    pizza_types
GROUP BY category;
```

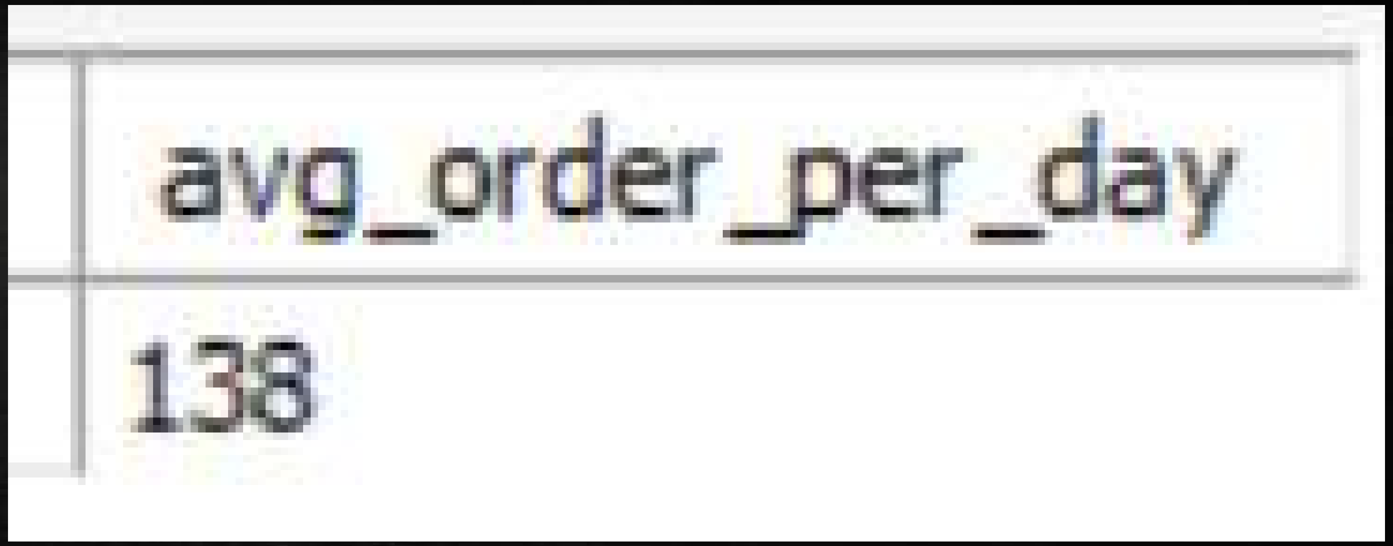


category	distribution
Chicken	6
Classic	8
Supreme	9
Veggie	9

Q9. Group the orders by date and calculate the average number of pizzas ordered per day.

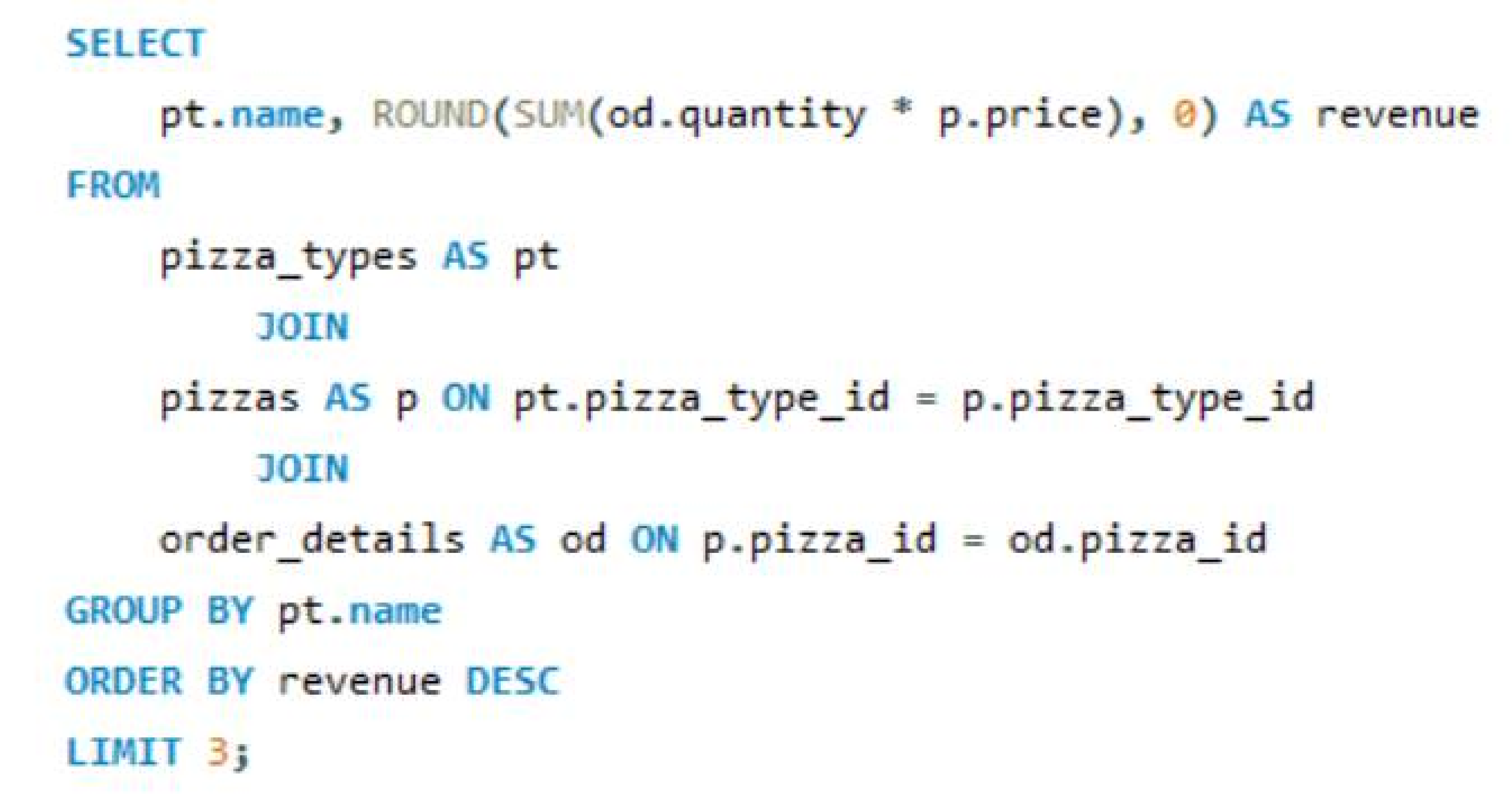


```
SELECT
    ROUND(AVG(quantity), 0) as avg_order_per_day
FROM
    (SELECT
        o.date, SUM(od.quantity) AS quantity
    FROM
        orders AS o
    JOIN order_details AS od ON o.order_id = od.order_id
    GROUP BY o.date) AS order_quantity;
```

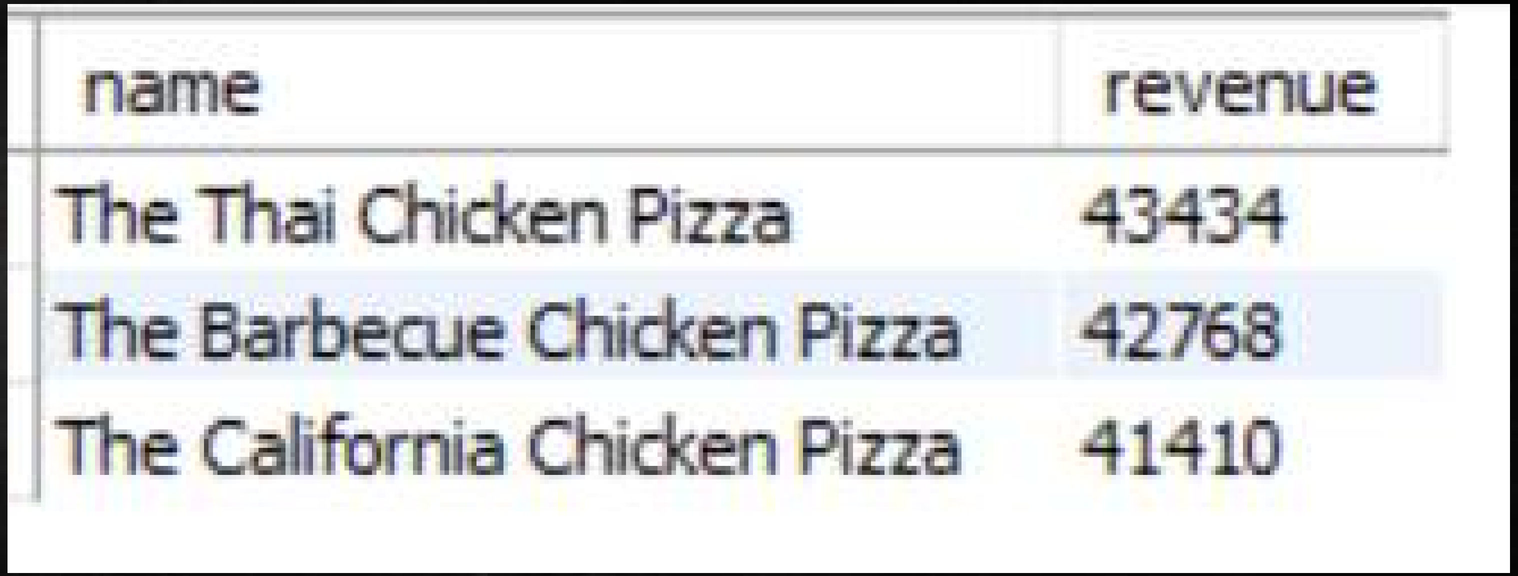


avg_order_per_day
138

Q10. Determine the top 3 most ordered pizza types based on revenue.

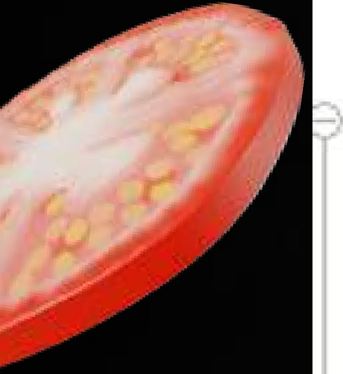


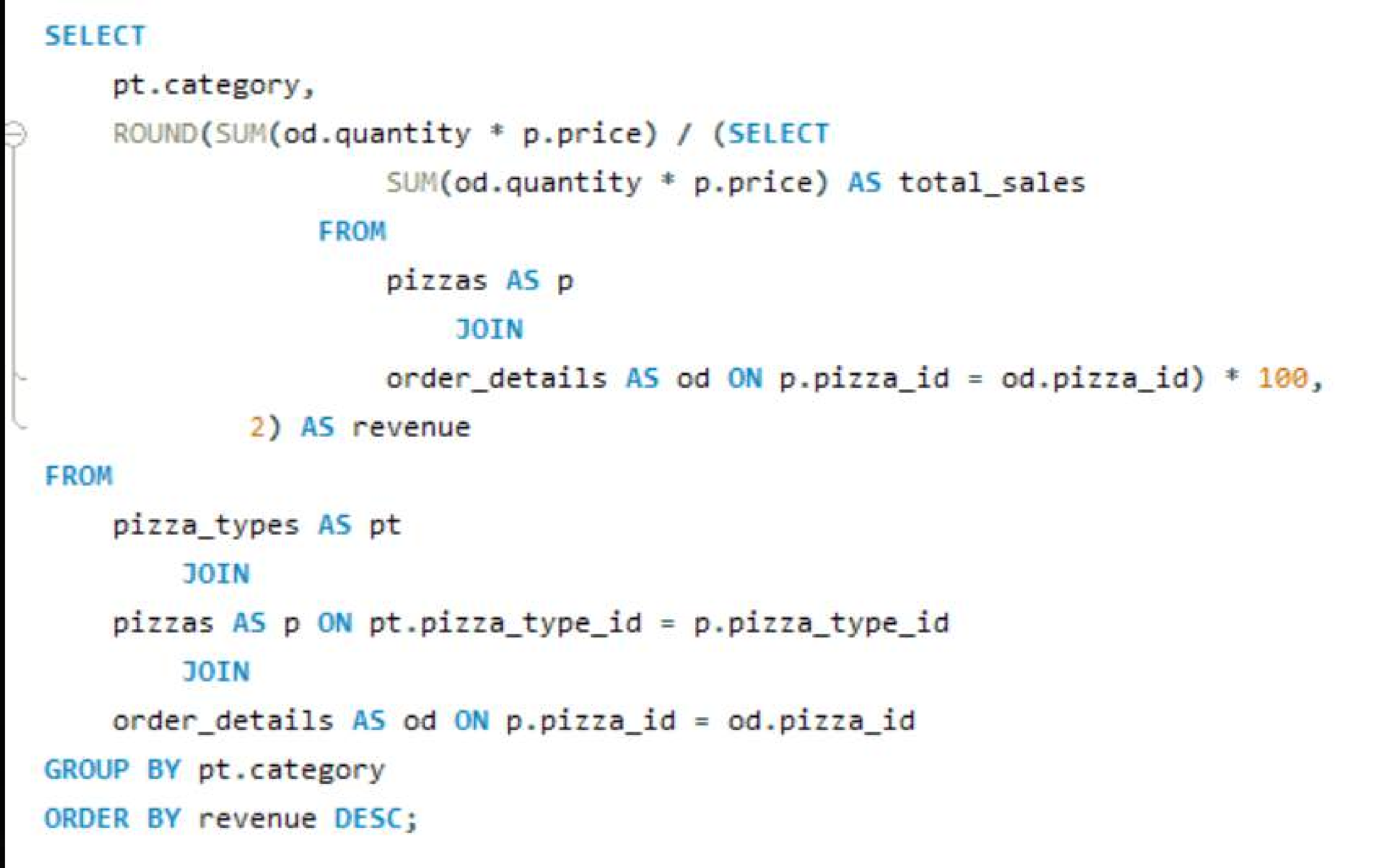
```
SELECT
    pt.name, ROUND(SUM(od.quantity * p.price), 0) AS revenue
FROM
    pizza_types AS pt
        JOIN
    pizzas AS p ON pt.pizza_type_id = p.pizza_type_id
        JOIN
    order_details AS od ON p.pizza_id = od.pizza_id
GROUP BY pt.name
ORDER BY revenue DESC
LIMIT 3;
```



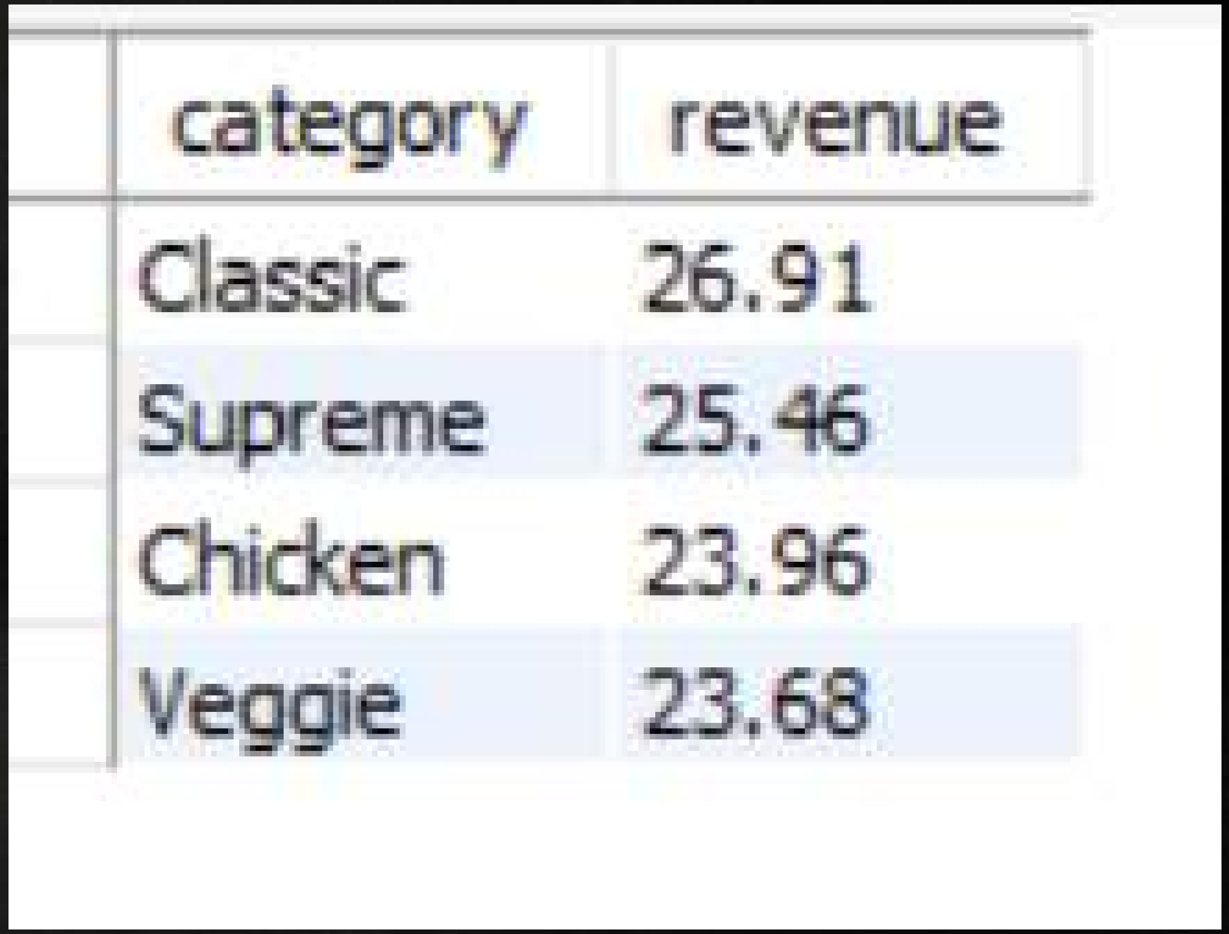
name	revenue
The Thai Chicken Pizza	43434
The Barbecue Chicken Pizza	42768
The California Chicken Pizza	41410

Q11. Calculate the percentage contribution of each pizza type to total revenue.



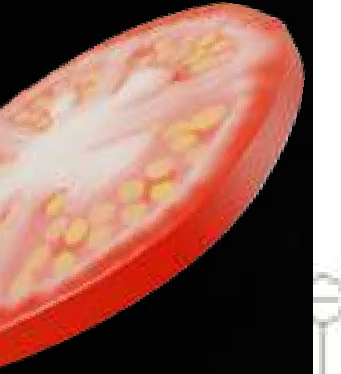


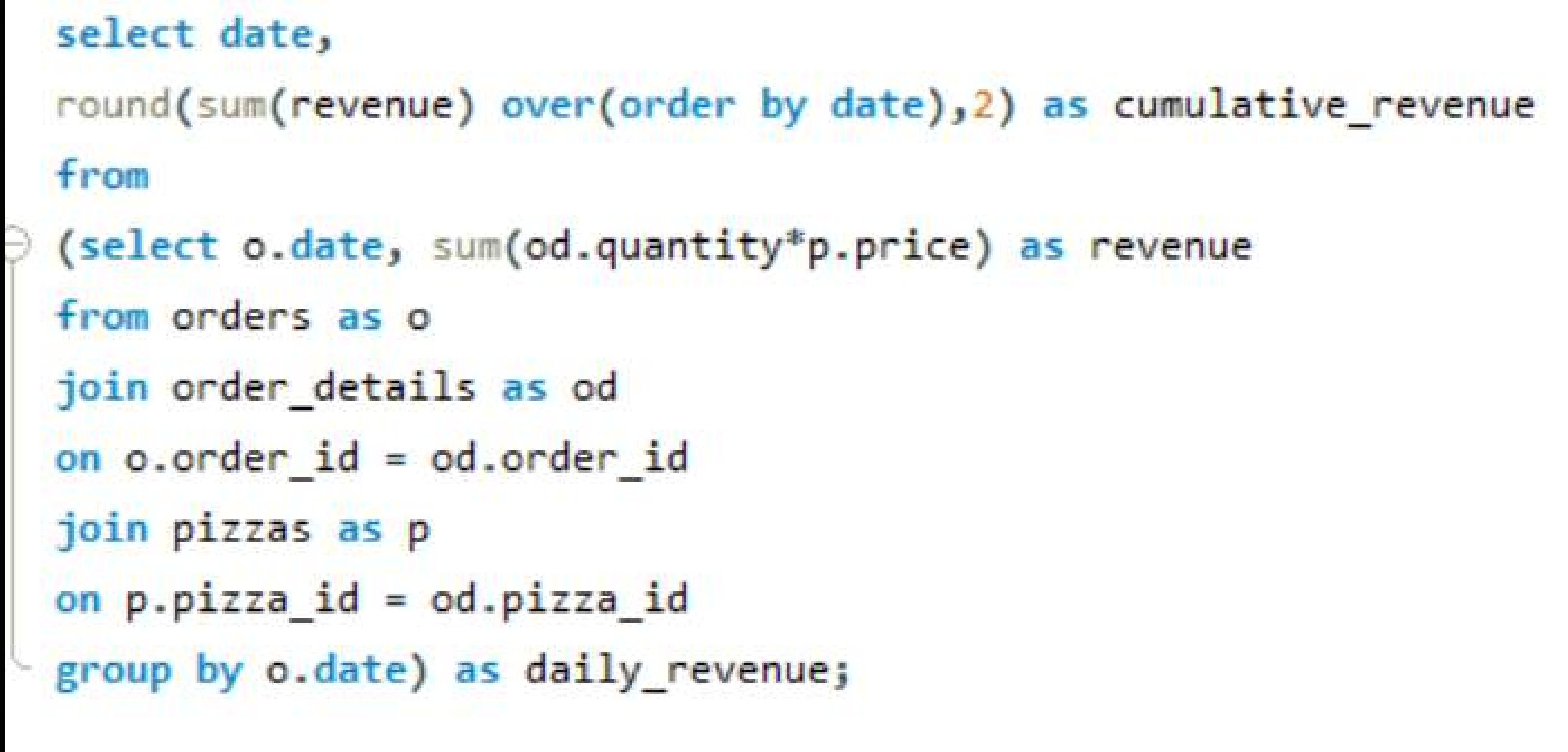
```
SELECT
    pt.category,
    ROUND(SUM(od.quantity * p.price) / (SELECT
                SUM(od.quantity * p.price) AS total_sales
            FROM
                pizzas AS p
                    JOIN
                order_details AS od ON p.pizza_id = od.pizza_id) * 100,
            2) AS revenue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



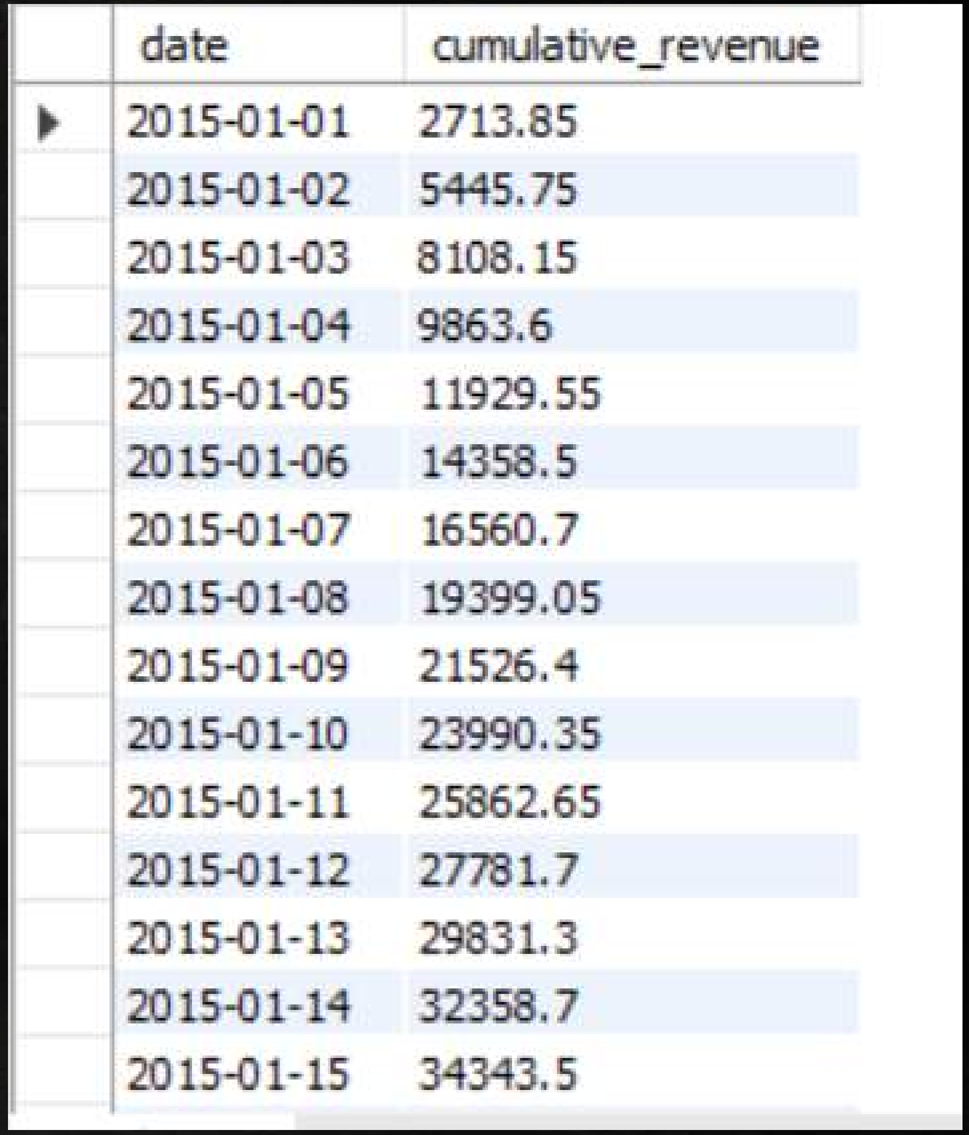
category	revenue
Classic	26.91
Supreme	25.46
Chicken	23.96
Veggie	23.68

Q12. Analyze the cumulative revenue generated over time.



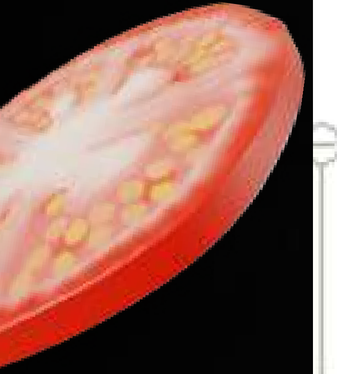


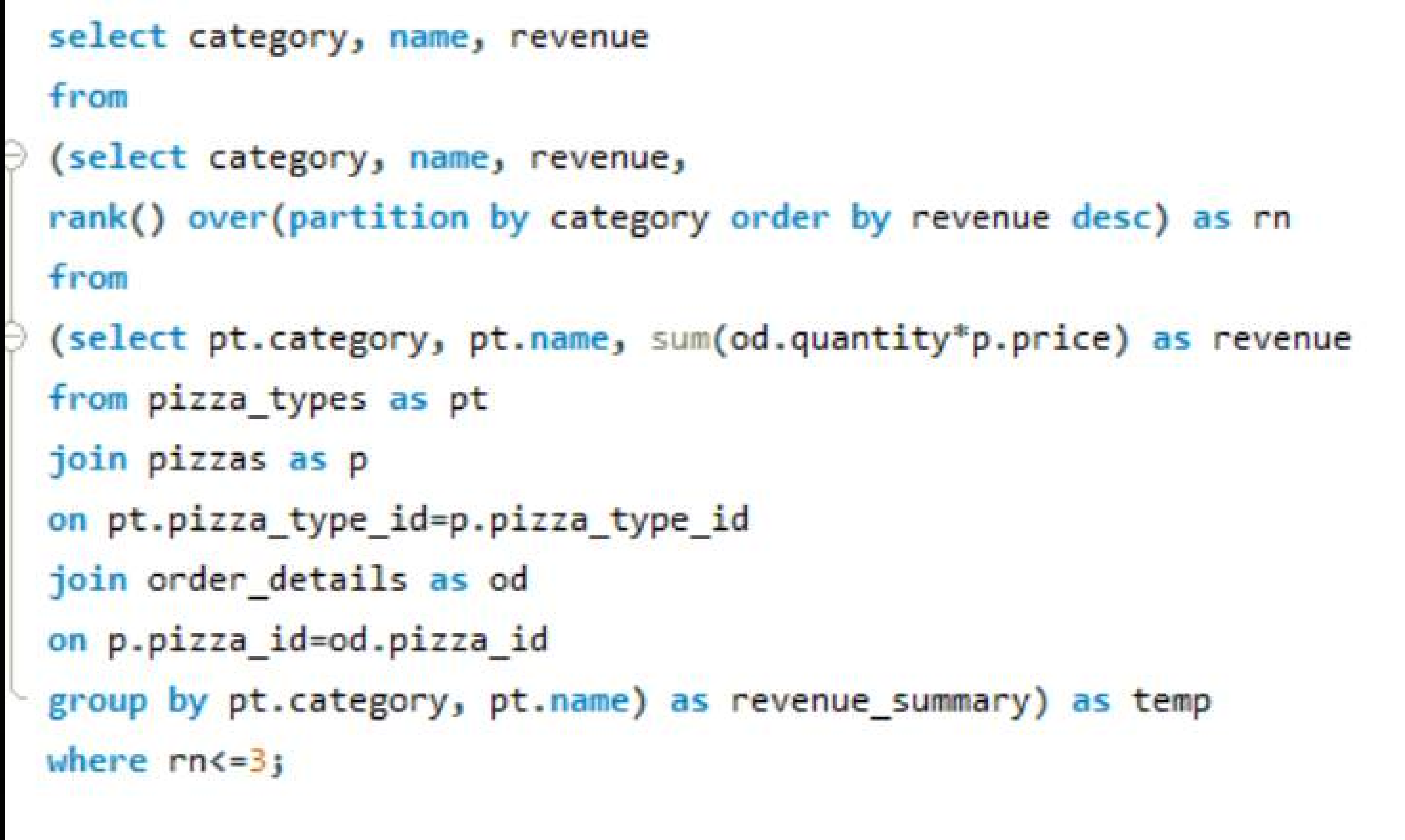
```
select date,
round(sum(revenue) over(order by date),2) as cumulative_revenue
from
(select o.date, sum(od.quantity*p.price) as revenue
from orders as o
join order_details as od
on o.order_id = od.order_id
join pizzas as p
on p.pizza_id = od.pizza_id
group by o.date) as daily_revenue;
```



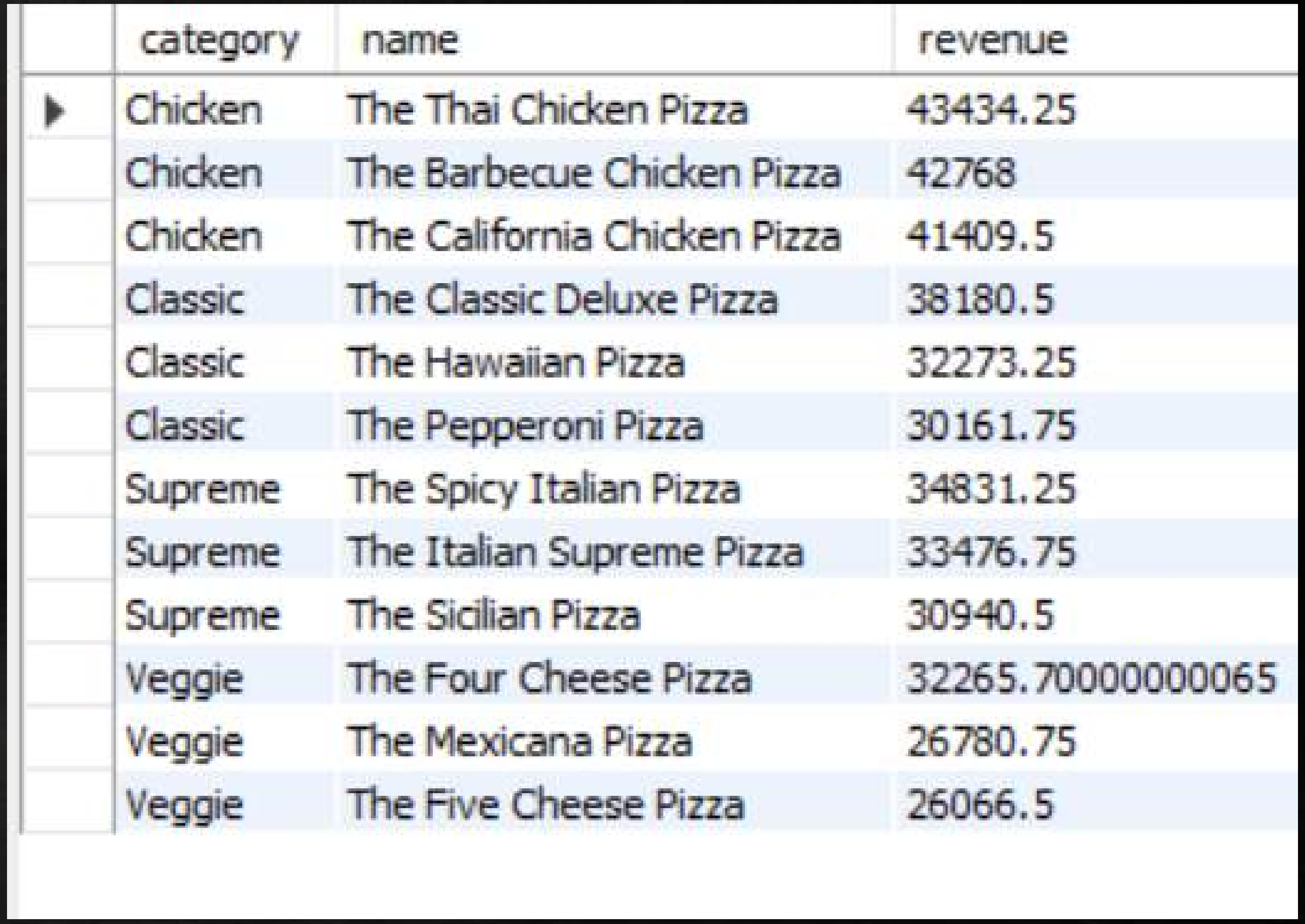
date	cumulative_revenue
2015-01-01	2713.85
2015-01-02	5445.75
2015-01-03	8108.15
2015-01-04	9863.6
2015-01-05	11929.55
2015-01-06	14358.5
2015-01-07	16560.7
2015-01-08	19399.05
2015-01-09	21526.4
2015-01-10	23990.35
2015-01-11	25862.65
2015-01-12	27781.7
2015-01-13	29831.3
2015-01-14	32358.7
2015-01-15	34343.5

Q13. 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 rn
from
(select pt.category, pt.name, sum(od.quantity*p.price) as revenue
from pizza_types as pt
join pizzas as p
on pt.pizza_type_id=p.pizza_type_id
join order_details as od
on p.pizza_id=od.pizza_id
group by pt.category, pt.name) as revenue_summary) as temp
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

INSIGHTS

- Highest Priced Pizza: The highest priced pizza is "The Greek Pizza."
- Most Common Size Ordered: The most commonly ordered pizza size is Large (L) with an order count of 18,526.
- Most Ordered Pizza: "The Classic Deluxe Pizza" is the most ordered pizza.
- Category Popularity: The most ordered pizza category is Classic, followed by Veggie.
- Peak Order Times: The highest number of orders occur during two time periods:
    - 12:00 PM - 1:00 PM
    - 5:00 PM - 6:00 PM
- Revenue Contribution by Category: Classic category pizzas contribute the most to total revenue with 26.9%, followed by Supreme with 25.46%.
- Highest Revenue-Generating Pizzas by Category:

1. Chicken Category: "The Thai Chicken Pizza"
2. Classic Category: "The Classic Deluxe Pizza"
3. Supreme Category: "The Spicy Italian Pizza"
4. Veggie Category: "The Four Cheese Pizza"

Thanks !