An Analysis of Pizza Sales Data

SQL PROJECT: PIZZA SALES

PROJECT BRIEF:

This project presents an in-depth SQL-based analysis of pizza sales data to uncover meaningful insights into customer behavior, sales performance, and product trends.

By writing and executing SQL queries on a relational database, the analysis focuses on:

- 📦 Order and revenue trends
- 🍕 Popular pizza sizes and types
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- 📈 Sales distribution over time
- 👬 Customer preferences and behavior

The goal is to help businesses make data-driven decisions regarding marketing strategies, inventory planning, and
optimization based on actionable insights extracted from the data.

PROJECT BRIEF:

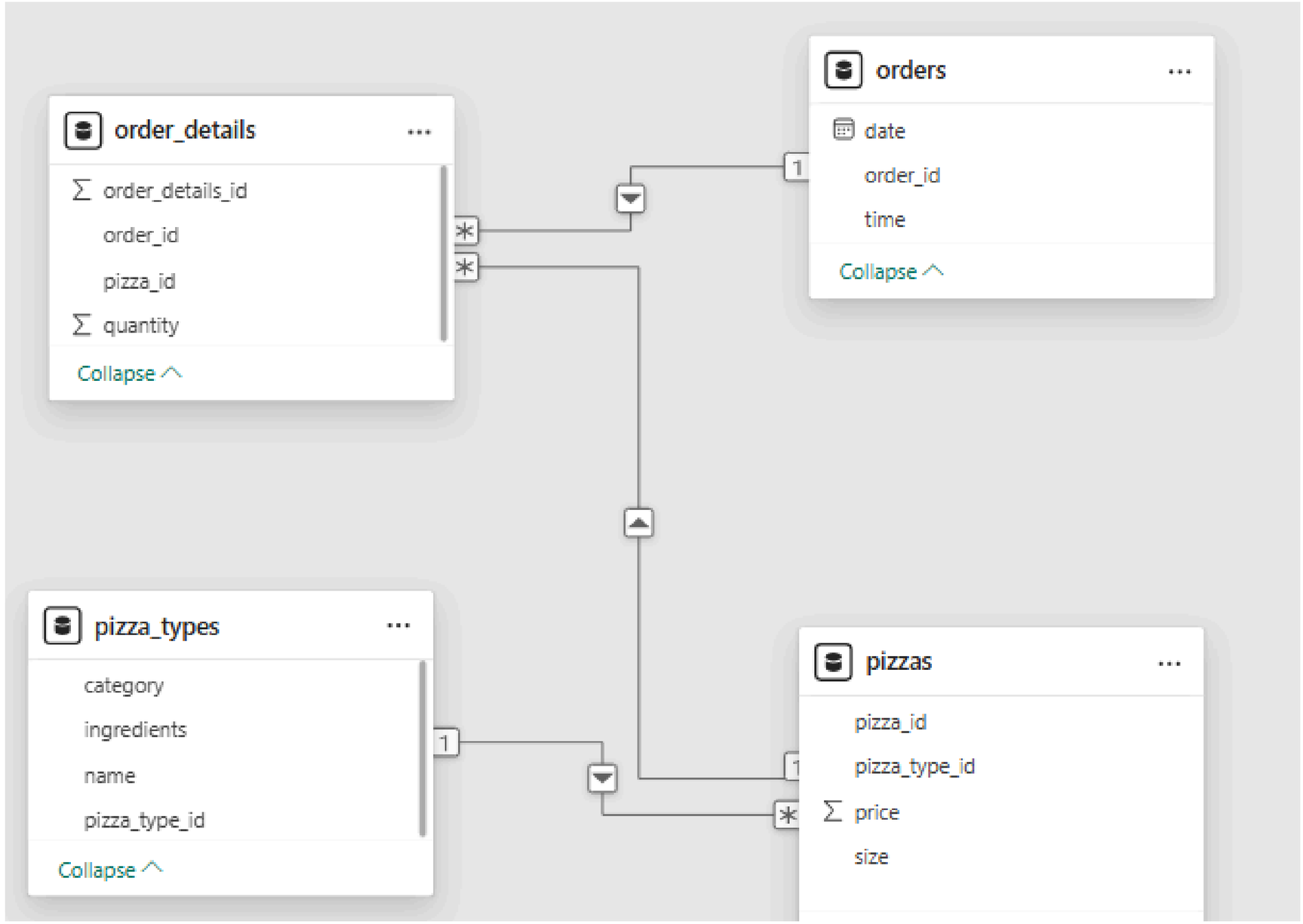
- ✅ Basic Analysis
- How many total orders were placed?
- What is the total revenue generated from pizza sales?
- Which pizza is the highest-priced item?
- What is the most commonly ordered pizza size?
- What are the top 5 most ordered pizza types and their quantities?

PROJECT BRIEF:

- Intermediate Analysis
- What is the total quantity ordered for each pizza category?
- How are orders distributed by hour of the day?
- What is the category-wise distribution of pizzas sold?
- What is the average number of pizzas ordered per day?
- Which are the top 3 pizza types based on revenue?

- 📊 Advanced Insights
- What is the percentage contribution of each pizza type to total revenue?
- What does the cumulative revenue trend look like over time?
- What are the top 3 pizza types by revenue in each pizza category?

Schema


order_details
order_details_id
order_id
pizza_id
quantity
Collapse
orders
date
order_id
time
Collapse
pizza_types
category
ingredients
name
pizza_type_id
Collapse
pizzas
pizza_id
pizza_type_id
price
size
1
*

Retrieve the total number of orders placed.

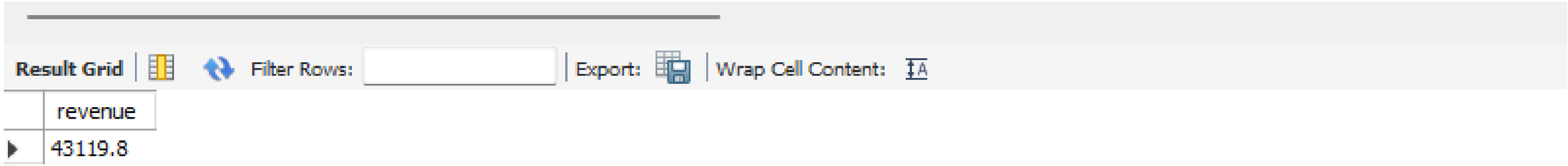
```sql
-- Retrieve the total number of orders placed.
select count(order_id) as total_no_of_orders from orders;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

total_no_of_orders
21350

Calculate the total revenue generated from pizza sales.

```sql
-- Calculate the total revenue generated from pizza sales.
select sum(order_details.quantity*pizzas.price) as revenue from order_details join pizzas
on pizzas.pizza_id=order_details.pizza_id
```



revenue
43119.8

Identify the most common pizza size ordered

```sql
-- Identify the most common pizza size ordered
select pizzas.size, count(order_details.order_id)as count from order_details
join pizzas on pizzas.pizza_id= order_details.pizza_id
group by 1 order by count desc
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

size	count
L	1005
M	804
S	712
XL	33

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

```sql
-- List the top 5 most ordered pizza types along with their quantities.
SELECT SUM(order_details.quantity), pizza_types.name 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 1 DESC LIMIT 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

SUM(order_details.quantity)	name
158	The Pepperoni Pizza
130	The Barbecue Chicken Pizza
125	The Thai Chicken Pizza
124	The California Chicken Pizza
117	The Hawaiian Pizza

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

Limit to 2000 rows

```
1   -- Join the necessary tables to find the total quantity of each pizza category ordered.
2   select pizza_types.category, sum(order_details.quantity)as Revenue_by_Category from pizza_types
3   JOIN pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
4   JOIN order_details ON order_details.pizza_id = pizzas.pizza_id
5   group by 1 order by 2 desc ;
6
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

category	Revenue_by_Category
Classic	775
Supreme	638
Veggie	617
Chicken	577

Determine the distribution of orders by hour of the day.

```sql
-- Determine the distribution of orders by hour of the day.
select hour(order_time) as Hour, count(order_id)as Order_count from orders group by 1 order by 2 desc
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Hour	Order_count
12	2520
13	2455
18	2399
17	2336
19	2009
16	1920

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

```
1    -- Join relevant tables to find the category-wise distribution of pizzas.
2    select count(name), category from pizza_types group by 2
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

count(name)	category
6	Chicken
8	Classic
9	Supreme
9	Veggie

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

```sql
-- Group the orders by date and calculate the average number of pizzas ordered per day.
select avg(no_of_order) from
(select orders.order_date as Date, sum(order_details.quantity) as no_of_order
from orders join order_details
on orders.order_id = order_details.order_id group by Date) as order_quantity
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

avg(no_of_order)
137.2105

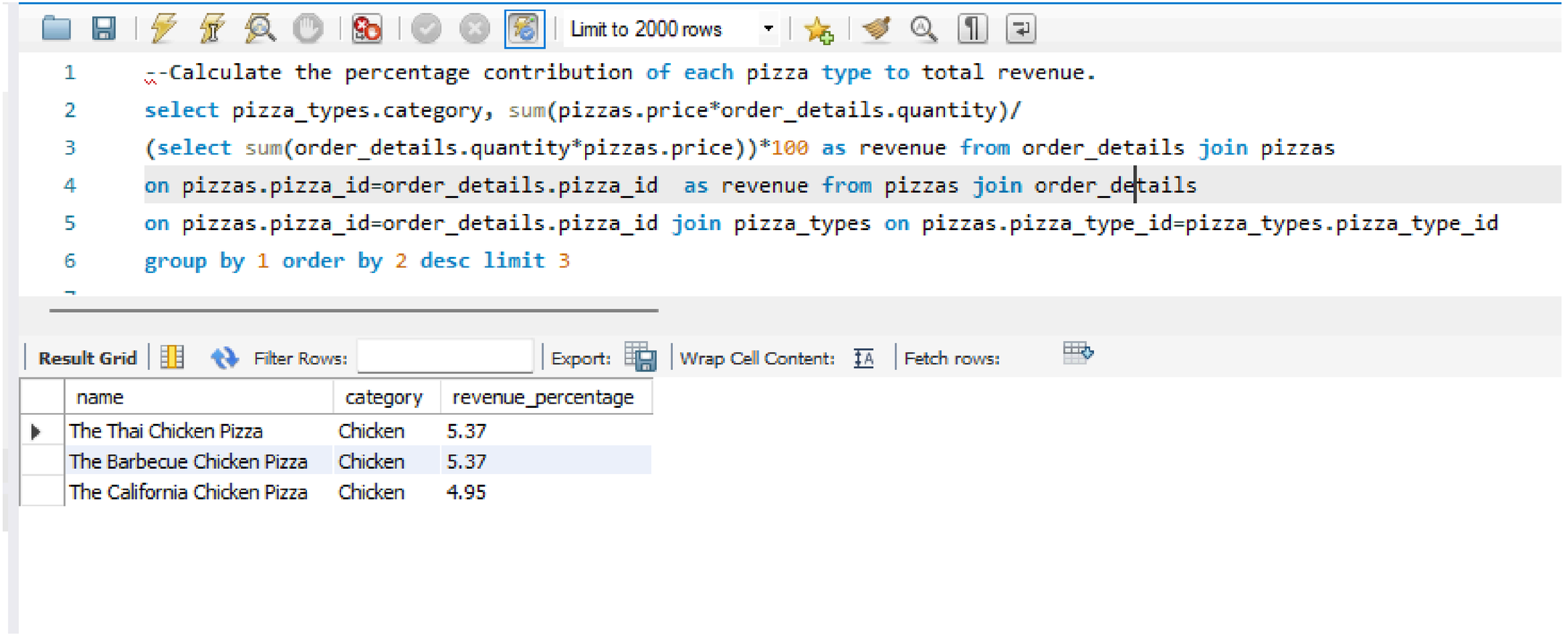
Determine the top 3 most ordered pizza types based on revenue

```sql
-- 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 order_details
on pizzas.pizza_id=order_details.pizza_id join pizza_types on pizzas.pizza_type_id=pizza_types.pizza_type_id
group by 1 order by 2 desc limit 3
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

name	revenue
The Barbecue Chicken Pizza	2317.5
The Thai Chicken Pizza	2313.75
The California Chicken Pizza	2133

Calculate the percentage contribution of each pizza type to total revenue



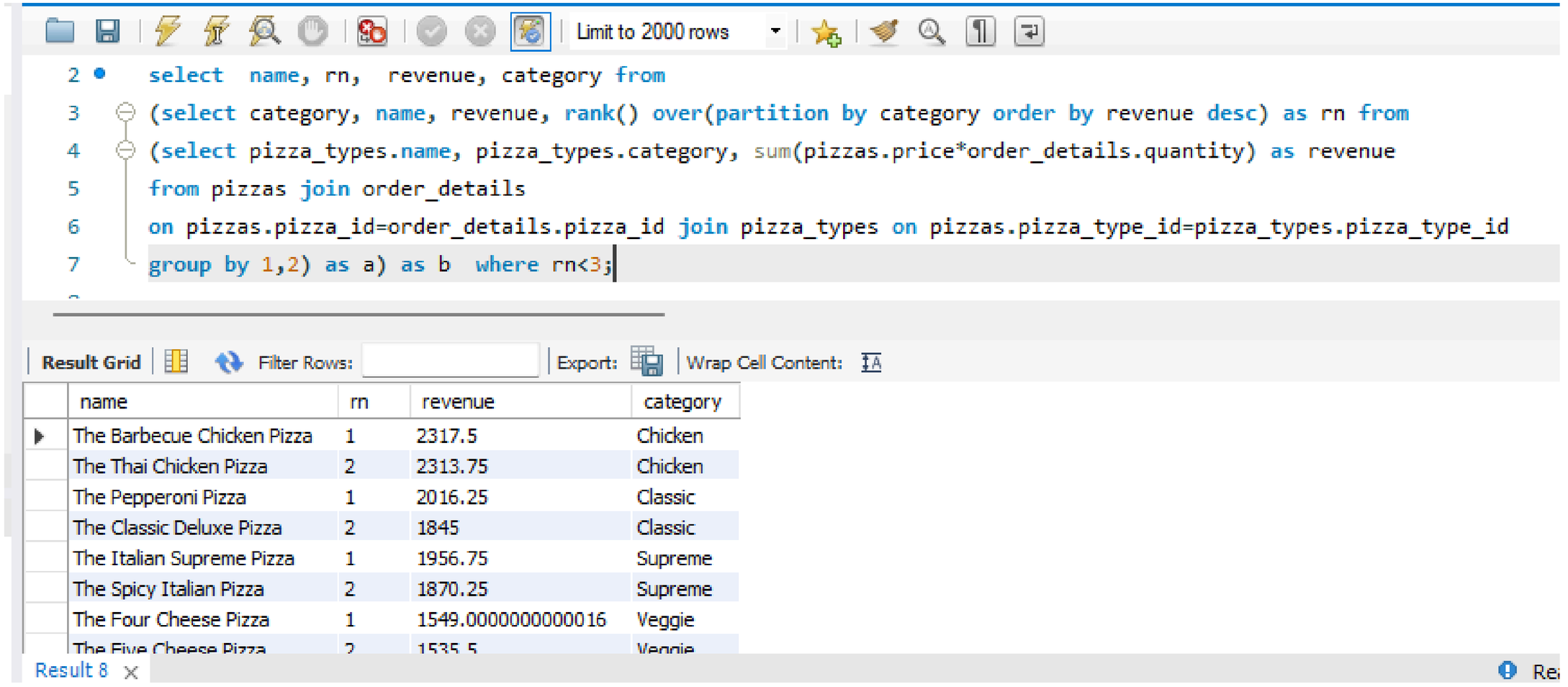
```
1   --Calculate the percentage contribution of each pizza type to total revenue.
2   select pizza_types.category, sum(pizzas.price*order_details.quantity)/
3   (select sum(order_details.quantity*pizzas.price))*100 as revenue from order_details join pizzas
4   on pizzas.pizza_id=order_details.pizza_id  as revenue from pizzas join order_details
5   on pizzas.pizza_id=order_details.pizza_id join pizza_types on pizzas.pizza_type_id=pizza_types.pizza_type_id
6   group by 1 order by 2 desc limit 3
```

Limit to 2000 rows

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

name	category	revenue_percentage
The Thai Chicken Pizza	Chicken	5.37
The Barbecue Chicken Pizza	Chicken	5.37
The California Chicken Pizza	Chicken	4.95

Determine the top 3 most ordered pizza types based on revenue for each pizza category



```
Limit to 2000 rows

2  select  name, rn,  revenue, category from
3  (select category, name, revenue, rank() over(partition by category order by revenue desc) as rn from
4  (select pizza_types.name, pizza_types.category, sum(pizzas.price*order_details.quantity) as revenue
5  from pizzas join order_details
6  on pizzas.pizza_id=order_details.pizza_id join pizza_types on pizzas.pizza_type_id=pizza_types.pizza_type_id
7  group by 1,2) as a) as b  where rn<3;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

name	rn	revenue	category
The Barbecue Chicken Pizza	1	2317.5	Chicken
The Thai Chicken Pizza	2	2313.75	Chicken
The Pepperoni Pizza	1	2016.25	Classic
The Classic Deluxe Pizza	2	1845	Classic
The Italian Supreme Pizza	1	1956.75	Supreme
The Spicy Italian Pizza	2	1870.25	Supreme
The Four Cheese Pizza	1	1549.0000000000016	Veggie
The Five Cheese Pizza	2	1535.5	Veggie

Result 8

🔍 Key Analysis

1. **High Order Volumes on Weekends & Evenings**

Orders peak during weekends and evenings, indicating strong customer engagement during leisure times.

2. **Most Popular Size: Medium**

Medium-sized pizzas were ordered the most — ideal for sharing, which suggests value-seeking behavior.

3. **Top Performers by Revenue**

A few premium pizzas (like Pepperoni Deluxe and BBQ Chicken) generate the highest revenue, even with fewer units sold — pointing to higher margins

4. **Category Insights**

Classic and Deluxe categories dominate sales, while Veggie options show moderate performance.

5. **Revenue Distribution**

A small set of pizza types contributes disproportionately high revenue, showing an 80/20 r
pattern — 20% of items bring 80% of sales.

Recommendations

1. Boost Popular Products with Combos
2. Create combo deals around best-selling medium pizzas to drive higher value and upselling.
3. Leverage High-Margin Pizzas in Promotions
4. Promote high-revenue pizzas (even with lower quantity) through premium deals or limited-time offers.
5. Optimize Weekend Operations
6. Increase staffing and inventory for weekends and evenings when demand surges.
7. Experiment with Underperforming Categories
8. Consider new toppings, pricing adjustments, or bundled deals to improve Veggie category performance.

Get in touch for more insights!

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