Domino's SQL Project

Unlocking Key Metrics and Business Strategies with SQL

GowthamiVatti

gowthamivatti

- By Gowthami Vatti

introduction

This project uses SQL to analyze sales data from Domino's, aiming to uncover key insights into customer demand, popular pizza types, and revenue performance. By examining metrics such as total orders, revenue, top-selling pizzas, and peak ordering times, we gain a clear picture of sales trends and customer preferences.

These insights provide a data-driven foundation for strategic decisions, such as refining the menu, optimizing staffing during peak hours, and focusing on high-revenue items, ultimately driving growth and efficiency for Domino's.

Objective

- **Understanding Customer Preferences:**

By identifying the most ordered pizza types and sizes, the business can tailor its offerings to match customer preferences, optimizing product availability and marketing efforts.

- **Revenue Optimization:**

Insights into the top 3 most ordered pizzas by revenue and the percentage contribution of each type allow for better focus on high-margin products, leading to an increase in overall profitability.

- **Category Insights:**

The category-wise distribution of pizzas and the top-performing pizza types within each category can guide future promotions, ensuring that the most popular and profitable items are highlighted.

- **Operational Efficiency:**

The analysis of orders by the hour of the day enables better staffing and resource allocation during peak times, improving customer service and reducing operational costs.

- **Sales Performance Over Time:**

Tracking cumulative revenue over time offers a clear picture of the business's financial health and growth trajectory, which can inform long-term strategic planning.

- **Data-Driven Decision Making:**

With detailed insights into order patterns, revenue contribution, and customer preferences, management can make more informed decisions on product offerings, promotions, and resource allocation.

Business Impact

- **Quantify Sales Performance:**

Retrieve the total number of orders and calculate the total revenue generated from pizza sales.

- **Identify Key Menu Insights:**

Determine the highest-priced pizza, most common pizza size, and top 5 most ordered pizza types along with their quantities.

- **Analyze Product Category Demand:**

Join tables to calculate the total quantity ordered for each pizza category and find the distribution of pizzas within each category.

- **Understand Customer Ordering Patterns:**

Examine the distribution of orders by hour of the day, and group orders by date to calculate the average number of pizzas ordered daily.

- **Revenue Contribution Analysis:**

Identify the top 3 most ordered pizza types based on revenue, calculate the revenue contribution percentage of each pizza type, and analyze cumulative revenue over time.

- **Category-Level Revenue Insights:**

dentify the top 3 most ordered pizza types based on revenue for each pizza category to better understand which categories drive the most sales.

Data Model

Schema Type: Snowflake Schema

- A central fact table **order_details** is connected to multiple dimension tables.

- One dimension table **pizzas** connects to another dimension table **pizza_types**, forming a snowflake structure.

Relationships :

- **orders** is connected to **order_details** to associate each order with its items.

- **pizzas** is linked to **order_details** to provide details of each pizza in an order.

- **pizza_types** is linked to **pizzas** to categorize each pizza by type.
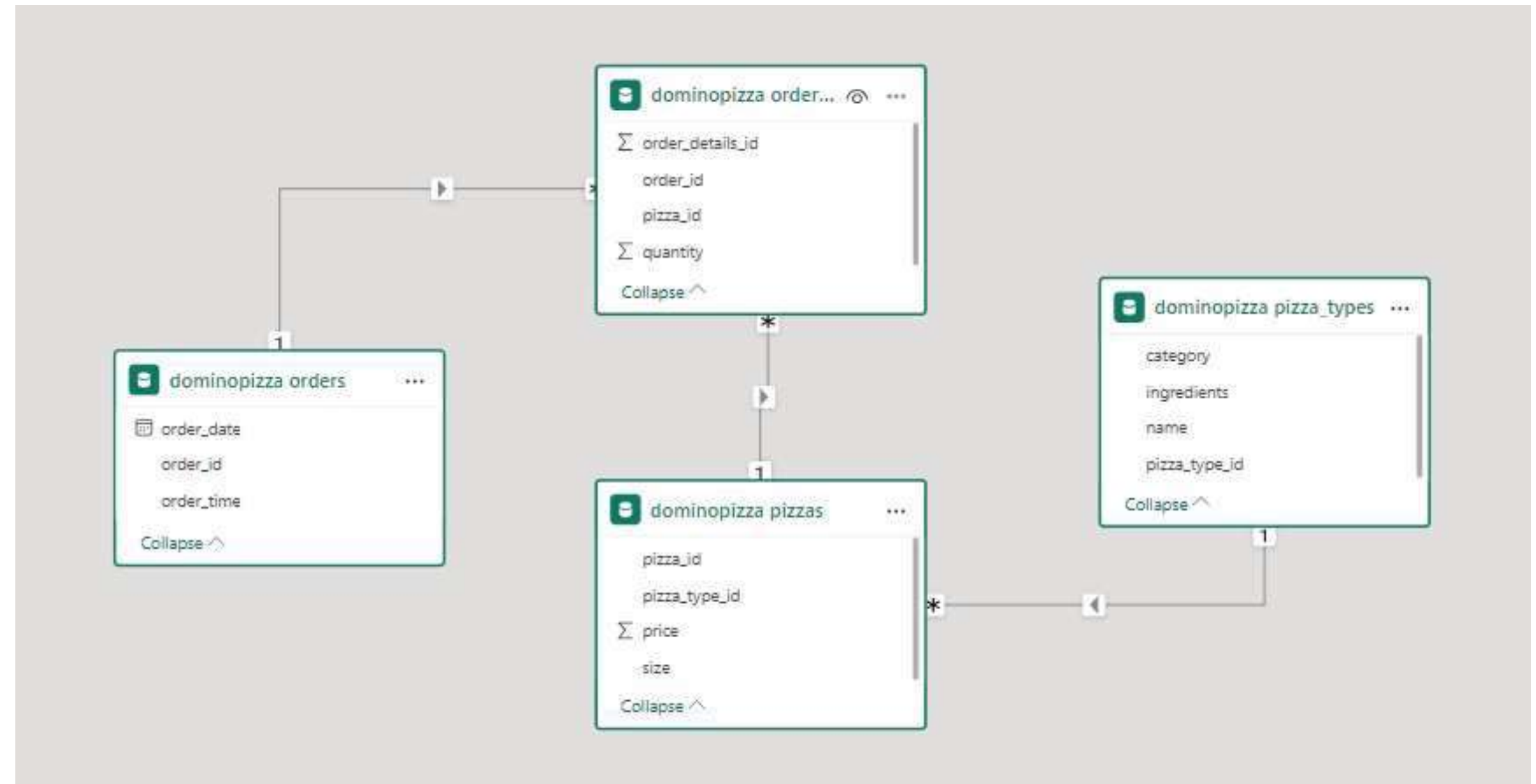
DATA ANALYSIS »

Retrieve the total number of orders placed.

```
select count(order_id) as total_order from orders
```

total_order

21350

Calculate the total revenue generated from pizza sales.

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

total_sales
817860.05

Identify the highest-priced 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.

```sql
SELECT
quantity, count(order_details_id)
from orders_details group by quantity;

select pizzas.size , count(orders_details.order_details_id) as order_count
from pizzas join orders_details
on pizzas.pizza_id = orders_details.pizza_id
group by pizzas.size
order by order_count desc;
```

Output

Key Insights:

- Size 1 pizzas are the most commonly ordered with 47,693 orders

- Size 2 pizzas have 903 orders, a distant second

- Sizes 3 and 4 have very low order volumes at 21 and 3 respectively

- The vast majority (98%) of orders are for Size 1 pizzas

Most Common Pizza Sizes Ordered
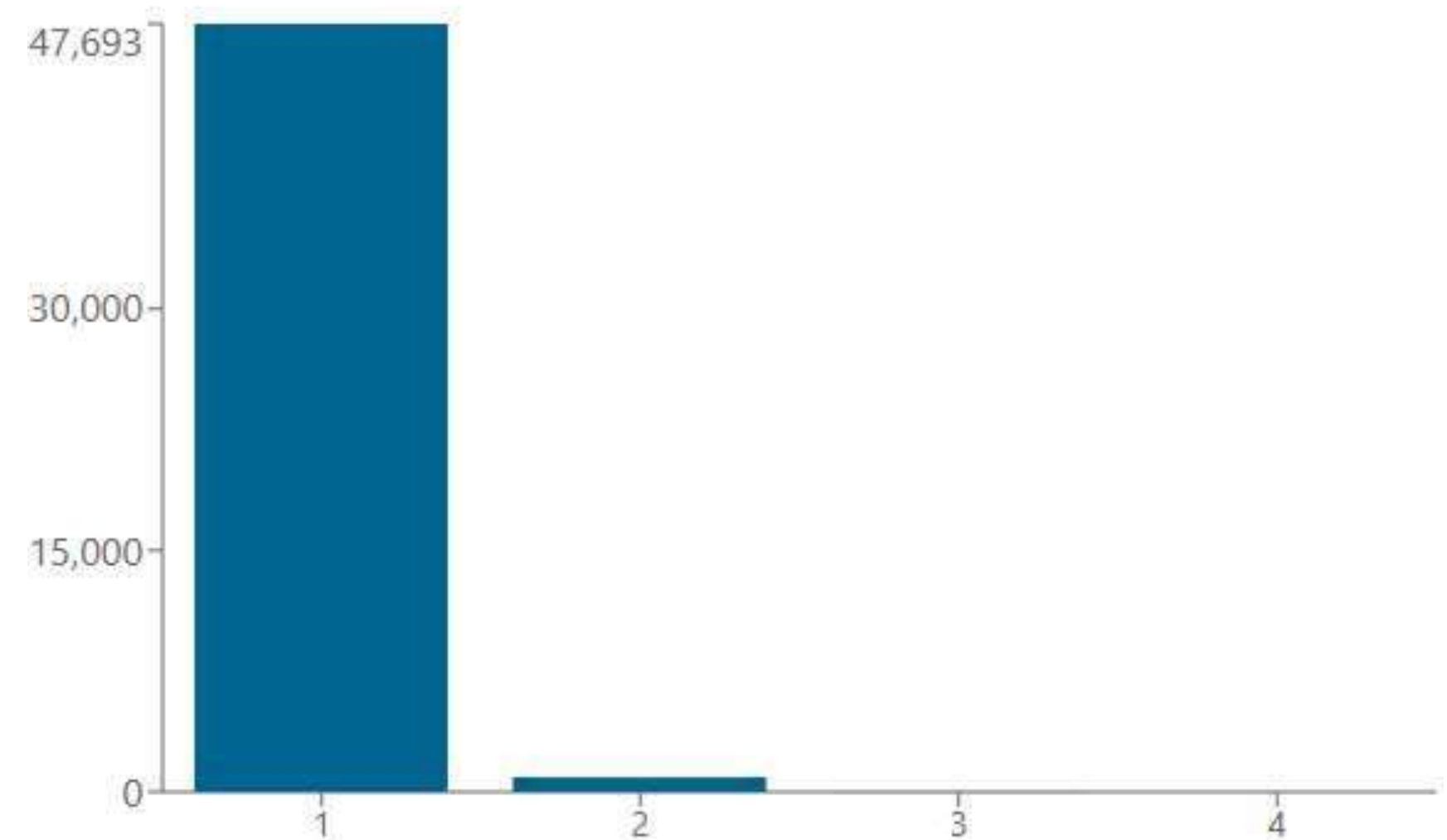
List the top 5 most ordered pizza types along with their quantities.

```sql
SELECT pizza_types.name,
sum(orders_details.quantity) as total_quantity
from pizza_types join pizzas
on pizza_types.pizza_type_id = pizzas.pizza_type_id
join orders_details
on orders_details.pizza_id = pizzas.pizza_id
group by pizza_types.name
order by total_quantity desc
limit 5;
```
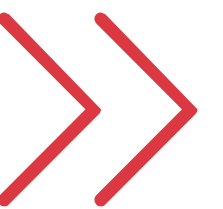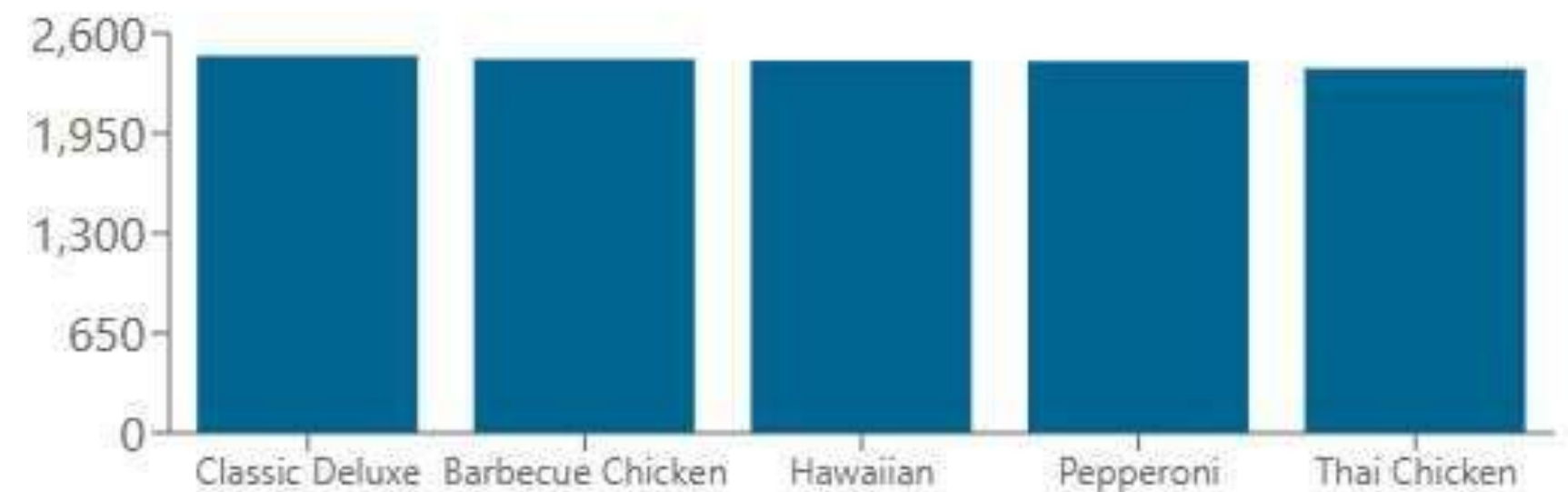
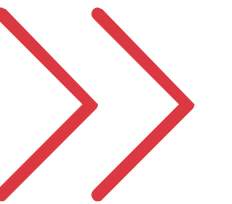# Output

The top 5 pizza types ordered, with:

- Classic Deluxe leading at 2,453 orders
- Followed closely by Barbecue Chicken with 2,432 orders
- Hawaiian with 2,422 orders
- Pepperoni with 2,418 orders
- Thai Chicken with 2,371 orders

Top 5 Most Ordered Pizzas

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

```sql
SELECT pizza_types.name,
sum(orders_details.quantity) as total_quantity
from pizza_types join pizzas
on pizza_types.pizza_type_id = pizzas.pizza_type_id
join orders_details
on orders_details.pizza_id = pizzas.pizza_id
group by pizza_types.name
order by total_quantity desc
limit 5;
```

Output

Classic pizzas dominate sales with 2,500 orders, suggesting customers prefer traditional flavors over specialty options, making it the most popular category by a significant margin (19% higher than the second-best Supreme category).

Top 5 Pizza Categories by Quantity Sold
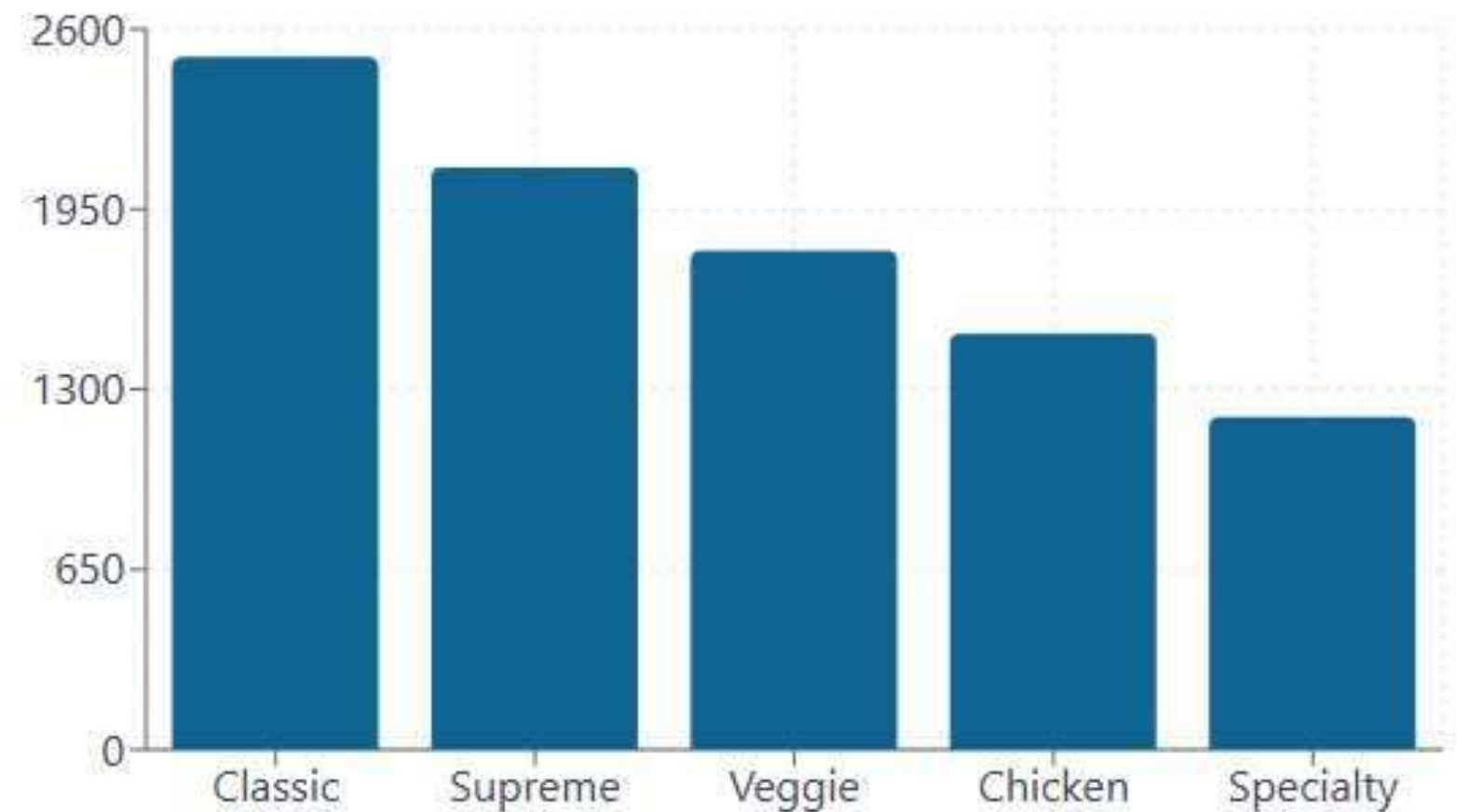
Determine the distribution of orders by hour of the day.

```sql
select hour(order_time) as hour , count(order_id) order_count from orders
group by hour(order_time);
```

Output

Key insights from the data:

1. Peak hours:
   - Lunch peak: 12:00-13:00 (2,520 orders)
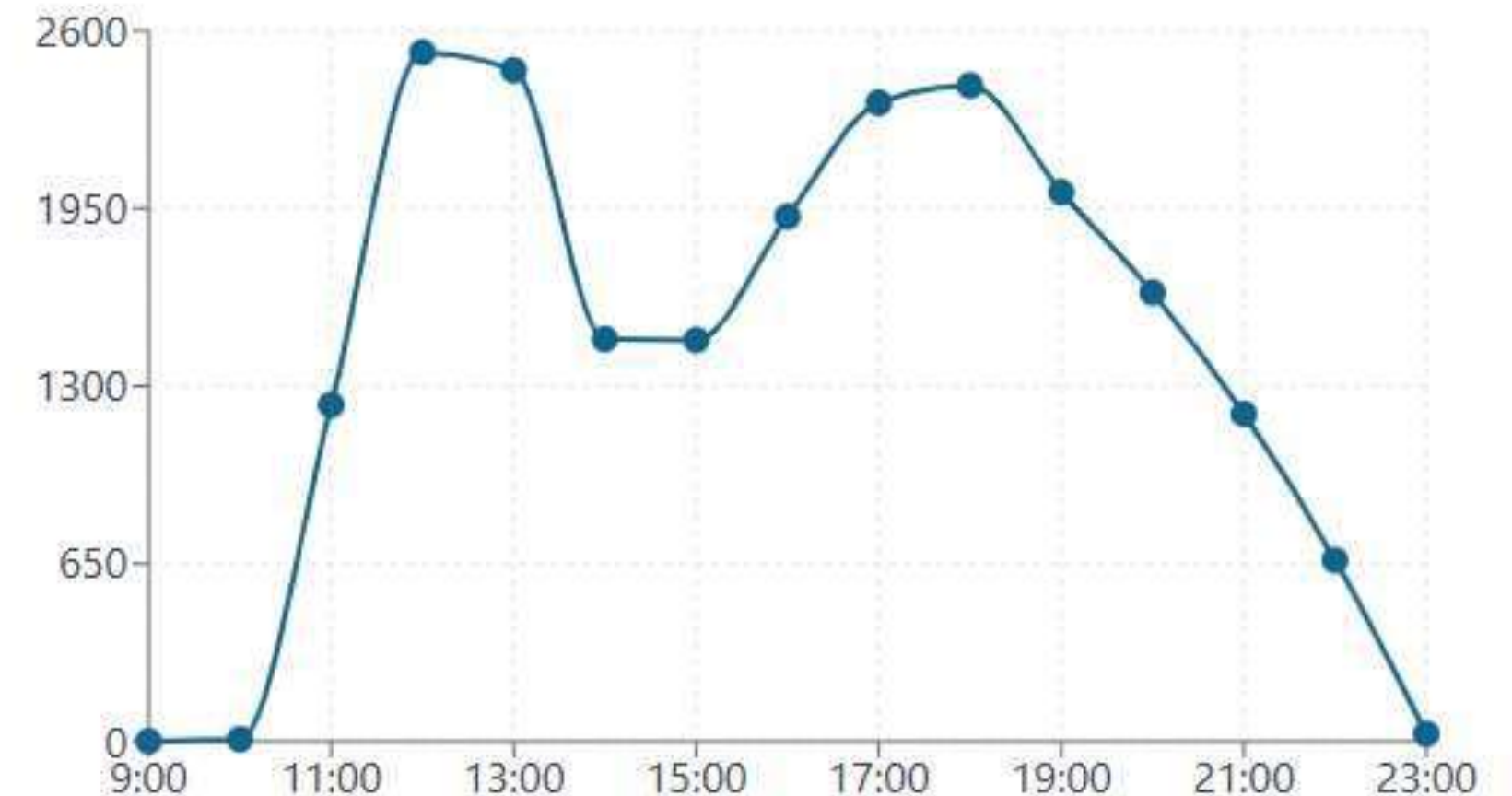   - Dinner peak: 17:00-19:00 (2,336-2,399 orders)

1. Slowest periods:
   - Early morning: 9:00-10:00 (1-8 orders)
   - Late night: 23:00 (28 orders)

1. Business pattern:
   - Orders start picking up at 11:00
   - Maintains steady volume through afternoon
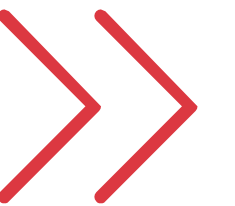   - Gradual decline after 20:00

Pizza Orders by Hour of Day

Determine the distribution of orders by hour of the day.

```sql
Select category , count(name) from pizza_types
group by category
```
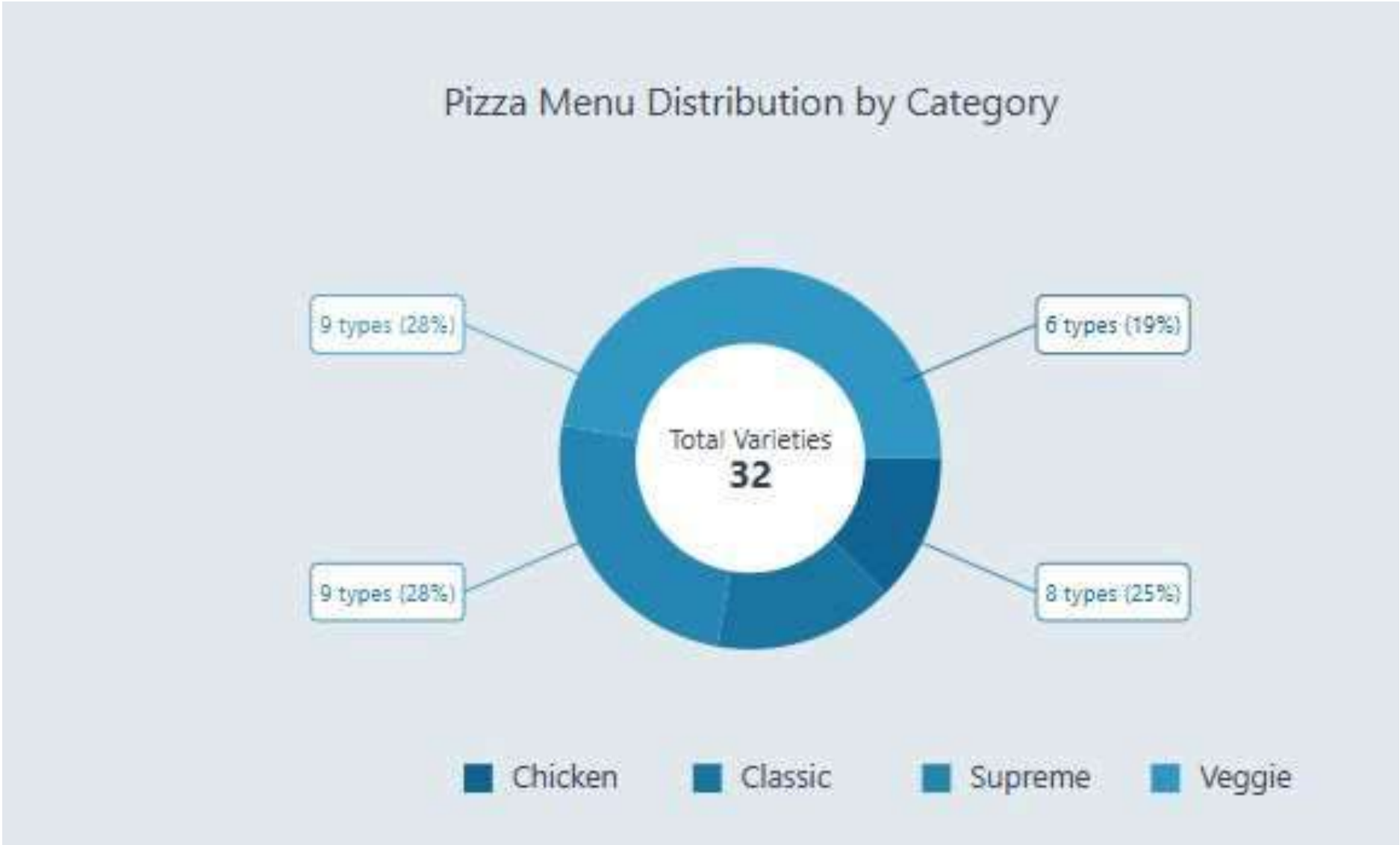
Output

Balanced Menu: 32 total varieties across 4 categories

Equal Leadership: Supreme & Veggie tied at 9 varieties each

Strong Traditional Base: Classic pizzas make up 25% of menu

Vegetarian Focus: 28% menu share shows commitment to variety

Specialized Options: Chicken category focused with 6 varieties

Pizza Menu Distribution by Category

9 types (28%) 6 types (19%)

Total Varieties
32

9 types (28%) 8 types (25%)

■ Chicken ■ Classic ■ Supreme ■ Veggie

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

```sql
Select category , count(name) from pizza_types
group by category
```
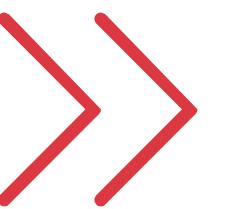
Output

Distribution of pizza types across categories:

- Supreme: 9 types (28.1%)
- Veggie: 9 types (28.1%)
- Classic: 8 types (25%)
- Chicken: 6 types (18.8%)

Business Strategy:

- The equal distribution between Supreme and Veggie (9 each) suggests a strategic focus on both premium and vegetarian markets
- The strong Classic lineup (8 types) indicates maintaining traditional customer base
- The smaller Chicken category (6 types) suggests a specialized but complete offering

Pizza Category Distribution

Supreme: 9
Veggie: 9
Chicken: 6
Classic: 8

Supreme ■ Veggie ■ Classic ■ Chicken
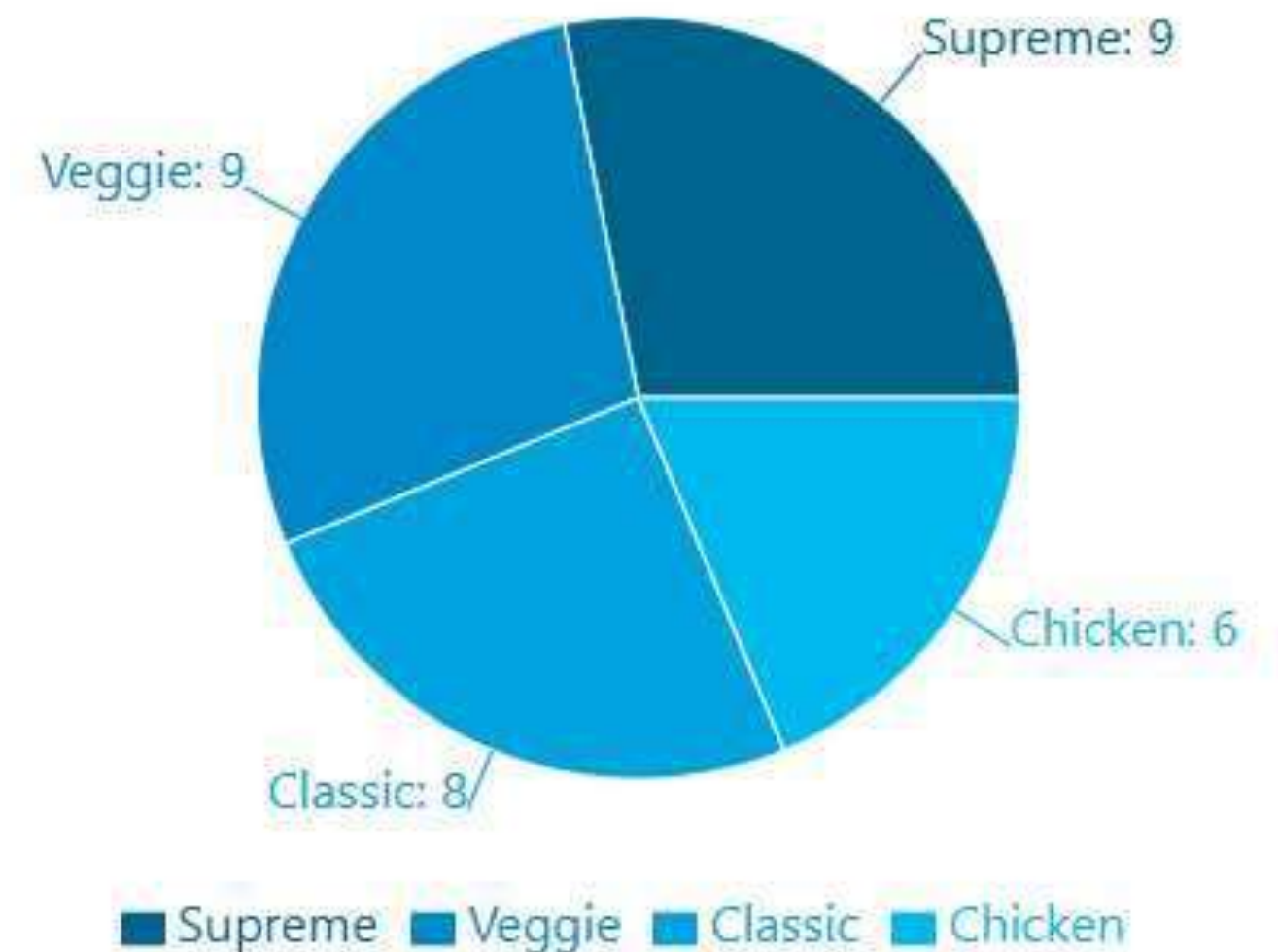
Group the orders by date and calculate the average number of pizzas ordered per day.

```sql
select round(avg(quantity),0) as avg_pizza_order_per_day from
(select orders.order_date , sum(orders_details.quantity) as quantity
from orders join orders_details on
orders.order_id = orders_details.order_id
group by orders.order_date) as order_quantity ;
```
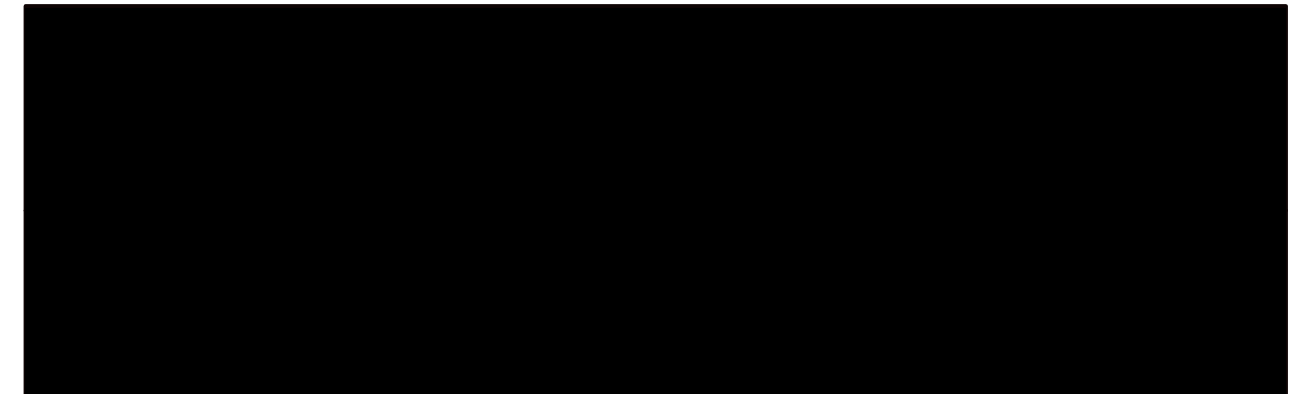
Determine the top 3 most ordered pizza types based on revenue.

```sql
select pizza_types.name,
round(sum(orders_details.quantity * pizzas.price),0) as revenue
from pizza_types join pizzas
on pizzas.pizza_type_id = pizza_types.pizza_type_id
join orders_details
on orders_details.pizza_id = pizzas.pizza_id
group by pizza_types.name
order by revenue
limit 3;
```

Output

Pizza Revenue Analysis

Revenue Rankings (in correct order):

- The Spinach Supreme Pizza leads with $15,278
- The Green Garden Pizza is second with $13,956
- The Brie Carre Pizza follows with $11,588

Analysis:

- Revenue spread of $3,690 between highest and lowest
- Even the lowest revenue among top 3 is substantial at $11,588
- All three pizzas are specialty items with premium ingredients
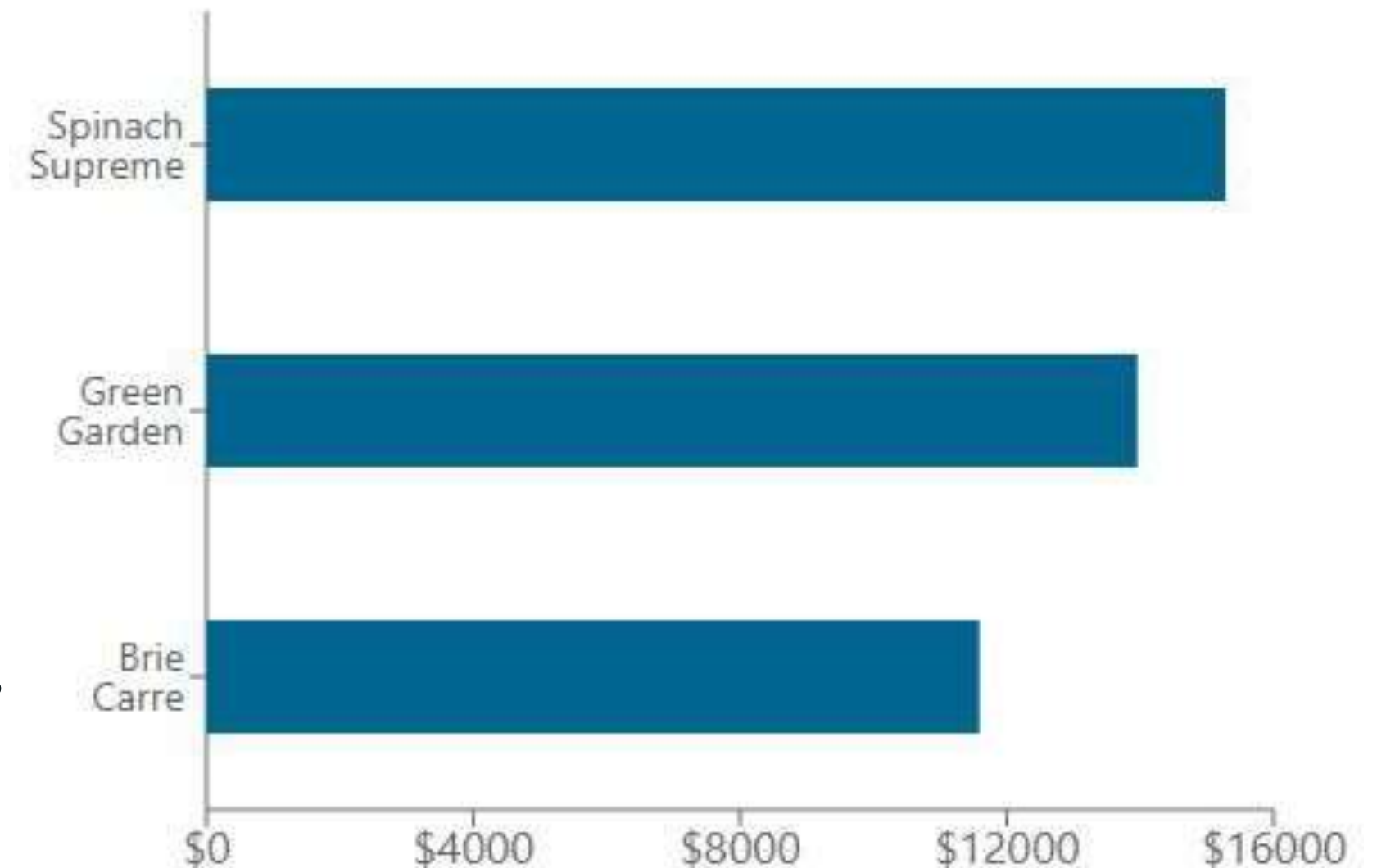
Determine the top 3 most ordered pizza types based on Category.

```sql
select pizza_types.category,
round(sum(orders_details.quantity*pizzas.price) / (SELECT
round(sum(orders_details.quantity * pizzas.price) , 2 ) As total_sales
FROM orders_details
join pizzas
ON pizzas.pizza_id = orders_details.pizza_id) *100,2) as revenue
from pizza_types join pizzas
on pizza_types.pizza_type_id = pizzas.pizza_type_id
join orders_details
on orders_details.pizza_id = pizzas.pizza_id
group by pizza_types.category
order by revenue desc;
```
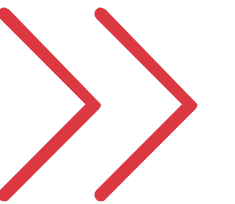
Output

Category Performance:

- Classic pizzas are the top revenue generator at 26.91%
- Supreme pizzas are a close second at 25.46%
- Chicken pizzas maintain strong performance at 23.96%
- Veggie pizzas contribute 23.68%

Distribution Analysis:
- Very balanced distribution across categories
- Only 3.23% difference between highest and lowest
- All categories contribute significantly (>23%)

Revenue Distribution by Category

25.46% 26.91%

23.96% 23.68%

■ Classic ■ Supreme ■ Chicken ■ Veggie
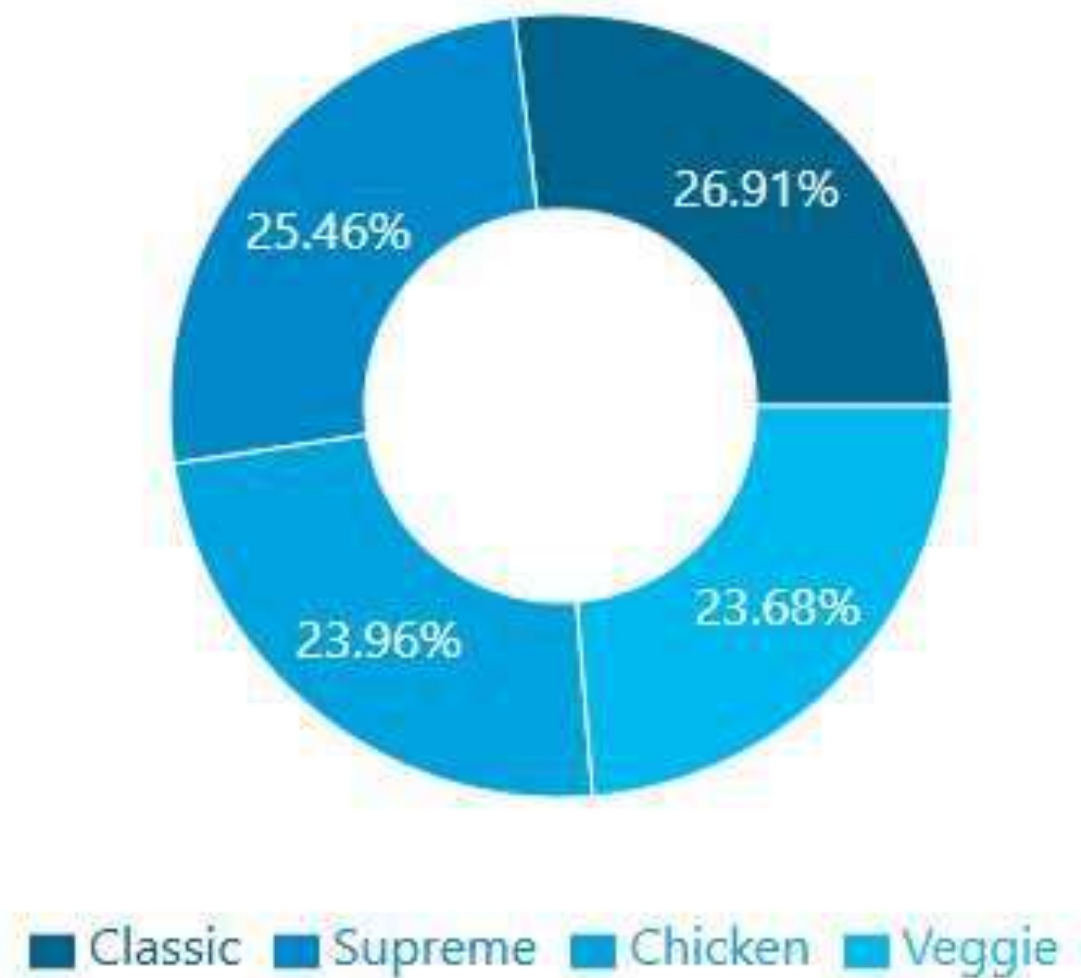
Analyze the cumulative revenue generated over time.

```sql
select order_date , sum(revenue) over(order by order_date) as cum_revenue
from
(select orders.order_date,
sum(orders_details.quantity * pizzas.price) as revenue
from orders_details join pizzas
on orders_details.pizza_id = pizzas.pizza_id
join orders
on orders.order_id = orders_details.order_id
group by orders.order_date) as sales ;
```

Output

Growth Pattern:

- Started with $2,713.85 on January 1st, 2015
- Ended with $817,860.05 on December 31st, 2015
- Total revenue growth of $815,146.20 over the year

Revenue Characteristics:

- Consistent upward trend throughout the year
- No significant drops or plateaus, indicating stable business growth
- The slope appears relatively constant, suggesting steady daily sales

Cumulative Revenue Over Time
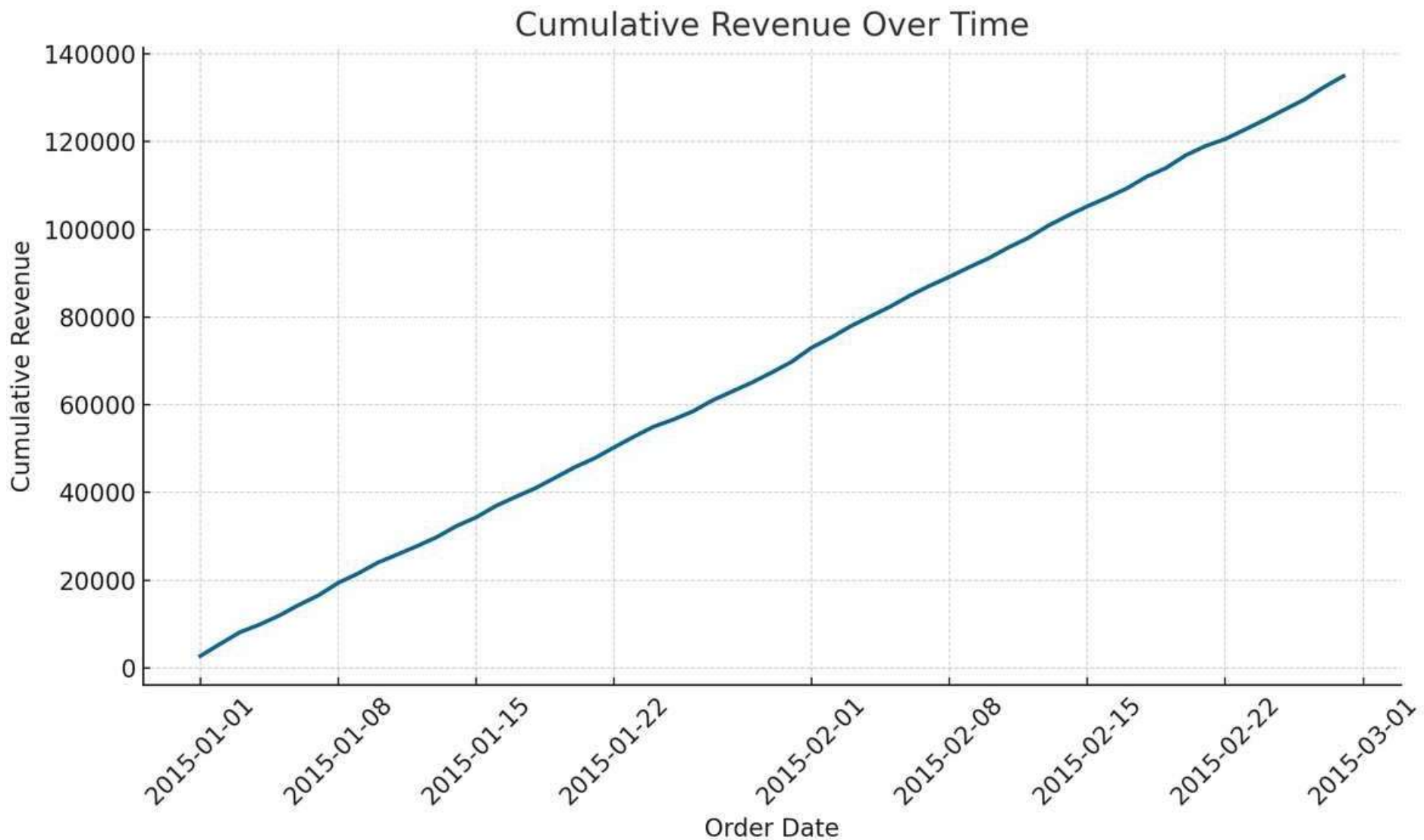
Determine the top 3 most ordered pizza types based on revenue for each pizza category.

```sql
select name , revenue from
(select category , name , revenue ,
rank() over(partition by category order by revenue desc) as rn
from
(select pizza_types.category , pizza_types.name ,
sum((orders_details.quantity) * pizzas.price) as revenue
from pizza_types join pizzas
on pizza_types.pizza_type_id = pizzas.pizza_type_id
join orders_details
on orders_details.pizza_id = pizzas.pizza_id
group by pizza_types.category , pizza_types.name) as a) as b
where rn ≤ 3 ;
```

Output

- Chicken Pizza Popularity: Chicken-based pizzas, especially Thai Chicken, are top sellers.

- Classic Favorites: Pepperoni and Hawaiian remain popular, showing consistent demand.

- Diverse Preferences: A wide range of pizza types suggests diverse customer tastes.

- Focus on Top Categories: Prioritizing chicken and classic pizzas can maximize revenue.

Top 3 Pizzas by Revenue (Each Category)
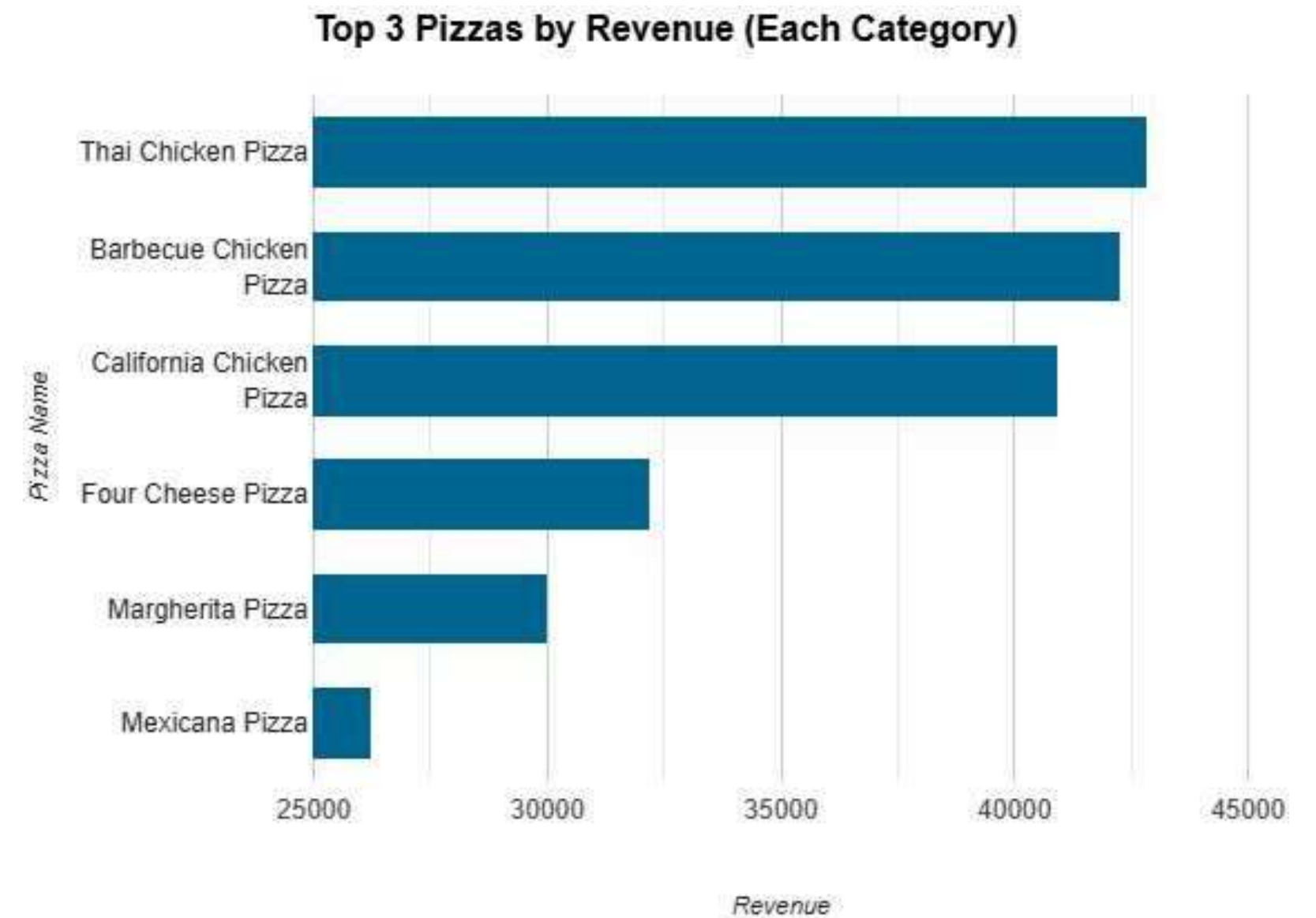
Thank You

GowthamiVatti

gowthamivatti

- By Gowthami Vatti