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RESEARCH LABS

INNOVATION. AUTOMATION. ANALYTICS

PROJECT ON

Pizza Store Analysis

By

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About me

Jidnyasa Baviskar
M. Sc. In Computational Mathematics (KBCNMU, Jalgaon)

Why I Want to Learn Data Science
I want to learn Data Science because it opens up opportunities to work with real world data, solve complex problems, and make data-driven decision that have a real impact on businesses and society.

Profiles:

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- **GitHub:** github.com/Jidnyasa2002

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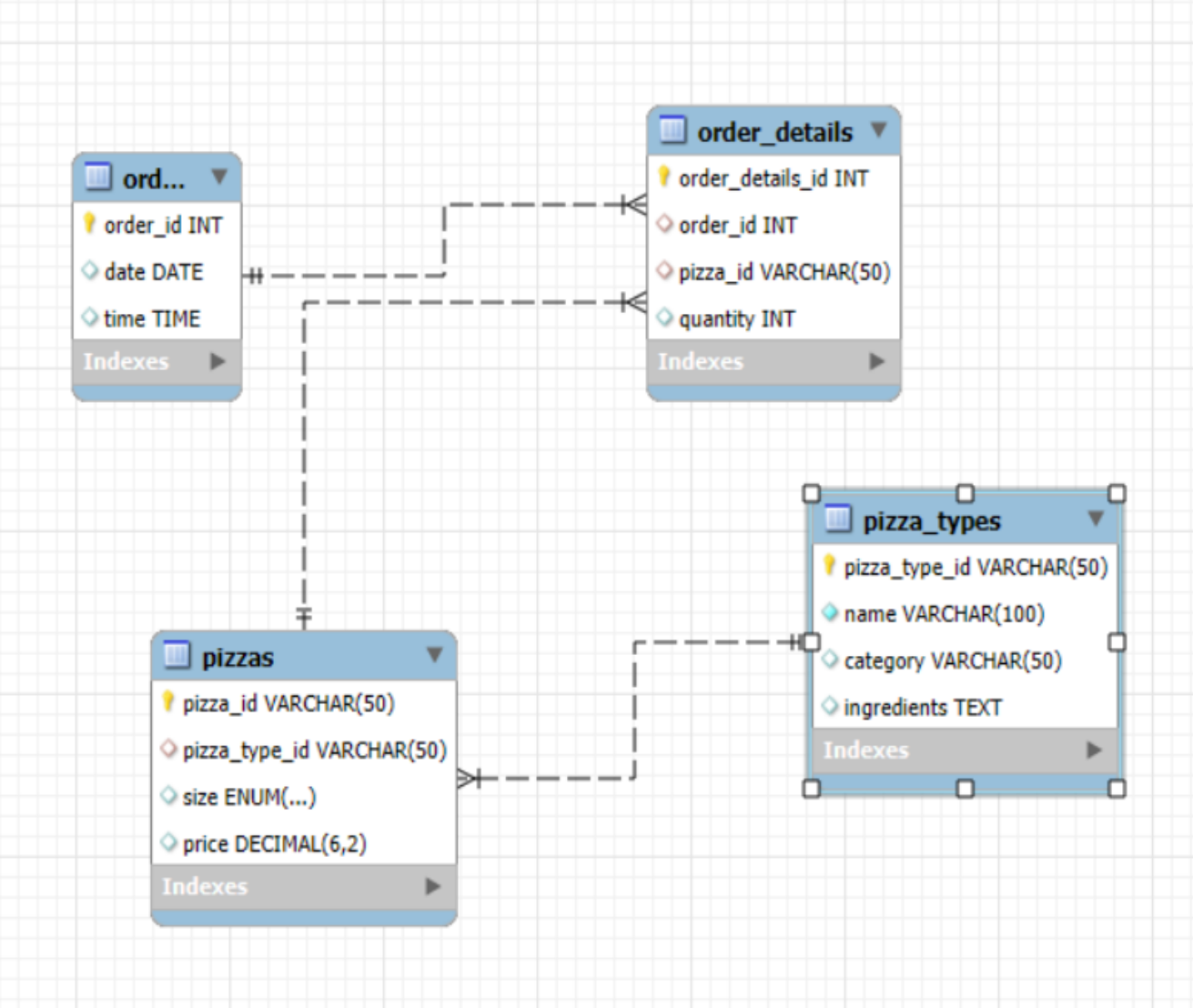
Objective of the Project :

- Database Design & Implementation to design a normalized relational database that efficiently stores pizza sales data, including pizza types, orders, and order details.
- To establish relationships between entities (pizza types, pizzas, orders, and order details) using foreign keys for data integrity.
- Data Management to organize and maintain structured data related to pizza types, pricing, ingredients, order dates, and times.
- Sales Analysis to calculate key business metrics such as total orders, total revenue, and top-selling pizzas.
- To identify patterns in sales data such as most popular pizza sizes, categories, and peak order hours.
- Business Insights to analyze revenue contributions by pizza type and category.

EER Diagram and Schema :



- **Orders table:** It gives information like order ID, date, and time. Each order can include multiple pizzas, which are recorded in the Order_Details table.
- **Order_Details table:** It acts as a link between Orders and Pizzas, it stores which pizzas were ordered and in what quantity.
- **Pizza table:** It contains details such as pizza ID, size, and price. Each pizza also belongs to a specific type, which is defined in the Pizza_Types table.
- **Pizza_Types table:** It stores information like the pizza name, category, and ingredients.

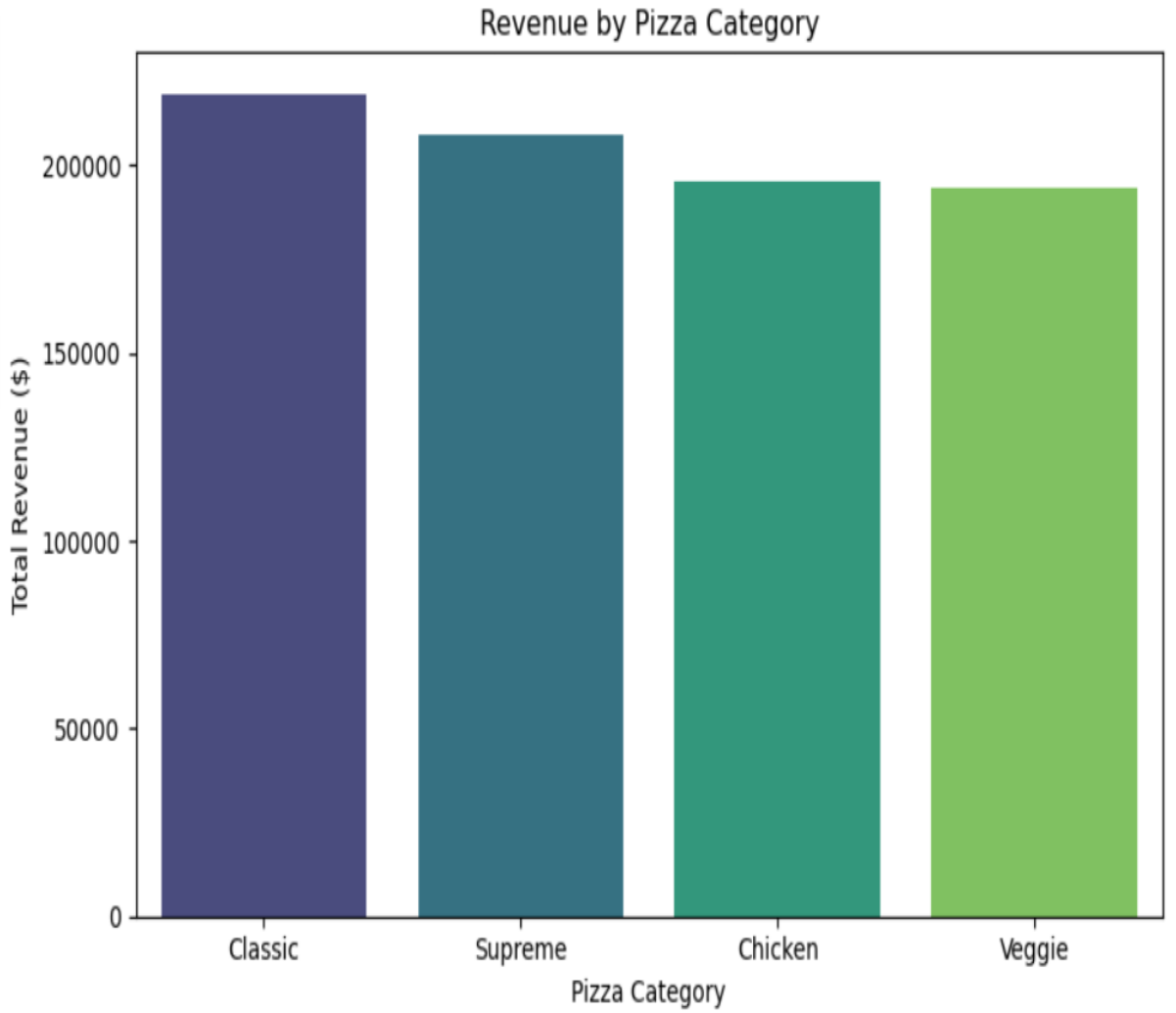
Key Areas of Exploration :

- Find the total quantity of each pizza category ordered.
- List the top 5 most ordered pizza types along with their quantities.
- Determine the distribution of orders by hour of the day.
- Analyze the cumulative revenue generated over time.
- Calculate the percentage contribution of each pizza type to total revenue.

Find the total quantity of each pizza category ordered.

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

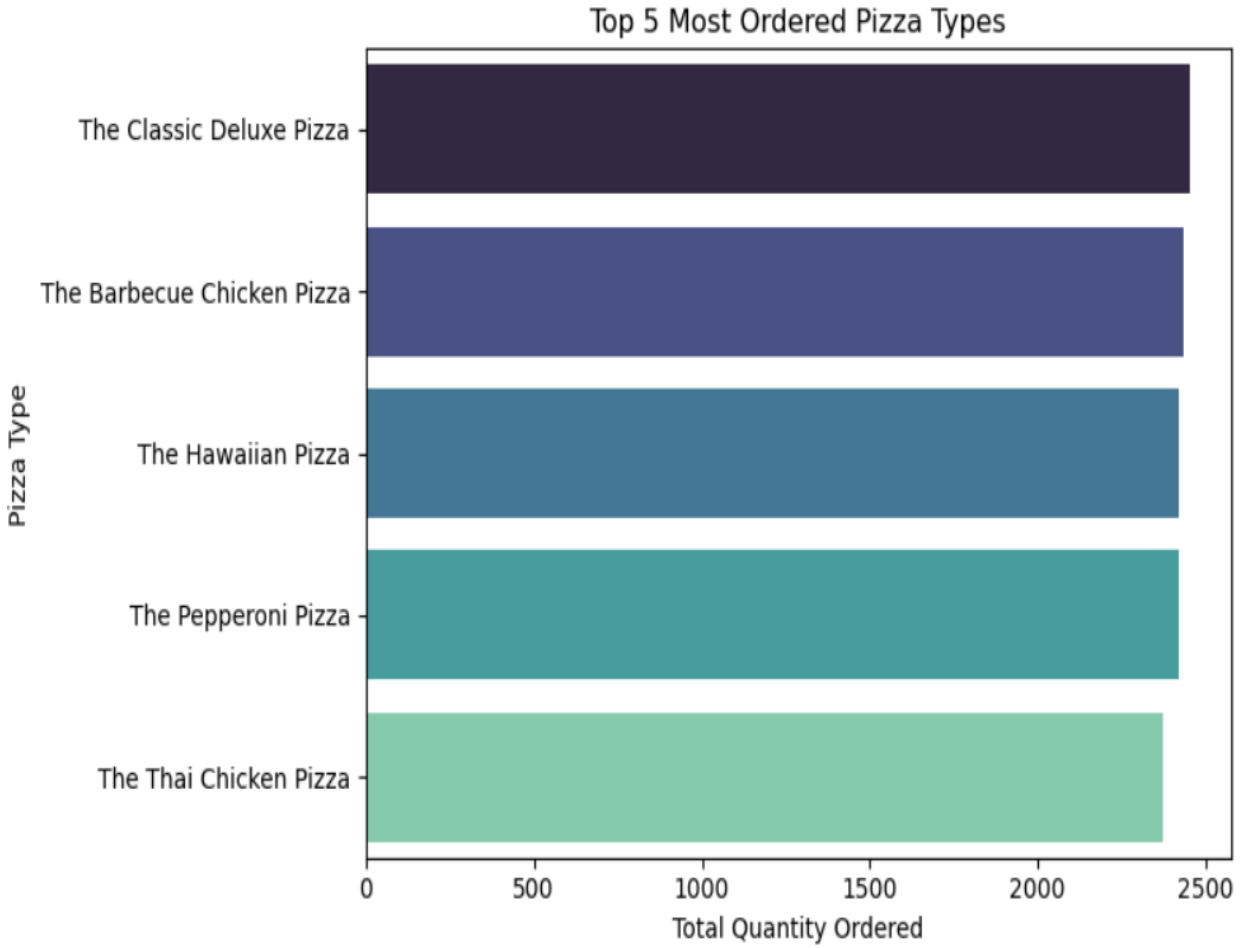
category	total_quantity
Classic	14860
Supreme	11987
Veggie	11649
Chicken	11050



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

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



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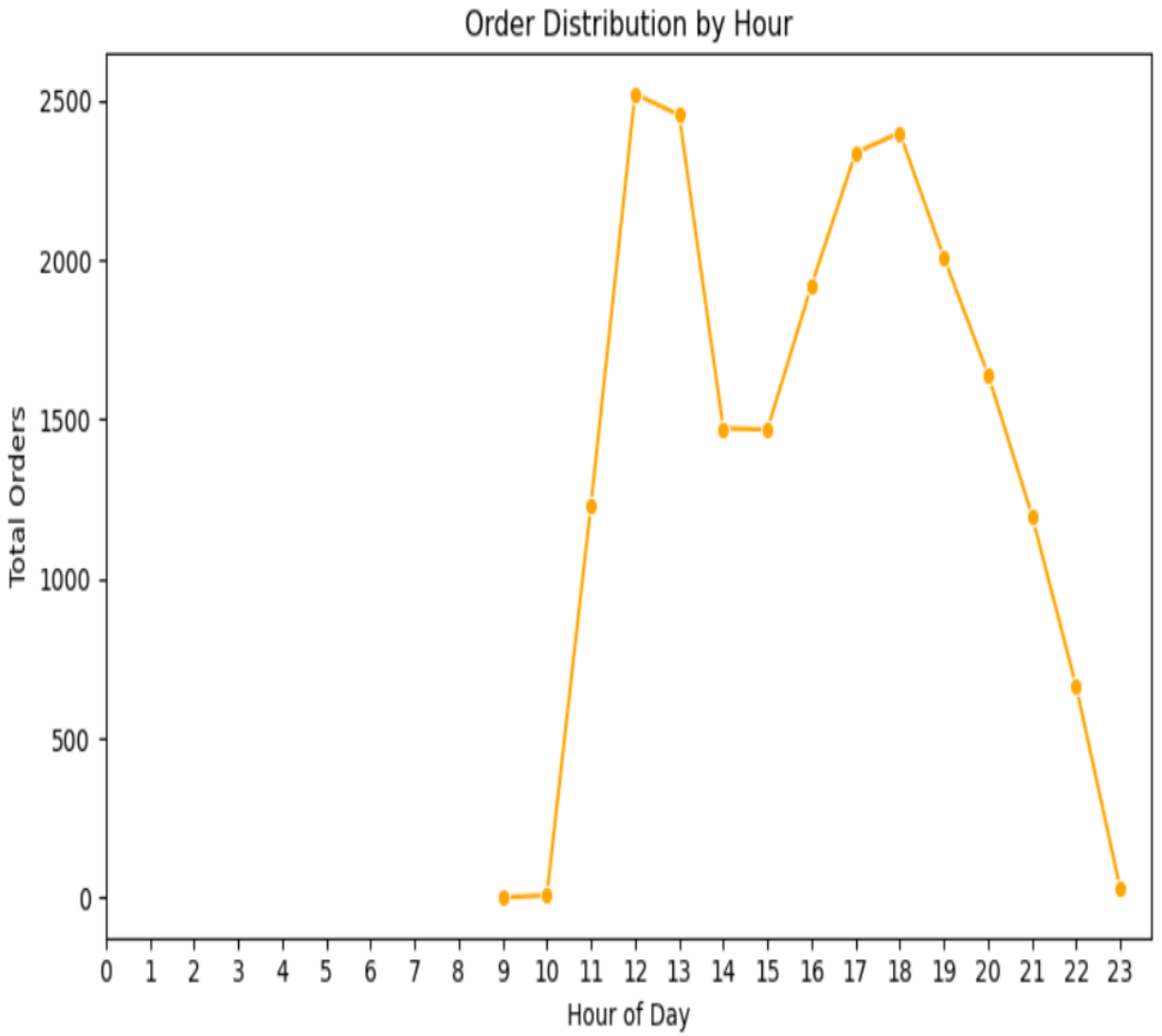
Determine the distribution of orders by hour of the day.

```sql
SELECT HOUR(time) AS order_hour, COUNT(*) AS total_orders
FROM orders
GROUP BY order_hour
ORDER BY order_hour;
```

order_hour	total_orders
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



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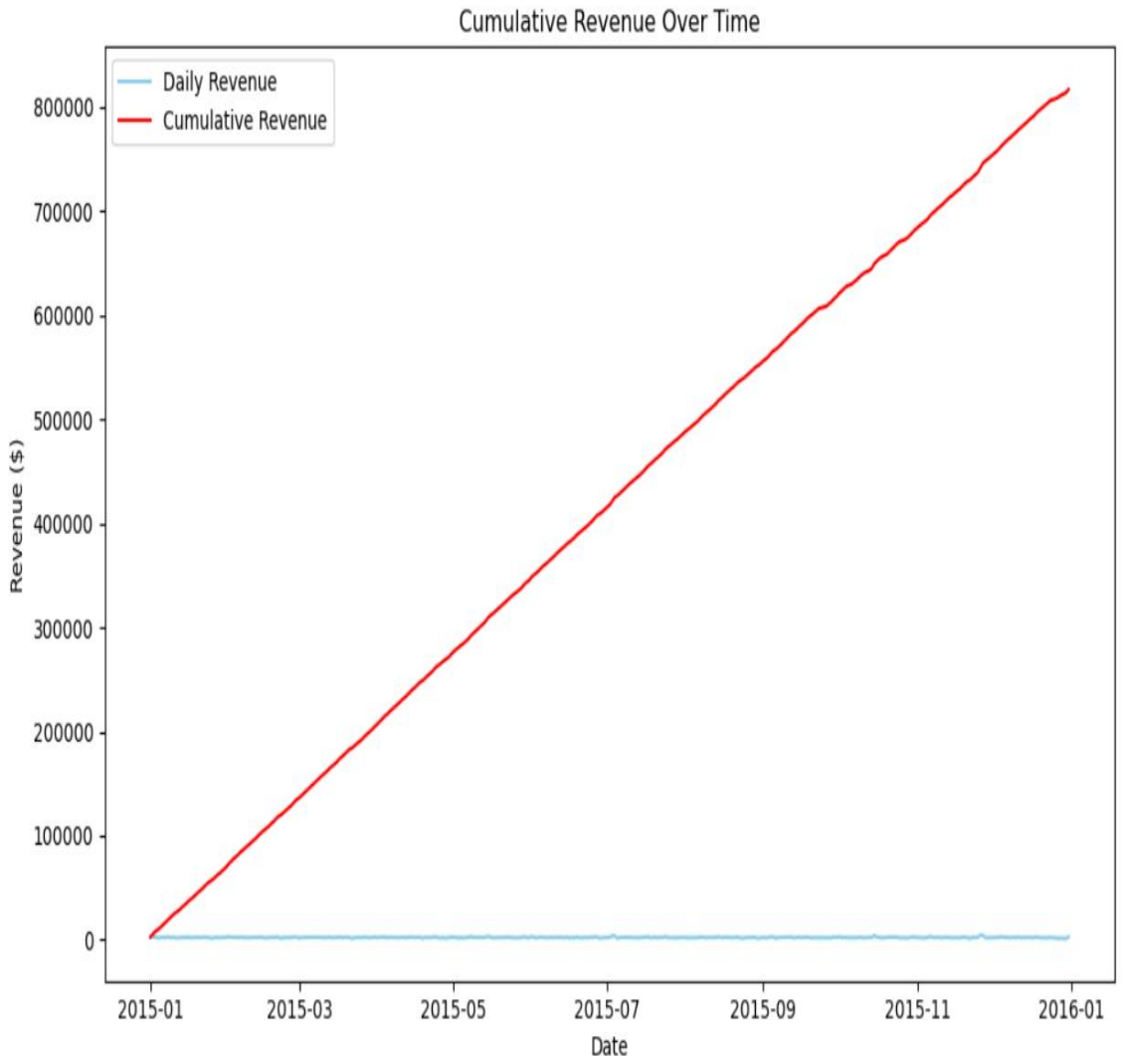
Analyze the cumulative revenue generated over time.

```sql
SELECT o.date,
       SUM(od.quantity * p.price) AS daily_revenue,
       SUM(SUM(od.quantity * p.price)) OVER (ORDER BY o.date) AS cumulative_revenue
FROM orders o
JOIN order_details od ON o.order_id = od.order_id
JOIN pizzas p ON od.pizza_id = p.pizza_id
GROUP BY o.date
ORDER BY o.date;
```

date	daily_revenue	cumulative_revenue
2015-01-01	2713.85	2713.85
2015-01-02	2731.90	5445.75
2015-01-03	2662.40	8108.15
2015-01-04	1755.45	9863.60
2015-01-05	2065.95	11929.55
2015-01-06	2428.95	14358.50
2015-01-07	2202.20	16560.70
2015-01-08	2838.35	19399.05
2015-01-09	2127.35	21526.40
2015-01-10	2463.95	23990.35
2015-01-11	1872.30	25862.65
2015-01-12	1919.05	27781.70
2015-01-13	2049.60	29831.30
2015-01-14	2527.40	32358.70
2015-01-15	1984.80	34343.50
2015-01-16	2594.15	36937.65
2015-01-17	2064.10	39001.75
2015-01-18	1976.85	40978.60
2015-01-19	2387.15	43365.75
2015-01-20	2397.90	45763.65
2015-01-21	2040.55	47804.20



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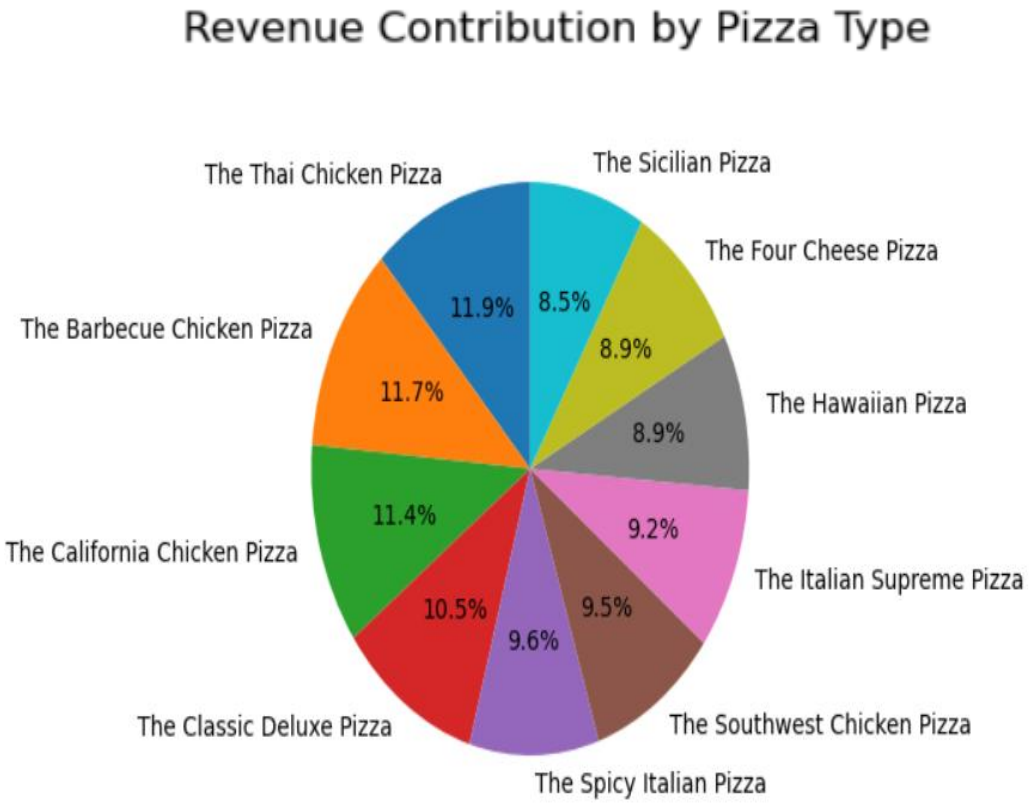
Calculate the percentage contribution of each pizza type to total revenue.

```sql
SELECT pt.name, ROUND(SUM(od.quantity * p.price) * 100 /
(SELECT SUM(od2.quantity * p2.price)
FROM order_details od2
JOIN pizzas p2 ON od2.pizza_id = p2.pizza_id), 2) AS revenue_percentage
FROM order_details od
JOIN pizzas p ON od.pizza_id = p.pizza_id
JOIN pizza_types pt ON p.pizza_type_id = pt.pizza_type_id
GROUP BY pt.name
ORDER BY revenue_percentage DESC;
```

name	revenue_percentage
The Thai Chicken Pizza	5.32
The Barbecue Chicken Pizza	5.24
The California Chicken Pizza	5.07
The Classic Deluxe Pizza	4.67
The Spicy Italian Pizza	4.26
The Southwest Chicken Pizza	4.25
The Italian Supreme Pizza	4.10
The Four Cheese Pizza	3.95
The Hawaiian Pizza	3.95
The Sicilian Pizza	3.79
The Pepperoni Pizza	3.69
The Greek Pizza	3.36
The Mexicana Pizza	3.28
The Five Cheese Pizza	3.19
The Pepper Salami Pizza	3.13
The Italian Capocollo Pizza	3.07
The Vegetables + Vegetable...	2.98
The Prosciutto and Arugula ...	2.96



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Conclusion

- Most ordered pizza types is Thai chicken pizza dominate sales, indicating clear customer preferences.
- Medium and Large sizes are the most frequently purchased, maximizing revenue.
- Peak hours occur during lunch and dinner times — best opportunities for targeted offers.
- Cumulative revenue shows steady business growth, reflecting consistent demand.
- Category-wise analysis helps identify high-performing and underperforming segments.

THANK YOU

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