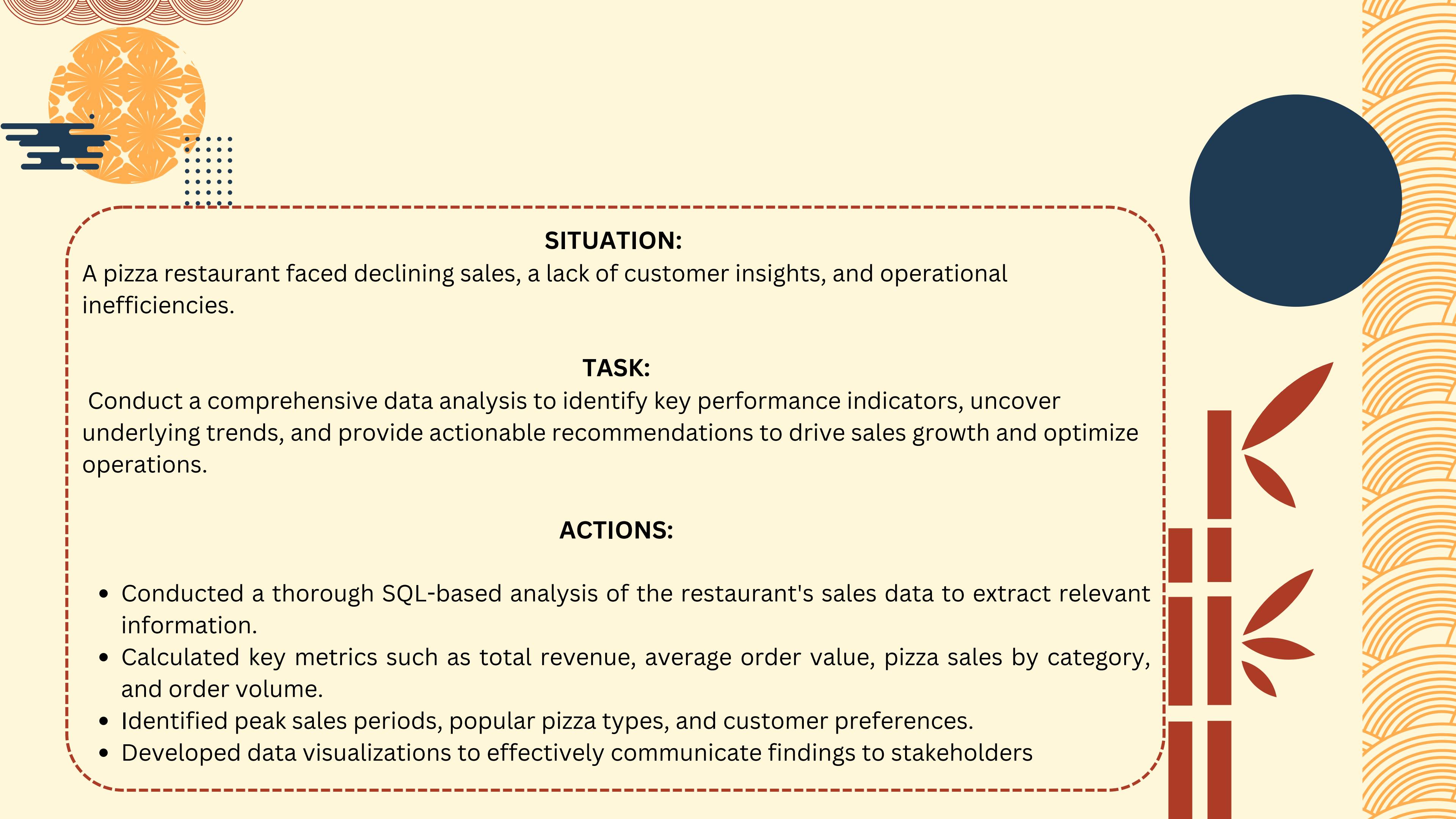


# PIZZA SALES ANALYSIS

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## SITUATION:

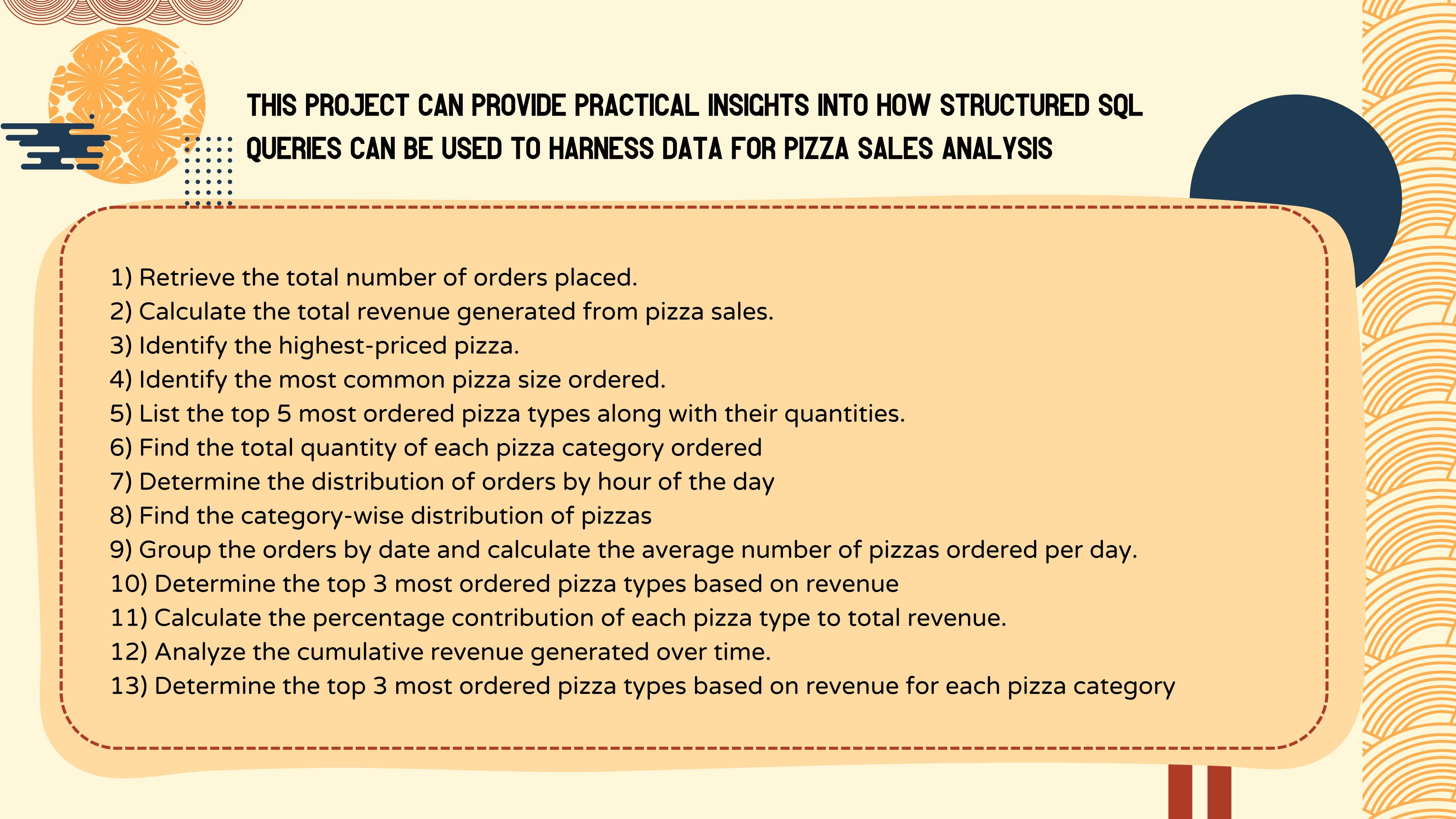
A pizza restaurant faced declining sales, a lack of customer insights, and operational inefficiencies.

## TASK:

Conduct a comprehensive data analysis to identify key performance indicators, uncover underlying trends, and provide actionable recommendations to drive sales growth and optimize operations.

## ACTIONS:

- Conducted a thorough SQL-based analysis of the restaurant's sales data to extract relevant information.
- Calculated key metrics such as total revenue, average order value, pizza sales by category, and order volume.
- Identified peak sales periods, popular pizza types, and customer preferences.
- Developed data visualizations to effectively communicate findings to stakeholders



## THIS PROJECT CAN PROVIDE PRACTICAL INSIGHTS INTO HOW STRUCTURED SQL QUERIES CAN BE USED TO HARNESS DATA FOR PIZZA SALES ANALYSIS

- 1) Retrieve the total number of orders placed.
- 2) Calculate the total revenue generated from pizza sales.
- 3) Identify the highest-priced pizza.
- 4) Identify the most common pizza size ordered.
- 5) List the top 5 most ordered pizza types along with their quantities.
- 6) Find the total quantity of each pizza category ordered
- 7) Determine the distribution of orders by hour of the day
- 8) Find the category-wise distribution of pizzas
- 9) Group the orders by date and calculate the average number of pizzas ordered per day.
- 10) Determine the top 3 most ordered pizza types based on revenue
- 11) Calculate the percentage contribution of each pizza type to total revenue.
- 12) Analyze the cumulative revenue generated over time.
- 13) Determine the top 3 most ordered pizza types based on revenue for each pizza category

# RETRIEVE THE TOTAL NUMBER OF ORDERS PLACED.

```
SELECT COUNT(DISTINCT order_id) AS "Total Orders"  
FROM orders;
```

Total Orders	bigint
1	21350

# CALCULATE THE TOTAL REVENUE GENERATED FROM PIZZA SALES.

```
SELECT CAST(SUM(order_details.quantity * pizzas.price)  
AS numeric(10, 2)) AS "Total Revenue" FROM order_details  
JOIN pizzas ON pizzas.pizza_id = order_details.pizza_id;
```

Total Revenue  
numeric (10,2) 

1 1635720.10

# IDENTIFY THE HIGHEST-PRICED PIZZA

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

	price double precision	name text
1	35.95	The Greek Pizza

# 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 text	order_count bigint
1	L	37052
2	M	30770
3	S	28274
4	XL	1088
5	XXL	56

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

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

	name text	pizza_count bigint
1	The Classic Deluxe Pizza	4906
2	The Barbecue Chicken Pizza	4864
3	The Hawaiian Pizza	4844
4	The Pepperoni Pizza	4836
5	The Thai Chicken Pizza	4742

# FIND THE TOTAL QUANTITY OF EACH PIZZA CATEGORY ORDERED

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

	category text	sum bigint
1	Supreme	23974
2	Chicken	22100
3	Classic	29776
4	Veggie	23298

# DETERMINE THE DISTRIBUTION OF ORDERS BY HOUR OF THE DAY

```
SELECT DATE_PART('hour', time) as "Hour of the day",
       COUNT(order_id) AS "No of Orders" FROM orders
    GROUP BY DATE_PART('hour', time)
ORDER BY "No of Orders" DESC;
```

Hour of the day	No of Orders
12	5040
13	4910
18	4798
17	4672
19	4018
16	3840
20	3284
14	2944
15	2936
11	2462
21	2396
22	1326
23	56
10	16
9	2

# FIND THE CATEGORY-WISE DISTRIBUTION OF PIZZAS

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

	category text	total_count bigint
1	Supreme	9
2	Chicken	6
3	Classic	8
4	Veggie	9

# CALCULATE THE AVERAGE NUMBER OF PIZZAS ORDERED PER DAY

```
SELECT CAST(AVG(Pizza_ordered)AS numeric(5,0))  
AS Avg_pizzas_ordered_per_day FROM(SELECT orders.date,  
SUM(order_details.quantity)AS Pizza_ordered  
FROM orders JOIN order_details  
ON orders.order_id=order_details.order_id  
GROUP BY orders.date) AS order_per_day;
```

	avg_pizzas_ordered_per_day	numeric (5)
1		554

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

```
SELECT pizza_types.name ,  
SUM(order_details.quantity*pizzas.price) 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 pizza_types.name ORDER BY Revenue DESC LIMIT 3;
```

	name text	revenue double precision
1	The Thai Chicken Pizza	86868.5
2	The Barbecue Chicken Pizza	85536
3	The California Chicken Pizza	82819

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

```
SELECT pizza_types.category ,  
CAST(SUM((order_details.quantity*pizzas.price)/  
        (SELECT CAST(SUM(order_details.quantity * pizzas.price)  
                  AS numeric(10, 2)) AS "Total Revenue"  
FROM order_details  
JOIN pizzas ON pizzas.pizza_id = order_details.pizza_id)*100)  
        AS numeric(10,2)) As Revenue_percentage  
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 pizza_types.category ORDER BY Revenue_percentage ;
```

	category text 	revenue_percentage numeric (10,2) 
1	Veggie	23.68
2	Chicken	23.96
3	Supreme	25.46
4	Classic	26.91

# ANALYZE THE CUMULATIVE REVENUE GENERATED OVER TIME

```
SELECT date, SUM(Revenue) OVER (ORDER BY date) AS Cum_Revenue  
FROM (  
    SELECT orders.date, SUM(order_details.quantity*pizzas.price) AS Revenue  
    FROM order_details  
    JOIN orders ON order_details.order_id = orders.order_id  
    JOIN pizzas ON pizzas.pizza_id = order_details.pizza_id  
    GROUP BY orders.date  
) AS Sales;
```

	date date	cum_revenue double precision
1	2015-01-01	10855.400000000001
2	2015-01-02	21783
3	2015-01-03	32432.6
4	2015-01-04	39454.399999999994
5	2015-01-05	47718.2
6	2015-01-06	57434
7	2015-01-07	66242.8
8	2015-01-08	77596.200000000001
9	2015-01-09	86185.6

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

```
SELECT name,revenue FROM
(SELECT category,name,revenue,
RANK()OVER(PARTITION BY category ORDER BY revenue)AS rn FROM
(SELECT pizza_types.category,pizza_types.name,
SUM(order_details.quantity*pizzas.price) 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 pizza_types.category,pizza_types.name) AS A)AS B
WHERE rn<=3;
```

	name text	revenue double precision
1	The Chicken Pesto Pizza	33403.5
2	The Chicken Alfredo Pizza	33800.5
3	The Southwest Chicken Pizza	69411.5
4	The Pepperoni, Mushroom, and Peppers Pizza	37669
5	The Big Meat Pizza	45936
6	The Napolitana Pizza	48174
7	The Brie Carre Pizza	23177.000000000226
8	The Spinach Supreme Pizza	30555.5
9	The Calabrese Pizza	31868.5
10	The Green Garden Pizza	27911.5
11	The Mediterranean Pizza	30721
12	The Spinach Pesto Pizza	31192

## Results:

- Determined that the total revenue generated was **1635720.10**
- Identified the **Greek pizza** as the highest-priced pizza on the menu.
- Found that **L** (Large) was the most popular pizza size.
- Established **Classic** as the top-performing pizza category, contributing **26.91%** of total revenue.
- Determined that **12:00** was the busiest hour of operation.
- Calculated an average **554** pizzas ordered daily .

## Recommendations:

- Optimize inventory management and staffing during the peak hour of **12:00** to ensure sufficient resources for high-demand items.
- Implement targeted marketing campaigns to promote high-revenue-generating pizzas like **Thai Chicken Pizza** , **Barbecue chicken Pizza** , and **California Chicken Pizza** .
- Offer promotions and discounts during off-peak hours to stimulate sales and increase customer foot traffic.
- Analyze customer preferences to identify opportunities for menu optimization and new product development.

THANK YOU