

# COMPREHENSIVE SQL ANALYSIS OF PIZZA SALES



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# SQL Project: Comprehensive Pizza Sales Analysis

This project aimed to perform a thorough analysis of pizza sales using SQL to derive actionable business insights. The primary tasks accomplished in this project include:

- **Total Orders Calculation:** Retrieved the total number of orders placed to understand overall sales volume.
- **Revenue Analysis:** Calculated the total revenue generated from pizza sales by summing up the product of quantity and price for each order.
- **Highest-Priced Pizza Identification:** Determined the highest-priced pizza in the menu.
- **Common Pizza Size:** Identified the most commonly ordered pizza size to gauge customer preferences.
- **Top Pizza Types:** Listed the top 5 most ordered pizza types along with their quantities to recognize popular choices.
- **Category-Wise Quantity:** Joined necessary tables to find the total quantity of each pizza category ordered.
- **Hourly Order Distribution:** Analyzed the distribution of orders by the hour of the day to understand peak order times.
- **Category-Wise Distribution:** Joined relevant tables to find the category-wise distribution of pizzas.
- **Daily Order Averages:** Grouped orders by date and calculated the average number of pizzas ordered per day.
- **Top Revenue-Generating Pizzas:** Identified the top 3 most ordered pizza types based on revenue.
- **Revenue Contribution:** Calculated the percentage contribution of each pizza type to the total revenue.
- **Cumulative Revenue:** Analyzed the cumulative revenue generated over time to observe sales trends.

These analyses provided a comprehensive understanding of pizza sales, helping to optimize inventory, tailor marketing strategies, and improve overall business performance.

# **RETRIEVE THE TOTAL NUMBER OF ORDERS PLACED.**

```
select count(order_id) from orders;
```

Result Grid	
	count(order_id)
▶	21350



# CALCULATE THE TOTAL REVENUE GENERATED FROM PIZZA SALES.

```
select sum(`order_details`.`quantity`*`pizzas`.`price`) as total_Revenue  
from `order_details` join `pizzas` on  
`pizzas`.`pizza_id`=`order_details`.`pizza_id`;
```

	total_Revenue
▶	817860.049999993



# ***IDENTIFY THE HIGHEST-PRICED PIZZA.***

```
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;
```

	<b>name</b>	<b>price</b>
▶	The Greek Pizza	35.95



# **IDENTIFY THE MOST COMMON PIZZA SIZE ORDERED.**

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

	<b>size</b>	<b>No_of_order</b>
▶	L	18526



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

```
select `pizza_types`.`name`,sum(`order_details`.`quantity`) as Quantity  
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 Quantity desc limit 5;
```

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



# **JOIN THE NECESSARY TABLES TO FIND THE TOTAL QUANTITY OF EACH PIZZA CATEGORY ORDERED.**

```
select `pizza_types`.`category`,  
sum(`order_details`.`quantity`) as Total_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`;
```

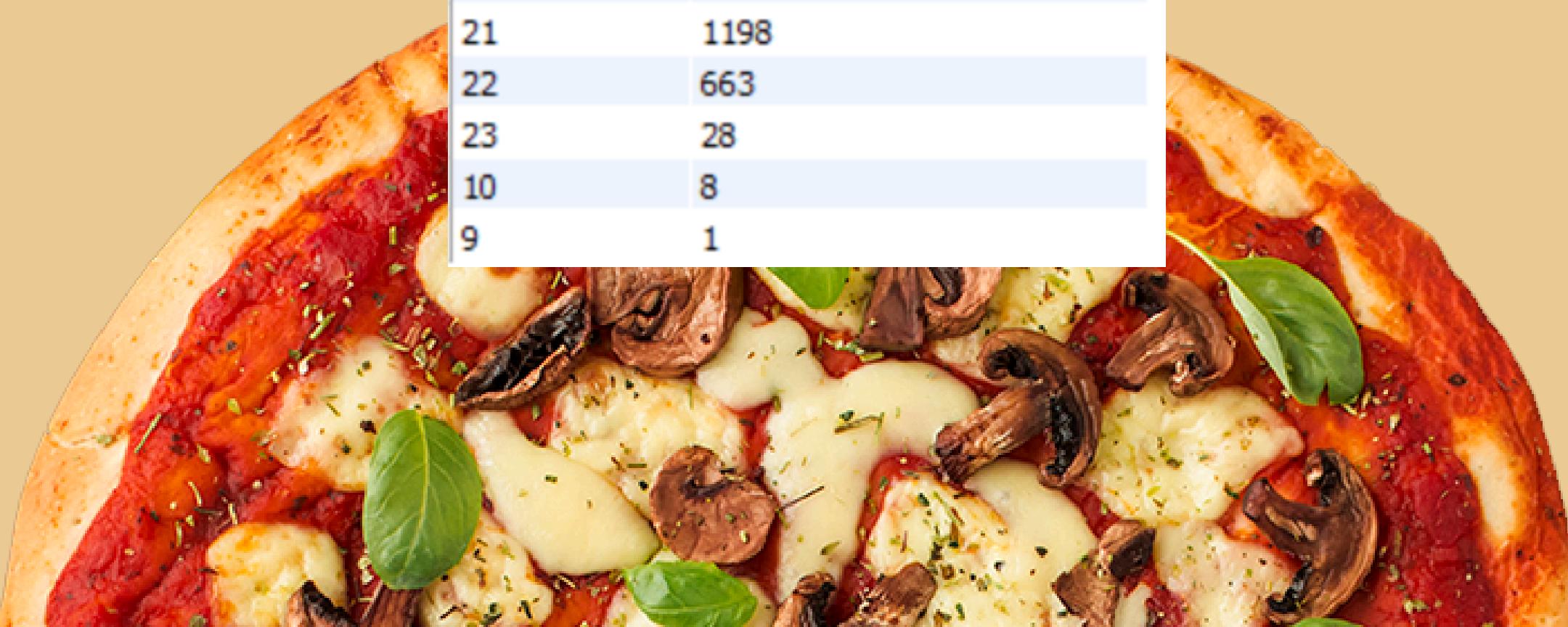
	category	Total_Quantity
▶	Classic	14888
	Veggie	11649
	Supreme	11987
	Chicken	11050



# **DETERMINE THE DISTRIBUTION OF ORDERS BY HOUR OF THE DAY.**

```
select hour(`time`), count(`orders`.`order_id`) from `orders`  
group by hour(`time`);
```

hour(`time`)	count(`orders`.`order_id`)
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



# **JOIN RELEVANT TABLES TO FIND THE CATEGORY-WISE DISTRIBUTION OF PIZZAS.**

```
select `category`, count(`name`) from `pizza_types`  
group by `category`;
```

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



# **GROUP THE ORDERS BY DATE AND CALCULATE THE AVERAGE NUMBER OF PIZZAS ORDERED PER DAY.**

```
select avg(Avg_Order_Quantity) from (SELECT `date`,sum(`order_details`.`quantity`)  
as Avg_Order_Quantity FROM `orders`  
JOIN `order_details` ON `orders`.`order_id` = `order_details`.`order_id`  
GROUP BY `date`)as order_Quantity;
```

avg(Avg_Order_Quantity)
138.4749



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

```
select `pizza_types`.`name`,sum(`pizzas`.`price`*`order_details`.`quantity`) Revenue  
from `pizza_types` join `pizzas` on `pizzas`.`pizza_type_id`=`pizza_types`.`pizza_type_id`  
join `order_details`on `pizzas`.`pizza_id`=`order_details`.`pizza_id`  
group by `pizza_types`.`name` order by Revenue desc limit 3;
```

name	Revenue
The Thai Chicken Pizza	43434.25
The Barbecue Chicken Pizza	42768
The California Chicken Pizza	41409.5



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

```
select `pizza_types`.`category`,round(sum(`pizzas`.`price`*`order_details`.`quantity`)
/ (select(sum(`order_details`.`quantity`*`pizzas`.`price`))
from `order_details` join `pizzas` on
`pizzas`.`pizza_id`=`order_details`.`pizza_id`)*100,2) as Revenue
from `pizza_types` join `pizzas` on `pizzas`.`pizza_type_id`=`pizza_types`.`pizza_type_id`
join `order_details`on `pizzas`.`pizza_id`=`order_details`.`pizza_id`
group by `pizza_types`.`category` order by Revenue;
```

category	Revenue
Veggie	23.68
Chicken	23.96
Supreme	25.46
Classic	26.91



# **ANALYZE THE CUMULATIVE REVENUE GENERATED OVER TIME.**

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

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
2015-01-16	36937.65
2015-01-17	39001.75



# OBSERVATIONS

**1. Order Volume:** A total of 21,350 orders were placed, showcasing significant customer engagement and high demand for the pizzas.

**2. Revenue Insights:** The total revenue generated from pizza sales was \$817,860, reflecting a strong financial performance and indicating robust customer demand and successful sales strategies.

**3. Product Pricing:** The highest-priced pizza is "The Greek Pizza," priced at \$35.95. This indicates it is a premium option, potentially featuring unique or high-quality ingredients that justify the higher cost.

**4. Customer Preferences:** The most common pizza size ordered is "L," with 18,526 orders. This indicates a strong preference for larger pizzas among customers.

## 5. Top 5 Most Ordered Pizza Types:

- The Classic Deluxe Pizza - 2,453 orders
- The Barbecue Chicken Pizza - 2,432 orders
- The Hawaiian Pizza - 2,422 orders
- The Pepperoni Pizza - 2,418 orders
- The Thai Chicken Pizza - 2,371 orders

These results reveal the most popular pizzas among customers, with preferences heavily favoring these five types. Their high order quantities suggest they are likely favorites or offer appealing combinations of flavors that drive customer choices.

## 6. Total Quantity by Pizza Category:

- Veggie - 11,649 orders
- Supreme - 11,987 orders
- Classic - 14,888 orders
- Chicken - 11,050 orders

These quantities indicate the popularity of different pizza categories, with the "Classic" category having the highest total quantity ordered, suggesting it is the most favored among customers.

# OBSERVATIONS

## 7. Distribution of Orders by Hour of the Day:

The distribution shows a clear peak in order volume during the late afternoon to early evening hours, particularly between 5 PM and 7 PM, with the highest number of orders at 6 PM (2,399 orders). This suggests that these hours are prime times for customer orders, likely reflecting increased dining activity or peak delivery periods. The order volume significantly drops after 10 PM, with very few orders placed late at night. This pattern can help optimize staffing and delivery schedules to align with peak ordering times and improve overall operational efficiency.

## 8. Category-Wise Distribution of Pizzas:

The distribution of pizza categories reveals the following insights:

- Variety within Categories: Both "Supreme" and "Veggie" categories have the highest variety with 9 types each. This suggests a broad range of options within these categories, catering to diverse customer preferences.
- Classic Category: With 8 types, the "Classic" category also offers a substantial variety, though slightly fewer options compared to "Supreme" and "Veggie."
- Chicken Category: The "Chicken" category has the fewest options, with 6 types. This indicates a more focused selection compared to the other categories, potentially highlighting either a more specialized offering or a targeted customer base.

This categorization helps understand the range of product offerings available in each category and can inform decisions about menu expansion or adjustments based on customer preferences and sales performance.

**9. Average Number of Pizzas Ordered per Day:** The average number of pizzas ordered per day is 138.47. This metric indicates a steady level of daily demand and helps in understanding overall sales patterns, which can be useful for inventory management, staffing, and optimizing delivery operations.

# OBSERVATIONS

## 10. Top 3 Most Ordered Pizza Types Based on Revenue:

- The Thai Chicken Pizza - \$43,434.25
- The Barbecue Chicken Pizza - \$42,768.00
- The California Chicken Pizza - \$41,409.50

These pizzas are the top revenue generators, indicating they are highly profitable and popular among customers. Their high revenue contributions highlight their importance in the overall sales strategy.

## 11. Percentage Contribution of Each Pizza Type to Total Revenue:

- Veggie - 23.68%
- Chicken - 23.96%
- Supreme - 25.46%
- Classic - 26.91%

The "Classic" category contributes the highest percentage to total revenue at 26.91%, followed closely by the "Supreme" category at 25.46%. The "Chicken" and "Veggie" categories contribute 23.96% and 23.68%, respectively. These percentages reflect the relative financial impact of each category, indicating which types are most influential in driving revenue.

## 12. The cumulative revenue:

data shows a consistent upward trend over time from January 1, 2015, to December 31, 2015. This steady increase indicates a positive growth pattern in revenue. Key observations include:

- Steady Growth: The revenue consistently rises each day, demonstrating a stable increase without significant fluctuations.
- Rapid Increase: Early months exhibit a relatively faster increase in cumulative revenue, with substantial gains.
- Month-end Peaks: The cumulative revenue grows more substantially towards the end of each month, suggesting potential end-of-month sales boosts or higher activity periods.
- Year-end Surge: The revenue exhibits a notable surge in the final months, peaking significantly by December, which could be attributed to seasonal factors such as holidays or year-end promotions.

Overall, the revenue growth is progressive, reflecting a healthy and expanding business performance throughout the year.

# **THANK YOU!**

**Thank you for reviewing this project. Your feedback and suggestions are highly appreciated and will help me improve further. If you have any questions or require additional information, please do not hesitate to contact me.**

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