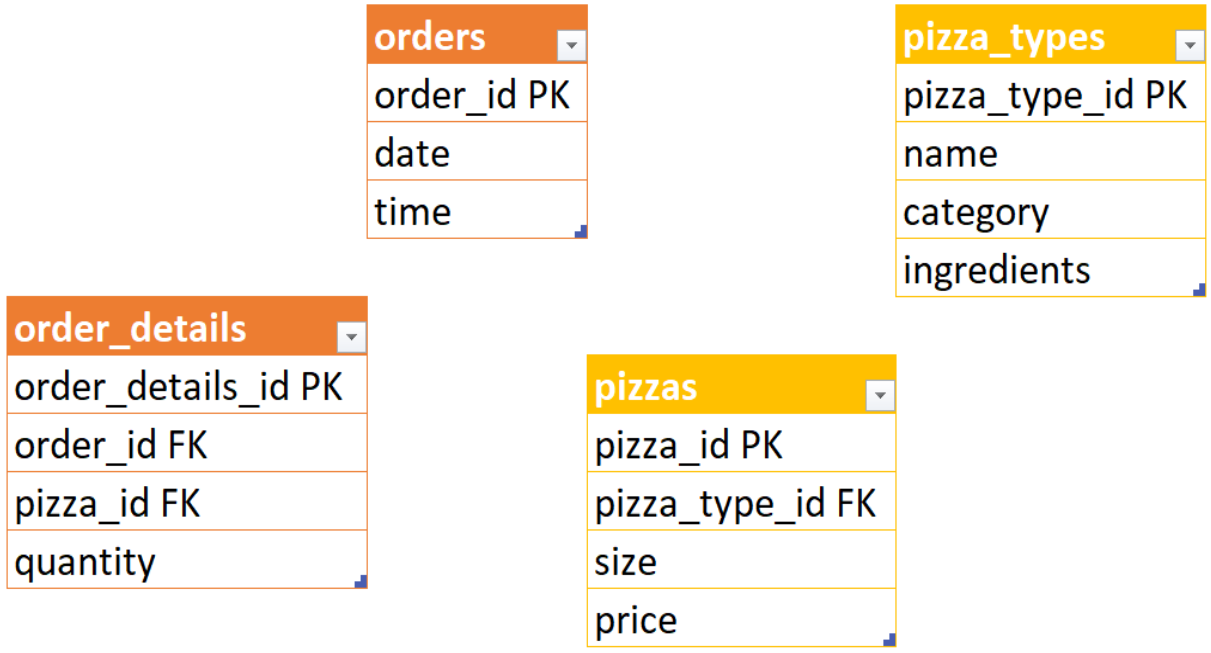
PIZZA SALES ANALYSIS

Welcome to the analysis of our pizza dataset, where we delve into the world of orders, pizzas, and flavors to uncover valuable insights and trends.

Introduction

A year's worth of sales from a fictitious pizza place, including the date and time of each order and the pizzas served, with additional details on the type, size, quantity, price, and ingredients.



Data Overview

- Before we dive into the specifies, let's start with an overview of our pizza dataset, spanning orders, order details, pizzas, and pizza types.
- This dataset offers a comprehensive snapshot of our pizza business, capturing crucial information about customer orders, pizza characteristics, and menu offerings.
- Our analysis journey began by exploring the raw data, understanding the relationships between tables, and identifying any data quality issues or anomalies.
- We then performed data cleaning to ensure accuracy and consistency, addressing missing values, outliers, and inconsistencies within the dataset.
- Next, we applied data transformation techniques to derive relevant metrics, calculate averages, and generate aggregated views to facilitate analysis.

Q1 What is the total number of orders placed within a specific time period?

```
SELECT
    month(date_and_time),
    COUNT(order_id) total_orders
FROM
    orders
GROUP BY month(date_and_time);
```

month(date_and_time)	total_orders
1	1845
2	1685
3	1840
4	1799
5	1853
6	1773
7	1935
8	1841
9	1661
10	1646
11	1792
12	1680

Q2 What is the average quantity of pizzas ordered per order?

```
SELECT
    AVG(quantity) avg_quantity
FROM
    order_details;
```

avg_quantity
1.0196

Q3 Which pizza type is the most popular among customers?

```sql
SELECT
    pt.name most_popular,
    COUNT(o.order_id) total_orders
FROM
    orders o
        JOIN
    order_details od ON od.order_id = o.order_id
        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 most_popular
ORDER BY total_orders DESC;
```

most_popular	total_orders
The Classic Deluxe Pizza	2416
The Barbecue Chicken Pizza	2372
The Hawaiian Pizza	2370
The Pepperoni Pizza	2369
The Thai Chicken Pizza	2315
The California Chicken Pizza	2302
The Sicilian Pizza	1887
The Spicy Italian Pizza	1887
The Southwest Chicken Pi...	1885
The Four Cheese Pizza	1850
The Italian Supreme Pizza	1849
The Big Meat Pizza	1811
The Vegetables + Vegeta...	1510

Q4 What is the total revenue generated from pizza orders?

```
SELECT
    ROUND(SUM(p.price * od.quantity)) total_revenue
FROM
    order_details od
        JOIN
    pizzas p ON od.pizza_id = p.pizza_id;
```

	total_revenue
▶	817860

Q5 How does the average order quantity vary based on the pizza size?

```
SELECT
    p.size, ROUND(AVG(od.quantity), 2) avg_order_quantity
FROM
    order_details od
        JOIN
    pizzas p ON od.pizza_id = p.pizza_id
GROUP BY p.size;
```

size	avg_order_quantity
M	1.02
L	1.02
S	1.02
XL	1.01
XXL	1.00

Q6 Which category of pizzas (Classic, Chicken, Supreme, Veggie) has the highest sales?

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

	category	sales
▶	Classic	14888
	Supreme	11987
	Veggie	11649
	Chicken	11050

Q7 How does the average price per pizza vary based on the pizza size?

```
SELECT
    p.size, ROUND(AVG(p.price),2) avg_price
FROM
    order_details od
        JOIN
    pizzas p ON od.pizza_id = p.pizza_id
GROUP BY p.size;
```

size	avg_price
L	19.8
M	15.95
S	12.36
XL	25.5
XXL	35.95

Q8 How does the revenue from pizza orders vary by date or month?

```
SELECT
    MONTHNAME(date_and_time) months,
    ROUND(SUM(p.price * od.quantity)) 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 months;
```

months	revenue
January	69793
February	65160
March	70397
April	68737
May	71403
June	68230
July	72558
August	68278
September	64180
October	64028
November	70395
December	64701

Q9 Which ingredients are most commonly used across all pizza types?

```
SELECT
    pt.ingredients, COUNT(od.order_id) commonly_used
FROM
    order_details od
        JOIN
    pizzas p ON od.pizza_id = p.pizza_id
        JOIN
    pizza_types pt ON pt.pizza_type_id = p.pizza_type_id
GROUP BY pt.ingredients
ORDER BY commonly_used DESC;
```

ingredients	commonly_used
Pepperoni, Mus...	2416
Barbecued Chic...	2372
Sliced Ham, Pin...	2370
Mozzarella Che...	2369
Chicken, Pinea...	2315
Chicken, Artich...	2302
Coarse Sicilian ...	1887
Capocollo, Tom...	1887
Chicken, Tomat...	1885
Ricotta Cheese,...	1850
Calabrese Sala...	1849
Bacon, Peppero...	1811
Mushrooms, To...	1510

Q10 What are the top most frequently ordered pizzas per month?

```sql
WITH total AS(
SELECT
    MONTH(date_and_time) months,
    pt.name,
    COUNT(od.quantity) quantity,
    ROW_NUMBER() OVER(PARTITION BY MONTH(date_and_time) order BY COUNT(od.quantity) DESC) AS r_n
FROM
    orders o
        JOIN
    order_details od ON od.order_id = o.order_id
        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 months, pt.name
ORDER BY months ASC, quantity DESC
    )
SELECT months, name FROM total WHERE r_n = 1;
```

months	name
1	The Pepperoni Pizza
2	The Pepperoni Pizza
3	The Barbecue Chicken Pizza
4	The Classic Deluxe Pizza
5	The Pepperoni Pizza
6	The California Chicken Pizza
7	The Pepperoni Pizza
8	The California Chicken Pizza
9	The Classic Deluxe Pizza
10	The Classic Deluxe Pizza
11	The Hawaiian Pizza
12	The Hawaiian Pizza

Conclusion

Based on the analysis conducted, the following key insights have been derived:

- Seasonal Sales Surge: Significant increases in sales were observed during the months of May and July, coinciding with vacation periods when people tend to travel more and dine out. This presents an opportunity to capitalize on these peak periods through targeted marketing strategies and resource allocation.
- Popular Pizza Choice: The "Classic Deluxe" pizza emerged as the most frequently ordered option. Its popularity can be attributed to its availability in small, medium, and large sizes, catering to a wide range of customer preferences. Ensuring consistent availability and quality of this pizza variant can further enhance customer satisfaction and drive sales.
- Least Ordered Pizza: The "Bie Carre" pizza recorded the lowest number of orders. This can be attributed to its limited availability in larger sizes only, such as large and extra-large. Exploring ways to offer this pizza in smaller sizes or adjusting its positioning within the menu could potentially increase its appeal and drive customer interest.

Next Step

- These insights provide valuable information for strategic decision-making, enabling targeted marketing efforts, menu optimization, and resource allocation to align with customer preferences. By leveraging these findings, we can enhance customer satisfaction, drive sales growth, and maintain a competitive edge in the pizza industry.
- After Exploratory Data Analysis using MySQL, we have to harnessed the power of data visualization using Power BI to present our findings effectively, leveraging charts, graphs, and visuals to bring the story of our pizza data to life.