DATA ANALYTICS PROJECT

PIZZA SALES DATA ANALYSIS USING SQL AND POWER BI

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OBJECTIVE:

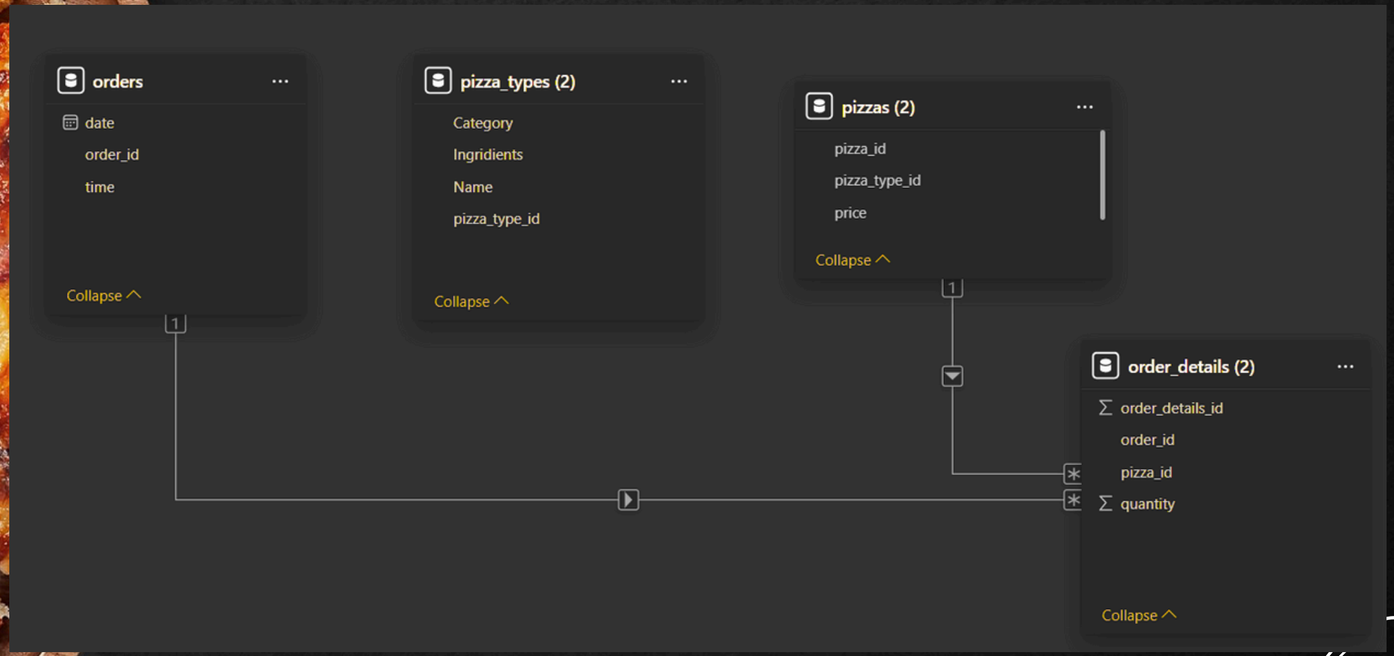
- To analyze pizza sales data using SQL queries.
- To uncover insights about sales trends, popular pizzas, and revenue patterns.

TOOLS and Skills:

- **SQL: For querying and data extraction.**
- **Power BI: For visualization and storytelling.**
- **Canva: For presentation design.**

Tables used:

- orders – Order details with order_id, date, and time.
- order_details – Pizza_id and quantity per order.
- pizzas – Pizza type, size, and price.
- pizza_types – Category and name of pizzas.



1. RETRIEVE THE TOTAL NUMBER OF ORDERS PLACED.

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

Result Grid

	total_orders
▶	21350

2. 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

3.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;
```

Result Grid | Filter Rows:

	name	price
▶	The Greek Pizza	35.95

4.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	order_count
▶	L	18526
	M	15385
	S	14137
	XL	544
	XXL	28

5.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

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

```
select pizza_types.category,
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.category
order by quantity desc;
```

category	quantity
Classic	14888
Supreme	11987
Veggie	11649
Chicken	11050

7.Determine the distribution of orders by hour of the day.

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

hour	order_count
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

8.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

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

```
select round(avg(quantity),0) as avg_pizzas from
(select orders.order_date, sum(order_details.quantity) as quantity
from orders join order_details
on orders.order_id = order_details.order_id
group by orders.order_date )as order_quantity;
```

avg_pizzas
138

10.Determine the top 3 most ordered pizza types based on revenue.

```
sum(order_details.quantity * pizzas.price)as revenue
from pizza_types join pizzas
on pizzas.pizza_type_id = pizza_types.pizza_type_id
join order_details
on order_details.pizza_id = pizzas.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

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

```
select pizza_types.category,
round (sum(order_details.quantity * pizzas.price) / (select ROUND(sum(order_details.quantity* pizzas.price),2) as total_sales
      from
   order_details
                  join
                pizzas on pizzas.pizza_id = order_details.pizza_id)*100,2)as revenue
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.category  order by revenue desc;
```

category	revenue
Classic	26.91
Supreme	25.46
Chicken	23.96
Veggie	23.68

12.ANALYZE THE CUMULATIVE REVENUE GENERATED OVER TIME.

```
select order_date,
sum(revenue) over(order by order_date) as cumulative_revenue
from
(select orders.order_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.order_date) as sales;
```

order_date	cumulative_revenue
2015-01-01	2713.850000000004
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	23990.350000000002
2015-01-11	25862.65
2015-01-12	27781.7
2015-01-13	29831.300000000003
2015-01-14	32358.700000000004

13.Determine the top 3 most ordered pizza types based on revenue for each pizza category.

```
sum(order_details.quantity * pizzas.price)as revenue
from pizza_types join pizzas
on pizzas.pizza_type_id = pizza_types.pizza_type_id
join order_details
on order_details.pizza_id = pizzas.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

KEY FINDINGS:

- THE MOST POPULAR PIZZA SIZE IS : LARGE(18526)

- THE HIGHEST-SELLING PIZZA IS :THAI CHICKEN PIZZA
- PEAK ORDERING TIME: 12PMHOUR.
- THAI CHICKEN PIZZA (43434.25)CATEGORY CONTRIBUTES THE MOST REVENUE.

Business Suggestion:

Focus marketing on top-selling pizza types during peak hours.

CONCLUSION:

The Pizza Sales Data Analysis project provided a comprehensive understanding of how structured query language (SQL) and Power BI can be integrated to perform real-world business analytics. Using SQL, various queries were executed to calculate total orders, total revenue, most ordered pizzas, category-wise performance, and revenue contribution. These outputs were visualized in Power BI through interactive dashboards and graphs for better interpretation. The insights derived from the data revealed the most profitable pizzas, popular sizes, peak order times, and key customer preferences. This analytical process demonstrates how data-driven strategies can optimize decision-making in the food and retail industry.

In conclusion, the project reinforces that data analytics is an essential tool for improving business performance, enabling stakeholders to make informed, evidence-based decisions.

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THANK YOU!