Pizza Sales Analysis

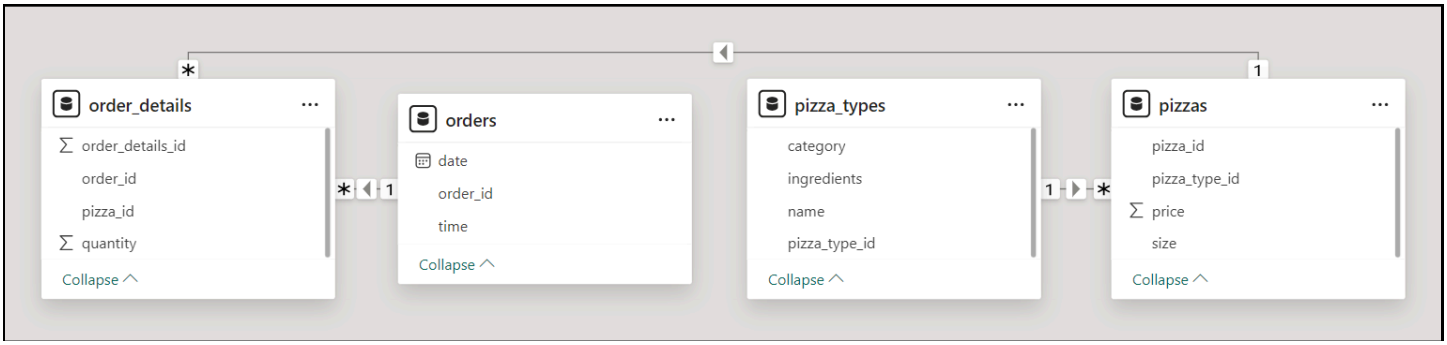
in SQL

This report aims to analyze and interpret pizza sales data to gain valuable insights into customer preferences and sales performance. Utilizing SQL queries, various aspects of the sales were examined to address business questions.

- Following questions were addresses:

1. Calculate the total revenue generated from pizza sales.
2. Retrieve the total number of orders placed.
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. Join the necessary tables to find the total quantity of each pizza category ordered.
7. Determine the distribution of orders by hour of the day.
8. Join relevant tables to 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.

Table Schema



```sql
--Calculate the total revenue generated from pizza sales.
Select round(sum(p.price * O.quantity),2) as total_revenue
from pizzas P
JOIN
order_details O
ON P.pizza_id=O.pizza_id
```

Results | Messages

	total_revenue
1	1635720.10

- Total no of revenue generated from pizza sales are 1635720.10 bucks
- Evaluating total revenue provides a measure of financial performance.

```sql
--Retrieve the total number of orders placed.
select COUNT(order_id)as total_orders from orders
```

Results | Messages

	total_orders
1	21350

- The total number of orders placed are 21530,this helps us understand overall demand

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```sql
--Identify the highest-priced pizza.
Select TOP 1 p.price,pt.name
from pizzas p
join
pizza_types pt
on p.pizza_type_id=pt.pizza_type_id
order by p.price desc
```

Results | Messages

	price	name
1	35.95	The Greek Pizza

- The highest-priced pizza is The Greek Pizza, priced at $35.95.
- This helps helps us set prices better and learn about how much customers are willing to spend.

```sql
--Identify the most common pizza size ordered.
select p.size, COUNT(o.order_details_id) as order_count
from pizzas p
join
order_details o
on
p.pizza_id=o.pizza_id
group by p.size
order by order_count desc
```

Results | Messages

size	order_count
L	37052
M	30770
S	28274
XL	1088
XXL	56

- The most common pizza size ordered is Large ,this allows us to Understand the popular pizza sizes which will assists in inventory and production planning.

```sql
--List the top 5 most ordered pizza types along with their quantities.
 select TOP 5 pt.name, SUM(o.quantity) as quantity
 from pizza_types pt join pizzas p
 on pt.pizza_type_id =p.pizza_type_id
 join order_details o
 on o.pizza_id= p.pizza_id
 group by pt.name
 order by quantity desc
```

Results | Messages

	name	quantity
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

- The top sellers helps focus marketing and promotional efforts.

```sql
--Join the necessary tables to find the total quantity
--of each pizza category ordered.
select pt.category, SUM(o.quantity) as quantity
from pizza_types pt join pizzas p
on pt.pizza_type_id =p.pizza_type_id
join order_details o
on o.pizza_id= p.pizza_id
group by pt.category
order by quantity desc
```

Results | Messages

	category	quantity
1	Classic	29776
2	Supreme	23974
3	Veggie	23298
4	Chicken	22100

- The Classic category is more popular than Supreme, followed closely by Veggie.
- Notably, the Chicken category has the least quantity sold.

```sql
-- Determine the distribution of orders by hour of the day.
select datepart(hour,time) as order_hour ,
count(order_id) as order_count from orders
group by datepart(hour,time)
order by order_hour
```

Results Messages

	order_hour	order_count
1	9	1
2	10	8
3	11	1231
4	12	2520
5	13	2455
6	14	1472
7	15	1468
8	16	1920
9	17	2336
10	18	2399
11	19	2009
12	20	1642
13	21	1198
14	22	663
15	23	28

- Most orders are placed around midday.
- Analyzing order distribution by hour can optimize staffing and operational efficiency.

```
--Join relevant tables to find the category-wise distribution of pizzas.
select category ,
COUNT(name) as distribution_of_category from pizza_types
group by category
```

Results Messages

	category	distribution_of_category
1	Chicken	6
2	Classic	8
3	Supreme	9
4	Veggie	9

- The analysis shows that both the Veggie and Supreme categories have the highest distribution, with 9 types of pizzas each followed by classic category with 8 types

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```sql
--Group the orders by date and
--calculate the average number of pizzas ordered per day.
Select avg(quantity) as avg_no_of_pizzas from
(select o.date, sum(od.quantity) as quantity
from orders o join order_details od
on o.order_id=od.order_id
group by o.date) as order_quantity
```

Results | Messages

	avg_no_of_pizzas
1	138

- On average, 138 pizzas are ordered daily.

```sql
--Determine the top 3 most ordered pizza types based on revenue.
Select top 3 pt.name ,
round(sum(p.price * O.quantity),2) as revenue
from pizzas P JOIN order_details O
ON P.pizza_id=O.pizza_id
join pizza_types pt
on P.pizza_type_id=PT.pizza_type_id
group by pt.name
order by revenue desc
```

Results | Messages

	name	revenue
1	The Thai Chicken Pizza	86868.50
2	The Barbecue Chicken Pizza	85536.00
3	The California Chicken Pizza	82819.00

- The results shows the popularity of these particular pizza among Customers aka top revenue-generating pizzas

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```sql
--Calculate the percentage contribution of each pizza type to total revenue.
select pt.category,
(SUM(p.price * o.quantity) * 100.0 / (SELECT SUM(p.price * o.quantity)
 FROM pizzas p JOIN order_details o ON p.pizza_id = o.pizza_id))
 AS revenue_percentage
from pizzas p join order_details o
on p.pizza_id=o.pizza_id
join pizza_types pt
on p.pizza_type_id=pt.pizza_type_id
group by pt.category
order by revenue_percentage desc
```

Results | Messages

	category	revenue_percentage
1	Classic	26.905960
2	Supreme	25.456311
3	Chicken	23.955137
4	Veggie	23.682590

- Based on our analysis we found that the Classic pizza type contributes the most to total revenue at 26.91%, followed closely by Supreme, Chicken, and Veggie.
- Notably, the Veggie pizza has the lowest revenue contribution at 23.68%.

```sql
-- Analyze the cumulative revenue generated over time.
select date,
sum(revenue) over(order by date) as cum_revenue
from
(Select orders.date,
sum(od.quantity * p.price) as revenue
from order_details od join pizzas p
on od.pizza_id = p.pizza_id
join orders
on orders.order_id = od.order_id
group by orders.date) as sales
```

Results | Messages

	date	cum_revenue
1	2015-01-01	5427.70
2	2015-01-02	10891.50
3	2015-01-03	16216.30
4	2015-01-04	19727.20
5	2015-01-05	23859.10
6	2015-01-06	28717.00
7	2015-01-07	33121.40
8	2015-01-08	38798.10
9	2015-01-09	43052.80
10	2015-01-10	47980.70
11	2015-01-11	51725.30
12	2015-01-12	55563.40

- The objective to analyze the cumulative revenue generated everyday is to understand the growth in sales.

```sql
-- Determine the top 3 most ordered pizza types
--based on revenue for each pizza category.
select category,name, revenue from
(select category, name , revenue,
rank() over(partition by category order by revenue desc)
as rn from
(select pt.category ,pt.name,
sum(od.quantity * p.price) as revenue
from pizza_types pt join pizzas p
on pt.pizza_type_id=p.pizza_type_id
join order_details od
on od.pizza_id=p.pizza_id
group by pt.category, pt.name) as a)as b
where rn <= 3
order by category,rn
```

Results | Messages

	category	name	revenue
1	Chicken	The Thai Chicken Pizza	86868.50
2	Chicken	The Barbecue Chicken Pizza	85536.00
3	Chicken	The California Chicken Pizza	82819.00
4	Classic	The Classic Deluxe Pizza	76361.00
5	Classic	The Hawaiian Pizza	64546.50
6	Classic	The Pepperoni Pizza	60323.50
7	Supreme	The Spicy Italian Pizza	69662.50
8	Supreme	The Italian Supreme Pizza	66953.50
9	Supreme	The Sicilian Pizza	61881.00
10	Veggie	The Four Cheese Pizza	64531.40
11	Veggie	The Mexicana Pizza	53561.50
12	Veggie	The Five Cheese Pizza	52133.00

- This highlight the pizzas that have consistently contributed the most to overall sales.

Summary

The primary purpose of this analysis is to provide understanding of sales performance and customer preferences.

The findings from this report offer actionable insights for business strategy, including pricing, inventory management, marketing, and operational efficiency.