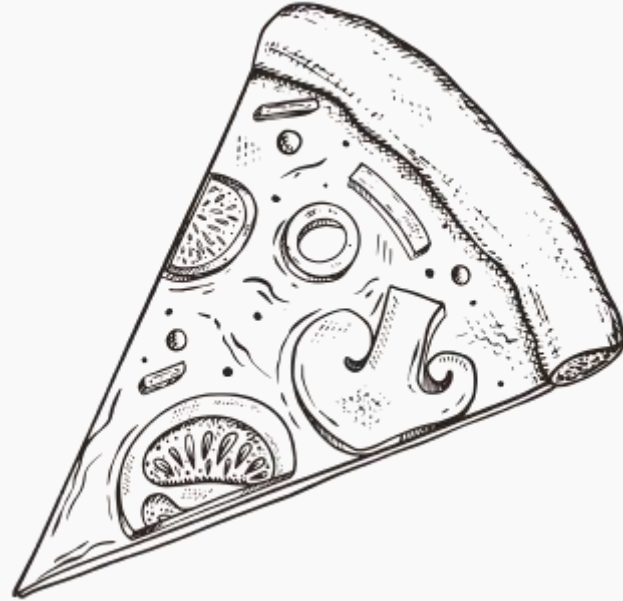


Pizza Sales Analysis (using SQL)

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Objective

The objective of this project is to analyze pizza sales data to evaluate restaurant performance and identify key sales trends. By assessing total sales, customer preferences, and peak sales periods, we aim to provide actionable insights that will support data-driven decision-making, optimize operational strategies, and plan effectively for future growth.

Agenda

BASIC

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.

INTERMEDIATE

1. Join the necessary tables to find the total quantity of each pizza category ordered.
2. Determine the distribution of orders by hour of the day.
3. Join relevant tables to find the category-wise distribution of pizzas.
4. Group the orders by date and calculate the average number of pizzas ordered per day.
5. Determine the top 3 most ordered pizza types based on revenue.

ADVANCED

1. Calculate the percentage contribution of each pizza type to total revenue.
2. Analyze the cumulative revenue generated over time.
3. Determine the top 3 most ordered pizza types based on revenue for each pizza category.

Retrieve the total number of orders placed.

Query

```
SELECT  
    COUNT(order_id) AS total_orders  
FROM  
    orders;
```

Output

	total_orders
	21350

Calculate the total revenue generated from pizza sales.

Query

```
SELECT
    ROUND(SUM(order_details.quantity * pizzas.price),
          2) AS total_revenue
FROM
    order_details
    JOIN
    pizzas ON pizzas.pizza_id = order_details.pizza_id;
```

Output

	total_revenue
	817860.05

Identify the highest-priced pizza.

Query

```
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;
```

Output

	name	price
	The Greek Pizza	35.95

Identify the most common pizza size ordered.

Query

```
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;
```

Output

	size	order_count
	L	18526
	M	15385
	S	14137
	XL	544
	XXL	28

List the top 5 most ordered pizza types along with their quantities.

Query

```
SELECT
    pizza_types.name,
    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 order_details.pizza_id = pizzas.pizza_id
GROUP BY pizza_types.name
ORDER BY total_quantity DESC
LIMIT 5;
```

Output

	name	total_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.

Query

```
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;
```

Output

	size	quantity
	Classic	14888
	Supreme	11987
	Veggie	11649
	Chicken	11050

Determine the distribution of orders by hour of the day.

Query

```
SELECT
    HOUR(order_time), COUNT(order_id) AS oder_count
FROM
    orders
GROUP BY HOUR(order_time);
```

Output

	HOUR(order_time)	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
	9	1

Join relevant tables to find the category-wise distribution of pizzas.

Query

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

Output

	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.

Query

```
SELECT
    ROUND(AVG(quantity), 0) AS Average_orders
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;
```

Output

	Average_orders
	138

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

Query

```
SELECT
    pizza_types.name,
    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;
```

Output

	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.

Query

```
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;
```

Output

	Category	Revenue
	Classic	26.91
	Supreme	25.46
	Veggie	23.96
	Chicken	23.68

Analyze the cumulative revenue generated over time.

Query

```
SELECT order_date, SUM(revenue) OVER(ORDER BY order_date) AS Cum_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;
```

Output

	order_date	Cum_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
	and so on	

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

Query

```
select name, revenue, category from
(select category, name, revenue,
rank() over(partition by category order by revenue desc) as p
from
(SELECT
    pizza_types.category,
    pizza_types.name,
    SUM((order_details.quantity) * pizzas.price) 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 , pizza_types.name) as r) as s
where p <= 3;
```

Output

	name	revenue	category
	The Thai Chicken Pizza	43434.25	Chicken
	The Barbecue Chicken Pizza	42768	Chicken
	The California Chicken Pizza	41409.5	Chicken
	The Classic Deluxe Pizza	38180.5	Classic
	The Hawaiian Pizza	32273.25	Classic
	The Pepperoni Pizza	30161.75	Classic
	The Spicy Italian Pizza	34831.25	Supreme
	The Italian Supreme Pizza	33476.75	Supreme
	The Sicilian Pizza	30940.5	Supreme
	The Four Cheese Pizza	32265.70	Veggie
	The Mexicana Pizza	26780.75	Veggie
	The Five Cheese Pizza	26066.5	Veggie

Insights

- i. Large pizzas are the most frequently ordered size, with a total of 18,526 orders.
- ii. The Thai Chicken Pizza stands out as a top revenue generator.
- iii. The average pizza sale amounts to 138.
- iv. The Veggie category reaches a peak of 9.
- v. The total revenue from pizza sales is \$817,860.05.
- vi. The Classic Deluxe Pizza is the most popular, with 2,453 orders.
- vii. Classic pizzas lead in revenue contribution, accounting for 26.91% of total sales.

Conclusion

Through the analysis of pizza sales data, we have gained valuable insights into customer preferences and behaviors, which are crucial for thriving in a competitive market. Our findings reveal which menu categories drive higher sales, the impact of pricing strategies on revenue, and key customer choices that influence purchasing patterns. By understanding these elements, we can refine our offerings to better meet customer demands, enhance pricing strategies, and improve overall operational efficiency. The data-driven insights from this project will enable us to make informed decisions that not only enhance the customer experience but also support sustainable growth and strategic planning for the future.

Thanks!

I hope you found the analysis helpful. Your feedback is important to me and helps improve future presentations. Feel free to share any comments or questions you have. I appreciate your input and look forward to hearing from you!

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