

PIZZA SALES ANALYSIS USING SQL



INTRODUCTION

"Hello everyone, I'm Vishal Tyagi, an aspiring data analyst. In this project, I've conducted a comprehensive pizza sales analysis using SQL queries to tackle key business challenges. Through this analysis, I aim to uncover insights that can inform business decisions and drive growth in the pizza industry."



OBJECTIVE

- To conduct a comprehensive analysis of pizza sales data using SQL queries to uncover key insights and trends, and to provide actionable recommendations to increase sales and drive business growth.
- ❑ **Specifically, this project aims to:**
 1. Analyze sales trends and patterns to identify opportunities for growth- Identify top-selling pizza types, sizes, and categories to inform menu engineering and marketing strategies
 2. Determine the distribution of orders by hour, day, and month to optimize staffing and inventory management- Calculate revenue contribution by pizza type and category to identify areas for improvement.
 3. Develop data-driven insights to support business decisions and drive growth in the pizza industry.



QUESTIONS THAT WILL BE ANSWERED:-

BASIC :

- Retrieve the total number of orders placed.
- Calculate the total revenue generated from pizza sales.
- Identify the highest-priced pizza.
- Identify the most common pizza size ordered.
- List the top 5 most ordered pizza types along with their quantities.

Intermediate:

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

Advanced:

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



- RETERIVE THE TOTAL NUMBER OF ORDERS PLACED

SELECT

COUNT (ORDER_ID) **AS** TOTAL_ORDERS

FROM

ORDERS;

Result Grid	
	TOTAL_ORDERS
▶	21350

- CALCULATED THE TOTAL REVENUE GENERATED FROM PIZZA SALES.

```
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;
```

Result Grid	
	TOTAL_REVENUE
▶	817860.05

- IDENTIFY THE HIGHEST PRICE 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 Row
	NAME	PRICE	
▶	The Greek Pizza	35.95	

- 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;
```

Result Grid			Filter
	SIZE	ORDER_COUNT	
▶	L	18526	
	M	15385	
	S	14137	
	XL	544	
	XXL	28	

- LIST THE TOP FIVE MOST ORDERED PIZZA TYPES ALONG WITH THEIR QUANTITY.

```
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;
```

Result Grid			Filter Rows:
	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 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;
```

Result Grid			Filter R
	CATEGORY	QUANTITY	
▶	Classic	14888	
	Supreme	11987	
	Veggie	11649	
	Chicken	11050	

- 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;
```

Result Grid			Filter F
	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	
	9	1	

- GROUP THE ORDERS BY DATE AND CALCULATE THE NUMBER OF PIZZAS ORDER PER DAY.

```
SELECT
    ROUND(AVG(QUANTITY), 0) AS AVG_PIZZA_ORDERED_PER_DAY
FROM
    (SELECT
        ORDERS.ORDER_DATE AS DATE,
        SUM(ORDER_DETAILS.QUANTITY) AS QUANTITY
    FROM
        ORDERS
    JOIN ORDER_DETAILS ON ORDERS.ORDER_ID = ORDER_DETAILS.ORDER_ID
    GROUP BY DATE) AS ORDER_QUANTITY;
```

Result Grid		Filter Rows:
	AVG_PIZZA_ORDERED_PER_DAY	
▶	138	

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

```
SELECT
    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.NAME
ORDER BY REVENUE DESC
LIMIT 3;
```

Result Grid			Filter Rows:
	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(ORDER_DETAILS.QUANTITY * PIZZAS.PRICE) / (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) * 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;
```

Result Grid			Filter
	CATEGORY	REVENUE	
▶	Classic	26.91	
	Supreme	25.46	
	Chicken	23.96	
	Veggie	23.68	

- ANALYZE THE CUMULATIVE REVENUE GENERATED OVER TIME.

```
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;
```

Result Grid			Filter Rows:
	ORDER_DATE	CUM_REVENUE	
▶	2015-01-01	2713.85000000000004	
	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	23990.3500000000002	
	2015-01-11	25862.65	
	2015-01-12	27781.7	
	2015-01-13	29831.3000000000003	
	2015-01-14	32358.7000000000004	
	2015-01-15	34343.500000000001	
	2015-01-16	36937.650000000001	
	2015-01-17	39001.750000000001	
	2015-01-18	40978.6000000000006	
	2015-01-19	43365.750000000001	
	2015-01-20	45763.650000000001	
	2015-01-21	47804.200000000001	
	2015-01-22	50300.900000000001	
	2015-01-23	52724.6000000000006	
	2015-01-24	55013.8500000000006	
	2015-01-25	56631.400000000001	
	2015-01-26	58515.800000000001	

- 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 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 A) AS B
WHERE RN <= 3;

```

Result Grid			
		Filter Rows:	Export:
	CATEGORY	NAME	REVENUE
▶	Chicken	The Thai Chicken Pizza	43434.25
	Chicken	The Barbecue Chicken Pizza	42768
	Chicken	The California Chicken Pizza	41409.5
	Classic	The Classic Deluxe Pizza	38180.5
	Classic	The Hawaiian Pizza	32273.25
	Classic	The Pepperoni Pizza	30161.75
	Supreme	The Spicy Italian Pizza	34831.25
	Supreme	The Italian Supreme Pizza	33476.75
	Supreme	The Sicilian Pizza	30940.5
	Veggie	The Four Cheese Pizza	32265.70000000065
	Veggie	The Mexicana Pizza	26780.75
	Veggie	The Five Cheese Pizza	26066.5

KEY INSIGHTS :

- The total number of orders placed so far 21350
- The total revenue generated from pizza sales : 817860.05
- Highest priced pizza is “Greek pizza”
- The most common pizza size ordered is “L”
- The classic deluxe pizza, barbecue chicken pizza, the Hawaiian pizza are top 3 most ordered pizza
- The most ordered pizza category by quantity is Classic followed by Supreme
- Busiest hours for sales : 12:00 TO 8:00 PM
- The average number of pizzas ordered per day : 138
- The top 3 most ordered pizza types based on revenue are the Thai chicken pizza, the Barbecue chicken pizza and the California chicken pizza
- The percentage contribution of each pizza type to total revenue is classic(27%),supreme(25%) ,chicken(24%) and veggie(23%)



SUGGESTIONS TO BOOST SALES :

Focus on Popular Pizzas:

- Consider promoting these through special deals or combo offers to boost sales further
- **Increase Classic and Supreme Offerings:** Introduce new flavors or variations within these categories to attract more customers and boost sales in these already popular segments.
- **Enhance Chicken Pizza Promotion :** Consider bundling these with popular sides or beverages to create attractive meal deals that can increase overall ticket size.
- **Introduce a Premium Greek Pizza Experience:** Create a premium dining experience or limited-time offer around it to attract customers willing to spend more for a premium product.
- **Target Peak Hours with Promotions:** The busiest hours for sales are between 12:00 PM and 8:00 PM. Introduce time-limited offers or discounts during these hours to maximize sales.
- **Optimize Marketing Strategies Based on Insights :** Focusing on the highest revenue contributors like Thai Chicken, Barbecue Chicken, and California Chicken pizzas.
- **Expand Size Options for Popular Sizes:** Introduce new variants or special deals for the popular size to cater to customer preferences and encourage repeat purchases
- **Loyalty Programs and Discounts:** Implement loyalty programs or offer discounts for frequent buyers.

OVERALL IMPACT :

Total Revenue Growth: Implementing all strategies effectively could result in an estimated 20-30% increase in revenue.

Total Sales Increment: This could translate to approximately 10,000-12,000 additional orders annually.

If you found this presentation helpful and would like to connect for more insights, please feel free to connect me on [LinkedIn](#).

THANK YOU