

PIZZA SALES ANALYSIS USING SQL



INTRODUCTION

"Hello everyone, I'm Taskin Arshad 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. Develop data-driven insights to support business decisions and drive growth in the pizza industry.
 - 3.



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.





```
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		
	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		
	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		
	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 F
	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	2713.8500000000004
	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	23990.35000000002
	2015-01-11	25862.65
	2015-01-12	27781.7
	2015-01-13	29831.30000000003
	2015-01-14	32358.70000000004
	2015-01-15	34343.5000000001
	2015-01-16	36937.6500000001
	2015-01-17	39001.7500000001
	2015-01-18	40978.60000000006
	2015-01-19	43365.7500000001
	2015-01-20	45763.6500000001
	2015-01-21	47804.2000000001
	2015-01-22	50300.9000000001
	2015-01-23	52724.60000000006
	2015-01-24	55013.85000000006
	2015-01-25	56631.4000000001
	2015-01-26	58515.8000000001

- 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;
  
```

	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