

PIZZA SALES ANALYSIS



ABOUT THE PROJECT

- The database contains comprehensive information about pizza orders, including details about orders, pizzas, pizza types, and their pricing.
- Using MySQL, I have written and executed queries to address various business-related questions, such as analyzing sales trends, identifying popular pizza types and sizes, and evaluating revenue contributions by category.
- The project is divided into three levels of complexity:
 - 1.Basic
 - 2.Intermediate
 - 3.Advanced



ABOUT THE PROJECT

Basic:

Straightforward queries to retrieve foundational insights, such as the total number of orders, total revenue generated, the most common pizza size, and the highest-priced pizza.

Intermediate:

Moderate-level queries aimed at uncovering deeper insights, such as the distribution of orders by hour, the total quantity of pizzas ordered by category, and the average number of pizzas ordered per day. These queries also include identifying the most ordered pizza types based on revenue.



ABOUT THE PROJECT

Advanced:

Complex queries leveraging advanced SQL techniques, such as calculating the percentage contribution of each pizza type to total revenue, analyzing cumulative revenue trends over time, and determining the top 3 most ordered pizza types by revenue for each category. These queries employ advanced concepts like window functions, subqueries, and ranking.



ABOUT THE PROJECT

- This project showcases proficient SQL skills, including the use of JOINs, GROUP BY, window functions, CTEs, and aggregations, to solve real-world data analysis challenges.
- It demonstrates how relational databases can provide actionable insights to optimize business decisions, such as inventory management, pricing strategies, and customer preferences.





TOOLS USED

MYSQL

Used for database creation, management, and executing SQL queries to analyze and extract insights.

CANVA

Utilized for visualizing database insights, creating clear and engaging graphical representations.

SQL EDITOR (MYSQL WORKBENCH)

Used to write, test, and optimize SQL queries.

BASIC QUESTIONS

1.RETRIEVE THE TOTAL NUMBER OF ORDERS PLACED.

QUERY

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

OUTPUT

total_orders
21350

INSIGHT- THE TOTAL NO. OF ORDERS PLACED IS 21350.

2.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
818023.95

INSIGHT- THE TOTAL REVENUE GENERATED FROM PIZZA SALES IS 818023.95.

3. IDENTIFY THE HIGHEST-PRICED PIZZA.

QUERY

```
SELECT
    pizzas.pizza_type_id,
    pizza_types.name,
    pizzas.size,
    pizzas.price
FROM
    pizzas
    JOIN
    pizza_types ON pizzas.pizza_type_id = pizza_types.pizza_type_id
WHERE
    price IN (SELECT
        MAX(price)
    FROM
        pizzas);
```

OUTPUT

pizza_type_id	name	size	price
the_greek	The Greek Pizza	XXL	35.95

INSIGHT- THE HIGHEST PRICES PIZZA IS 'THE GREEK PIZZAS' OF SIZE XXL HAVING PRICE 35.95.

4. IDENTIFY THE MOST COMMON PIZZA SIZE ORDERED.

QUERY

```
SELECT
    pizzas.size, SUM(order_details.quantity) AS quantity
FROM
    pizzas
        JOIN
    order_details ON pizzas.pizza_id = order_details.pizza_id
GROUP BY pizzas.size
ORDER BY quantity DESC
LIMIT 1;
```

OUTPUT

size	quantity
L	19014

INSIGHT- THE MOST COMMON PIZZA SIZE ORDERED IS L WITH 19014 ORDERS.

5. LIST THE TOP 5 MOST ORDERED PIZZA TYPES ALONG WITH THEIR QUANTITIES.

QUERY

```
SELECT
    pizza_types.pizza_type_id,
    pizza_types.name,
    SUM(order_details.quantity) AS quantity
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 1 , 2
ORDER BY 3 DESC
LIMIT 5;
```

OUTPUT

pizza_type_id	name	quantity
bbq_ckn	The Barbecue Chicken Pizza	2442
classic_dlx	The Classic Deluxe Pizza	2430
pepperoni	The Pepperoni Pizza	2429
hawaiian	The Hawaiian Pizza	2419
thai_ckn	The Thai Chicken Pizza	2361

INSIGHT- THE BARBECUE CHICKEN PIZZA IS THE MOST ORDERED PIZZA TYPE WITH QUANTITY 2442.

INTERMEDIATE QUESTIONS

1. 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 pizzas.pizza_type_id = pizza_types.pizza_type_id
    JOIN
    order_details ON order_details.pizza_id = pizzas.pizza_id
GROUP BY 1;
```

OUTPUT

category	quantity
Classic	14918
Veggie	11685
Supreme	11931
Chicken	11044

INSIGHT- CLASSIC PIZZA IS ORDERED WITH A HIGHER QUANTITY 14918.

2.DETERMINE THE DISTRIBUTION OF ORDERS BY HOUR OF THE DAY.

QUERY

```
SELECT  
    HOUR(order_time) AS hour, COUNT(order_id) AS order_count  
FROM  
    orders  
GROUP BY hour  
ORDER BY hour ASC;
```

OUTPUT

hour	order_count
9	1
10	8
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

INSIGHT- BETWEEN 12-14 HOUR AND 17-19 HOUR ,MOST NUMBERS OF ORDERS HAS BEEN PLACED.

3.JOIN RELEVANT TABLES TO FIND THE CATEGORY-WISE DISTRIBUTION OF PIZZAS.

QUERY

```
SELECT
    pizza_types.category, COUNT(order_details.order_id) AS count
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 1
ORDER BY count DESC;
```

OUTPUT

category	count
Classic	14611
Supreme	11719
Veggie	11475
Chicken	10815

INSIGHT- CLASSIC CATEGORY PIZZAS HAVE HIGHEST SALES.

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

QUERY

```
SELECT  
    ROUND(AVG(quantity), 0)  
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  
    ORDER BY quantity DESC) AS order_quantity;
```

OUTPUT

ROUND(AVG(quantity), 0)
138

INSIGHT-THE AVERAGE NUMBER OF PIZZAS ORDERED PER DAY IS 138.

5.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 1
ORDER BY 2 DESC
LIMIT 3;
```

OUTPUT

name	revenue
The Thai Chicken Pizza	43162.75
The Barbecue Chicken Pizza	42907.5
The California Chicken Pizza	41171

INSIGHT-THE THAI CHICKEN PIZZA IS THE MOST PROFITABLE PIZZA.

ADVANCED QUESTIONS

1.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_revenue
    FROM
        order_details
        JOIN
        pizzas ON pizzas.pizza_id = order_details.pizza_id)) * 100,
    2) 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 1
ORDER BY 2 DESC;
```

OUTPUT

category	revenue
Classic	26.96
Supreme	25.35
Chicken	23.93
Veggie	23.76

INSIGHT-CLASSIC PIZZA HAS THE HIGHEST CONTRIBUTION IN TOTAL REVENUE.

2. ANALYZE THE CUMULATIVE REVENUE GENERATED OVER TIME.

QUERY

```
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 1)  
AS sales ;
```

OUTPUT

order_date	cumulative_revenue
2015-01-01	2985.75
2015-01-02	5766.9
2015-01-03	8667.05
2015-01-04	10649.75
2015-01-05	13002.95
2015-01-06	15535.150000000001
2015-01-07	17925.75
2015-01-08	20939.1
2015-01-09	23351.699999999997
2015-01-10	25925.899999999998
2015-01-11	27966.449999999997
2015-01-12	30159.499999999996
2015-01-13	32324.35

INSIGHT-THE CUMULATIVE REVENUE GENERATED OVER TIME IS GIVEN IN OUTPUT.

3.DETERMINE THE TOP 3 MOST ORDERED PIZZA TYPES BASED ON REVENUE FOR EACH PIZZA CATEGORY.

QUERY

```
SELECT
    category,
    name,
    revenue
FROM
    (SELECT category, name, revenue, RANK() OVER(PARTITION BY category ORDER BY revenue DESC) AS ranks
     FROM
        (SELECT
            pizza_types.category,
            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 1 , 2
         ORDER BY 1 ASC , 3 DESC)
        AS A )
    AS B
WHERE ranks <=3;
```

OUTPUT

category	name	revenue
Chicken	The Thai Chicken Pizza	43162.75
Chicken	The Barbecue Chicken Pizza	42907.5
Chicken	The California Chicken Pizza	41171
Classic	The Classic Deluxe Pizza	37703.5
Classic	The Hawaiian Pizza	32248.75
Classic	The Pepperoni Pizza	30318.5
Supreme	The Spicy Italian Pizza	34777.25
Supreme	The Italian Supreme Pizza	33021.75
Supreme	The Sicilian Pizza	30724.25
Veggie	The Four Cheese Pizza	31693.800000000632
Veggie	The Mexicana Pizza	26806.25
Veggie	The Five Cheese Pizza	26695.5

INSIGHT-THE MOST ORDERED PIZZA OF EACH CATEGORY BASED ON REVENUE ARE GIVEN IN THE OUTPUT.

THANK YOU!

