PIZZA SALES ANALYSIS

By Adna Alam

INTRODUCTION

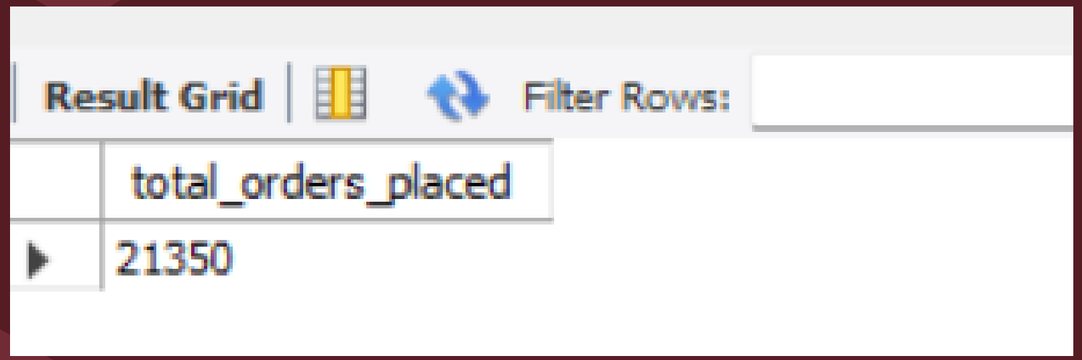
Hi, my name is Adnan Alam, and this is my data analysis project on pizza sales. I sourced the dataset from GitHub and conducted the analysis using SQL queries in MySQL. The database consists of tables such as orders, order_details, pizzas, pizza_types, and others, structured to store information about customer orders, pizza details, and their associated metadata. Through SQL queries, the project explores various metrics and trends critical for business decision-making.

KPI’S

- 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.
- 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 average number of pizzas ordered per day.
- Determine the top 3 most ordered pizza types based on revenue.
- 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.

1. RETRIEVE THE TOTAL NUMBER OF ORDERS PLACED.

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



2. CALCULATE THE TOTAL REVENUE GENERATED FROM PIZZA SALES.

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

total_revenue
817860.05

3. IDENTIFY THE HIGHEST-PRICED PIZZA.

```
SELECT
    pizza_types.name, pizzas.price AS
highest_priced_pizza
FROM
    pizzas
        JOIN
    pizza_types ON pizzas.pizza_type_id =
pizza_types.pizza_type_id
ORDER BY pizzas.price DESC
LIMIT 1;
```

name	highest_priced_pizza
The Greek Pizza	35.95

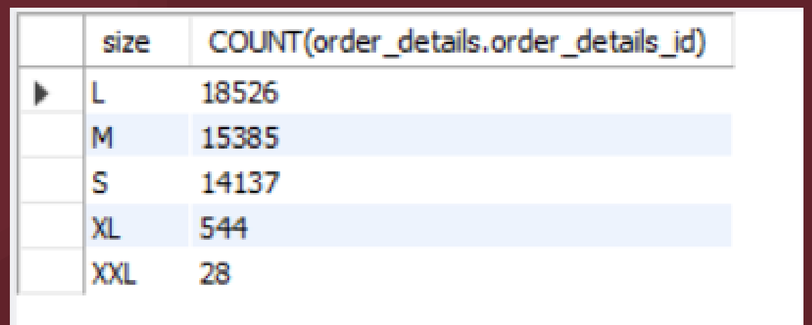
4. IDENTIFY THE MOST COMMON PIZZA SIZE ORDERED.

```
SELECT
    pizzas.size,
COUNT(order_details.order_details_id)
FROM
    pizzas
        JOIN
    order_details ON pizzas.pizza_id =
order_details.pizza_id
GROUP BY pizzas.size
ORDER BY
COUNT(order_details.order_details_id) DESC;
```

size	COUNT(order_details.order_details_id)
L	18526
M	15385
S	14137
XL	544
XXL	28

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

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



size	COUNT(order_details.order_details_id)
L	18526
M	15385
S	14137
XL	544
XXL	28

6. JOIN THE NECESSARY TABLES TO FIND THE TOTAL QUANTITY OF EACH PIZZA CATEGORY ORDERED.

```
SELECT
    pizza_types.category, SUM(order_details.quantity)
FROM
    pizza_types
        JOIN
    pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
        JOIN
    order_details ON pizzas.pizza_id = order_details.pizza_id
GROUP BY pizza_types.category
ORDER BY SUM(order_details.quantity) DESC;
```

category	SUM(order_details.quantity)
Classic	14888
Supreme	11987
Veggie	11649
Chicken	11050

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

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

hour	orders
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

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

```
WITH order_quantity AS (
    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
)
SELECT round(avg(quantity),0) as avg_pizza_order_per_day
FROM order_quantity;
```

	avg_pizza_order_per_day
▶	138

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

```
SELECT
    pizza_types.name,
    SUM(pizzas.price * order_details.quantity) 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;
```

name	revenue
The Thai Chicken Pizza	43434.25
The Barbecue Chicken Pizza	42768
The California Chicken Pizza	41409.5

10. CALCULATE THE PERCENTAGE CONTRIBUTION OF EACH PIZZA TYPE TO TOTAL REVENUE.

```
WITH sale AS (
    SELECT
        pizza_types.category AS category,
        SUM(order_details.quantity * pizzas.price) AS total_sale_per_category
    FROM
        order_details
    JOIN
        pizzas ON order_details.pizza_id = pizzas.pizza_id
    JOIN
        pizza_types ON pizzas.pizza_type_id = pizza_types.pizza_type_id
    GROUP BY
        pizza_types.category
),
total_sale AS (
    SELECT
        SUM(order_details.quantity * pizzas.price) AS total_sale
    FROM
        order_details
    JOIN
        pizzas ON order_details.pizza_id = pizzas.pizza_id
)
SELECT
    sale.category,
    (sale.total_sale_per_category / total_sale.total_sale) * 100 AS percentage_of_total_sale
FROM
    sale, total_sale
        order by percentage_of_total_sale desc;
```

category	percentage_of_total_sale
Classic	26.905960255669903
Supreme	25.45631126009884
Chicken	23.955137556847493
Veggie	23.682590927384783

11. ANALYZE THE CUMULATIVE REVENUE GENERATED OVER TIME.

```
with sales as (
 select orders.order_date, sum(order_details.quantity *
pizzas.price) as revenue from orders
    join order_details on orders.order_id =
order_details.order_id
    join pizzas on order_details.pizza_id = pizzas.pizza_id
    group by orders.order_date
    )

select order_date, sum(revenue) over (order by order_date)
as cum_revenue from sales;
```

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	23990.350000000002
2015-01-11	25862.65
2015-01-12	27781.7
2015-01-13	29831.300000000003
2015-01-14	32358.700000000004
2015-01-15	34343.50000000001
2015-01-16	36937.65000000001
2015-01-17	39001.75000000001
2015-01-18	40978.600000000006
2015-01-19	43365.75000000001
2015-01-20	45763.65000000001
2015-01-21	47804.20000000001

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

```
WITH sales AS (
    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 pizzas.pizza_id = order_details.pizza_id
    GROUP BY
        pizza_types.category, pizza_types.name
),
ranked_sales AS (
    SELECT
        category,
        name,
        revenue,
        RANK() OVER (PARTITION BY category ORDER BY revenue DESC) AS rn
    FROM
        sales
)
SELECT name, revenue
FROM ranked_sales
WHERE rn <= 3;
```

name	revenue
The Thai Chicken Pizza	43434.25
The Barbecue Chicken Pizza	42768
The California Chicken Pizza	41409.5
The Classic Deluxe Pizza	38180.5
The Hawaiian Pizza	32273.25
The Pepperoni Pizza	30161.75
The Spicy Italian Pizza	34831.25
The Italian Supreme Pizza	33476.75
The Sicilian Pizza	30940.5
The Four Cheese Pizza	32265.70000000065
The Mexicana Pizza	26780.75
The Five Cheese Pizza	26066.5

30940.5

Business Implications

- **Operational Efficiency:** By analyzing peak ordering hours and average daily orders, the business can optimize staffing and inventory management.

- **Product Strategy:** Insights into popular pizza sizes, types, and categories help tailor offerings to customer preferences.

- **Revenue Growth:** Identifying high-revenue products and categories provides data for targeted marketing campaigns and promotional strategies.

- **Customer Trends:** Understanding order patterns by hour, day, and product type allows the business to align with customer behavior.

THANK YOU