SQL Project: Analyzing Pizza Sales Data

BY HAYA PARVEEN

INTRODUCTION

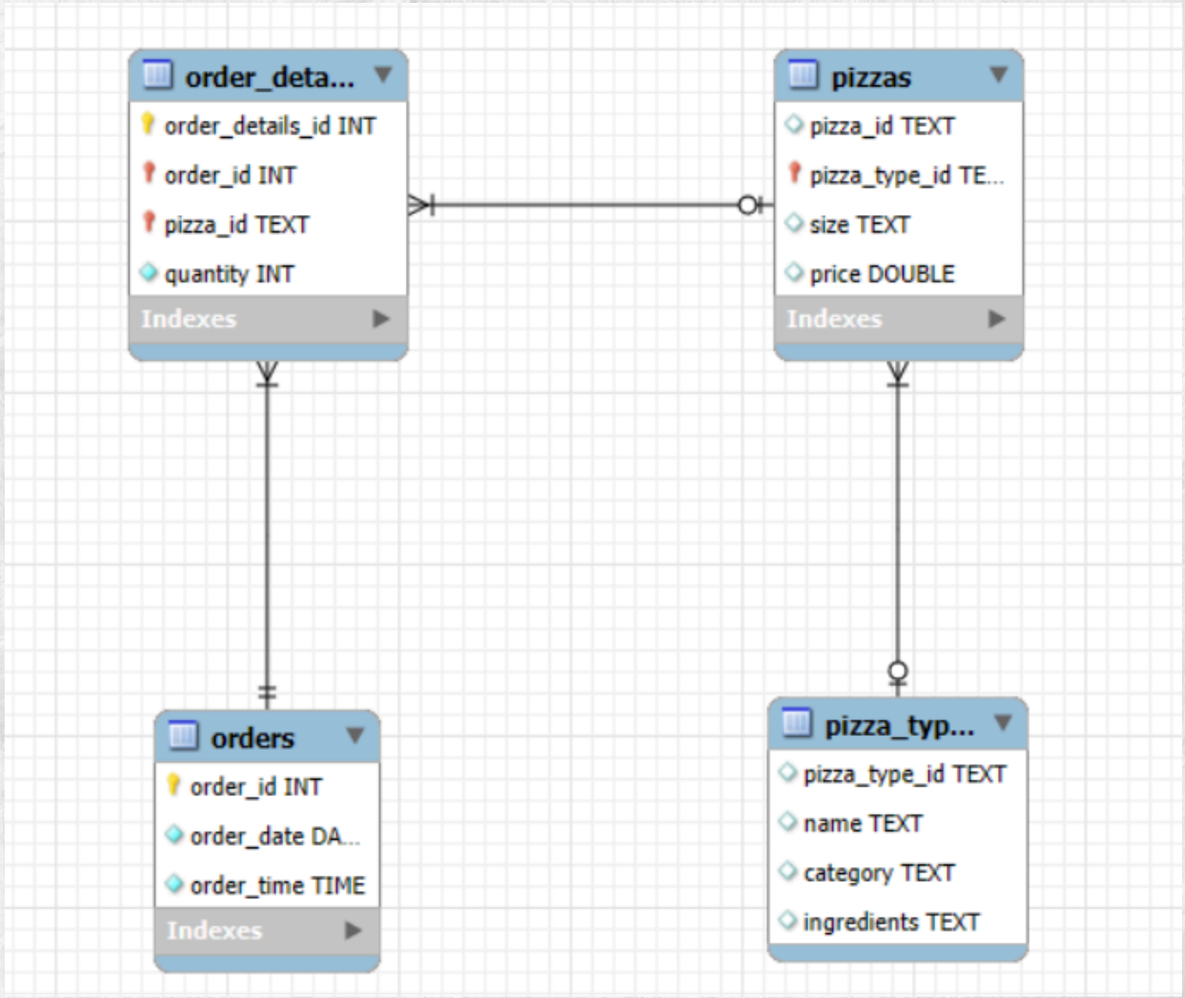
Hi, I'm Haya Parveen, an aspiring Data Analyst passionate about working with real-world data.

In this project, I performed a complete SQL-based analysis of a pizza sales dataset. I began by importing raw CSV files into a relational database, created four related tables, and wrote SQL queries to explore the data step by step.

I analyzed total orders, revenue, top-selling pizzas, popular sizes, and customer ordering patterns. Through this, I gained hands-on experience in using JOINs, aggregate functions, date/time analysis, and writing SQL queries to answer real business questions.

The goal of this project was to build a strong foundation in SQL by working end-to-end - from data loading to deriving actionable insights.

SCHEMAS



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BASIC QUERIES

1.Retrieve the total number of orders placed.

```sql
SELECT
    COUNT(order_id) AS Total_number_of_orders
FROM
    orders;
```

Total_number_of_orders
21350

2.Calculate the total revenue generated from pizza sales.

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

Total_revenue
817860.05

3.Identify the highest-priced pizza.

```sql
SELECT
    pt.name, p.price
FROM
    pizza_types pt
        JOIN
    pizzas p ON pt.pizza_type_id = p.pizza_type_id
ORDER BY (p.price) DESC
LIMIT 1;
```

name	price
The Greek Pizza	35.95

4.Identify the most common pizza size ordered.

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

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

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

```sql
SELECT
    pt.name, SUM(o.quantity) quantity
FROM
    pizza_types pt
        JOIN
    pizzas p ON pt.pizza_type_id = p.pizza_type_id
        JOIN
    order_details o ON o.pizza_id = p.pizza_id
GROUP BY pt.name
ORDER BY SUM(o.quantity) DESC
LIMIT 5;
```

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

INTERMEDIATE QUERIES

1. Join the necessary tables to find the total quantity of each pizza category ordered.

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

category	total_quantity
Classic	14888
Supreme	11987
Veggie	11649
Chicken	11050

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

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

category	pizza_count
Chicken	6
Classic	8
Supreme	9
Veggie	9

3.Group the orders by date and calculate the average number of pizzas ordered per day.

```sql
SELECT
    ROUND(AVG(quantity), 0)
FROM
    (SELECT
        o.order_date, SUM(od.quantity) quantity
    FROM
        orders o
    JOIN order_details od ON o.order_id = od.order_id
    GROUP BY o.order_date) order_quantity;
```

	ROUND(AVG(quantity),0)
▶	138

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

```sql
SELECT
    pt.name, SUM(o.quantity * p.price) Total_revenue
FROM
    pizza_types pt
        JOIN
    pizzas p ON pt.pizza_type_id = p.pizza_type_id
        JOIN
    order_details o ON p.pizza_id = o.pizza_id
GROUP BY pt.name
ORDER BY Total_revenue DESC
LIMIT 3;
```

	name	Total_revenue
▶	The Thai Chicken Pizza	43434.25
	The Barbecue Chicken Pizza	42768
	The California Chicken Pizza	41409.5

5.Determine the distribution of orders by hour of the day.

```
3 •  SELECT
4        EXTRACT(HOUR FROM order_time) Hour,
5        COUNT(order_id) order_count
6    FROM
7        orders
8    GROUP BY EXTRACT(HOUR FROM order_time);
```

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

1.Calculate the percentage contribution of each pizza type to total revenue.

```sql
SELECT pt.category,
    ROUND(SUM(od.quantity * p.price) /
    (SELECT ROUND(SUM(od.quantity * p.price), 2) total_sales
                FROM order_details od
                JOIN pizzas p
                ON od.pizza_id = p.pizza_id) * 100, 2) revenue
FROM pizza_types pt
JOIN pizzas p
ON pt.pizza_type_id = p.pizza_type_id
JOIN order_details od ON od.pizza_id = p.pizza_id
GROUP BY pt.category
ORDER BY revenue DESC;
```

category	revenue
Classic	26.91
Supreme	25.46
Chicken	23.96
Veggie	23.68

2.Analyze the cumulative revenue generated over time.

```sql
SELECT order_date,
SUM(revenue) OVER(ORDER BY order_date) cum_revenue
FROM
    (SELECT o.order_date,
    SUM(od.quantity * p.price) revenue
    FROM order_details od
    JOIN pizzas p
    ON od.pizza_id=p.pizza_id
    JOIN orders o
    ON o.order_id=od.order_id
    GROUP BY o.order_date) 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

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

```sql
SELECT name, revenue FROM
    (SELECT category, name, revenue,
    RANK() OVER(PARTITION BY category ORDER BY REVENUE DESC) rn
    FROM
        (SELECT pt.category,pt.name,
        SUM(od.quantity * p.price) revenue
        FROM pizza_types pt
        JOIN pizzas p
        ON pt.pizza_type_id=p.pizza_type_id
        JOIN order_details od
        ON od.pizza_id=p.pizza_id
        GROUP BY pt.category,pt.name) A) B
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

THANK YOU!

This project helped me understand how data analysis drives business decisions.
I look forward to building more real-world projects using SQL and Power BI.

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