



HOUSE OF PIZZA



● PIZZA SALES SQL ANALYSIS PROJECT



ABOUT

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I'm Harshitha Salian, an aspiring Data Analyst passionate about transforming data into actionable insights. I'm building my skills in SQL, Excel, and Power BI to transition into a Data Analyst role.

About This Project

This project analyzes pizza sales data for a fictional pizzeria, "House of Pizza." I analyzed pizza sales data using MySQL to uncover trends in revenue, product performance, and customer behavior. This project highlights my skills in SQL querying, data cleaning, CTEs, window functions, and business-focused analytics.

Tools: MySQL, PowerPoint

Skills: Data Cleaning • KPI Analysis • CTEs • Window Functions



PROJECT INTRODUCTION

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Objective:

Analyze pizza sales performance to generate actionable business insights using SQL.

Dataset Source:

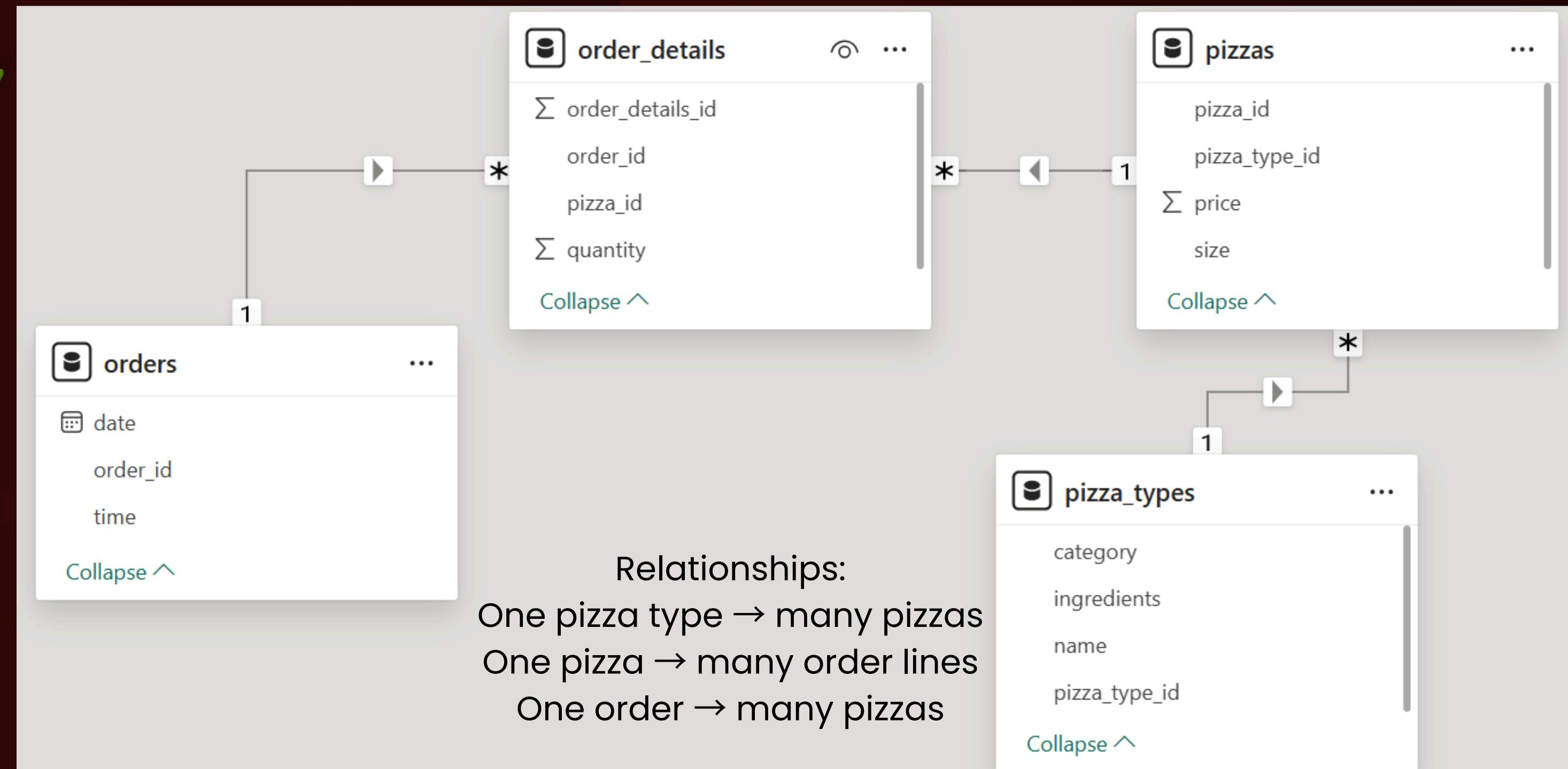
<https://github.com/Ayushi0214/pizza-sales---SQL>

Dataset Overview:

Table	Columns	Row count
pizzas	pizza_id, pizza_type_id, size, price	96 pizzas
pizza_types	pizza_type_id, name, category, ingredients	32 pizza types
orders	order_id, order_date, order_time	21,350 orders
order_details	order_details_id, order_id, pizza_id, quantity	48,620 order lines



ER DIAGRAM

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DATA CLEANING

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- ✓ Checked for null values
- ✓ Checked for invalid prices
- ✓ Checked for zero/negative quantities
- ✓ Verified no orphan records
- ✓ Validated price ranges
- ✓ Ensured consistent pizza sizes (S, M, L, XL, XXL)

01

Outcome:

Data is clean, complete, and ready for analysis.

03

04



KEY KPIS

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```
-- Total number of orders placed.  
select count(order_id) as Total_orders from orders;
```

Total_orders
21350

```
-- Total revenue generated from pizza sales.  
select round(sum(p.price * o.quantity), 2) as Total_revenue  
from pizzas p join order_details o  
on p.pizza_id = o.pizza_id;
```

Total_revenue
817860.05

```
-- Average order value (AOV):  
select round(avg(Revenue),2) as AvgOrderValue  
from (select od.order_id, sum(od.quantity * p.price) as Revenue  
      from order_details od join pizzas p  
      on od.pizza_id = p.pizza_id  
      group by od.order_id) as revenue_data;
```

AvgOrderValue
38.31



KEY KPIS

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```
-- Highest-priced pizza.  
select pt.name, pt.category, p.size, p.price  
from pizzas p join pizza_types pt  
on p.pizza_type_id = pt.pizza_type_id  
order by p.price desc  
limit 1;
```

name	category	size	price
The Greek Pizza	Classic	XXL	35.95

```
-- Most common pizza size ordered.  
select p.size, sum(od.quantity) as TotalQty  
from order_details od join pizzas p  
on od.pizza_id = p.pizza_id  
group by p.size  
order by TotalQty desc  
limit 1;
```

size	TotalQty
L	18956



TOP PERFORMING PIZZAS

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```
-- List the top 5 most ordered pizza types along with their quantities.  
select pt.name, sum(od.quantity) as Total_quantity  
from order_details od join pizzas p  
on p.pizza_id = od.pizza_id  
join pizza_types pt  
on p.pizza_type_id=pt.pizza_type_id  
group by pt.name  
order by Total_quantity desc  
limit 5;
```

name	Total_quantity
The Classic Deluxe Pizza	2453
The Barbecue Chicken Pizza	2432
The Hawaiian Pizza	2422
The Pepperoni Pizza	2418
The Thai Chicken Pizza	2371

```
-- Find the top 3 pizza categories that generate the highest revenue.  
select pt.category, round(sum(od.quantity * p.price), 2) as TotalRevenue  
from order_details od join pizzas p  
on od.pizza_id = p.pizza_id  
join pizza_types pt  
on p.pizza_type_id = pt.pizza_type_id  
group by pt.category  
order by TotalRevenue desc  
limit 3;
```

category	TotalRevenue
Classic	220053.1
Supreme	208197
Chicken	195919.5



TIME-BASED INSIGHTS

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-- Monthly revenue trend:

```
select monthname(o.order_date) as MonthName, round(sum(od.quantity * p.price), 2) as Revenue
from orders o join order_details od
on o.order_id = od.order_id
join pizzas p on od.pizza_id = p.pizza_id
group by MonthName;
```

-- Revenue by day of week:

```
select dayname(o.order_date) as DayOfWeek, round(sum(od.quantity * p.price), 2) as Revenue
from orders o join order_details od
on o.order_id = od.order_id
join pizzas p
on od.pizza_id = p.pizza_id
group by dayname(o.order_date)
order by Revenue desc;
```

Insights:

- Best Performing Month: July
- Best-performing day: Friday

MonthName	Revenue
January	69793.3
February	65159.6
March	70397.1
April	68736.8
May	71402.75
June	68230.2
July	72557.9
August	68278.25
September	64180.05
October	64027.6
November	70395.35
December	64701.15

DayOfWeek	Revenue
Friday	136073.9
Thursday	123528.5
Saturday	123182.4
Wednesday	114408.4
Tuesday	114133.8
Monday	107329.55
Sunday	99203.5



TIME-BASED INSIGHTS

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```
-- Determine the distribution of orders by hour of the day.  
select hour(order_time) as Hours, count(order_id) as Ordercount  
from orders  
group by Hours  
order by Hours asc;
```

Insights:

- Peak hours: 12PM – 1PM

```
-- Group the orders by date and calculate the average number of pizzas ordered per day  
select round(avg(daily_pizza_quantity), 0) as AvgPizzasPerDay  
from (select o.order_date, sum(od.quantity) as daily_pizza_quantity  
from orders o join order_details od  
on o.order_id = od.order_id  
group by order_date) as tot_qty;
```

AvgPizzasPerDay

138

```
-- Average number of orders per day.
```

```
select round(avg(DailyOrderCount), 0) as AvgOrderPerDay  
from (select order_date, count(order_id) as DailyOrderCount  
      from orders  
     group by order_date) as daywiseOrders;
```

AvgOrderPerDay

60

Hours	Ordercount
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



BUSINESS QUESTIONS ANSWERED

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```
-- Join the necessary tables to find the total quantity of each pizza category ordered.  
select pt.category, sum(od.quantity) as Total_Quantity  
from order_details od join pizzas p  
on od.pizza_id = p.pizza_id  
join pizza_types pt  
on p.pizza_type_id = pt.pizza_type_id  
group by pt.category  
order by Total_Quantity desc;
```

category	Total_Quantity
Classic	14888
Supreme	11987
Veggie	11649
Chicken	11050

```
-- Determine the top 3 most ordered pizza types based on revenue.  
select pt.name, sum(p.price * od.quantity) as Total_revenue  
from order_details od join pizzas p  
on od.pizza_id = p.pizza_id  
join pizza_types pt on p.pizza_type_id = pt.pizza_type_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



BUSINESS QUESTIONS ANSWERED

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```
-- Analyze the cumulative revenue generated over time.  
select o.order_date, round(sum(od.quantity * p.price), 2) as DailyRevenue,  
       sum(round(sum(od.quantity * p.price), 2)) over (order by o.order_date) as cumm_revenue  
from order_details od join orders o  
on od.order_id = o.order_id  
join pizzas p  
on od.pizza_id = p.pizza_id  
group by o.order_date;
```

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

```
with cte_RevenueByType as (  
    select pt.category, pt.name, sum(od.quantity * p.price) as Revenue,  
          rank() over (partition by pt.category order by sum(od.quantity * p.price) desc) as rank_no  
    from order_details od join pizzas p  
    on od.pizza_id = p.pizza_id  
    join pizza_types pt  
    on p.pizza_type_id = pt.pizza_type_id  
    group by pt.category, pt.name  
)  
select category, name, round(Revenue, 2)as Revenue from cte_RevenueByType where rank_no < 4;
```

order_date	DailyRevenue	cumm_revenue
2015-01-01	2713.85	2713.85
2015-01-02	2731.9	5445.75
2015-01-03	2662.4	8108.15
2015-01-04	1755.45	9863.6
2015-01-05	2065.95	11929.55
2015-01-06	2428.95	14358.5
2015-01-07	2202.2	16560.7
2015-01-08	2838.35	19399.05

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	32265.7
Veggie	The Mexicana Pizza	26780.75
Veggie	The Five Cheese Pizza	26066.5



BUSINESS QUESTIONS ANSWERED

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

with cte_getTotalRev as (
    select sum(od.quantity * p.price) as TotalRevenue
    from order_details od join pizzas p
    on od.pizza_id = p.pizza_id
),
cte_getDailyRevOnType as (
    select pt.pizza_type_id, pt.name, sum(od.quantity * p.price) as DailyRevenue
    from order_details od join pizzas p
    on od.pizza_id = p.pizza_id
    join pizza_types pt
    on pt.pizza_type_id = p.pizza_type_id
    group by pt.pizza_type_id, pt.name
)
select trt.pizza_type_id, trt.name, round(DailyRevenue, 2) as Revenue,
       round((trt.DailyRevenue/tr.TotalRevenue) * 100, 2) as revenue_pct
from cte_getTotalRev tr cross join cte_getDailyRevOnType trt
order by revenue_pct desc;
```

pizza_type_id	name	Revenue	revenue_pct
thai_ckn	The Thai Chicken Pizza	43434.25	5.31
bbq_ckn	The Barbecue Chicken Pizza	42768	5.23
cali_ckn	The California Chicken Pizza	41409.5	5.06
classic_dlx	The Classic Deluxe Pizza	38180.5	4.67
spicy_ital	The Spicy Italian Pizza	34831.25	4.26
southw_ckn	The Southwest Chicken Pizza	34705.75	4.24
ital_supr	The Italian Supreme Pizza	33476.75	4.09
hawaiian	The Hawaiian Pizza	32273.25	3.95
four_cheese	The Four Cheese Pizza	32265.7	3.95
sicilian	The Sicilian Pizza	30940.5	3.78
pepperoni	The Pepperoni Pizza	30161.75	3.69
the_greek	The Greek Pizza	28454.1	3.48
mexicana	The Mexicana Pizza	26780.75	3.27



BUSINESS INSIGHTS

Product Insights

- Large and Medium pizzas are the most preferred sizes, contributing the highest share of total orders.
- The Greek Pizza is the highest-priced item, indicating strong Classic positioning.
- Classic and Supreme categories generate the highest revenue, making them the core drivers of menu performance.

Time-Based Insights

- 12 PM – 1 PM is the peak hour for daily orders, suggesting strong lunchtime demand.
- Friday records the highest weekly revenue, reflecting increased end-of-week consumer spending.
- July emerges as the top-performing month, indicating strong seasonal or promotional impact.

Sales & Revenue Patterns

- Revenue is concentrated around specific pizza categories, reinforcing the importance of menu optimization.
- Top revenue-generating pizzas are: Thai Chicken Pizza, Barbecue Chicken Pizza, California Chicken Pizza
- These chicken variants are high-impact products — they drive a large share of total revenue despite being only a subset of the menu.





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THANK YOU

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