

By Varun R

SQL Analysis OF PIZZA COMPANY

A COMPREHENSIVE DATA ANALYSIS PROJECT



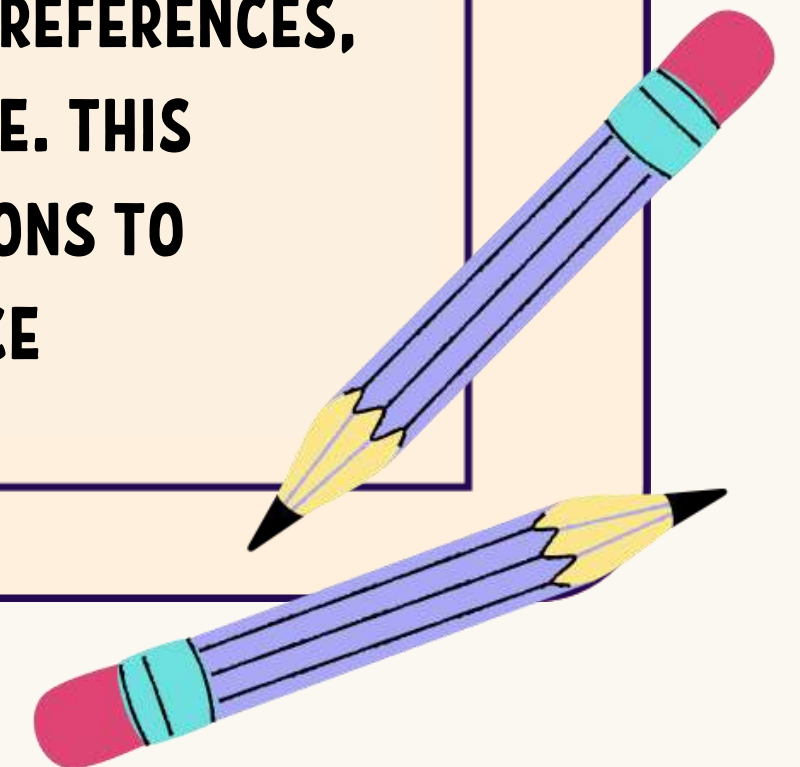


PROJECT OVERVIEW

THIS PROJECT INVOLVES ANALYZING THE SALES DATA OF A PIZZA COMPANY TO UNCOVER KEY BUSINESS INSIGHTS. USING MYSQL WORKBENCH, WE EXAMINE VARIOUS DATA SETS INCLUDING ORDER DETAILS, ORDER TIMINGS, PIZZA TYPES AND PRICING.

AIM

OUR GOAL IS TO UNDERSTAND CUSTOMER PREFERENCES, OPTIMIZE INVENTORY, AND BOOST REVENUE. THIS ANALYSIS WILL INFORM STRATEGIC DECISIONS TO ENHANCE OVERALL BUSINESS PERFORMANCE





DATA OVERVIEW

Data sets involves 4 tables:

- order_details: Contains specifics about each order.
- orders: Records of order dates and times.
- pizza_types: Information on different pizza types.
- pizzas: Details on pizza sizes and prices.


Result Grid	Filter Rows:	Export:	Wrap Cell Content:
pizza_type_id	name	category	ingredients
bbq_ckn	The Barbecue Chicken Pizza	Chicken	Barbecued Chicken, Red Peppers, Green Pepp...
cali_ckn	The California	The Barbecue Chicken Pizza	Chicken, Artichoke, Spinach, Garlic, Jalapeno P...
ckn_alfredo	The Chicken Alfredo Pizza	Chicken	Chicken, Red Onions, Red Peppers, Mushrooms...
ckn_pesto	The Chicken Pesto Pizza	Chicken	Chicken, Tomatoes, Red Peppers, Spinach, Garl...
southw_ckn	The Southwest Chicken Pizza	Chicken	Chicken, Tomatoes, Red Peppers, Red Onions, ...
thai_ckn	The Thai Chicken Pizza	Chicken	Chicken, Pineapple, Tomatoes, Red Peppers, T...
big_meat	The Big Meat Pizza	Classic	Bacon, Pepperoni, Italian Sausage, Chorizo Sau...
classic_dlx	The Classic Deluxe Pizza	Classic	Pepperoni, Mushrooms, Red Onions, Red Peppe...
hawaiian	The Hawaiian Pizza	Classic	Sliced Ham, Pineapple, Mozzarella Cheese
ital_cpdlc	The Italian Capocollo Pizza	Classic	Capocollo, Red Peppers, Tomatoes, Goat Chee...
napolitana	The Napolitana Pizza	Classic	Tomatoes, Anchovies, Green Olives, Red Onion...
pep_msh_pep	The Pepperoni, Mushroom, ...	Classic	Pepperoni, Mushrooms, Green Peppers

pizza_types

Result Grid			 Filter Rows:	
	pizza_id	pizza_type_id	size	price
▶	bbq_ckn_s	bbq_ckn	S	12.75
	bbq_ckn_m	bbq_ckn	M	16.75
	bbq_ckn_l	bbq_ckn	L	20.75
	cali_ckn_s	cali_ckn	S	12.75
	cali_ckn_m	cali_ckn	M	16.75
	cali_ckn_l	cali_ckn	L	20.75
	ckn_alfredo_s	ckn_alfredo	S	12.75
	ckn_alfredo_m	ckn_alfredo	M	16.75
	ckn_alfredo_l	ckn_alfredo	L	20.75
	ckn_pesto_s	ckn_pesto	S	12.75
	ckn_pesto_m	ckn_pesto	M	16.75
	ckn_pesto_l	ckn_pesto	L	20.75

pizzas








Result Grid



Filter Rows:

order_id	order_date	order_time
1	2015-01-01	11:38:36
2	2015-01-01	11:57:40
3	2015-01-01	12:12:28
4	2015-01-01	12:16:31
5	2015-01-01	12:21:30
6	2015-01-01	12:29:36
7	2015-01-01	12:50:37
8	2015-01-01	12:51:37
9	2015-01-01	12:52:01
10	2015-01-01	13:00:15

orders

Result Grid		 Filter Rows:	<input type="text"/>	Edit:			
	order_details_id		order_id	pizza_id	quantity		
	1		1	hawaiian_m	1		
	2		2	classic_dlx_m	1		
	3		2	five_cheese_l	1		
	4		2	ital_supr_l	1		
	5		2	mexicana_m	1		
	6		2	thai_ckn_l	1		
	7		3	ital_supr_m	1		
	8		3	prsc_argla_l	1		
	9		4	ital_supr_m	1		
	10		5	ital_supr_m	1		

order_details

Basic Analysis-Order Volume

**QUESTION : WHAT IS OUR TOTAL
ORDERS BEEN PLACED**

**Objective : Determine the total
number of orders placed.**

```
-- Retrieve the total number of orders placed.  
• select count(order_id) as total_orders from orders;
```

Result Grid	
	total_orders
▶	21350

Basic Analysis-Revenue Insights

QUESTION:HOW CAN WE MEASURE OUR CUSTOMER DEMAND EFFECTIVELY?

Objective:Calculate the total revenue generated from pizza sales.

```
-- Calculate the total revenue generated from pizza sales.  
• SELECT  
    ROUND(SUM(od.quantity * p.price), 2) AS total_sales  
FROM  
    order_details od  
    JOIN  
    pizzas p ON od.pizza_id = p.pizza_id
```

Result Grid	
	total_sales
▶	817860.05

Basic Analysis-Pricing Strategy

QUESTION: WHICH PIZZA COMMANDS THE HIGHEST PRICE ON OUR MENU?

Objective: Identify the highest priced pizza.

```
-- Identify the highest-priced pizza.  
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
```

Result Grid			Filter Rows:
	name	price	
▶	The Greek Pizza	35.95	

Basic Analysis-Product Demand

QUESTION: WHICH PIZZA TYPES ARE OUR TOP SELLERS?

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

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

Basic Analysis-Product Popularity

QUESTION: WHAT IS THE MOST PREFERRED PIZZA SIZE AMONG OUR CUSTOMERS?

Objective: Identify the most common pizza size ordered.

```
-- Identify the most common pizza size ordered.  
• SELECT  
    pizzas.size,  
    COUNT(order_details.order_details_id) AS no_of_pizzas_sold  
FROM  
    order_details  
    JOIN  
    pizzas ON order_details.pizza_id = pizzas.pizza_id  
GROUP BY pizzas.size  
ORDER BY no_of_pizzas_sold DESC  
LIMIT 1;
```

Result Grid			Filter Rows:
	size	no_of_pizzas_sold	
▶	L	18526	

Intermediate Analysis

Category Demand

**QUESTION: HOW DOES DEMAND VARY
ACROSS DIFFERENT PIZZA CATEGORIES?**

**Objective: Find the total quantity of
each pizza category ordered.**

```
-- Join relevant tables to find the category-wise distribution of pizzas.  
SELECT  
    category, COUNT(name) AS no_of_pizzas  
FROM  
    pizza_types  
GROUP BY category;
```

Result Grid			Filter Rows:
	category	no_of_pizzas	
▶	Chicken	6	
	Classic	8	
	Supreme	9	
	Veggie	9	

Intermediate Analysis

Order Timing

**QUESTION: WHEN DO OUR CUSTOMERS
PLACE ORDERS MOST FREQUENTLY?**

**Objective: Determine the distribution
of orders by hour of the day**

```
-- Determine the distribution of orders by hour of the day.  
SELECT  
    HOUR(order_time) AS hour, COUNT(order_id) AS order_id  
FROM  
    orders  
GROUP BY hour;
```

Result Grid			Filter Row
	hour	order_id	
▶	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	

Intermediate Analysis

Category Distribution

QUESTION: WHAT IS THE DISTRIBUTION OF PIZZA SALES BY CATEGORY?

Objective: Find the category-wise distribution of pizzas.

```
-- Join relevant tables to find the category-wise distribution of pizzas
SELECT
    category, COUNT(name) AS no_of_pizzas
FROM
    pizza_types
GROUP BY category;
```

	category	no_of_pizzas
▶	Chicken	6
	Classic	8
	Supreme	9
	Veggie	9

Intermediate Analysis

Order Patterns

QUESTION: WHAT ARE THE DAILY ORDER TRENDS FOR OUR PIZZAS?

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

```
-- Group the orders by date and calculate the average number of pizzas ordered per day.  
SELECT  
    ROUND(AVG(quantity), 0) AS avg_pizzas_per_day  
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) AS temp;
```

Result Grid		Filter Rows:
	avg_pizzas_per_day	
▶	138	

Intermediate Analysis

Revenue Drivers

**QUESTION: WHICH PIZZA TYPES
GENERATE THE MOST REVENUE?**

**Objective: Determine the top 3 most
ordered pizza types based on
revenue.**

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

SELECT

pizza_types.name AS name_of_pizza,

ROUND(SUM(order_details.quantity * pizzas.price),
2) AS revenue

FROM

order_details

JOIN

pizzas ON order_details.pizza_id = pizzas.pizza_id

JOIN

pizza_types ON pizza_types.pizza_type_id = pizzas.pizza_type_id

GROUP BY name_of_pizza

ORDER BY revenue DESC

LIMIT 3;

Result Grid | Filter Rows:

	name_of_pizza	revenue
▶	The Thai Chicken Pizza	43434.25
	The Barbecue Chicken Pizza	42768
	The California Chicken Pizza	41409.5

Advanced Analysis

Revenue Contribution

QUESTION: HOW MUCH DOES EACH PIZZA TYPE CONTRIBUTE TO OUR TOTAL REVENUE?

Objective: determine the most contrubuting pizza category

```
-- Calculate the percentage contribution of each pizza type to total revenue.
SELECT
  pizza_types.category,
  ROUND(SUM(order_details.quantity * pizzas.price),
        3) AS revenue,
  CONCAT(ROUND((SUM(order_details.quantity * pizzas.price) / (SELECT
    ROUND(SUM(order_details.quantity * pizzas.price),
    4)
    FROM
      order_details
    JOIN
      pizzas ON order_details.pizza_id = pizzas.pizza_id)) * 100,
        3),
        ' %') AS revenue_percentage
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;
```

	category	revenue	revenue_percentage
▶	Classic	220053.1	26.906 %
	Supreme	208197	25.456 %
	Chicken	195919.5	23.955 %
	Veggie	193690.45	23.683 %

Advanced Analysis Revenue Trends

**QUESTION: HOW HAS OUR REVENUE
EVOLVED OVER TIME?**

**Objective: Analyze the cumulative
revenue generated over time.**

```
-- Analyze the cumulative revenue generated over time.  
select order_date, round(sum(revenue) over(order by order_date),3) as cumulative_sum  
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 order_details.order_id=orders.order_id  
group by orders.order_date) as temp;
```

Result Grid			Filter Rows:
	order_date	cumulative_sum	
▶	2015-01-01	2713.85	
	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	23990.35	
	2015-01-11	25862.65	
	2015-01-12	27781.7	
	2015-01-13	29831.3	
	2015-01-14	32358.7	
	2015-01-15	34343.5	

Advanced Analysis

Category Revenue Drivers

QUESTION: WHICH PIZZA TYPES ARE THE TOP REVENUE GENERATORS WITH IN EACH CATEGORY?

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

```
-- Determine the top 3 most ordered pizza types based on revenue for each pizza category.
select category,name,revenue, rn as ranking
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 temp) as temp1
where rn<=3;
```

Result Grid	Filter Rows:	Export:	Wrap C
category	name	revenue	ranking
Chicken	The Thai Chicken Pizza	43434.25	1
Chicken	The Barbecue Chicken Pizza	42768	2
Chicken	The California Chicken Pizza	41409.5	3
Classic	The Classic Deluxe Pizza	38180.5	1
Classic	The Hawaiian Pizza	32273.25	2
Classic	The Pepperoni Pizza	30161.75	3
Supreme	The Spicy Italian Pizza	34831.25	1
Supreme	The Italian Supreme Pizza	33476.75	2
Supreme	The Sicilian Pizza	30940.5	3

KEY FINDINGS

Focus on stocking popular pizza sizes and types to reduce waste and ensure availability

Inventory Optimization

Adjust pricing based on high-demand and high-value pizzas to maximize revenue.

Pricing Strategy

Target promotions during peak hours and for top-selling pizza types to increase sales.

Marketing Campaigns

Optimize staffing and operations based on order patterns to improve service efficiency and reduce costs

Operational Efficiency





CONCLUSIONS

TOTAL ORDERS AND REVENUE

The analysis successfully identified the total number of orders and the total revenue generated from pizza sales. This foundational insight helps gauge overall business performance.

ORDER PATTERNS

Understanding the distribution of orders by hour and day helps optimize staffing and operational efficiency.

CATEGORY INSIGHTS

Insights into the category-wise distribution and the average number of pizzas ordered per day help in planning and demand forecasting.





THANK YOU!



By Varun R