



PIZZA SALES SQL PROJECT

INTRODUCTION

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This project explores a pizza sales dataset using SQL to uncover valuable insights and trends in sales performance.

INFORMATION

The dataset provides details such as order dates, pizza types, sizes, quantities, and revenues. By leveraging SQL, this project aims to:

1. Analyze sales patterns across different time periods.
2. Identify the most popular pizza types and sizes.
3. Examine revenue distribution and customer purchasing behavior.
4. Provide actionable insights to enhance business strategies.

QUESTIONS

BASIC:

- 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.

INTERMEDIATE:

- 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.

ADVANCED:

- 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.

ALL TABLES THAT ARE USED

(PIZZAS)TABLE

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

(PIZZA_TYPE)TABLE

pizza_type_id	name	category	ingredients
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 Pepp...
hawaiian	The Hawaiian Pizza	Classic	Sliced Ham, Pineapple, Mozzarella Cheese
ital_cpdlo	The Italian Capocollo Pizza	Classic	Capocollo, Red Peppers, Tomatoes, Goat Chee...

(ORDERS)TABLE

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

(ORDERS_DETAILS)TABLE

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

RETRIEVE THE TOTAL NUMBER OF ORDERS PLACED.

QUERY:

```
-- Retrieve the total number of orders placed.  
SELECT  
    COUNT(order_id) AS total_orders  
FROM  
    orders;
```

OUTPUT:

Result Grid	
	total_orders
▶	21350

CALCULATE THE TOTAL REVENUE GENERATED FROM PIZZA SALES.

QUERY:

```
-- Calculate the total revenue generated from pizza sales.  
• SELECT  
    ROUND(SUM(orders_details.quantity * pizzas.price)) AS total_revenue  
FROM  
    orders_details  
    JOIN  
    pizzas ON orders_details.pizza_id = pizzas.pizza_id;
```

OUTPUT:

Result Grid	
	total_revenue
▶	817860

IDENTIFY THE HIGHEST-PRICED PIZZA.

QUERY:

```
-- Identify the highest-priced pizza.  
SELECT  
    pizza_types.name, pizzas.price  
FROM  
    pizzas  
        JOIN  
            pizza_types ON pizzas.pizza_type_id = pizza_types.pizza_type_id  
ORDER BY price DESC  
LIMIT 1;
```

OUTPUT:

Result Grid | Filter Rows:

	name	price
▶	The Greek Pizza	35.95

IDENTIFY THE MOST COMMON PIZZA SIZE ORDERED.

QUERY:

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

OUTPUT:

Result Grid | Filter

	size	total_quantity
▶	L	18526

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

QUERY:

```
-- List the top 5 most ordered pizza types along with their quantities.  
SELECT  
    pizza_types.name,  
    COUNT(orders_details.quantity) AS quantities_1  
FROM  
    pizza_types  
        JOIN  
    pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id  
        JOIN  
    orders_details ON orders_details.pizza_id = pizzas.pizza_id  
GROUP BY pizza_types.name  
ORDER BY quantities_1 DESC  
LIMIT 5;
```

OUTPUT:

	name	quantities_1
▶	The Classic Deluxe Pizza	2416
	The Barbecue Chicken Pizza	2372
	The Hawaiian Pizza	2370
	The Pepperoni Pizza	2369
	The Thai Chicken Pizza	2315

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

QUERY:

```
-- Join the necessary tables to find the total quantity of each pizza category ordered.  
SELECT  
    pizza_types.category,  
    COUNT(orders_details.quantity) AS quantities_1  
FROM  
    pizza_types  
        JOIN  
    pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id  
        JOIN  
    orders_details ON orders_details.pizza_id = pizzas.pizza_id  
GROUP BY pizza_types.category  
ORDER BY quantities_1 DESC;
```

OUTPUT:

	category	quantities_1
▶	Classic	14579
	Supreme	11777
	Veggie	11449
	Chicken	10815

DETERMINE THE DISTRIBUTION OF ORDERS BY HOUR OF THE DAY.

QUERY:

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

OUTPUT:

	HOUR(order_time)	COUNT(order_id)
▶	11	1231
	12	2520
	13	2455
	14	1472
	15	1468
	16	1920
	17	2336

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

QUERY:

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

OUTPUT:

	category	COUNT(name)
▶	Chicken	6
	Classic	8
	Supreme	9
	Veggie	9

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

QUERY:

```
-- Group the orders by date and calculate the average number of pizzas ordered per day.  
WITH order_quantity AS(  
    SELECT orders.order_date AS date_1, SUM(orders_details.quantity) AS avg_quantity  
    FROM orders  
    JOIN orders_details  
    ON orders.order_id=orders_details.order_id  
    GROUP BY date_1)  
SELECT ROUND(AVG(avg_quantity))  
FROM order_quantity;
```

OUTPUT:

Result Grid		Filter Rows:
ROUND(AVG(avg_quantity))		
▶	138	

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

QUERY:

```
-- Determine the top 3 most ordered pizza types based on revenue.  
SELECT  
    pizza_types.name,  
    SUM(orders_details.quantity * pizzas.price) AS revenue  
FROM  
    pizza_types  
        JOIN  
    pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id  
        JOIN  
    orders_details ON orders_details.pizza_id = pizzas.pizza_id  
GROUP BY pizza_types.name  
ORDER BY revenue DESC  
LIMIT 3;
```

OUTPUT:

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

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

QUERY:

```
-- Calculate the percentage contribution of each pizza type to total revenue.  
SELECT pizza_types.category,  
    ROUND(SUM(orders_details.quantity*pizzas.price)/(SELECT ROUND(SUM(orders_details.quantity*pizzas.price)))  
FROM pizzas  
JOIN orders_details  
ON orders_details.pizza_id=pizzas.pizza_id)*100,2) AS revenue  
  
FROM pizza_types  
JOIN pizzas  
ON pizza_types.pizza_type_id=pizzas.pizza_type_id  
JOIN orders_details  
ON orders_details.pizza_id=pizzas.pizza_id  
GROUP BY pizza_types.category;
```

OUTPUT:

	category	revenue
▶	Classic	26.91
	Veggie	23.68
	Supreme	25.46
	Chicken	23.96

ANALYZE THE CUMULATIVE REVENUE GENERATED OVER TIME.

QUERY:

```
-- Analyze the cumulative revenue generated over time.  
SELECT order_date, SUM(revenue) OVER(ORDER BY order_date) AS cum_revenue  
FROM  
  (SELECT orders.order_date, SUM(orders_details.quantity*pizzas.price) AS revenue  
   FROM orders_details  
   JOIN pizzas  
   ON orders_details.pizza_id=pizzas.pizza_id  
   JOIN orders  
   ON orders.order_id=orders_details.order_id  
   GROUP BY orders.order_date) AS sales;
```

OUTPUT:

	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

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

QUERY:

```
-- Determine the top 3 most ordered pizza types based on revenue for each pizza category.  
SELECT category, name, revenue  
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(orders_details.quantity*pizzas.price) AS revenue  
         FROM orders_details  
         JOIN pizzas  
         ON orders_details.pizza_id=pizzas.pizza_id  
         JOIN pizza_types  
         ON pizza_types.pizza_type_id=pizzas.pizza_type_id  
         GROUP BY pizza_types.name, pizza_types.category) AS a) AS b  
WHERE rn<=3;
```

OUTPUT:

	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	32265.70000000065
	Veggie	The Mexicana Pizza	26780.75
	Veggie	The Five Cheese Pizza	26066.5