

Analyzing Pizza Sales Data

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Introduction

Overview of Case Study

In this case study, we analyze the sales data of a pizza business using a comprehensive dataset consisting of four interconnected tables: Pizzas, Pizza_Type, Orders, and Order_Details. Our goal is to gain insights into sales performance, customer preferences, and revenue trends. The following sections will delve into the structure of each table, the relationships between them, and the analysis performed to extract meaningful business insights.

Data Description

In this Case study I have used below four tables :

- Pizzas
- Pizza_Types
- Orders
- Order_Details

Retrieve the total number of orders placed.

```
SELECT  
    COUNT(order_id) as Total_number_of_orders  
FROM  
    orders;
```

| Result Grid | |
|-------------|------------------------|
| | Total_number_of_orders |
| ▶ | 21350 |

Calculate the total revenue generated from pizza sales.

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

| Result Grid | |
|-------------|-----------|
| | Eevenue |
| ▶ | 817860.05 |

Identify the highest-priced pizza.

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

| Result Grid | | |
|-------------|-----------------|-------|
| | name | price |
| ▶ | The Greek Pizza | 35.95 |

Identify the most common pizza size ordered.

```
SELECT
    pizzas.size, COUNT(order_details.order_details_id) AS Count
FROM
    pizzas
    JOIN
        order_details ON pizzas.pizza_id = order_details.pizza_id
GROUP BY pizzas.size
ORDER BY count DESC
LIMIT 1;
```

| | size | Count |
|---|------|-------|
| ▶ | L | 18526 |

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

```
SELECT
    pizza_types.name,
    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 order_details.pizza_id = pizzas.pizza_id
GROUP BY pizza_types.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 |

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

```
SELECT
    pizza_types.category,
    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 order_details.pizza_id = pizzas.pizza_id
GROUP BY pizza_types.category
order by total_quantity desc
```

| | category | total_quantity |
|---|----------|----------------|
| ▶ | Classic | 14888 |
| | Supreme | 11987 |
| | Veggie | 11649 |
| | Chicken | 11050 |

Determine the distribution of orders by hour of the day.

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

| 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 |

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

```
select pizza_types.category, count(pizza_types.name)  
from pizza_types  
group by pizza_types.category
```

| Result Grid | | |
|-------------|----------|-------------------------|
| | category | count(pizza_types.name) |
| ▶ | Chicken | 6 |
| | Classic | 8 |
| | Supreme | 9 |
| | Veggie | 9 |

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

```
with cte 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 Average_quantity
from cte;
```

| Result Grid | |
|-------------|------------------|
| | Average_quantity |
| ▶ | 138 |

determine the top 3 most ordered pizza types based on revenue.

```
SELECT
    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.name
ORDER BY revenue DESC
LIMIT 3;
```

| Result Grid | | Filter Rows: |
|-------------|------------------------------|--------------|
| | 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.

```
with CTE as (
  SELECT
    pizza_types.category as pizza_type,
    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
  ORDER BY revenue DESC
),
CTE2 as (SELECT
  ROUND(SUM(order_details.quantity * pizzas.price),
  2) AS total_sales
FROM
  order_details
  JOIN
  pizzas ON order_details.pizza_id = pizzas.pizza_id
)

select pizza_type, concat(Round(revenue/total_sales *100, 2), "%") as Percentage
from CTE,CTE2;
```

| | pizza_type | Percentage |
|---|------------|------------|
| ▶ | Classic | 26.91% |
| | Supreme | 25.46% |
| | Chicken | 23.96% |
| | Veggie | 23.68% |

Result 8

Analyze the cumulative revenue generated over time.

```
with CTE 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 , Round(sum(revenue) over (order by order_Date), 2) as cumulative_revenue
from CTE;
```

| | order_Date | cumulative_revenue |
|---|------------|--------------------|
| ▶ | 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 |
| | 2015-01-16 | 36937.65 |
| | 2015-01-17 | 39001.75 |
| | 2015-01-18 | 40978.6 |
| | 2015-01-19 | 43365.75 |
| | 2015-01-20 | 45763.65 |
| | 2015-01-21 | 47804.2 |
| | 2015-01-22 | 50300.9 |
| | 2015-01-23 | 52724.6 |
| | 2015-01-24 | 55013.85 |

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

```
> with CTE 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
)
,
CTE2 as (select category, name, revenue, rank() over(partition by category order by revenue desc) as rank_given
from CTE
)
select category ,name, round(revenue,2) as Revenue_generated
from CTE2
where rank_given <=3
```

| | category | name | Revenue_generated |
|---|----------|------------------------------|-------------------|
| ▶ | 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 |

THANK YOU

