



### Pizza Sales Analysis

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#### Introduction

- Objective: Analyze pizza sales data to identify trends, popular items, and potential areas for growth.
- Data Sources: Description of the datasets used, such as sales transactions, customer details, and pizza inventory.

#### SQL Query Techniques Used:

- Data Cleaning and Preparation: Methods used to handle missing values, normalize data, and join multiple tables.
- Aggregate Functions: Use of SUM(), AVG(), COUNT() and GROUP BY to summarize the sales data.
- Analytical Functions: Examples of using 'WINDOW' function like 'ROW\_NUMBER()', 'RANK()' and 'PARTITION BY' for advance analysis.

#### Key Insights and Finding

- Top-Selling Pizzas: Identification of the most popular pizzas based on sales and revenue.
- Sales Trends: Analysis of sales pattern over time(e.g., peak sales period, seasonal trends).
- Customer Insights: Segmentation of customers based on purchasing behavior and preference.

### **BASICS**

#### 1. Retrieve the total number of orders placed.

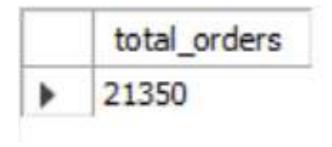
```
-- Retrieve the total number of orders placed.

SELECT

COUNT(order_id) AS total_orders

FROM

pizzahut.orders;
```



# 2. Calculate the total revenue generated from pizza sales.

```
-- Calculate the total revenue generated from pizza sales.

SELECT

ROUND(SUM(orders_details.quantity + pizzas.price),

3) AS total_sales

FROM

orders_details

JOIN

pizzas ON pizzas.pizza_id = orders_details.pizza_id;
```



#### 3. Identify the highest-priced pizza.

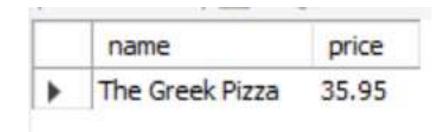
```
-- Identify the highest-priced pizza.

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;
```



#### 4. Identify the most common pizza size ordered.

```
-- Identify the most common pizza size ordered.
SELECT
   pizzas.size,
   COUNT(orders_details.order_details_id) AS order_count
FROM
    pizzas
        JOIN
   orders details ON pizzas.pizza id = orders details.pizza id
GROUP BY pizzas.size
ORDER BY order_count DESC;
                                             order_count
                                      size
                                             18526
                                             15385
                                     M
                                             14137
                                     XL
                                             544
                                     XXL
                                             28
```

# 5. 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(orders_details.quantity) AS total_quantity
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 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

# 6. 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(orders_details.quantity) AS total_quantity
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 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	

### INTERMEDIATE

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

```
-- Join the necessary tables to find the total quantity of each pizza category ordered.
SELECT
    pizza_types.category,
    SUM(orders details.quantity) AS quantity
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
                                                                    category
                                                                                quantity
ORDER BY quantity DESC;
                                                                   Classic
                                                                               14888
```

Supreme

Veggie

Chicken

11987

11649

11050

# 2. 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\_count from orders group by hour(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

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

```
-- Join relevant tables to find the category-wise distribution of pizzas. select category, count(name) from pizza_types group by category;
```

category	count(name)
Chicken	6
Classic	8
Supreme	9
Veggie	9

# 4. Group the 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) 'average pizza ordered per day'

FROM

(SELECT

orders.order_date, SUM(orders_details.quantity) as quantity

FROM

orders

JOIN orders_details ON orders.order_id = orders_details.order_id

GROUP BY orders.order date) AS order qantity;
```

average pizza ordered per day 138

### 5. 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,
    SUM(orders details.quantity * pizzas.price) AS revenue
FROM
    pizza types
        JOIN
    pizzas ON pizzas.pizza type id = pizza types.pizza type id
        JOIN
    orders details ON orders details.pizza id = pizzas.pizza id
GROUP BY pizza types.name
ORDER BY revenue DESC
                                     name
                                                                  revenue
LIMIT 3;
                                     The Thai Chicken Pizza
                                                                 43434.25
                                     The Barbecue Chicken Pizza
                                                                42768
                                     The California Chicken Pizza
                                                                41409.5
```

### **ADVANCE**

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

```
-- Calculate the percentage contribution of each pizza type to total revenue.
SELECT
   pizza types.category,
   CONCAT(ROUND((SUM(orders_details.quantity * pizzas.price) / (SELECT
                           ROUND(SUM(orders details.quantity + pizzas.price),
                                       3) AS total sales
                       FROM
                           orders details
                               JOIN
                           pizzas ON pizzas.pizza id = orders details.pizza id)) * 100,
                   2),
           '%') AS revenue
FROM
                                                                       category
                                                                                     revenue
   pizza types
       JOIN
                                                                       Classic
                                                                                    25.84%
   pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
                                                                       Supreme
                                                                                    24.45%
       JOIN
                                                                       Chicken
                                                                                    23.01%
   orders details ON orders details.pizza id = pizzas.pizza id
                                                                                    22.75%
                                                                       Veggie
GROUP BY pizza_types.category
ORDER BY revenue DESC;
```

### 2. Analyze the cumulative revenue generated over time.

```
-- Analyze the cumulative revenue generated over time.
select order date, sum(revenue) over(order by order date) as cum revenue
from
                                                                  order_date
                                                                            cum_revenue
                                                                            2713.85000000000004
                                                                  2015-01-01
(select orders.order date,
                                                                  2015-01-02 5445.75
sum(orders details.quantity*pizzas.price) as revenue
                                                                  2015-01-03
                                                                           8108, 15
                                                                  2015-01-04 9863.6
from orders_details join pizzas
                                                                  2015-01-05 11929.55
on orders details.pizza id=pizzas.pizza id
                                                                  2015-01-06 14358.5
                                                                           16560.7
                                                                  2015-01-07
join orders
                                                                  2015-01-08
                                                                           19399.05
on orders.order_id=orders_details.order_id
                                                                           21526.4
                                                                  2015-01-09
                                                                  2015-01-10
                                                                            23990.3500000000002
group by orders.order date) as sales;
                                                                  2015-01-11
                                                                            25862.65
                                                                  2015-01-12
                                                                            27781.7
                                                                  2015-01-13
                                                                           29831,3000000000003
                                                                  2015-01-14
                                                                           32358,7000000000004
                                                                  2015-01-15
                                                                           34343,500000000001
                                                                  2015-01-16
                                                                            36937.65000000001
```

2015-01-17

39001.75000000001

#### 3. 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 name, revenue from
(select category, name, revenue, rank() over(partition by category order by
revenue) as ranks from
                                                                          name
(select pizza_types.category, pizza_types.name,
                                                                         The Chicken Pesto Pizza
                                                                         The Chicken Alfredo Pizza
                                                                         The Southwest Chicken Pizza
sum((orders_details.quantity)*pizzas.price) as revenue
                                                                         The Pepperoni, Mushroom, and Peppers Pizza
                                                                         The Big Meat Pizza
from pizza_types join pizzas
                                                                         The Napolitana Pizza
                                                                         The Brie Carre Pizza
on pizza_types.pizza_type_id=pizzas.pizza_type_id
                                                                         The Spinach Supreme Pizza
                                                                         The Calabrese Pizza
join orders details
                                                                         The Green Garden Pizza
                                                                         The Mediterranean Pizza
on orders_details.pizza_id=pizzas.pizza_id
                                                                         The Spinach Pesto Pizza
group by pizza_types.category, pizza_types.name) as A)as B
where ranks<=3;
```

revenue

16701.75

16900.25

34705.75

18834.5

22968

24087

15277.75

15934.25

13955.75

15360.5

15596

11588.4999999999