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SQL Pizza Hut Analysis

OVERVIEW OF SQL PIZZA HUT ANALYSIS

This project focuses on analyzing Pizza Hut's sales data to gain insights into customer preferences, order patterns, and revenue generation. The dataset contains information about orders, pizzas, and their categories. The key objectives include:

- Determining the most popular pizza types based on order quantity and revenue.
- Identifying peak ordering hours to understand customer behavior.
- Calculating total revenue generated from pizza sales.
- Analyzing order distribution by category, size, and time.

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PROBLEM STATEMENTS

1. Retrieve the total number of orders placed.
2. Calculate the total revenue generated from pizza sales.
3. Identify the highest-priced pizza.
4. Identify the most common pizza size ordered.
5. List the top 5 most ordered pizza types along with their quantities.
6. Join the necessary tables to find the total quantity of each pizza category ordered.
7. Determine the distribution of orders by hour of the day.
8. Join relevant tables to find the category-wise distribution of pizzas.
9. Group the orders by date and calculate the average number of pizzas ordered per day.
10. Determine the top 3 most ordered pizza types based on revenue.

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

12. Analyze the cumulative revenue generated over time.

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

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

Code:

```
SELECT count(order_id)  AS TOTAL_ORDERS FROM orders;
```

Output:

TOTAL_ORDERS
21350

2. Calculate the total revenue generated from pizza sales

Code:

```
SELECT
    ROUND(SUM(orders_details.quantity * pizzas.price),
            2) AS TOTAL_REVENUE
FROM
    orders_details
        JOIN
    pizzas ON pizzas.pizza_id = orders_details.pizza_id;
```

Output:

TOTAL_REVENUE
817860.05

3. Identify the highest-priced pizza.

Code:

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

Output:

name	HIGHEST_PRICE_OF_PIZZA
The Greek Pizza	35.95

4. Identify the most common pizza size ordered.

Code:

```
SELECT
    pizzas.size,
    COUNT(orders_details.quantity) AS common_pizza_size_
FROM
    orders_details
        JOIN
    pizzas ON orders_details.pizza_id = pizzas.pizza_id
GROUP BY pizzas.size
ORDER BY common_pizza_size_ordered DESC
```

Output:

size	common_pizza_size_ordered
L	18526

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

Code:

```
SELECT
    pizza_types.name, 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.name
ORDER BY QUANTITY DESC
LIMIT 5;
```

Output:

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

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

Code:

```
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
ORDER BY QUANTITY DESC;
```

Output:

category	QUANTITY
Classic	14888
Supreme	11987
Veggie	11649
Chicken	11050

7. Determine the distribution of orders by hour of the day.

Code:

```
SELECT
    HOUR(order_time), COUNT(order_id) AS ORDER_s
FROM
    orders
GROUP BY HOUR(order_time)
ORDER BY ORDER_s DESC;
```

Output:

HOUR(order_time)	ORDER_s
12	2520
13	2455
18	2399
17	2336
19	2009
16	1920
20	1642
14	1472
15	1468
11	1231
21	1198
22	663
23	28
10	8
9	1

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

Code:

```
SELECT
    category, COUNT(name) AS PIZZA_NAME
FROM
    pizza_types
GROUP BY category
ORDER BY PIZZA_NAME DESC;
```

Output:

category	PIZZA_NAME
Supreme	9
Veggie	9
Classic	8
Chicken	6

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

Code:

```
SELECT
    ROUND(AVG(Quantity)) AS AVERAGE_PIZZA_ORDERD
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_quantity;
```

Output:

AVERAGE_PIZZA_ORDERD
138

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

Code:

```sql
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

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

Code:

```
SELECT
    pizza_types.category,
    ROUND((SUM(orders_details.quantity * pizzas.price) / (SELECT
                    ROUND(SUM(orders_details.quantity * pizzas.price),
                                2) AS TOTAL_REVENUE
                FROM
                    orders_details
                        JOIN
                    pizzas ON pizzas.pizza_id = orders_details.pizza_id)) * 100,
            2) AS Revenue_in_percentage
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 Revenue_in_percentage DESC;
```

Output:

category	Revenue_in_percentage
Classic	26.91
Supreme	25.46
Chicken	23.96
Veggie	23.68

12. Analyze the cumulative revenue generated over time.

Code:

```
SELECT order_date,Revenue,sum(Revenue) OVER(ORDER BY order_date) AS Cumulative_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	Revenue	Cumulative_Revenue
2015-01-01	2713.8500000000004	2713.8500000000004
2015-01-02	2731.8999999999996	5445.75
2015-01-03	2662.3999999999996	8108.15
2015-01-04	1755.4500000000003	9863.6
2015-01-05	2065.95	11929.55
2015-01-06	2428.95	14358.5
2015-01-07	2202.2000000000003	16560.7
2015-01-08	2838.3499999999995	19399.05
2015-01-09	2127.3500000000004	21526.4
2015-01-10	2463.95	23990.350000000002
2015-01-11	1872.3000000000002	25862.65
2015-01-12	1919.0500000000002	27781.7
2015-01-13	2049.6000000000004	29831.300000000003

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

Code:

```
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 pizza_types JOIN pizzas
ON pizza_types.pizza_type_id = pizzas.pizza_type_id
join orders_details
on pizzas.pizza_id =orders_details.pizza_id
GROUP BY pizza_types.category,pizza_types.name) AS a;
```

Output:

category	name	revenue	rn
Chicken	The Thai Chicken Pizza	43434.25	1
Chicken	The Barbecue Chicken Pizza	42768	2
Chicken	The California Chicken Pizza	41409.5	3
Chicken	The Southwest Chicken Pizza	34705.75	4
Chicken	The Chicken Alfredo Pizza	16900.25	5
Chicken	The Chicken Pesto Pizza	16701.75	6
Classic	The Classic Deluxe Pizza	38180.5	1
Classic	The Hawaiian Pizza	32273.25	2
Classic	The Pepperoni Pizza	30161.75	3
Classic	The Greek Pizza	28454.100000000013	4
Classic	The Italian Capocollo Pizza	25094	5
Classic	The Napolitana Pizza	24087	6
Classic	The Big Meat Pizza	22968	7
Classic	The Pepperoni, Mushroom, ...	18834.5	8
Supreme	The Spicy Italian Pizza	34831.25	1
Supreme	The Italian Supreme Pizza	33476.75	2
Supreme	The Sicilian Pizza	30940.5	3
Supreme	The Pepper Salami Pizza	25529	4

Thank You