PIZZA SALES

DATA ANALYSIS

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OBJECTIVE

The primary objective of this analysis is to leverage MySQL for extracting and interpreting key insights from pizza sales data. Through this analysis, we aim to:

- Understand overall sales performance and revenue generation.
- Identify the most popular and high-revenue pizzas.
- Examine customer preferences regarding pizza sizes.
- Analyze ordering trends to inform inventory and marketing strategies.
- Provide data-driven recommendations for optimizing sales and customer satisfaction.

This comprehensive analysis will support data-driven decision-making for improving business operations and maximizing profitability.

TOTAL QUANTITY OF EACH PIZZA CATEGORY ORDERED

Insights:

- By merging relevant data from tables on pizza types, pizzas, and orders, we discerned the total quantity of each pizza category ordered.
- This comprehensive view enables strategic decision-making in inventory management, catering to customer preferences effectively.
- Understanding category-wise demand aids in optimizing production and marketing strategies for enhanced operational efficiency.

Input:

```
64 •  SELECT
65        pizza_types.category,
66        SUM(order_details.quantity) AS quantity
67    FROM
68        pizza_types
69            JOIN
70        pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
71            JOIN
72        order_details ON order_details.pizza_id = pizzas.pizza_id
73    GROUP BY pizza_types.category
74    ORDER BY quantity DESC;
```

Output:

	category	quantity
▶	Classic	14888
	Supreme	11987
	Veggie	11649
	Chicken	11050

ANALYZING ORDER DISTRIBUTION BY HOUR

Insights:

- Understanding the distribution of orders by hour reveals peak and off-peak times for pizza sales.
- This insight aids in scheduling staff efficiently, ensuring optimal staffing levels during peak hours to handle increased demand.
- It also guides promotional activities, allowing targeted marketing efforts during slower hours to stimulate sales.

Input:

```
79 •    SELECT
80          HOUR(order_time) AS hour, COUNT(order_id) AS order_count
81      FROM
82          orders
83      GROUP BY HOUR(order_time);
```

Output:

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

ANALYZING CATEGORY-WISE DISTRIBUTION OF PIZZAS

Insights:

- Analyzing the category-wise distribution of pizzas provides valuable insights into customer preferences.
- It helps in understanding which pizza categories are most popular among customers, guiding menu optimization and promotional efforts.
- This analysis facilitates targeted marketing strategies, ensuring effective communication of offerings aligned with customer preferences.

Input:

```
89 •    SELECT
90          category, COUNT(name)
91      FROM
92          pizza_types
93      GROUP BY category;
```

Output:

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

ANALYZING DAILY PIZZA ORDER TRENDS

Insights:

- Grouping orders by date and calculating the average number of pizzas ordered per day provides insights into daily order trends.
- This analysis helps identify peak days for pizza sales, enabling better resource allocation and staffing adjustments.
- Understanding daily order trends allows businesses to optimize production schedules and inventory management, ensuring sufficient stock levels to meet demand fluctuations.

Input:

```
99  SELECT
100     ROUND(AVG(quantity), 0) as avg_pizza_ordered_per_day
101 FROM
102     (SELECT
103         orders.order_date, SUM(order_details.quantity) AS quantity
104     FROM
105         orders
106     JOIN order_details ON orders.order_id = order_details.order_id
107     GROUP BY orders.order_date) AS order_quantity;
```

Output:

avg_pizza_ordered_per_day
138

IDENTIFYING TOP 3 REVENUE-GENERATING PIZZA TYPES

Insights:

- Identifying the top revenue-generating pizza types offers valuable insights into customer preferences and purchasing behaviour.
- This analysis helps prioritize menu offerings and promotional efforts towards the most profitable pizza types.
- Understanding the revenue contribution of each pizza type enables strategic decision-making in menu optimization and pricing strategies to enhance profitability.

Input:

```
113 •   SELECT
114         pizza_types.name,
115         SUM(order_details.quantity * pizzas.price) AS revenue
116     FROM
117         pizza_types
118             JOIN
119         pizzas ON pizzas.pizza_type_id = pizza_types.pizza_type_id
120             JOIN
121         order_details ON order_details.pizza_id = pizzas.pizza_id
122     GROUP BY pizza_types.name
123     ORDER BY revenue DESC
124     LIMIT 3;
```

Output:

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

ANALYZING REVENUE CONTRIBUTION BY PIZZA TYPE

Insights:

- Calculating the percentage contribution of each pizza type to total revenue offers insights into the revenue distribution across different menu items.
- This analysis helps identify the most lucrative pizza types, guiding menu optimization and promotional strategies to maximize revenue.
- Understanding the contribution of each pizza type to total revenue enables informed decisions on resource allocation and marketing investments for optimal business outcomes.

Input:

```
SELECT
    pizza_types.category,
    CONCAT(ROUND((SUM(order_details.quantity * pizzas.price) / (SELECT
                        ROUND(SUM(order_details.quantity * pizzas.price),
                                2)
                    FROM
                        order_details
                            JOIN
                        pizzas ON pizzas.pizza_id = order_details.pizza_id)) * 100,
                2),
            '%') 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
ORDER BY revenue DESC;
```

Output:

	category	revenue
▶	Classic	26.91%
	Supreme	25.46%
	Chicken	23.96%
	Veggie	23.68%

ANALYZING CUMULATIVE REVENUE OVER TIME

Insights:

- Analyzing cumulative revenue over time provides insights into revenue trends and business performance.
- This analysis helps identify growth patterns, seasonality, and overall revenue trajectory, guiding long-term strategic planning.
- Understanding the cumulative revenue trend enables businesses to assess performance against targets, identify areas for improvement, and make informed decisions to drive sustainable growth.

Input:

```sql
SELECT order_date,
       ROUND(SUM(revenue) OVER (ORDER BY order_date), 2) AS cum_revenue
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 orders.order_id = order_details.order_id
    GROUP BY orders.order_date
) AS sales;
```

Output:

order_date	cum_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

TOTAL QUANTITY OF EACH PIZZA CATEGORY ORDERED

Insights:

- Determining the top revenue-generating pizza types by category provides a granular understanding of sales performance within each menu category.
- This analysis allows for targeted optimization of menu offerings and promotional efforts tailored to specific customer preferences within each category.
- Understanding the revenue contribution of individual pizza types within each category enables strategic decision-making to maximize profitability and enhance customer satisfaction.

Input:

```
168 •   SELECT name, ROUND(revenue, 2) as revenue
169     FROM (
170         SELECT category, name, revenue,
171         RANK() OVER (PARTITION BY category ORDER BY revenue DESC) as rn
172         FROM (
173             SELECT pizza_types.category, pizza_types.name,
174             SUM(order_details.quantity * pizzas.price) as revenue
175             FROM pizza_types
176             JOIN pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
177             JOIN order_details ON order_details.pizza_id = pizzas.pizza_id
178             GROUP BY pizza_types.category, pizza_types.name
179         ) as a
180     ) as b
181     WHERE rn <= 3;
```

Output:

name	revenue
The Thai Chicken Pizza	43434.25
The Barbecue Chicken Pizza	42768
The California Chicken Pizza	41409.5
The Classic Deluxe Pizza	38180.5
The Hawaiian Pizza	32273.25
The Pepperoni Pizza	30161.75
The Spicy Italian Pizza	34831.25
The Italian Supreme Pizza	33476.75
The Sicilian Pizza	30940.5
The Four Cheese Pizza	32265.7
The Mexicana Pizza	26780.75
The Five Cheese Pizza	26066.5

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I appreciate your time and interest in exploring my data analysis project. If you would like to delve deeper into the details or access the full project, please visit my GitHub repository at https://github.com/karstendsouza/Pizza-Sales-Data-Analysis. Your engagement and feedback are invaluable to me as I continue to refine and improve my analytical insights. Thank you for your support!

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THANK YOU