Domino’s Pizza Sales Analysis using SQL

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Tool used: MYSQL

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Project Overview:

This project demonstrates SQL techniques used by analysts to explore, clean, and analyze pizza sales and customer data. The analysis focuses on understanding order patterns, revenue, customer behavior, and menu performance to support business decision-making.

Objectives:

1. Set up a Domino’s pizza database: Create and populate the database with orders, pizzas, and customers.
2. Data Cleaning: Identify and remove null or inconsistent records.
3. Exploratory Data Analysis (EDA): Understand customer behavior, order trends, and menu performance.
4. Business Analysis: Answer stakeholder-driven questions to derive actionable insights.

Database Structure:

Tables:

- **orders:** Contains order-level information (order_id, custId, order_date, order_time).
- **order_details:** Contains details of each order (order_detail_id, order_id, pizza_id, quantity).
- **pizzas:** Contains pizza information (pizza_id, pizza_type_id, size, price).
- **pizza_types:** Contains pizza type info (pizza_type_id, name, category).
- **customers:** Contains customer info (custId, first_name, last_name).

Data explorations and techniques:

- Verify total records in each table.
- Check for null or missing values in critical columns.

The data was cleaned and prepared by modifying column data type and validating record counts.

Techniques Used: Aggregations, Joins, CTEs, Window Functions, Ranking Functions, and Date-Time Functions.

Analysis and key insights:

1. **Order Volume**

Total Unique Orders: Calculated using COUNT(DISTINCT order_id).

Monthly Trends: SQL window functions (LAG()) were used to find month-over-month (MoM).

→ **Insight:** Orders show significant seasonal variation, indicating peak months around festive or promotional periods.

2. Peak Ordering Days

Day-wise Order Distribution: Using DAYNAME(order_date)

shows that weekends (especially Friday and Saturday) record the highest order volumes — **suggesting stronger weekend sales patterns.**

3. Total Revenue

Formula: SUM(quantity * price)

Insight: The total revenue figure provides the baseline for evaluating category-wise and product-level contributions.

4. Highest-Priced Pizza

Identified using an ORDER BY price DESC query.

Insight: Premium large-size pizzas (especially from the "Supreme" and "Classic Deluxe" categories) dominate the top pricing tier.

5. Most Common Pizza Size Ordered

Finding: Medium (M) and Large (L) sizes are most frequently ordered.

Business Implication: Focus promotions and inventory on M/L sizes for optimal sales.

6. Top 5 Most Ordered Pizza Types

pizza_type_id	order_count
classic_dlx	2453
bbq_ckn	2432
hawaiian	2422
pepperoni	2418
thai_ckn	2371

Insight: The top five pizzas account for a major portion of total sales volume, suggesting strong brand favorites.

7. Category-Wise Performance

Top Categories by Quantity: "**Classic**" and "**Veggie**" pizzas.

Top Categories by Revenue: "**Deluxe**" and "**Supreme**" categories due to higher unit prices.

8. Order Timing Trends

Hourly Analysis: HOUR(order_time) reveals order **peaks between 6 PM – 9 PM**, aligning with dinner hours.

Business Use: Useful for staffing and delivery resource planning.

9. Average Pizzas Ordered per Day

Metric: Average daily pizza demand = AVG(daily_total)

Insight: Provides consistency tracking of daily performance and inventory needs.

10. Top Revenue Generators

Top 3 Pizzas by Revenue: Derived using SUM(quantity * price) with ORDER BY DESC.

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

Finding: A few pizza types contribute disproportionately to total revenue — essential for pricing and marketing focus.

11. Revenue Distribution by Size

Calculated using window functions for percentage contribution.

size	revenue	contri
M	249382.25	30.49
L	375318.7	45.89
S	178076.5	21.77
XL	14076	1.72
XXL	1006.6	0.12

12. Cumulative Revenue Trend

months	monthly_revenue	cumulative_revenue
2015-01	69793.3	69793.3
2015-02	65159.6	134952.9
2015-03	70397.1	205350
2015-04	68736.8	274086.8
2015-05	71402.75	345489.55
2015-06	68230.2	413719.75
2015-07	72557.9	486277.65
2015-08	68278.25	554555.9
2015-09	64180.05	618735.95
2015-10	64027.6	682763.55
2015-11	70395.35	753158.9
2015-12	64701.15	817860.05

Finding: A steady upward trend with noticeable spikes in festive or promotional periods.

Key Business Recommendations:

- **Focus Promotions on Peak Hours**: Target advertising and discounts during 6–9 PM.
- **Inventory Planning**: Prioritize medium and large pizza stock levels.
- **Product Strategy**: Promote high-margin “Deluxe” and “Supreme” categories.
- **Seasonal Campaigns**: Leverage months with historical order spikes for promotional campaigns.
- **Customer Retention**: Reward loyal customers who order repeatedly from top-selling pizza types.

Conclusion:

This SQL-based analysis of Domino’s Pizza sales provides valuable insights into ordering behavior, product performance, and revenue distribution. By leveraging data-driven findings, Domino’s can refine its sales strategies, optimize operations, and enhance customer satisfaction.