



MAVEN PIZZA SALES



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PROJECT DOMAIN: FOOD AND BEVERAGE
TOOLS USED: SQL SERVER, CANVA

PIZZA SALES ANALYSIS

- WHERE EVERY SLICE TELLS A STORY





ABOUT PROJECT

OBJECTIVE

The project aims to analyze the pizza shop's sales data to derive actionable insights that support optimizing operations, improving customer satisfaction, and enhancing profitability.



PROBLEM STATEMENT

A pizza shop seeks to leverage data-driven strategies to:

- Identify peak sales periods.
- Determine popular pizza types and sizes.
- Uncover revenue trends.
- Understand customer preferences.

The insights will guide decisions to refine menu offerings, streamline inventory management, and reduce waste, ultimately maximizing operational efficiency and profitability.



ABOUT DATASET

The dataset contains historical sales data from the pizza shop, providing essential information to analyze operational performance, customer preferences, and revenue trends. It is downloaded from Maven Analytics website. It consists of four interconnected tables. The order details table contains 48620 rows and 5 columns.

ORDERS

- **order_id:** Unique identifier for each order.
- **date:** The date the order was placed.
- **time:** The time the order was placed.

ORDER DETAILS

- **order_details_id:** Unique identifier for each pizza in an order.
- **order_id:** Foreign key linking to the Orders table.
- **pizza_id:** Foreign key linking to the Pizzas table.
- **quantity:** Number of pizzas of the same type and size ordered.

PIZZAS

- **pizza_id:** Unique identifier for each pizza.
- **pizza_type_id:** Foreign key linking to the Pizza Types table.
- **size:** Size of the pizza.
- **price:** Price of the pizza.

PIZZA TYPES

- **pizza_type_id:** Unique identifier for each pizza type.
- **name:** Name of the pizza.
- **category:** Category of the pizza.
- **ingredients:** List of ingredients used in the pizza.



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1. NULL VALUE CHECK

Performed a thorough check for null values in critical columns, including time and date in the Orders table, price and size in the Pizzas table, and quantity in the Order_details table. No null values were found, ensuring data completeness across key fields.

2. DUPLICATE DATA

Verified the Pizza_types table for duplicate entries by grouping and counting records in the name column. The check confirmed that no duplicate pizzas were present, ensuring data uniqueness and integrity.

3. DATA VALIDATION

Reviewed distinct values in the category column of the Pizza_types table and the size column of the Pizzas table. This step validated that all entries were consistent and aligned with expected data classifications.

DATA CLEANING



4. FOREIGN KEY

Added foreign key constraints to the Order_details table by linking order_id to the Orders table and pizza_id to the Pizzas table. This ensured referential integrity and reinforced logical relationships between tables.

5. FEATURE ENGINEERING

Enhanced the Orders table by creating SaleMonth and SaleDay columns to capture the month and weekday from the date column. These new features facilitate temporal analysis for identifying sales patterns.

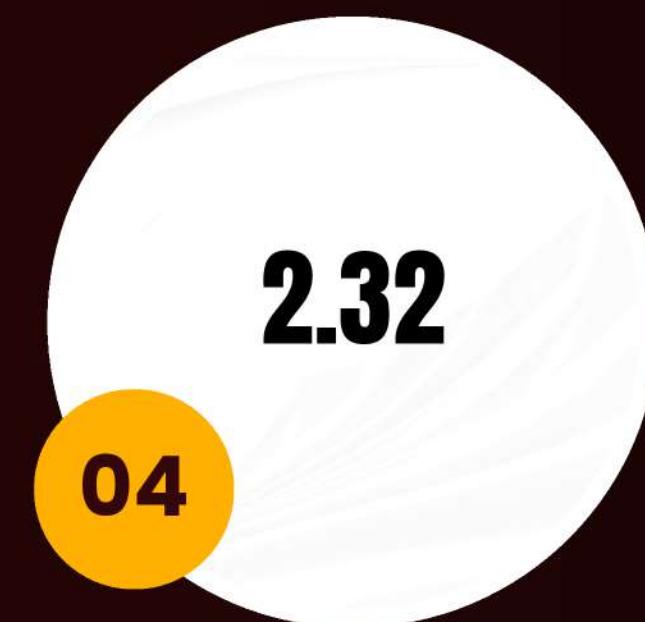
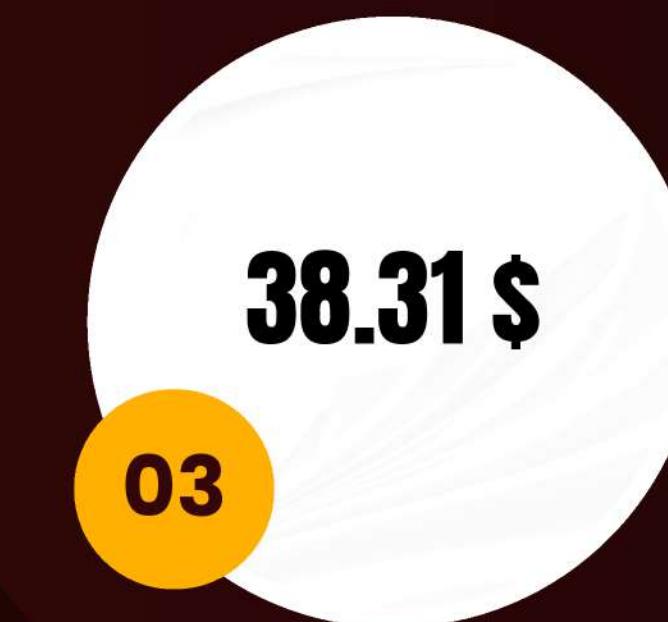
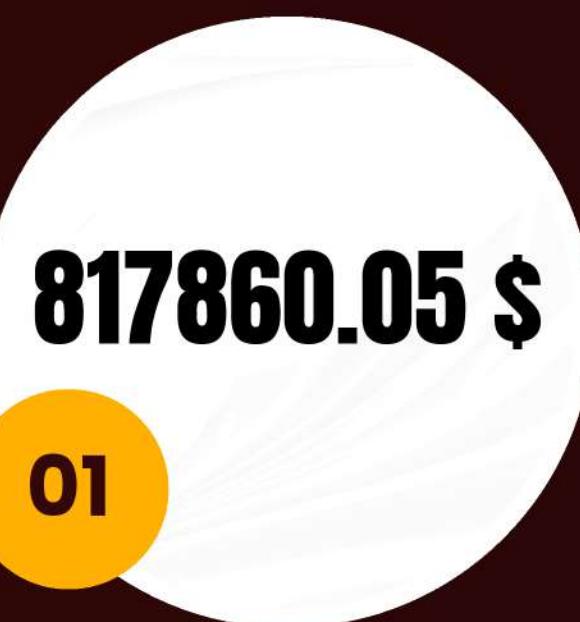
6. DATA FORMATTING

Standardized the price column in the Pizzas table by rounding all values to two decimal places. This step improved the clarity and presentation of numerical data for analysis and reporting.



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KEY METRICS



REVENUE

TOTAL ORDERS

Avg Order
Value

Avg Pizzas Per
Order

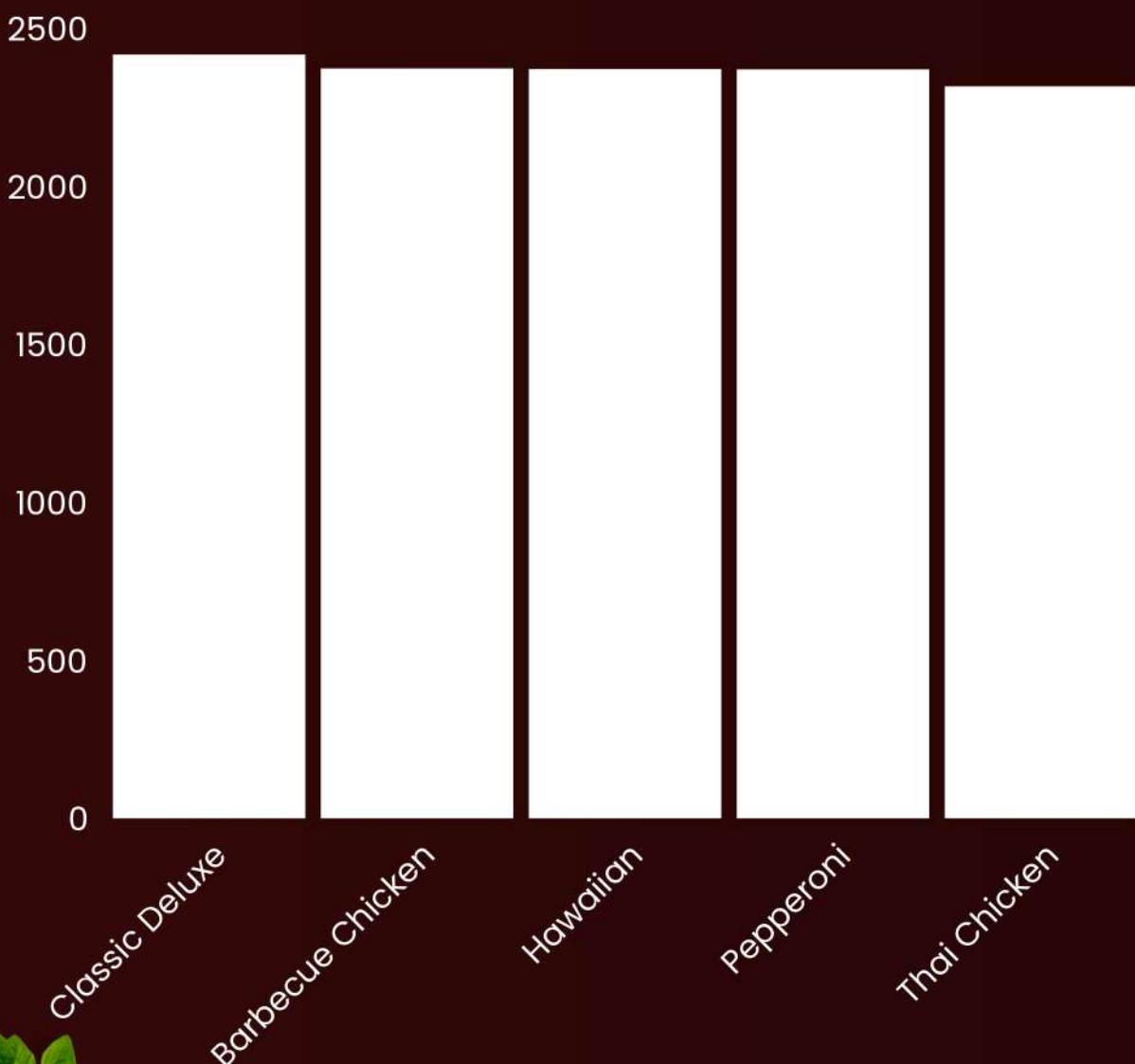
The pizza shop generated \$817,860.05 in revenue from 21,350 orders, with an average order value of \$38.31.

Customers typically ordered 2.32 pizzas per transaction, highlighting group or family purchases.



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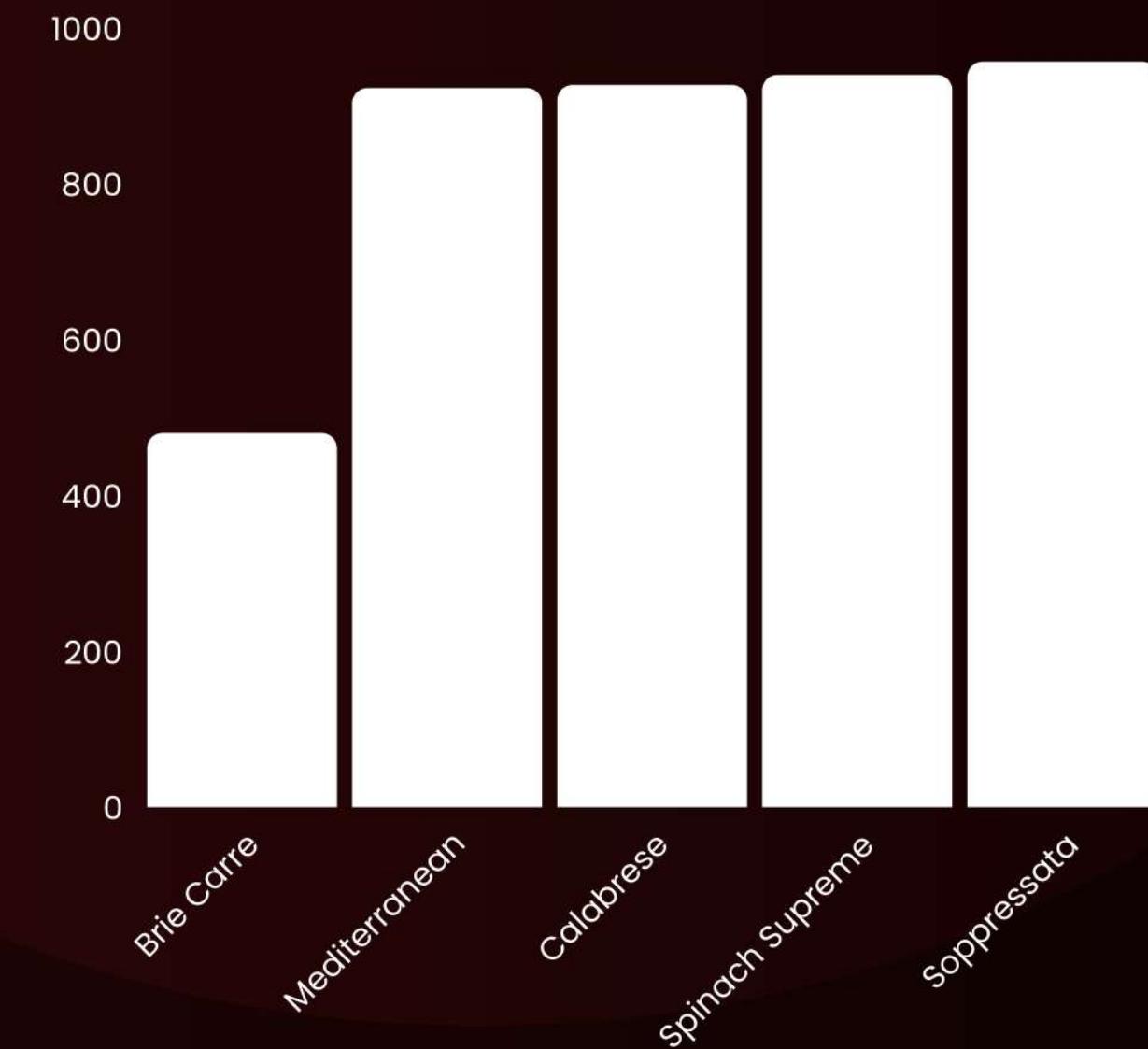
BEST SELLERS



OBSERVATIONS

- The top-selling pizza is the Classic Deluxe Pizza with 2,416 orders generating \$38,180.50.
- Other bestsellers include the Barbecue Chicken Pizza (2,372 orders, \$42,768) and the Thai Chicken Pizza (2,315 orders, \$43,434.25).
- The Brie Carre Pizza is the least popular, with 480 orders and \$11,588.50 revenue.
- Other low performers include the Mediterranean Pizza (923 orders, \$15,360.50) and the Spinach Supreme Pizza (940 orders, \$15,277.75).

LOW SELLERS





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TOP 10 PIZZA INGREDIENTS

- Tomatoes (5) are the most frequently used, indicating their essential role in most pizzas, likely as a base for sauces or toppings.
- Other staples like Red Peppers (4), Garlic (4), Mozzarella Cheese (3), Chicken (3), and Red Onions (3) are also widely used, highlighting their popularity across multiple recipes.
- Ingredients such as Jalapeno Peppers (2), Pepperoni (2), and Pineapple (2) cater to specific flavor profiles, such as spicy or sweet-savory combinations.
- Items like Lunganega Sausage (1), Artichoke (1), Thai Sweet Chilli Sauce (1), and various specialty cheeses (e.g., Ricotta, Fontina, Gorgonzola) appear less frequently, suggesting they are used in niche or premium recipes.
- Cheese dominates the ingredient list, with multiple varieties like Mozzarella, Parmigiano Reggiano, Goat Cheese, and Gouda, reflecting its critical role in pizza preparation.
- Vegetables like Tomatoes, Red Peppers, Garlic, and Onions are integral, offering flavor diversity.





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RECOMMENDATIONS

- **Best Sellers:**

- Special promotions or discounts for these pizzas to encourage more orders.
- Create meal combos around these pizzas to increase order size.
- Leverage seasonal themes or holidays to market these pizzas, ensuring they remain in demand year-round.

- **Low Sellers:**

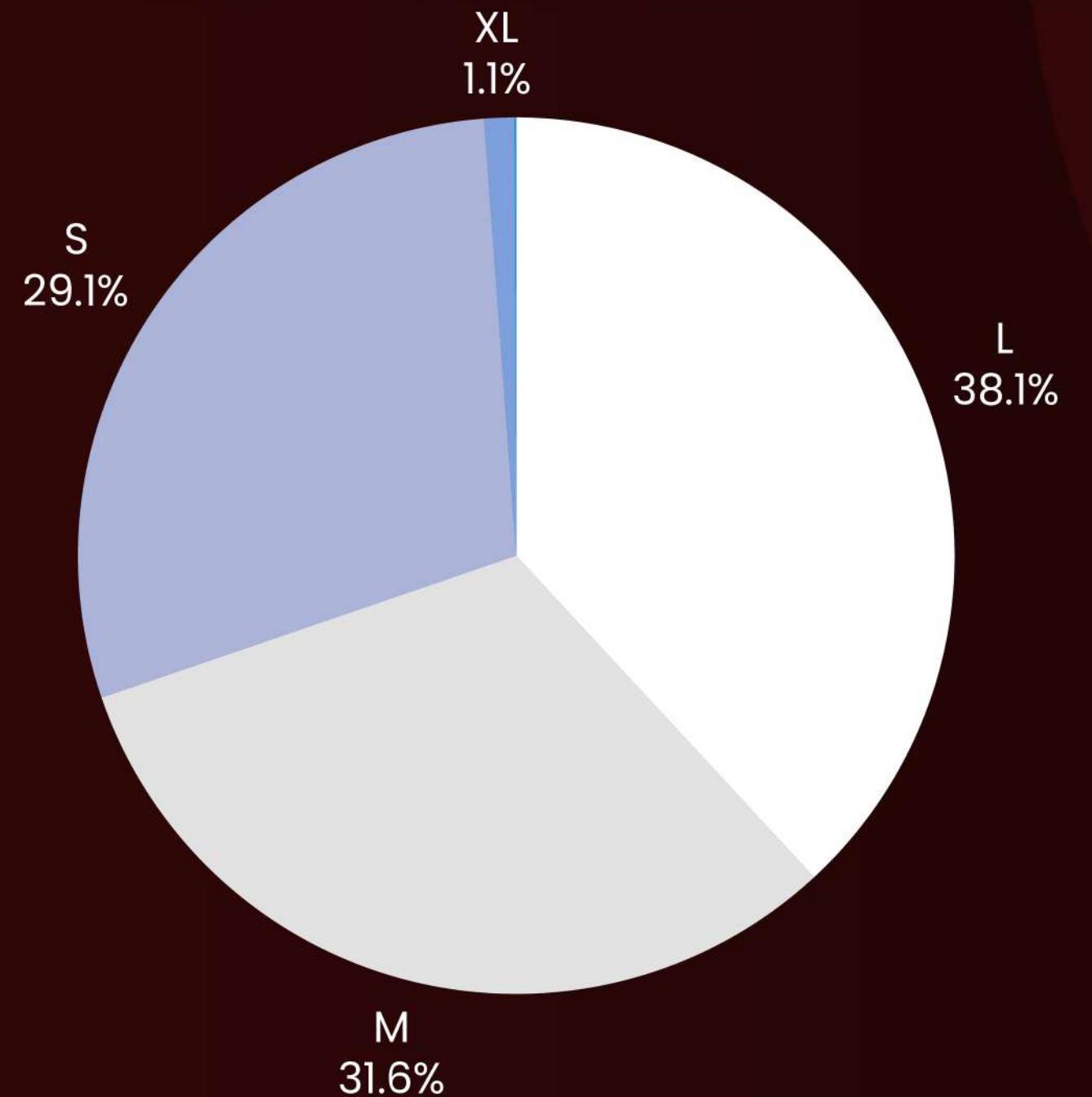
- Customer feedback regarding taste, texture, and ingredients.
- The possibility of modifying recipes to make them more appealing.
- Highlight these pizzas in social media campaigns or try offering them at a lower price to encourage trial.
- If low-performing pizzas like Brie Carre and Mediterranean aren't gaining traction even with discounts, consider removing them from the menu to simplify offerings and reduce food waste.

- **Inventory Management for most ordered pizza Ingredients:**

- Negotiate better pricing or larger quantities with suppliers for ingredients of most ordered pizzas to reduce costs and ensure consistent availability.
- For low-frequency ingredients, consider ordering in smaller batches to minimize waste and ensure freshness.



BEST SELLERS (SIZE)



OBSERVATIONS

- Large (L) is the most ordered size with 18,526 pizzas, followed by Medium (M) at 15,385 and Small (S) at 14,137.
- Together, Large, Medium, and Small pizzas account for 98.83% of all orders, highlighting their overwhelming popularity and customer preference.
- XL and XXL are the least popular sizes, with only 544 and 28 orders, respectively.
- XL and XXL pizzas contribute only 1.17% of total orders, indicating minimal demand for these sizes.
- Further analysis required for XL and XXL sizes.



LEAST ORDERED SIZES

| pizza_type_id | size | TotalOrders |
|---------------|------|-------------|
| the_greek | L | 255 |
| the_greek | M | 281 |
| the_greek | S | 304 |
| the_greek | XL | 552 |
| the_greek | XXL | 28 |

| pizza_type_id | name | Ingredients |
|---------------|-----------------|------------------|
| the_greek | The Greek Pizza | Kalamata Olives |
| the_greek | The Greek Pizza | Feta Cheese |
| the_greek | The Greek Pizza | Tomatoes |
| the_greek | The Greek Pizza | Garlic |
| the_greek | The Greek Pizza | Beef Chuck Roast |
| the_greek | The Greek Pizza | Red Onions |

OBSERVATIONS

- Only one pizza type is present with XL and XXL sizes.
- Least Ordered Size Pizza have premium ingredients such as Kalamata Olives, Feta Cheese and Beef Chuck Roast which indicates customers may not like to eat extreme Non Veg like Beef.
- But for the same pizza type Small, Medium, and Large sizes are performing consistently with order counts of 304, 281, and 255, respectively.
- XL size has a higher order count (552) compared to the smaller sizes, suggesting it is well-received despite its larger size.
- XXL size significantly underperforms with only 28 orders, indicating low demand or potential issues with this size.



MAVEN PIZZA SALES

RECOMMENDATIONS

- **Focus on Small, Medium, and Large Sizes:**

- Promote these sizes, as they account for 98.83% of orders.
- Offer combo deals and size-specific promotions to increase sales.

- **Reevaluate XL and XXL Pizzas:**

- Remove or significantly reduce XXL size due to minimal demand.
- For XL, consider promoting it as a premium option for large groups or events.

- **Adjust Topping Strategy:**

- Replace premium ingredients like Beef Chuck Roast in XL/XXL pizzas with more popular options (e.g., Chicken, Bacon, Mozzarella) to increase appeal.

- **Offer Customization:**

- Allow customers to mix flavors or offer half-size options for XL and XXL pizzas to enhance flexibility and appeal.

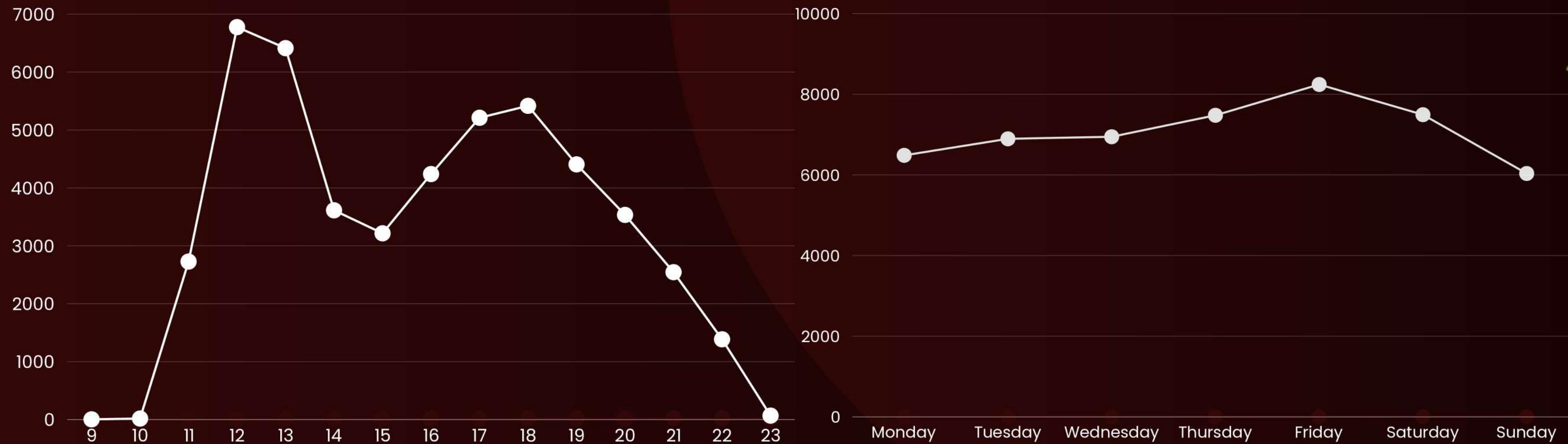
- **Simplify the Menu:**

- Remove underperforming sizes (e.g., XXL) and streamline offerings, focusing on the most popular sizes and value combinations.



MAVEN PIZZA SALES

ORDER TRENDS



OBSERVATIONS

- Orders peak during lunchtime (11 a.m. to 1 p.m.) and dinnertime (6 p.m. to 7 p.m.), with minimal activity in early mornings and late nights.
- Friday is the busiest day, followed by Saturday and Thursday, while **Sunday** sees the least orders.
- Strong weekday demand suggests consistent activity, while weekends show higher overall volumes.



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RECOMMENDATIONS

- **Focus on Peak Hours (12:00 PM - 2:00 PM and 6:00 PM)**

- Ensure the kitchen is well-staffed and prepared to manage peak demand during these hours. Consider streamlining processes to maintain fast service.
- Launch lunch-specific or dinner-specific promotions (e.g., "Lunch Rush Special") to capitalize on these busy hours.

- **Address Low Orders During Late-Night Hours (11:00 PM)**

- Evaluate whether operating during these late hours is cost-effective, or consider reducing hours or offering exclusive late-night deals to attract night-time customers.

- **Focus on Peak Days: (Thursday, Saturday, and Friday)**

- Plan for additional staffing and promotional offers on these peak days to enhance customer experience and maximize sales.

- **Target Low-Order Days (Sunday and Monday)**

- Sunday being the weekend is showing slightly dull orders, which highlights a scope for increase in the business.
- Introduce special discounts or promotions (e.g., "Sunday Special" or "Monday Madness") to encourage more orders on these days.



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| SaleMonth | TotalRevenue | TotalOrders | PercentageChange | AverageOrderValue |
|-----------|--------------|-------------|------------------|-------------------|
| January | 69793.3 | 1845 | 0% | 37.83 |
| February | 65159.6 | 1685 | -7% | 38.67 |
| March | 70397.1 | 1840 | 7% | 38.26 |
| April | 68736.8 | 1799 | -2% | 38.21 |
| May | 71402.75 | 1853 | 4% | 38.53 |
| June | 68230.2 | 1773 | -5% | 38.48 |
| July | 72557.9 | 1935 | 6% | 37.5 |
| August | 68278.25 | 1841 | -6% | 37.09 |
| September | 64180.05 | 1661 | -6% | 38.64 |
| October | 64027.6 | 1646 | 0% | 38.9 |
| November | 70395.35 | 1792 | 9% | 39.28 |
| December | 64701.15 | 1680 | -9% | 38.51 |

OBSERVATIONS

- The highest revenue was recorded in July (\$72,557.9), while the lowest revenue occurred in October (\$64,027.6).
- Revenue saw the highest increase in November (+9%) and March (+7%), suggesting effective strategies during these months.
- Significant declines occurred in February (-7%), August (-6%), and December (-9%), which may reflect seasonal low demand or missed opportunities.
- The total number of orders remained consistent throughout the year, with small fluctuations aligning with revenue trends.
- Despite fluctuations, Average Order Value remained stable, ranging from \$37.09 to \$39.28, with slight peaks in October (\$38.9) and November (\$39.28).
- The summer months (May to July) showed higher revenue and orders, while late-year months (October to December) experienced a decline..



MONTHLY TRENDS



RECOMMENDATIONS

- Though there are so many festivals in December like Christmas, Thanks Giving and New Year, it doesn't show any peak sales during this month.
 - Consider targeted promotions, discounts, or special campaigns during these months to attract more customers.
 - Take feed back from the customers to know the factors such as customer sentiment, external competition, or operational inefficiencies that are dropping the sales during this month.
- **Inventory Management:**
 - Inventory planning should account for reduced sales in months like February, June, and September. Overstocking during these months could lead to wastage.
 - Ensure adequate stock levels in March, July, and November to meet increased demand and avoid losing sales opportunities due to shortages.
- The average order value (AOV) fluctuates but remains relatively stable, indicating consistent pricing or customer spending habits. The average order value (AOV) is lowest in July (37.5) and August (37.09). Evaluate if prices can be adjusted or if bundling offers could increase revenue.

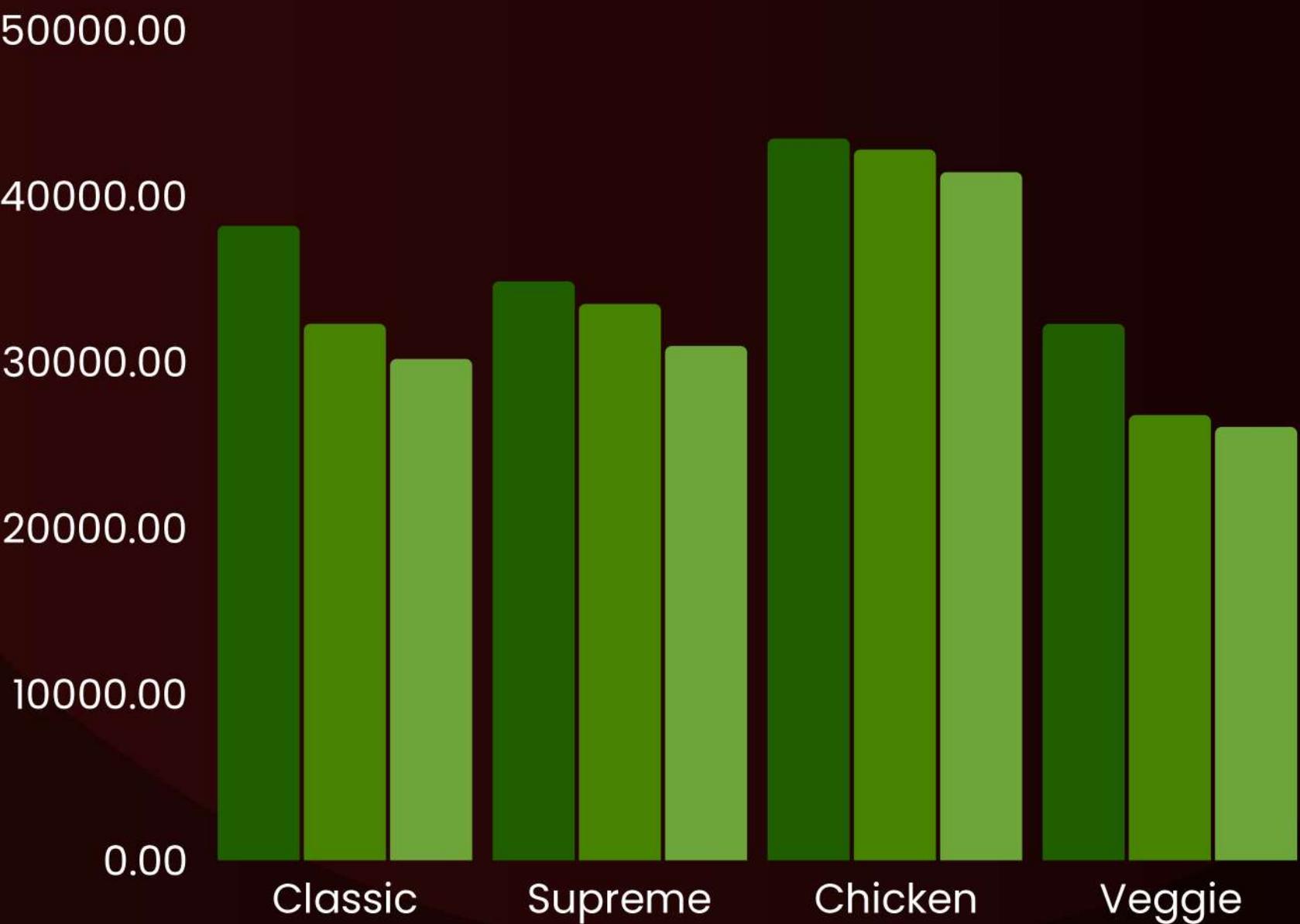


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OBSERVATIONS

- Classic pizzas lead in revenue, followed by Supreme and Chicken, while Veggie ranks lowest.
- Classic Category:**
 - Classic Deluxe is the top performer, significantly outperforming Hawaiian and Pepperoni.
 - The higher sales of the Deluxe variant suggest that customers prefer loaded, premium offerings in this category.
- Chicken Category:**
 - Thai Chicken leads with the highest revenue, followed by Barbecue Chicken and California Chicken.
 - The consistent revenue across these options shows balanced popularity among chicken-based pizzas.
- The strong demand for Italian-inspired flavors reflects customer inclination toward bold and spicy options in supreme category.
- The success of cheese-heavy options indicates a preference for rich, flavorful vegetarian pizzas in the veggie category.

CATEGORY BEST SELLERS





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RECOMMENDATIONS

- **Sales Optimization:**

- Create combo deals with top pizzas across categories, e.g., The Thai Chicken Pizza + The Classic Deluxe Pizza at a discounted price to encourage multi-category purchases.
- Chicken pizzas dominate with the highest revenues. Prioritize promotions and advertising for chicken pizzas to maximize returns.

- **Menu Reforming:**

- Veggie pizzas like The Mexicana Pizza (₹26,780.75) and The Five Cheese Pizza (₹26,066.50) have the lowest revenues. Assess their popularity and consider replacing or reformulating these options.
 - Add more chicken pizza variants as this category performs consistently well.
 - Collect customer feedback on low-performing pizzas to understand potential reasons (e.g., taste, price, or availability) and take corrective actions.
- Suggest complementary items (e.g., beverages or sides) when ordering high-revenue pizzas like The Thai Chicken Pizza or The Classic Deluxe Pizza.



PARTY PREFERENCE

| name | category | size | TotalOrdered |
|------------------------------|----------|------|--------------|
| The Big Meat Pizza | Classic | S | 196 |
| The Four Cheese Pizza | Veggie | L | 166 |
| The Five Cheese Pizza | Veggie | L | 160 |
| The Thai Chicken Pizza | Chicken | L | 155 |
| The Spicy Italian Pizza | Supreme | L | 134 |
| The Classic Deluxe Pizza | Classic | M | 133 |
| The Hawaiian Pizza | Classic | L | 122 |
| The Hawaiian Pizza | Classic | S | 118 |
| The Pepperoni Pizza | Classic | M | 113 |
| The Barbecue Chicken Pizza | Chicken | M | 111 |
| The Barbecue Chicken Pizza | Chicken | L | 110 |
| The California Chicken Pizza | Chicken | L | 109 |
| The Italian Supreme Pizza | Supreme | M | 109 |
| The Southwest Chicken Pizza | Chicken | L | 108 |
| The California Chicken Pizza | Chicken | M | 103 |

OBSERVATIONS

- The Big Meat Pizza (Classic, S) is the highest-selling item with 196 units sold in bulk orders, indicating its strong preference among customers for party or large group settings.
- Large-sized pizzas (L) dominate the sales, accounting for a majority of the top-performing items. This highlights customer preference for larger portions during bulk orders.
- Some pizzas, such as the Hawaiian Pizza (Classic) and Barbecue Chicken Pizza (Chicken), perform well across multiple sizes, demonstrating their versatility and broad appeal.
- While Classic pizzas lead, the Chicken and Veggie categories collectively contribute significantly to the overall sales, indicating a balanced demand for diverse offerings.



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RECOMMENDATIONS

- Offer party packs featuring bestselling large pizzas (e.g., The Four Cheese Pizza, The Thai Chicken Pizza) like "Buy 4 Large Pizzas, Get 1 Free" or "Discounted Rates for Orders of 6 or More Large Pizzas." with attractive discounts to boost bulk sales.
- Design targeted campaigns and combo deals around Chicken and Classic categories, emphasizing top sellers like The Big Meat Pizza and The Barbecue Chicken Pizza.
- Implement tiered discounts for bulk purchases (e.g., 10% off for 5–9 pizzas, 15% off for 10+ pizzas). This incentivizes larger orders and increases overall revenue.
- Create a dedicated section for bulk ordering on the website/app with pre-designed party combos and customizable options. Simplify the process to encourage repeat orders.
- Align promotions with high-demand periods like holidays or events, offering exclusive party packages to attract group orders.
- Allow customers to mix and match sizes and categories based on the number of attendees.



CONCLUSION

The SQL project provided a comprehensive analysis of the pizza shop's sales data, yielding actionable insights into sales optimization, menu reforming, and inventory management. By leveraging SQL queries to extract critical patterns and trends, several key recommendations have been formulated to maximize profitability, enhance customer satisfaction, and streamline operations.

- **Sales Optimization:** Strategic promotions, targeted campaigns, and combo deals focusing on bestselling categories (Chicken and Classic) can drive higher revenue. Bulk order incentives and party packs are essential to capitalize on large group orders.
- **Menu Reforming:** Reassessing low-performing pizzas like Veggie options and optimizing the menu by focusing on popular offerings such as Chicken pizzas ensures alignment with customer preferences.
- **Inventory Management:** Aligning stock levels with seasonal demand and focusing on high-volume ingredients for popular pizzas ensures cost efficiency and reduces wastage.
- **Operational Efficiency:** Streamlining processes for peak hours and days, while introducing special promotions for low-order periods, will help maintain consistent sales.



THANK YOU

FOR ATTENTION

- 2025 PIZZA SALES PRESENTATION