Project Report

Domino's Data Analysis

Name :- Disha Pravin Kolapkar

Project Name :- Domino's Data Analysis

Date :- 9 September 2024

Technology :- Language " Python"

Library :- NumPy, Pandas, Matplotlib, Seaborn

Project Description

This project aims to delve into Domino's pizza order data to uncover valuable insights and trends. By analysing various aspects of the data, we can gain a deeper understanding of customer preferences, delivery patterns, and operational efficiency.

Data Dictionary:

- **order_id:** A unique identifier assigned to each order.
- **customer_id:** A unique identifier for the customer placing the order.
- **email:** The customer's email address.

- **phone_number:** The customer's phone number.
- **zip_code:** The ZIP code of the delivery address.
- **delivery_address:** The complete delivery address.
- **order_method:** The method used to place the order (e.g., online, phone).
- **menu_data:** A detailed description of the menu items ordered, possibly in JSON format.
- **pizza_size:** The size of the pizza ordered (small, medium, large).
- **order_quantity:** The quantity of pizzas ordered.
- **total_price:** The total price of the order.
- **order_date:** The date when the order was placed.
- **order_time:** The time when the order was placed.
- **order_status:** The current status of the order (e.g., pending, delivered, canceled).
- **feedback**: Any feedback provided by the customer.
- **payment_method:** The payment method used to complete the order.

Key Objectives:

- **Customer Analysis:**
    - Identify customer demographics and preferences.
    - Analyse customer loyalty and repeat business.
    - Evaluate customer satisfaction based on feedback.
- **Order Analysis:**
    - Analyse order frequency, size, and timing patterns.

    - Identify popular menu items and combinations.
    - Evaluate the impact of promotions and discounts on sales.
- **Delivery Analysis:**
    - Analyse delivery times and routes for efficiency.
    - Identify areas with high delivery demand.
    - Assess the impact of delivery methods (e.g., in-store pickup, delivery) on customer satisfaction.
- **Operational Efficiency:**
    - Evaluate the efficiency of kitchen operations and order fulfilment.
    - Identify areas for improvement in resource allocation and waste reduction.

Potential Insights:

- **Customer Segmentation:** Identify different customer segments based on demographics, preferences, and ordering behavior.
- **Peak Demand:** Determine peak order times and days to optimize staffing and resources.
- **Popular Menu Items:** Identify the most popular pizza sizes, toppings, and combinations.
- **Delivery Efficiency:** Analyse delivery routes and identify opportunities for optimization.
- **Customer Satisfaction:** Evaluate customer satisfaction levels and identify areas for improvement.

Additional Sections for Your Project Report

Methodology

Data Acquisition:

- Describe how the Domino's pizza order data was collected. This might involve extracting data from a database, API, or other sources.

Data Cleaning and Preprocessing:

- Explain the steps taken to clean and prepare the data for analysis. This might include handling missing values, outliers, inconsistencies, or formatting issues.

Data Exploration:

- Discuss any exploratory data analysis (EDA) techniques used to understand the data's characteristics, distributions, and relationships. This might involve summary statistics, visualizations, or correlation analysis.

Statistical Methods:

- Specify the statistical methods or techniques employed for data analysis. This could include descriptive statistics, hypothesis testing, regression analysis, or other relevant methods.

Data Analysis

- **Customer Analysis:** Describe how you analyzed customer demographics, preferences, and loyalty.
- **Order Analysis:** Explain the methods used to analyze order frequency, size, and timing patterns.
- **Delivery Analysis:** Detail the techniques used to analyze delivery times, routes, and efficiency.
- **Operational Efficiency:** Outline the metrics and methods used to evaluate kitchen operations and resource allocation.

Results and Discussion

- **Key Findings:** Present the most significant findings from your analysis, supported by relevant visualizations and statistical evidence.
- **Discussion:** Interpret the findings and discuss their implications for Domino's business operations.

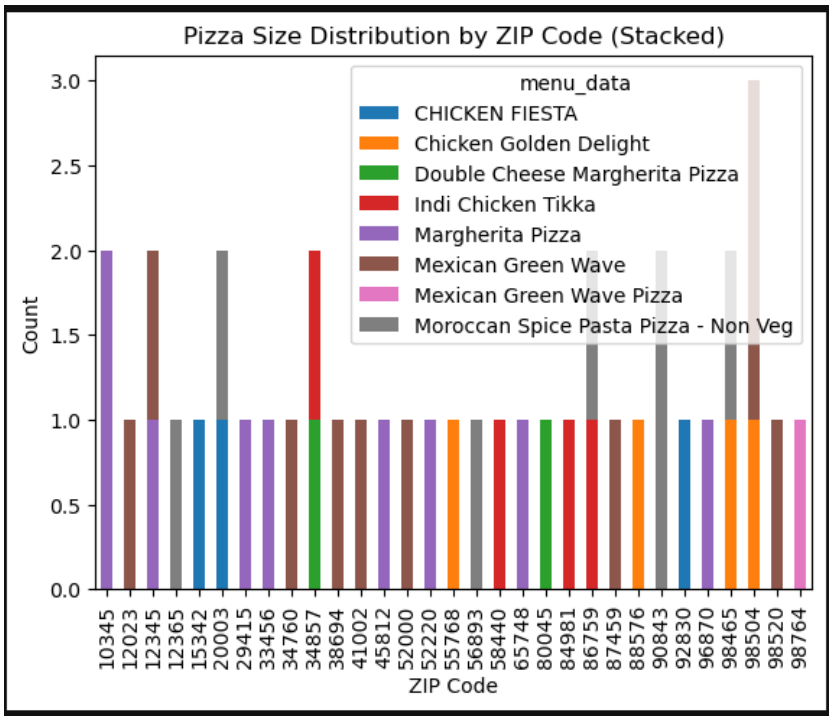
- **Comparison with Benchmarks:** If applicable, compare your findings to industry benchmarks or previous studies.

Future Work

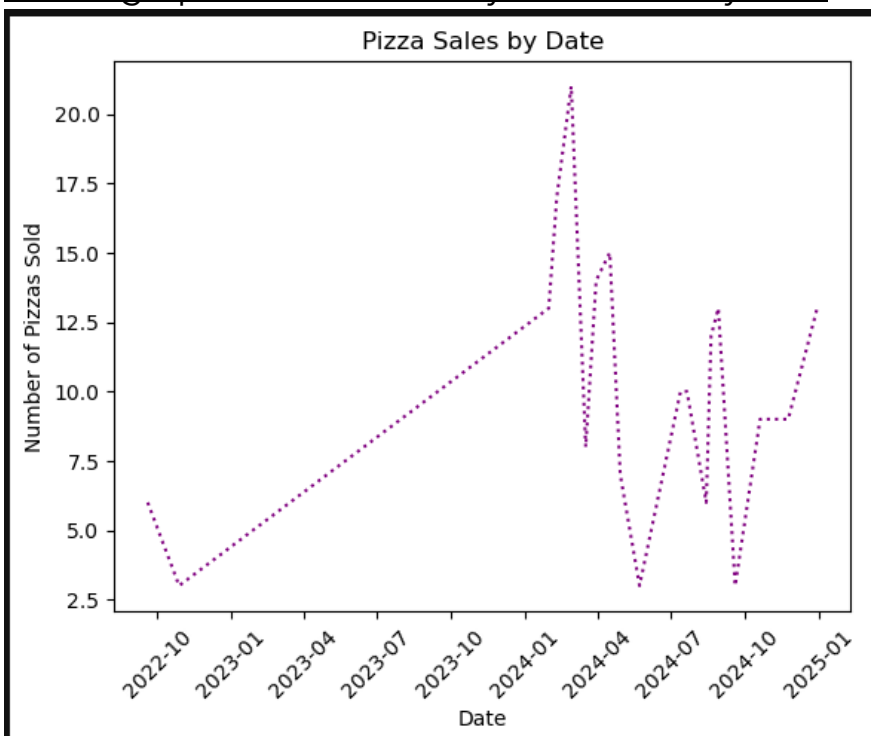
- **Additional Analysis:** Suggest potential areas for further analysis, such as customer segmentation, predictive modeling, or sentiment analysis.
- **Data Enrichment:** Explore the possibility of incorporating additional data sources (e.g., weather data, competitor information) to enhance your analysis.
- **Technological Advancements:** Discuss potential applications of emerging technologies (e.g., machine learning, artificial intelligence) in future research.

Project Snapshot

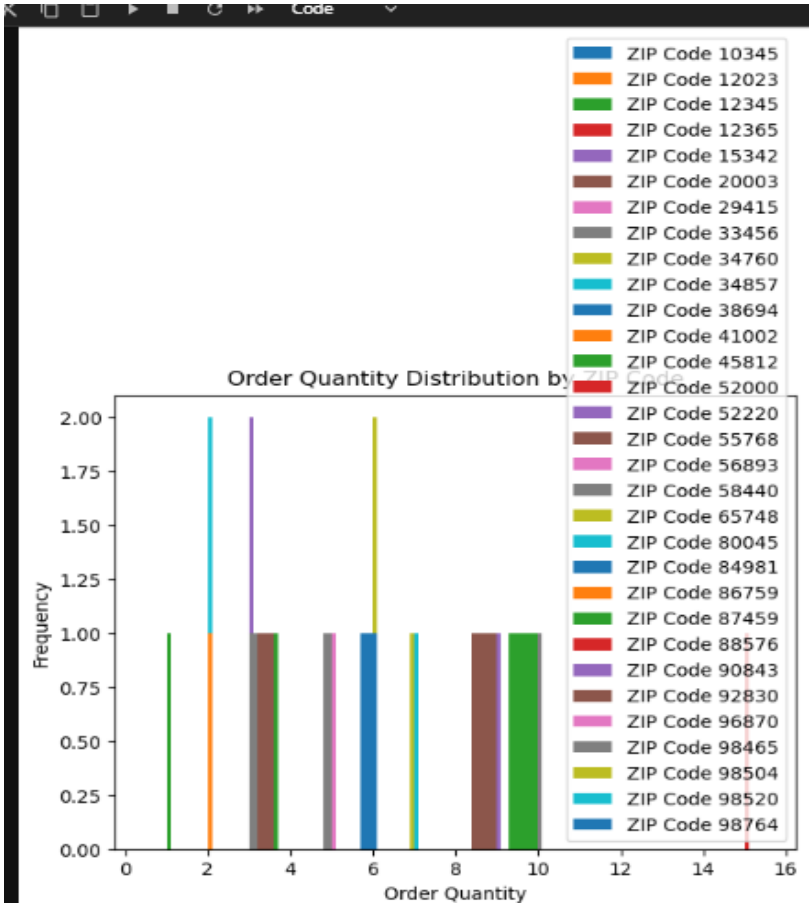
1. From this graph you can see All Pizza Size Distribution



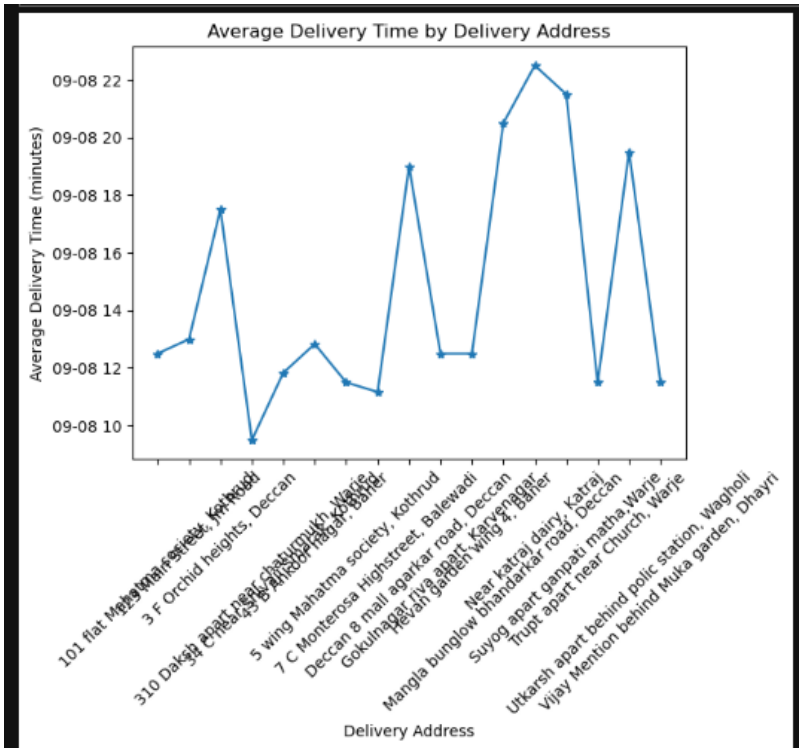
2. This graph show how many Pizza sales by date



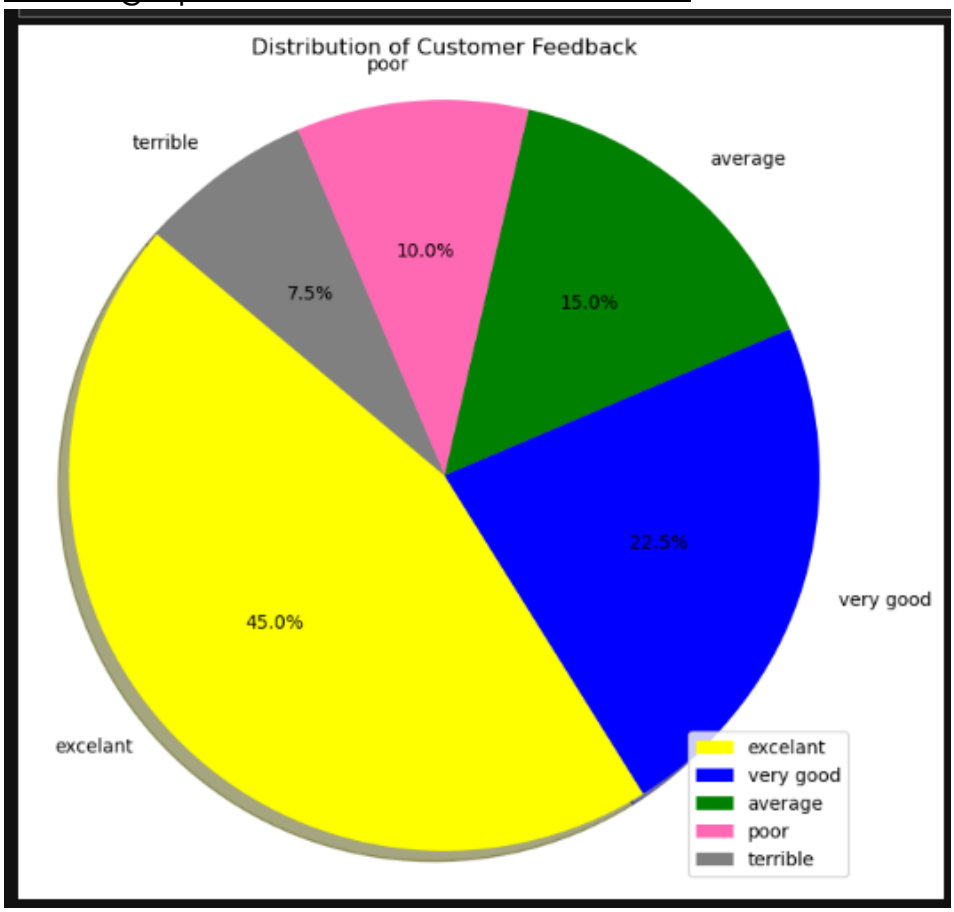
3. This graph shows Order Quantity Distribution



3. From this graph shows Delivery Time Analysis

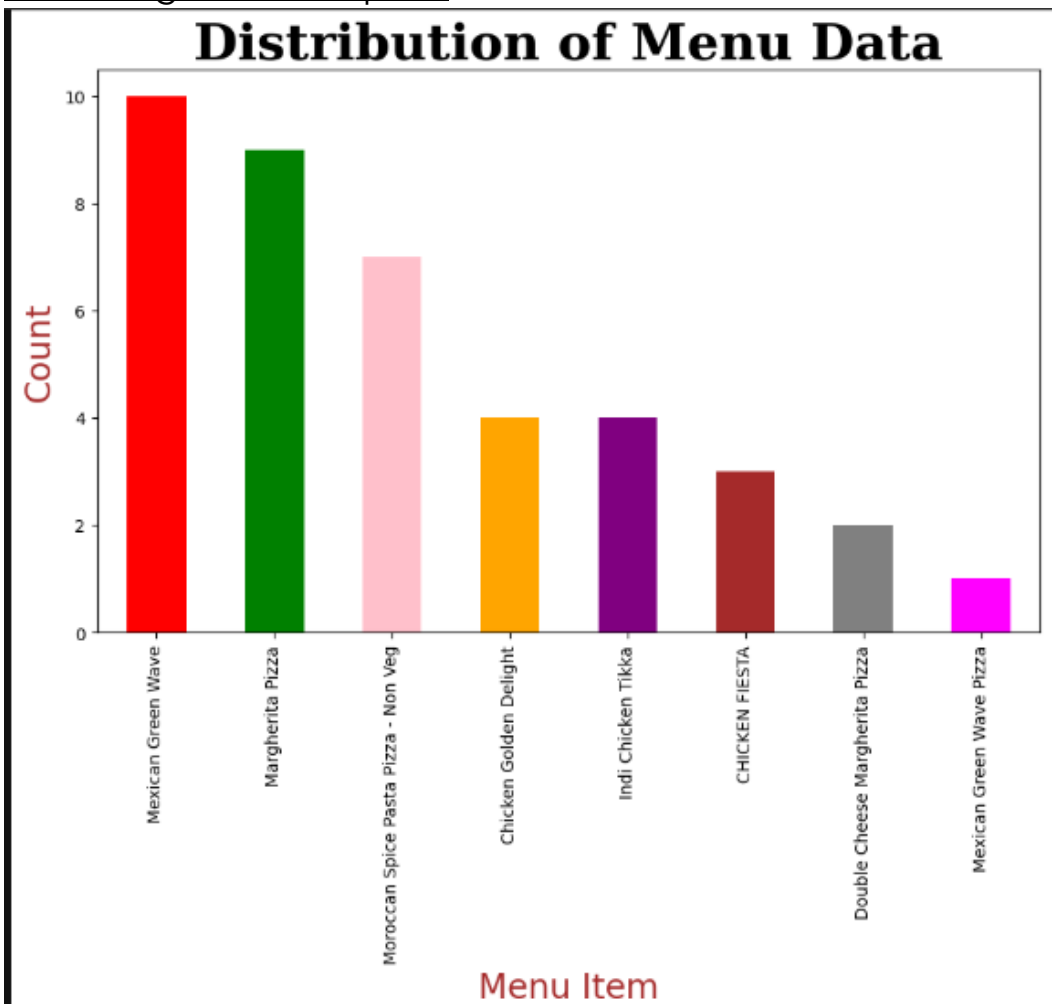


4. This graph show Customer's feedback

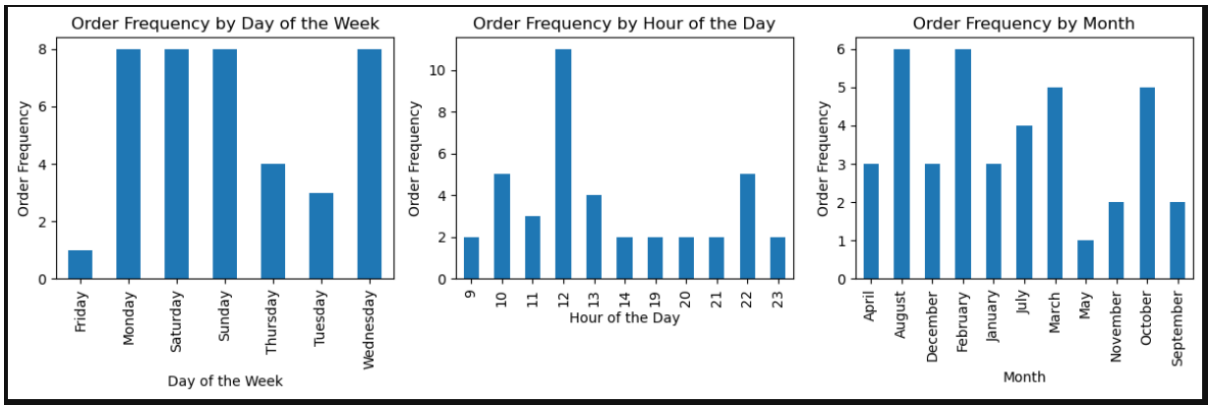


5. From this graph shows Customer's order Quantity (using line graph and scatter plot)

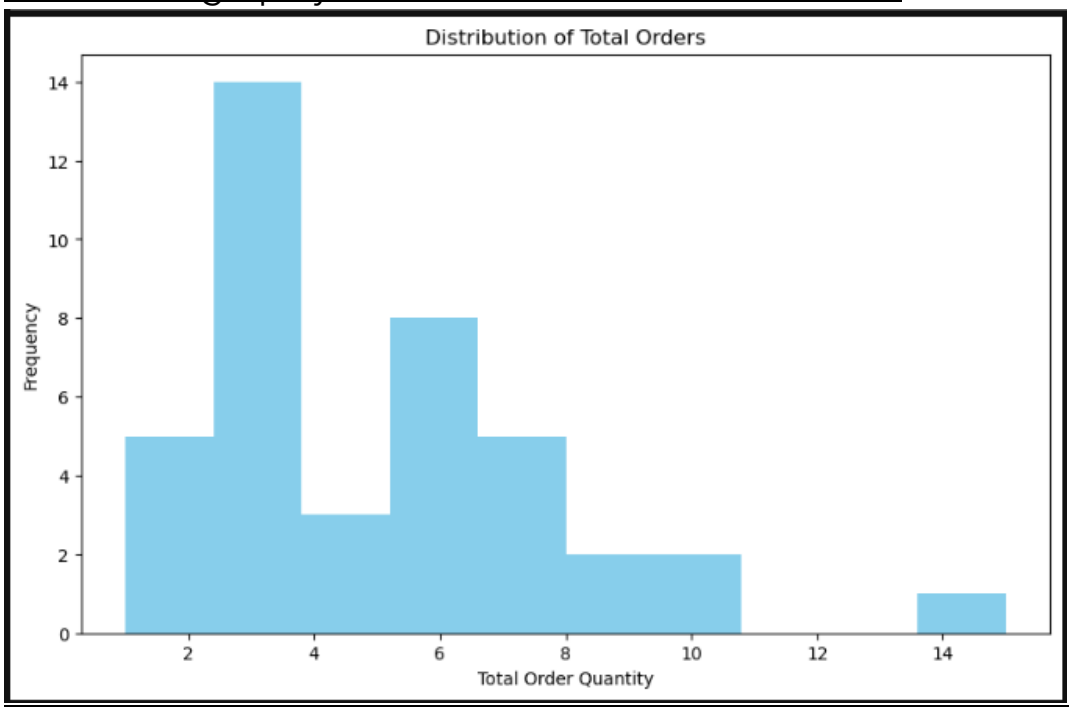
6. From this graph you can see the most of people preferred to order Mexican green wave pizza



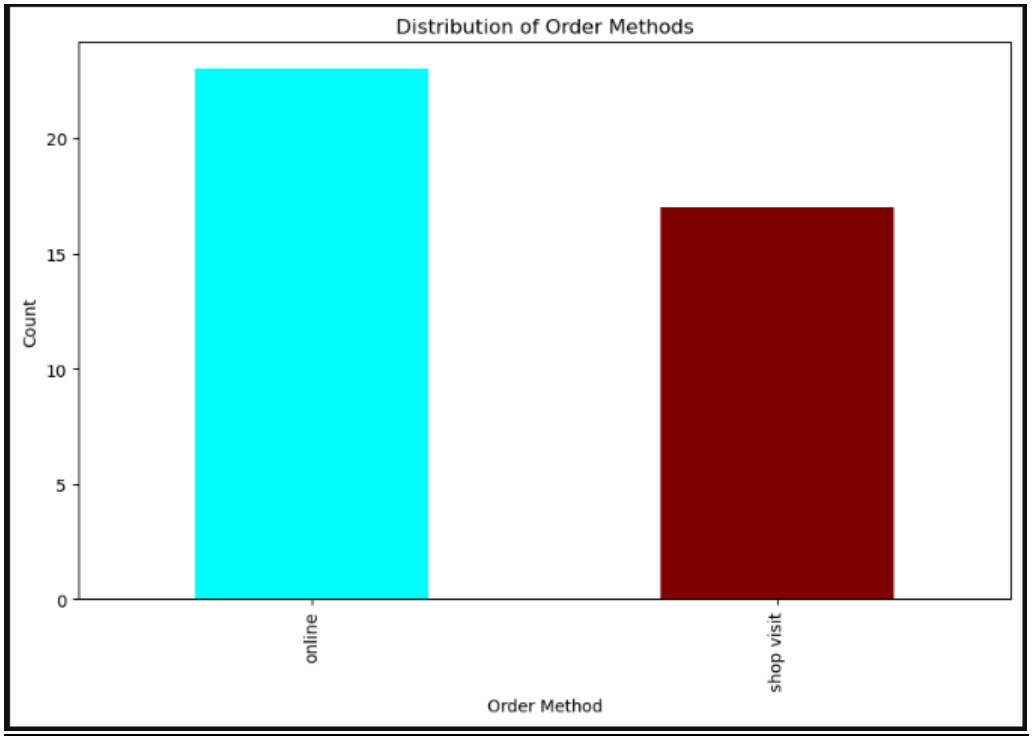
7.From this graph Customer order frequency vary by day of the week, time of day, and season



8.From this graph you can see maximum order count



9. From this graph you can see the most of people prefer online method to order



Conclusion :

Most Popular Pizza Combinations

We looked at all the pizza orders and found the most popular combinations. These were the pizzas that people ordered the most. We found that large pizzas with pepperoni and mushrooms were very popular.

Customer Satisfaction

We asked customers how happy they were with their pizzas. We found that most people were very happy. However, some people said they would like their pizzas to be hotter when they arrive.