Pizza Shop Analysis Documentation

**Data Source**:- The "Pizza Shop" dataset, sourced from Kaggle, encompasses a rich collection of data pertinent to a local pizza shop. This dataset comprises a diverse range of information, including sales records, customer preferences, and market trends. It amalgamates both internal data sources from the pizza shop, such as transaction histories and customer order timeline, along with external data sources like demographic insights and industry reports.

**Data Processing**:-  
Step 1:-  
Integration of Data from Four Files for Pizza Shop Analysis

The "Pizza Shop Analysis" project involved gathering data from four distinct files: "Order Details," "Orders," "Pizza Type," and "Pizza." These files encompassed vital information essential for evaluating the pizza shop's operations and customer preferences. To streamline the analysis process, the data from these files was amalgamated into a single workbook. Each original file was allocated to an individual sheet within the workbook.

Step 2:- meticulous steps were taken to enhance its usability. Tables were constructed, and each sheet was thoughtfully labeled: "Order Details," "Orders," "Pizza Type," and "Pizza." Furthermore, columns underwent a strategic renaming process, ensuring clarity and relevance to the analysis at hand.

Step 3:-

Centralized Order Details Table and VLOOKUP Integration

A pivotal "Order Details" table was established on a dedicated sheet to comprehensively store all shop orders. To enhance data accessibility, a strategic approach was employed. Using the VLOOKUP formula, data from this main table was dynamically fetched into other relevant sheets based on matching values. This integration streamlined the analysis process, connecting disparate data points seamlessly.

**VLOOKUP Formula: =VLOOKUP(lookup value, table array, col index num, [range lookup])**

By leveraging this formula, information from the central table efficiently populated other sheets, fostering a cohesive analysis environment.

Step 4:- a meticulous data validation process was initiated to identify any potential null values within the dataset. This step is crucial for ensuring the accuracy and completeness of the analysis.

In addition, a focus was placed on refining the format of date and time entries. Ensuring consistent and proper date-time formatting enhances the clarity of the dataset and aids in accurate analysis. This formatting optimization paves the way for effective exploration of sales trends, order patterns, and customer preferences.

Step 5:-

Time Period Categorization Formula

To enhance the analysis of the dataset, a new column was created to categorize time periods based on the existing time data.

The formula :-

**IF(column name<TIME(12,0,0),"Morning", IF(column name <TIME(17,0,0),"Afternoon", IF(column name <TIME(20,0,0),"Evening", "Night")))**

was employed. This formula assesses the time values in column F (or any specified column) and assigns corresponding labels "Morning," "Afternoon," "Evening," or "Night" based on the time ranges defined.

This categorization enhances the dataset's usability by segmenting orders into distinct time frames. It facilitates deeper insights into customer behavior and order trends throughout the day, aiding the pizza shop in making informed decisions to optimize service and offerings during specific time periods.

Step 6:-

Weekday Retrieval with Text Function

To gain insights into order patterns and customer behavior, the weekday associated with each date was extracted. The "Text" function was employed with the

formula

**TEXT(date,"dddd")**

This formula takes a date value and converts it into the corresponding weekday in text format.

By implementing this approach, the dataset now includes a new column displaying the weekday for each order.

Step 7:-

Time Interval Categorization Formula

To further enhance time-based insights, a new column was generated to categorize different time intervals based on the existing time values.

The formula

**IF(column name<TIME(12,0,0),"9 to 12", IF(column name<TIME(17,0,0),"12 to 3", IF(column name<TIME(20,0,0),"3 to 6", "6 to 11")))**

was implemented. This formula evaluates the time values in the specified column and assigns appropriate labels such as "9 to 12," "12 to 3," "3 to 6," or "6 to 11" according to the defined time intervals.

By employing this method, the dataset gains a new column showcasing time intervals for each order.

**Key Metrics Display**

**Number of Orders:**

This card visually presents the total count of orders processed by the pizza shop. It provides an immediate snapshot of the shop's order volume, enabling quick assessment of customer demand and business activity.

**Number of Quantity**:

Displayed in this card is the aggregate quantity of pizzas sold across all orders. This metric sheds light on the overall consumption trends, indicating the most popular pizza choices and potential areas for menu adjustments.

**Number of Categories:**

The card dedicated to the number of categories showcases the diversity of pizza offerings. By revealing the count of unique pizza categories sold, it underscores the variety and richness of the shop's menu, catering to a wide range of customer preferences.

**Total Sales:**

This card highlights the cumulative sales revenue generated by the pizza shop. The total sales figure provides a comprehensive view of the shop's financial performance, guiding strategic decisions and offering insights into revenue growth over time.

1. **Which month recorded the highest number of orders, and which month had the lowest number of orders?**

Answer:

The month of July experienced the highest order volume, totaling 4,301 orders. On the other hand, October registered the lowest order count, with a total of 3,797 orders.

1. **On which day are orders more likely to be busy?**

Answer:-

Among the days of the week, Friday stands out as the most bustling day in terms of order activity. Notably, Saturday closely follows as the second busiest day, while Thursday occupies the third spot in terms of order frequency.

1. **which time frame has the most orders?**

Answer:-

The time period from 12-3 pm has the highest number of orders. Following that, the time between 6-9 pm comes next in terms of order volume. After that, the time period from 3-6 pm has the third-highest number of orders.

This information helps the pizza shop understand when customer orders are most active during the day, allowing them to manage their operations more efficiently during these busy periods.

1. **Which pizza variant contributes the most to sales ?**

Answer:-

Presently, the "Thai Chicken Pizza" takes the lead in terms of generating the highest sales, amounting to 42,332 rupees. However, it's essential to consider that pizza preferences might shift when considering different categories and sizes.

This observation highlights the significance of comprehending how sales patterns are influenced by diverse menu factors, including categories and sizes, thereby aiding the pizza shop in making informed decisions to optimize offerings and cater to various customer preferences.

1. **Among the four pizza categories, which category receives the highest number of orders?**

Answer:-

The "Classic" category garners the most significant share of orders, contributing 30% of the total orders. Following closely, the "Veggies" and "Supreme" categories both capture 24% each, while the "Chicken" category trails slightly with 22%.

This observation showcases the popularity distribution across categories, offering insights into customer preferences. Such insights empower the pizza shop to tailor its offerings, allocate resources, and strategize promotional efforts effectively.

1. **What sizes of pizza do people commonly order?**

Answer:-

The most frequently ordered pizza sizes are as follows: Large (L) holds the highest share with 38%, followed by Medium (M) with 32%. Small (S) follows with 29%, while Extra Large (XL) accounts for 1% of orders. Interestingly, the Extra Extra Large (XXL) size registers no orders at this time.

Upon careful analysis, it has been observed that the XXL size registers orders from only one pizza category. This suggests a limited demand for the XXL size, with a single order placed across all categories.

This insight underscores the distinct customer preference for sizes across various pizza categories. Recognizing the unique demand patterns for different sizes aids the pizza shop in refining its size offerings to better cater to customer preferences and potentially exploring opportunities to boost XXL size sales.