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Project Name : Zomato Sales Data

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Objectives :

The goal of this project is to conduct a comprehensive analysis of Zomato's restaurant sales data to uncover meaningful insights that can drive better business outcomes. By examining the performance metrics of various restaurants—including sales volume, customer ratings, and revenue trends—the project seeks to identify key factors that influence restaurant success. Additionally, this analysis will provide actionable recommendations to optimize restaurant performance, improve customer satisfaction, and enhance strategic decision-making for stakeholders in the food and beverage industry. Through effective data visualization and interpretation, the project aims to transform complex data into valuable insights for operational and strategic growth.

Problem statements :

In the highly competitive food and beverage industry, restaurants listed on Zomato face challenges in understanding the factors that impact their sales performance and customer engagement. Despite the abundance of available data, many businesses struggle to effectively analyse and utilize this information to improve their operations and remain competitive. Key issues include identifying the factors driving customer demand, understanding regional sales variations, recognizing trends in customer preferences, and determining why some restaurants outperform others. This project aims to address these challenges by leveraging sales data to uncover actionable insights that can guide restaurants in optimizing their strategies, enhancing customer satisfaction, and boosting overall sales performance.

Data Description :

- **Source:** The dataset was retrieved from Kaggle and contains information about various crimes against women in India.

Data Models :

- **Entities and Attributes**
 - **Attributes:**
 - **Name:** Name of the restaurant.
 - **Online Order:** Indicates whether the restaurant offers online ordering (Yes/No).
 - **Book Table:** Indicates if table booking is available (Yes/No).
 - **Rate:** Customer ratings for the restaurant (e.g., a numerical or star-based rating).
 - **Votes:** Total number of votes received for the restaurant.
 - **Approx Cost for Two:** The estimated cost for two people dining at the restaurant.
 - **Listed in Type:** Type or category of the restaurant (e.g., casual dining, café, fast food, etc.).

Relationships and Connections

- **Restaurant Performance Analysis:** This model examines the relationship between attributes such as ratings, online ordering availability, cost for two, and type, and how they influence sales performance.
- **Customer Preferences and Trends:** The data model helps identify patterns by connecting attributes like ratings and votes to restaurant types and services offered (e.g., online ordering availability).

Approach:

1. Data Import and Libraries:

- **Libraries Used:** Panda , Matplotlib , Seaborn
- **Process:**
 - Import relevant libraries.
 - Load the dataset and inspect its structure for initial insights.

2. Data Cleaning:

- checks missing values, duplicates, or any inconsistencies in the dataset.
- Standardize values for clarity.

3. Exploratory Data Analysis (EDA):

- Use visualizations (e.g., bar charts, line plots) to identify trends over time and geographical patterns.

Project Results :

1. **Top Restaurants:** Identified which restaurants have the highest and lowest customer ratings and votes.
2. **Customer Preference for Online vs. Offline:** Found that restaurants with online ordering options had higher customer satisfaction than those without.
3. **Cost and Customer Ratings:** Analyzed how the approximate cost for two people correlated with customer ratings, revealing price-sensitive trends.
4. **Performance by Restaurant Type:** Compared the performance of different types of restaurants (e.g., cafes, casual dining) based on ratings and sales.
5. **Customer Engagement:** Highlighted restaurants with maximum customer votes, indicating strong customer engagement and popularity.

Conclusion :

This project provided an in-depth analysis of Zomato's restaurant sales data, offering valuable insights into customer preferences, service satisfaction, and performance drivers. The results highlighted that online ordering is a key factor in boosting customer satisfaction, suggesting a shift towards digital convenience in dining preferences. Top-rated and most-voted restaurants were identified, showcasing standout performers in terms of customer engagement and satisfaction. The analysis also revealed how factors like approximate cost and restaurant type influence customer perceptions and ratings. These findings offer actionable recommendations for restaurants to enhance their operational strategies, tailor offerings to customer preferences, and improve overall sales performance. By leveraging data-driven insights, stakeholders can make informed decisions to remain competitive and better serve their customers.