**Project Synopsis**

**Title: Zomato Data Analysis using Python**

**Introduction:**

The growth of the online food delivery industry has provided valuable data for understanding consumer behaviour and preferences. Zomato, one of the largest online food delivery platforms, collects vast amounts of data from restaurants across different regions. This project aims to analyse the Zomato dataset to uncover trends, insights, and patterns related to restaurant types, online orders, ratings, and pricing. By analysing this data, the goal is to better understand the factors that contribute to customer satisfaction and restaurant performance.

**Objectives:**

* To analyze the Zomato dataset and extract meaningful insights related to restaurant types (e.g., dining, café).
* To explore the relationship between restaurant ratings and online ordering preferences.
* To evaluate how restaurant cost (for two people) affects customer satisfaction, as reflected in ratings.
* To identify trends in the distribution of restaurant ratings across various categories.
* To offer recommendations for improving restaurant performance based on the analysis.

**Scope of Work:**

The project focuses on analysing the dataset provided by Zomato, which includes various columns such as restaurant name, online order availability, booking options, ratings, votes, cost for two people, and restaurant type (e.g., dining or café). The analysis will cover:

1. Distribution of restaurant types and their relationship with online orders.
2. Correlation between customer ratings and restaurant cost.
3. Analysis of the majority of votes and their impact on restaurant performance.
4. Insights into online and offline order preferences and their impact on customer satisfaction.

The project will use Python, specifically libraries like Pandas, Numpy, Matplotlib, and Seaborn, to perform data cleaning, exploration, and visualization.

**Methodology:**

The methodology involves several steps:

1. **Data Cleaning:** First, the raw data will be cleaned by removing missing values, handling duplicates, and converting data into a usable format.
2. **Exploratory Data Analysis (EDA):** Next, EDA will be conducted to identify key patterns in the dataset, including restaurant types, online ordering trends, and cost comparisons.
3. **Data Visualization:** Using Matplotlib and Seaborn, the project will visualize the data through charts and graphs to make it easier to interpret. Histograms, pie charts, scatter plots, and box plots will be used to represent trends and correlations.
4. **Statistical Analysis:** The relationship between different variables, such as online orders and ratings, will be analyzed using statistical methods like correlation analysis.

**Expected Outcomes:**

1. **Trend Identification:** The project is expected to reveal key trends such as which restaurant types are most common, how customer ratings vary by restaurant type, and whether customers prefer online or offline orders.
2. **Insights into Customer Behavior:** It will provide insights into customer preferences, particularly related to restaurant pricing and ratings, as well as online ordering behavior.
3. **Recommendations:** Based on the analysis, actionable recommendations will be made to improve restaurant service offerings, such as focusing on enhancing the dining experience, offering more affordable menu options, or optimizing online ordering systems.
4. **Data-Driven Insights:** The project will present a data-driven understanding of the restaurant industry, highlighting areas for growth or improvement.

**Timeline:**

* **Week 1-2:** Data collection, cleaning, and preprocessing. Initial exploration of the dataset and basic visualizations.
* **Week 3:** In-depth data analysis, including statistical testing and trend identification. Start creating detailed visualizations to support findings.
* **Week 4:** Interpretation of results, drawing conclusions, and formulating recommendations. Finalize the report and prepare for presentation.

**Conclusion:**

This project aims to analyse Zomato’s restaurant data to uncover insights about restaurant performance, customer satisfaction, and the impact of online orders and pricing. By leveraging Python and its powerful data analysis libraries, the project will contribute to a deeper understanding of how restaurant types, cost, and online ordering preferences influence customer behaviour. The analysis can help restaurant owners and food delivery platforms improve their strategies, enhance customer experiences, and make more informed business decisions. Ultimately, this project will highlight the value of data analytics in the food industry and demonstrate how insights from data can lead to better service offerings and higher customer satisfaction.