**Zomato Data Analysis Project Overview**  
This project focused on analysing Zomato restaurant data to gain insights into customer preferences, ratings, and restaurant attributes. By exploring various aspects of the data, we aimed to identify patterns and trends related to cuisine popularity, customer ratings, and price range, offering valuable information for restaurant owners and industry analysts.

**Key Steps Taken:**

1. **Data Collection & Cleaning**  
   The first step involved gathering Zomato restaurant data, which included various attributes such as restaurant names, cuisines, customer ratings, price range, location, and more. After collecting the data, it was essential to clean it by handling missing values, duplicate entries, and inconsistencies. Missing data was imputed or removed as appropriate to ensure the dataset was accurate and ready for analysis.
2. **Exploratory Data Analysis (EDA)**  
   The next step involved performing exploratory data analysis (EDA) to better understand the structure of the data. EDA allowed us to identify key patterns, detect outliers, and gain a preliminary understanding of the relationships between various variables in the dataset.
3. **Statistical Analysis**  
   Customer ratings and restaurant types were analyzed using various statistical measures, such as mean, median, mode, and standard deviation. This helped in understanding rating distributions and pinpointing any correlations between customer feedback and restaurant attributes like cuisine type or price range.
4. **Data Visualization**  
   Data visualization played a crucial role in this analysis. We created multiple visualizations, including bar charts, pie charts, and histograms, to showcase trends in cuisine popularity, price range, and rating distributions. These visualizations helped to communicate the findings more clearly and allowed for better decision-making by stakeholders.
5. **Trend Analysis**  
   We analyzed seasonal or geographical trends in restaurant performance, customer ratings, and popular cuisines. This step was important for identifying which types of restaurants performed better in specific locations or during certain times, providing actionable insights to restaurant owners and marketers.

**Libraries and Tools Used:**

* **Pandas**: Used for data cleaning, manipulation, and statistical analysis.
* **NumPy**: Utilized for handling numerical data and performing mathematical operations.
* **Matplotlib**: Leveraged for creating static, interactive, and animated visualizations.
* **Seaborn**: Employed for advanced statistical data visualization to enhance the readability of plots.

This project highlights the power of data analysis in extracting actionable insights from complex datasets. By leveraging Python libraries and applying data analysis techniques, we were able to provide meaningful visualizations and statistical insights that can help improve restaurant operations and customer experiences.