**Project Summary: Restaurant Data Analysis**

**Problem Statement:** In today’s competitive restaurant industry, understanding customer preferences and the factors that influence restaurant success is essential. This project aims to analyze a dataset of restaurant information to uncover key insights about customer ratings, restaurant features, pricing, cuisines, and services like table bookings and delivery. By doing so, we can understand the trends that drive customer satisfaction and business performance.

**Approach:**

**1. Data Preprocessing:**

* **Objective:** Prepare the data for analysis in a meaningful way.
* **Tasks:**
  + Clean the data by identifying **missing values**, **duplicates**, and any **inconsistent information**.
  + Rename columns to make them easier to understand and use.
  + Address any missing values by choosing the most suitable method for the data (like imputation or removal).

**2. Exploratory Data Analysis (EDA):**

* **Objective:** Dive deep into the data to discover patterns and trends.
* **Tasks:**
  + Provide a **statistical summary** of the data, focusing on variables like restaurant cost, ratings, and number of votes.
  + Analyze how **ratings are distributed** across different factors like pricing, the number of cuisines offered, and delivery options.
  + Examine which **cuisines are most popular** in various cities.
  + Investigate how features like **table booking** and **online delivery** influence customer satisfaction.

**3. Delivery & Booking Insights:**

**Tasks:**

* + Compare the number of restaurants that offer **table bookings** vs. those that don’t.
  + Explore how many restaurants provide **online delivery** and how that correlates with ratings and customer satisfaction.

**4. Actionable Insights & Recommendations:**

**Tasks:**

* + Identify key factors that contribute to a restaurant’s success, such as pricing, rating trends, and the variety of cuisines offered.
  + Suggest strategies for improvement—like adjusting pricing, adding new cuisines, or focusing on enhancing delivery services.

**Outcome:**

This project uncovers important insights into what drives customer ratings and restaurant success. From understanding how different cuisines and pricing models affect customer satisfaction to seeing how table bookings and delivery options play a role, the analysis provides valuable recommendations that restaurant owners can use to improve their business operations.

**Innovation:**

To ensure a fast and efficient analysis, I integrated **ChatGPT**, an AI tool that assisted in data exploration and hypothesis testing. By incorporating this powerful technology, I was able to streamline the process, solve problems more quickly, and ensure a deeper level of insight. This collaboration between human intuition and AI made the entire process much faster and more efficient.