Milestone 1 Report: Customer Satisfaction Data Analysis

**1. Data Loading**

The first step was to load the raw data into Power BI. We began by connecting to the restaurant\_customer\_satisfaction.csv file, which contains all the customer feedback and behavioural data.

**2. Data Cleaning & Preparation**

After loading the data, several key transformations were performed in Power Query to prepare the data for analysis. The primary goal was to create a clean, organized data model.

* **Created AvgRating Column:** A new column named AvgRating was created to provide a single, average satisfaction score for each customer. This was calculated by averaging the ServiceRating, FoodRating, and AmbianceRating columns.
* **Created DimProduct Table:** A new table called DimProduct was created. This table was designed to serve as a dimension table containing unique combinations of PreferredCuisine, MealType, and DiningOccasion. A unique ProductID was added to this table to simplify future analysis.
* **DimCustomer Table:** A dimension table for customer information was created. It contains unique CustomerID along with descriptive data like Age, Gender, and Income.

**3. Visualizations & Analysis**

A Power BI dashboard was created to present key insights from the data. The visuals were made interactive using slicers for MealType and PreferredCuisine to allow for dynamic filtering.

* **Average Rating by Preferred Cuisine:** A clustered bar chart was used to show the average rating for each cuisine type.
  + **Insight:** The analysis revealed that **Chinese** and **Mexican** cuisines have the highest average ratings, while **Indian** and **Italian** have the lowest. This highlights areas for potential improvement.
* **Average Spend by Dining Occasion:** A bar chart was created to display the average amount of money customers spend based on their dining occasion.
  + **Insight:** This visual showed that customers celebrating a **Celebration** tend to have the highest average spend, indicating this is a highly profitable dining occasion.
* **Customer Satisfaction by Visit Frequency:** A column chart was used to analyze how customer satisfaction varies with their visit frequency.
  + **Insight:** The visual demonstrated that **Weekly** visitors have the highest satisfaction ratings, suggesting that customer loyalty is a key driver of satisfaction.

**4. Conclusion**

The initial data analysis successfully identified key trends in customer behavior and satisfaction. The dashboard provides actionable insights that can be used to inform business decisions related to cuisine offerings, marketing strategies, and customer loyalty programs. The preparation of a robust **star schema**, including both the **DimProduct** and **DimCustomer** tables, lays a strong foundation for a more advanced data model and complex analysis in future milestones.