***Sales Analysis of Local Ramen Shop***

Section 52745 | Group Number 30 | Fidel Otero (fco229) | Ryan Mehendale (ram3273) 10/31/2023

The goal of this project is to uncover patterns in consumer behavior at a local ramen shop that can help to optimize scheduling, inventory, or marketing strategies. We also wish to forecast sales. We aim to develop a cohesive visual story that allows us to turn our discoveries into actionable insights. The data is extracted from a local ramen shop in Austin from the time May – October 2023.

**Description of the Dataset**

The original size of the dataset is 22323 rows and 33 columns. After removing columns that we don’t need and rows that are null, the new size of the dataset is 20937 rows and 13 columns.

The names of the columns are Order\_Number, Order\_Type, Order\_Date, Order\_Sub\_Total, Order\_Sales\_Tax, Order\_Total, Payment\_Type, Product\_Name, Category, Exchange\_Void\_or\_Return, Total\_Sales\_Price, Total\_Product\_Tax, Product\_Quantity.

The classification of each column is Order\_Number : Categorical, Order\_Type : Categorical, Order\_Date: Continuous, Order\_Sub\_Total: Continuous, Order\_Sales\_Tax: Continuous, Order\_Total: Continuous, Payment\_Type: Categorical, Product\_Name: Categorical Category: Categorical, Exchange\_Void\_or\_Return: Categorical, Total\_Sales\_Price: Continuous, Total\_Product\_Tax: Continuous, and Product\_Quantity: Discrete.

A list of discrete values for the categorical variables are as follows. Order\_Number has 8789 different unique order numbers so we will not list them. The discrete values for Order\_Type are 'To Go', 'Eat In', 'Doordash', 'Uber', and 'Grubhub'. For Product\_Name there are 267 different product names thus we will not list them. For Exchange\_Void\_or\_Return the discrete values are 0 and 1. Finally, for Category, the discrete values are 'Ramen', 'Specials', 'Appetizers', 'Food', 'Drinks', nan, 'Special', 'Extras', 'Sazan @ Daiboku', 'HAPPY HOUR', 'Online Food', 'Online Drinks', 'Gift', 'Event'.

The distribution of the discrete variables will be represented by the mode. Thus, the mode for Order\_Number is 228348 which occurs 30 times. The mode for Order\_Type is ‘To Go’ which occurs 11035 times. The mode for Product\_Name is ‘Shoyu’ which occurs 3247 times. The mode for Exchange\_Void\_or\_Return is 0 and occurs 21532 times. Finally, the mode for Category is ‘Food’ which occurs 13964 times.