Goal

- The goal of this project build an “automated process” that can analyze sales data from different restaurants in many different formats
- Please build the entire analysis in a Google Colab notebook

Data Format

- Data will come in 2 standard formats from two different sources.
    a. Data Source 1: Toast POS - example
    b. Data Source 2: Square POS - example

User Process Requirements

- CSV’s in the same format above will put into this Google Drive folder
- Without changing any of the code, the system must take the files and process them into “flapjack format”
- A user must only have to click “File” → “Run”
- The system must work with any CSV in the format above
- The results from the questions below must be exported into some sort of text file (a word doc, a .txt., or something else) so that it is easily read.
- The text document must contain the question the answer is responding too

Task 1 - Set Service Times for Square Data

- Allow users to define the service times (Square data only)
- User can define by simply editing the code, no need for a popup or UI
    a. If a user inputs Breakfast = 08:00 to 12:00 and Dinner is 12:00 to 24:00
    b. The service times will be created for Square records that allow us to define the data by this time

Task 2 - Convert Data to Standard Format

- Take the data above and convert it to a standard format. This format is how what we will use to process all of our data
- Data will always be of one type - all “Toast POS” or all “Square POS”. Data will never be mixed
- Specifically, make sure to include
    a. Date
    b. Time
    c. Time Zone
    d. Category/Sales Category
    e. Location/Dining Area
    f. Service (Toast only)
    g. Menu Group (Toast only)
    h. Menu (Toast only)
    i. Order ID (Toast) / Transaction ID (Square)
    j. Menu Item
    k. Gross Sale

- Here is previous work that you can use as a starting point https://colab.research.google.com/drive/145R7ETFN5EZnGZ_HpgR8mw16oBanQsdm

Task 3 - Top Selling Times/Services

- Map out gross sales throughout the times of the day, grouping by hour of the day. What time of day does the most sales?
- Map out the revenue throughout the day grouping by service. What service does the most sales?
- Map out the revenue throughout the week. What day of the week does the most sales?

Task 4 - Top Selling Categories

- Rank the categories by greatest sales volume to least.
- Calculate the average sale price per category.
- List the percentage of total sales the categories represent
- Include dine-in sales data only

Task 5 - Top Selling Categories by Service

- Grouping by service, rank the categories by greatest sales volume to least.
- Calculate the average sale price per category.
- List the percentage of total sales the categories represent
- Include dine-in sales data only

Task 6 - Top Selling Dishes

- List the 10 top selling dishes by gross sales per category
- List the percentage of total sales the dish represents.
- List the percentage of category sales the dish represent.
- Include dine-in sales data only

Task 7 - Top Selling Dishes by Service

- Grouping by service, rank the top 10 dishes by greatest sales volume to least.
- List the percentage of total sales the dish represents.
- List the percentage of category sales the dish represent.
- Include dine-in sales data only

Task 8 - Items Commonly Sold Together

- What are the top 20 Items most commonly sold together?
- What is the probability that these two items will be sold together?
- How many of these items are sold together
- What is the total sales volume of this combination
- The order in which items were ordered was not important ((Breads, Chicken Curries) is the same as (Chicken Curries, Breads)). Remove duplicates (beer sold with beer)

Task 9 - Categories Commonly Sold Together

- What are the categories commonly sold together?
- What is the probability that these two categories will be sold together?
- How many of categories are sold together
- What is the total sales volume of this combination
- The order in which items were ordered was not important ((Breads, Chicken Curries) is the same as (Chicken Curries, Breads)). Remove duplicates (beer sold with beer)

Task 10 - Substitutes and Compliments

- Run this substitutes and complements analysis on the data above
- https://colab.research.google.com/drive/1uv68hQduc1aIhhFcpSp9kKRYWRQCEBBE