**Exploring Areas for Restaurant Recommendation or for new Restaurant Venture in Mexico**

**1. Discussion and Background of the Business Problem:**

**Problem Statement: Prospects of a Lunch Restaurant, types of cuisines, parking spaces in Mexico**

Mexico is in the global economic power index and definitely one of the best places to start up a new business.

During the daytime, especially in the morning and lunch hours, office areas provide huge opportunities for restaurants. Reasonably priced (one lunch meal 8$) shops are usually always full during the lunch hours (11 am — 2 pm) and, given this scenario, we will go through the benefits and pitfalls of opening a breakfast cum lunch restaurant in highly dense office places.

We will go through each step of this project and address them separately. I first outline the initial data preparation and describe future steps to start the battle of neighborhoods in Mexico.

**Target Audience**

*What type of clients or a group of people would be interested in this project?*

1. Business personnel who wants to invest or open a restaurant. This analysis will be a comprehensive guide to start or expand restaurants targeting the large pool of office workers in Mexico during lunch hours.
2. Freelancer who loves to have their own restaurant as a side business. This analysis will give an idea, how beneficial it is to open a restaurant and what are the pros and cons of this business.
3. New graduates, to find reasonable lunch/breakfast place close to office.
4. Budding Data Scientists, who want to implement some of the most used Exploratory Data Analysis techniques to obtain necessary data, analyze it, and, finally be able to tell a story out of it.

**Dataset Link:**

The datasets used are Restaurant cuisine, Restaurant Parking, the number of hours and days it is open, etc. The datasets is freely available on the following link:

<https://archive.ics.uci.edu/ml/datasets/Restaurant+%26+consumer+data>

There are 9 data files and a README, and are grouped like this:

Restaurants

* 1 chefmozaccepts.csv
* 2 chefmozcuisine.csv
* 3 chefmozhours4.csv
* 4 chefmozparking.csv
* 5 geoplaces2.csv

Consumers

* 6 usercuisine.csv
* 7 userpayment.csv
* 8 userprofile.csv

User-Item-Rating

* 9 rating\_final.csv

**Methodology:**

Data Preprocessing is the first step to start working. After that dataset visualization is done.

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## Plot to visualize available parking place at the Restaurants

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## Now performing label encoding to convert char to factors.

## 

## 

## Since some variables contains dirty values, we are going to perform data cleaning on those variables.

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## Label encoding

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## 

## Plot for facilities provided by Restaurants based on city.

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## Producing location for the Restaurants on the Map

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The goal here is to predict the ratings that would be given by each consumer for the restaurants he/she has not rated. A list of restaurants with the highest predicted ratings can then be recommended to each consumer. Because the restaurant ratings are numerical, predicting their values can be treated as a regression problem. Rather than predicting the exact values of ratings that a consumer would give to certain restaurants, what is more important is predicting the ranks of these restaurants for the consumer. Linear Models will be used to predict the ratings. The fundamental concepts are that each restaurant is characterized by a vector of features; each consumer preference is described by a vector of weights which has the same dimension as the product features; and the predicted rating of a restaurant-consumer pair equals the inner product of the two vectors. The mathematics is therefore equivalent to a simple linear regression. At last the best passible locations of restaurants are plotted out by using Map.

**Result:**

Data Preprocessing and visualization of the datasets have been done. The best possible places depending on the parameters given in the datasets have been found out and have been plotted on the Map of Mexico.