

**Coursera IBM Data Science Capstone Project :**

**Opening a new Bermese Restaurant in Toronto**

# Introduction :

- A hypothetical scenario to explore opening a Burmese restaurant in Toronto area.
- Entrepreneur is thinking of opening this restaurant in locations where Asian food is popular as Burmese food is very similar to other Asian cuisines.

# Business Problem :

- By using data science methods and machine learning methods such as clustering, this project aims to provide solutions to ans this business question: In Toronto, if an entrepreneur wants to open a Burmese restaurant, where should they consider opening it?

# Data Required:

- List of neighborhoods in Toronto, Canada.
- Latitude and Longitude of these neighborhoods.
- Venue data related to Asian restaurants. This will help us find the neighborhoods that are most suitable to open a Burmese restaurant.

# Extracting the Data :

- Scrapping of Toronto neighborhoods via Wikipedia
- Getting Latitude and Longitude data of these neighborhoods via Geocoder package
- Using Foursquare API to get venue data related to these neighborhoods

# Methodology :

- Extracting the list of neighborhoods from wikipedia page.
- Scraping by utilizing pandas html table scraping method.
- Geocoder package to match the coordinates of Toronto neighborhoods.
- Foursquare API to pull the list of top 100 venues within 500 meters radius.
- Clustering the neighborhoods in Toronto into 3 clusters based on their frequency of occurrence for “Thai food”, by using k-means clustering.

# Results :

3 clusters based on how many Thai restaurants are in each neighborhood:

- **Cluster 0**: Little or no Thai restaurants
- **Cluster 1**: Some Thai restaurants
- **Cluster 2**: High number of Thai restaurants



# Recommendations :

- Most of Thai restaurants are in Cluster 2 which is around Adelaide, King, Richmond areas and lowest (close to zero) in Cluster 1 areas which are North Toronto West and Parkdale areas.
- Also, there are good opportunities to open near Chinatown, St James town as the competition seems to be low. Looking at nearby venues, it seems Cluster 1 might be a good location as there are not a lot of Asian restaurants in these areas.

Thank You !