

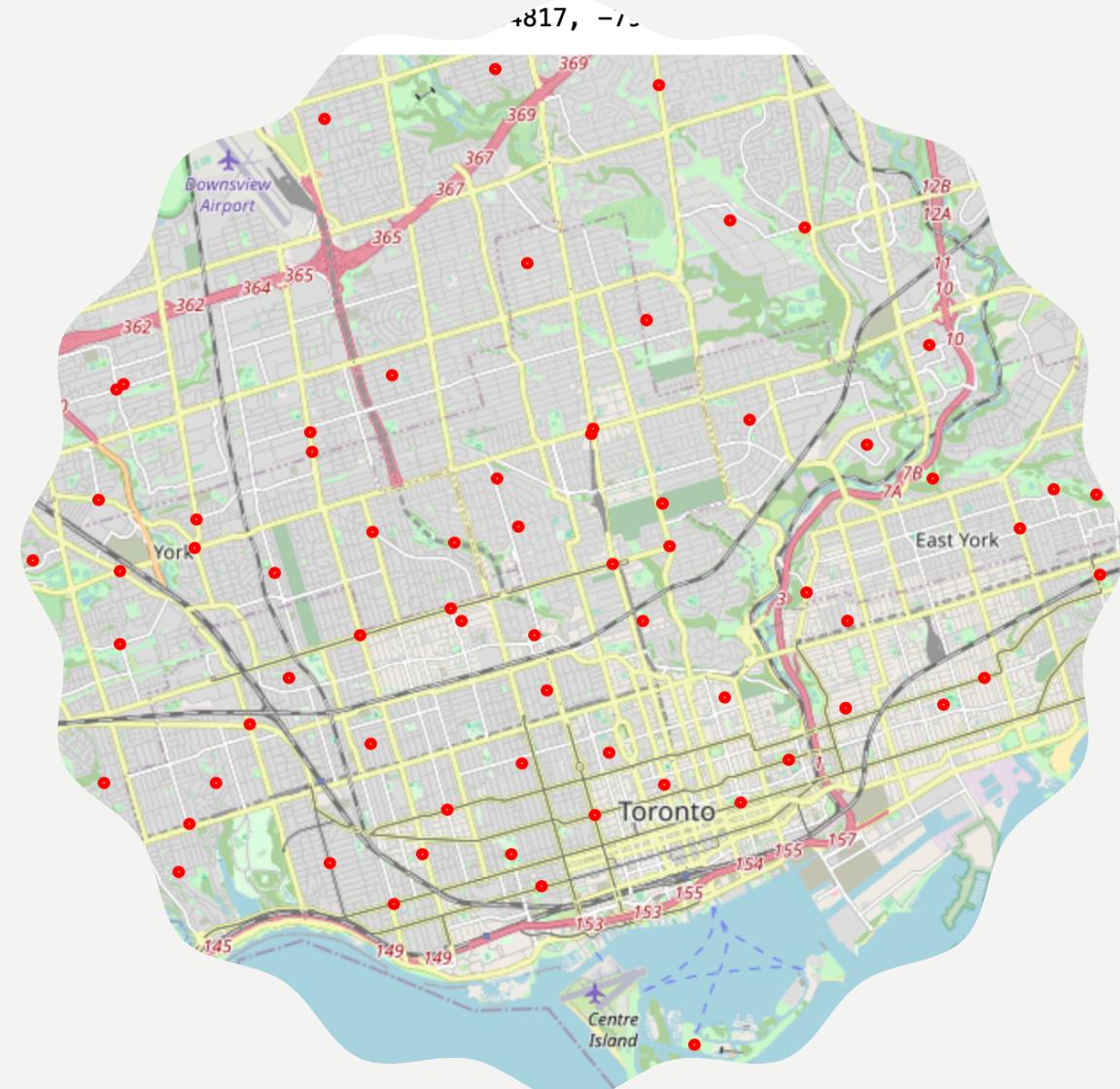
# **BATTLE OF NEIGHBORHOOD**

**AUTHOR: GAWTAM**

**IBM DATA SCIENCE CERTIFICATION COURSE**

# INTRODUCTION

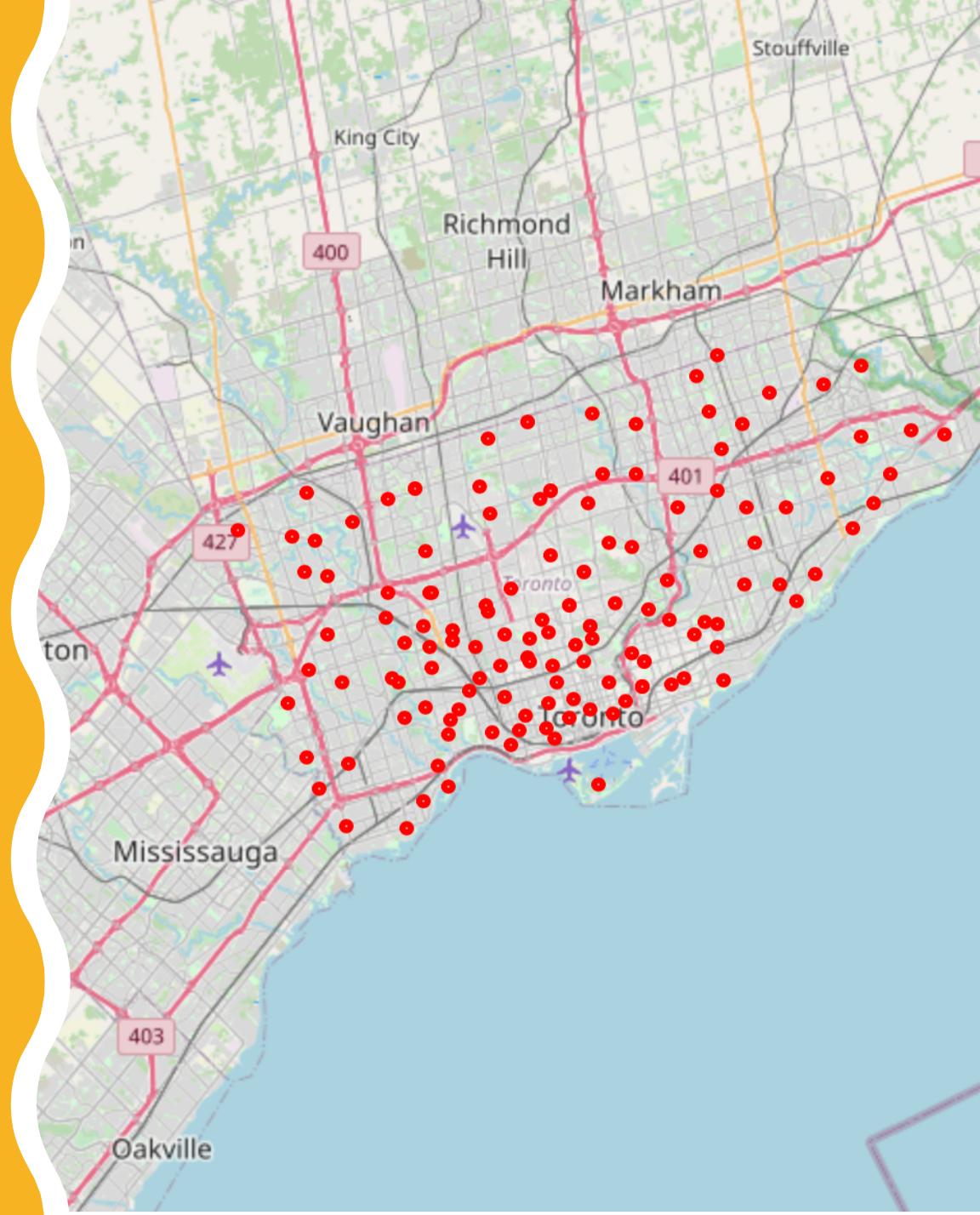
- Toronto is Canada's largest city and a world leader in such areas as business, finance, technology, entertainment and culture. Land of opportunity for new restaurants of different cuisines.
- A famous Multi-cuisine Cook and a venture capitalist who owns multiple franchise company in South Asia, looking for an opportunity to open a restaurant in the best neighborhood in Toronto, Canada.



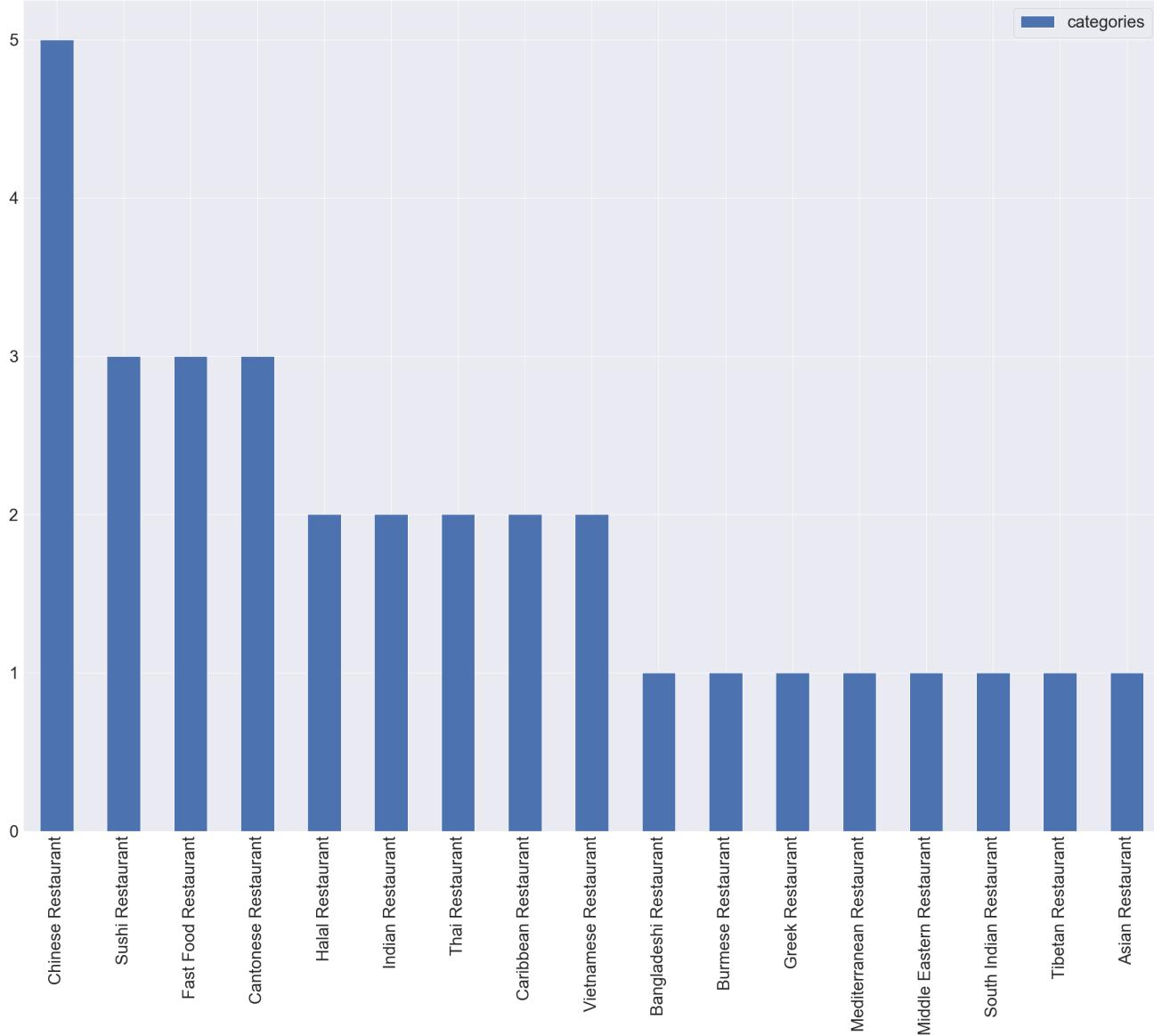
# **PROBLEM STATEMENT**

- Many successful food franchises from all over world every year look for new places to start their business by investing in new cities.
- Our client Mr. XYZ is looking for such an opportunity to invest.
- Our aim is to develop a report of analysis which allows our client to carefully analyze and make a suitable decision to expand his business in Toronto.
- Recommend suitable neighborhoods for investment on opening South Asian cuisine restaurant in Toronto Canada.

# SPOTTING ALL THE NEIGHBORHOOD WITH GOOD POPULATION DENSITY



# NUMBER OF RESTAURANTS AND TYPES OF CUISINE



# METHODOLOGY:

Jupyter Notebook

Foursquare API:

Clustering Approach using KMeans:

**Python Libraries used to develop the Project:**

Pandas: For creating and manipulating data frames.

Folium: Python visualization library would be used to visualize the neighborhoods cluster distribution of using interactive leaflet map.

Scikit Learn: For importing k-means clustering.

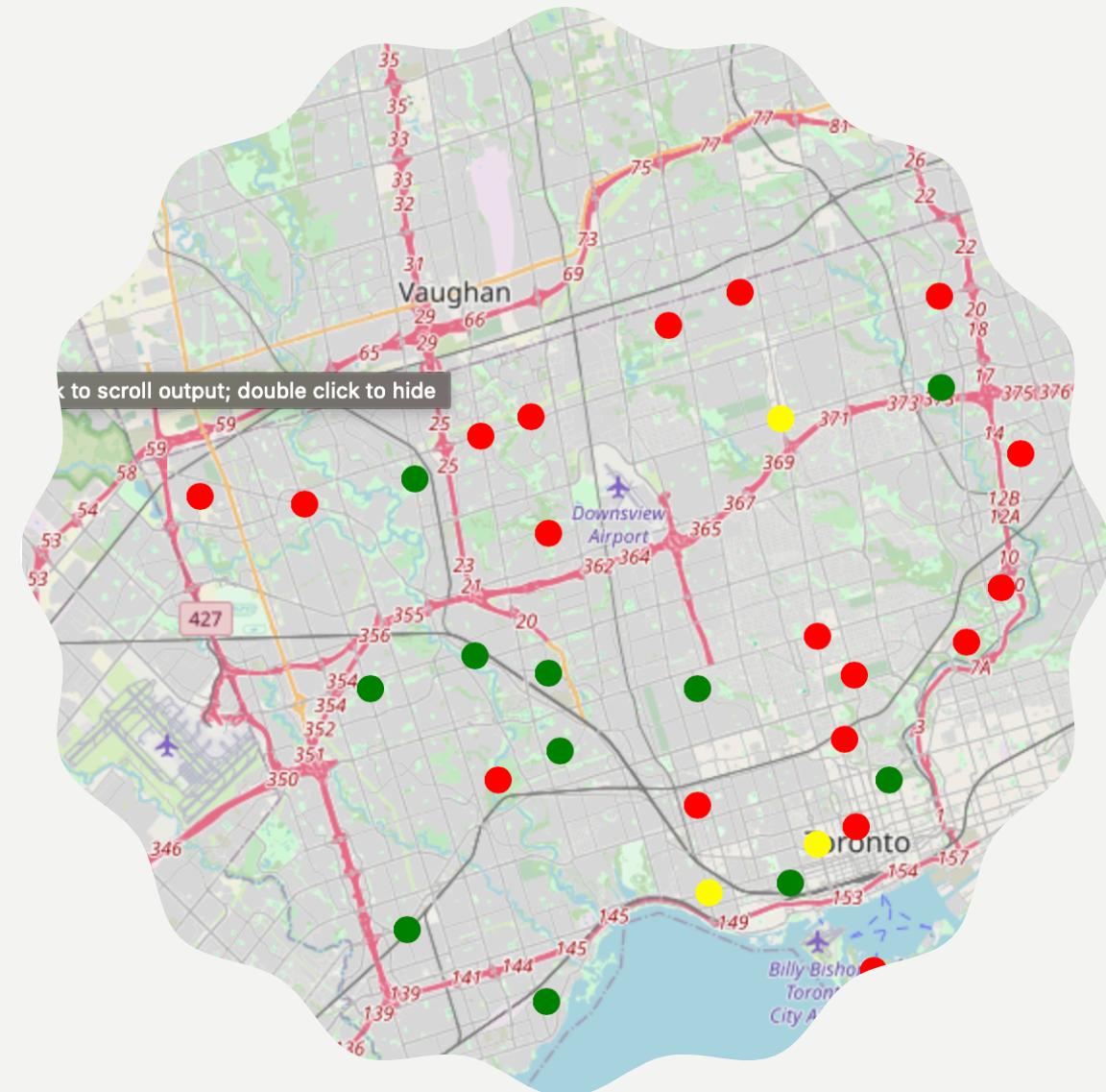
JSON: Library to handle JSON files. Geocoder: To retrieve Location Data.

Beautiful Soup and Requests: To scrap and library to handle http requests.

Matplotlib: Python Plotting Module.

# CLUSTERING USING KMEANS ALGORITHM

- Red color : Cluster 1
  - Green color: Cluster 2
  - Yellow color: Cluster 3
  - Blue color: Cluster 4



# **RESULT AND RECOMMENDATION**

**Cluster 1**

average Number of  
Restaurant cluster 1:  
32

average score cluster  
1:  
2.0777936138153117

**Cluster 2**

average Number of  
Restaurant cluster 2: 1

average score cluster  
2:  
1.9942055781898618

**Cluster 3**

average Number of  
Restaurant cluster 3:  
14

average score cluster  
3:  
1.9723093321551832

**Cluster 4**

average Number of  
Restaurant cluster 4: 7

average score cluster  
4:  
2.1107313407904496

## **RESULT AND RECOMMENDATION**

### **Neighborhoods recommended from Analysis:**

1. North St. James Town
2. Clairlea-Birchmount
3. Islington-City Centre West
4. Oakwood Village
5. Rockcliffe-Smythe
6. Weston
7. Mimico (includes Humber Bay Shores)
8. Brookhaven-Amesbury
9. Kingsview Village-The Westway
10. Kennedy Park
11. Niagara
12. Henry Farm
13. Scarborough Village
14. Humbermede