



Business Project
Open Coffee Shop Nearby Supermarket

Capstone Project - The Battle of Neighborhoods
Applied Data Science Capstone

Smain SEFFOUH

August - 2020



Business Problem :

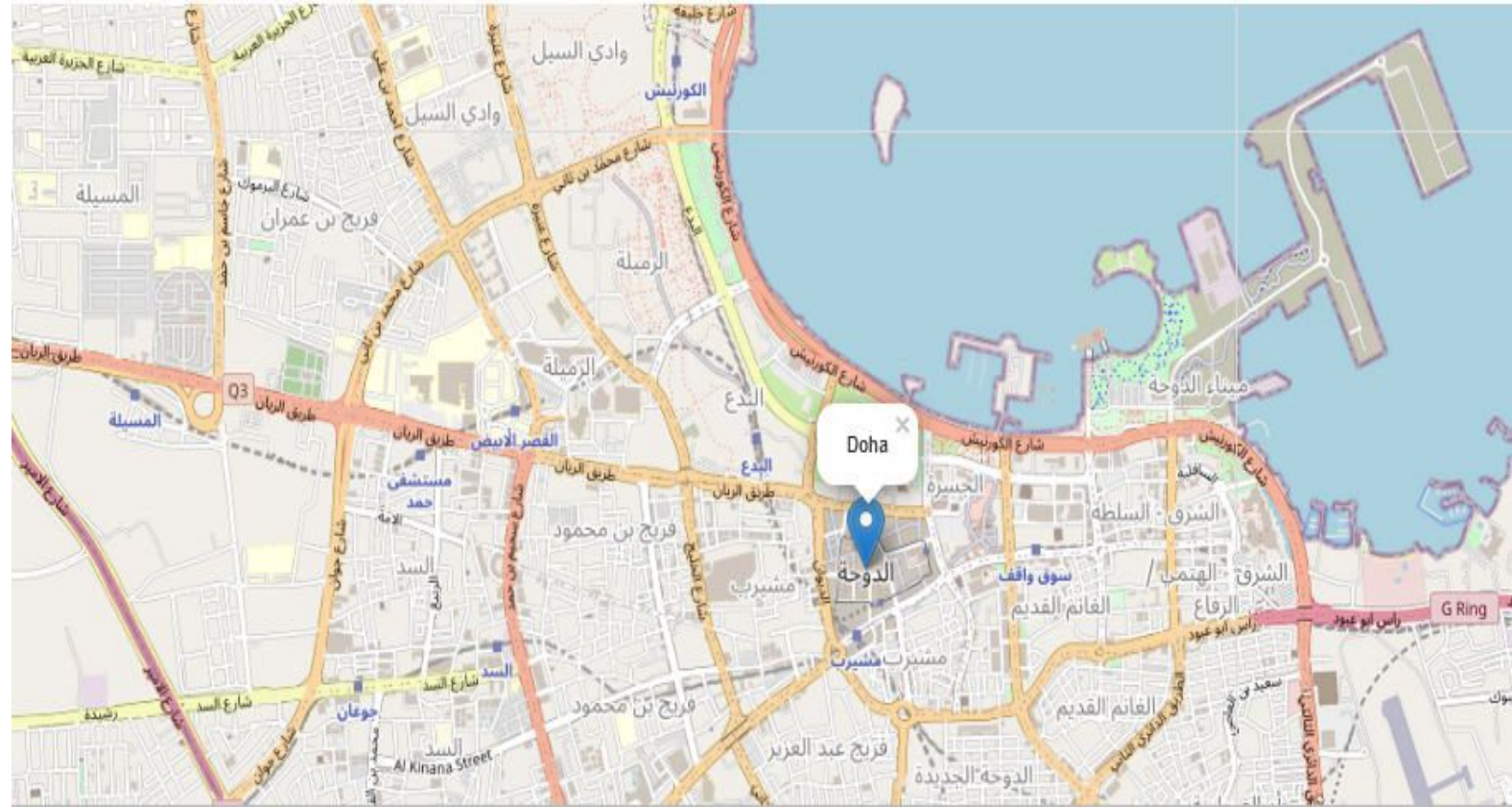
Deciding to run my own business by opening new Coffee shop with only Take Away service.
For that we need to find suitable and proper location for it.

By considering :

- **The Coffee Shop need to be near by Supermarket.**
- **List of supermarkets existing in the City.**
- **List of the Coffee Shops near to each Supermarket.**

Data :

- ✓ Obtaining the Geo coordinates of the city.
- ✓ With Foursquare API:
 - Finding the list of the Supermarkets in the city
 - Finding the list of the Coffee Shops near to each the Supermarket



- **The Central point : Doha - Qatar**

Data Wrangling and Cleaning :

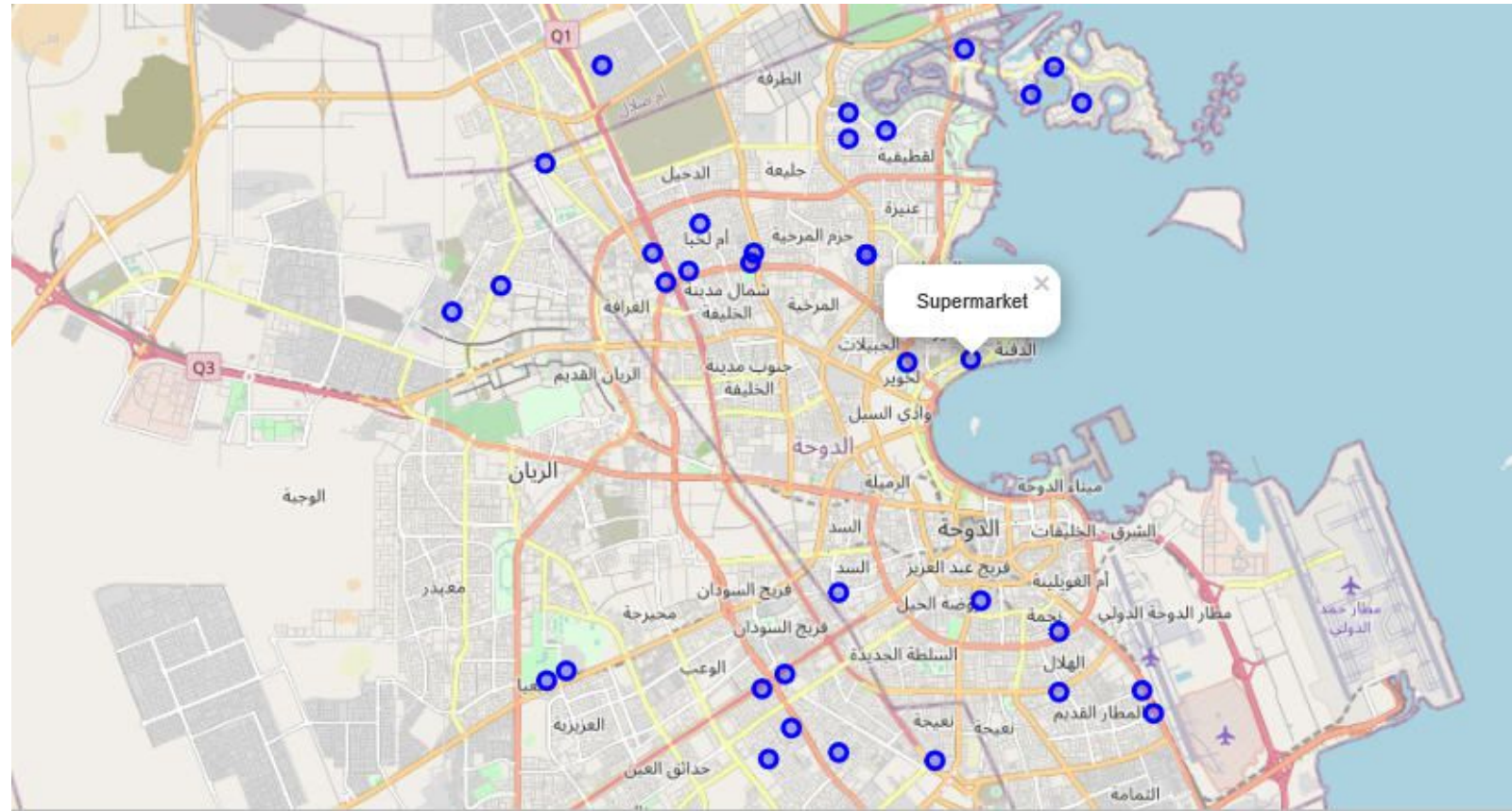
Within perimeter of 25Km around the we found :

- **40 Supermarkets.**

Tracking the Coffee Shops existing near by the supermarkets:

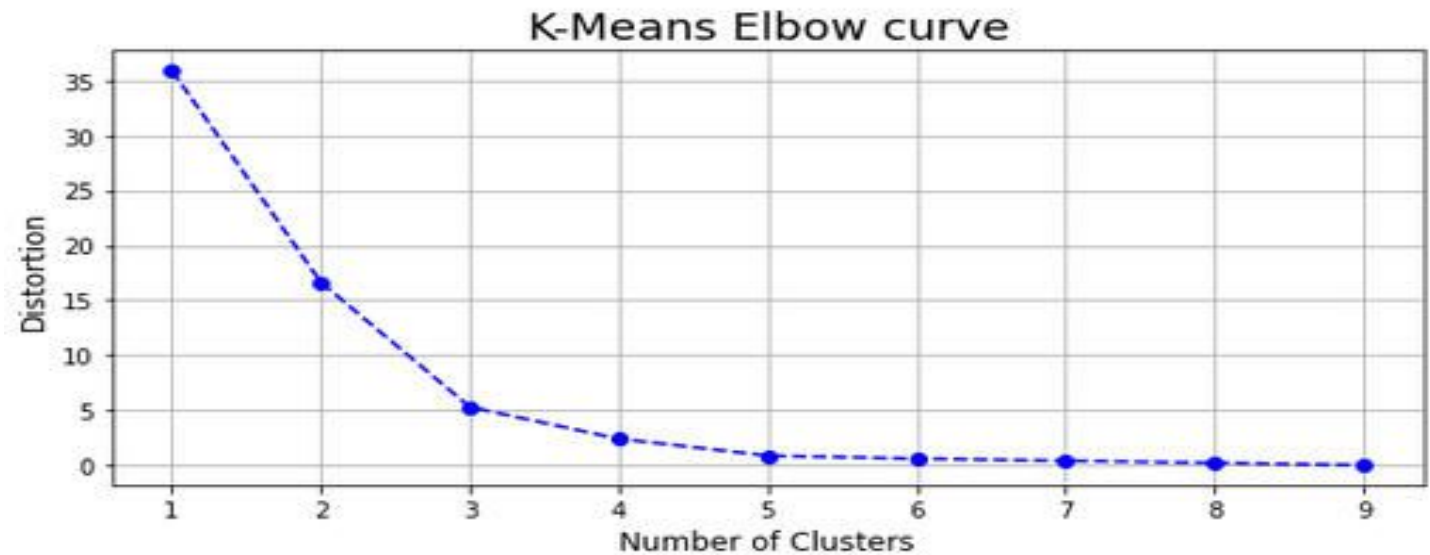
- **120 Coffee Shop and Café**

The both subcategory had been considered in our Dataframe.



Methodology :

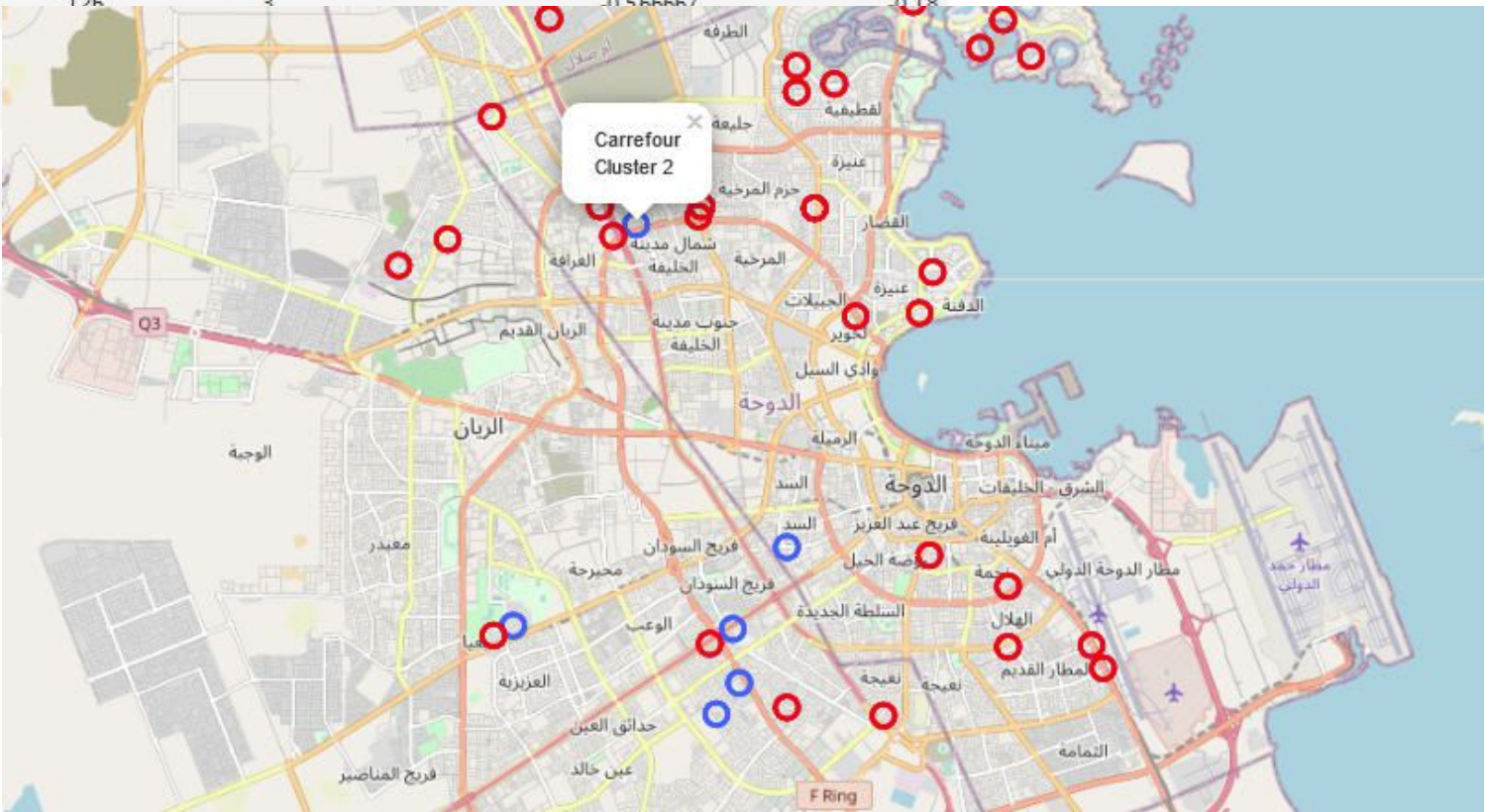
- Conda, Geopy & Folium : for Geo Coordinates and mapping
- Foursquare API : to retrieve the supermarkets and the coffee Shops existing from the city
- Pandas : to merge the both Dataframes of the Coffee shops near to supermarkets.
- K-means : Clusters the Supermarkets.
- Depending on the Elbow method , 3 clusters has been calculated.



Result :

```
CS_coffees_grouped_df.head(10)
```

	Cluster Label	Supermarket	lat	lng	Min Distance from Supermarket	Coffees Count	Norm Min Distance from Supermarket	Norm Coffees Count
0	0	MONOPRIX (مونوبري)	25.317642	51.526913	196	3	0.433333	-0.18
1	1	MONOPRIX (مونوبري)	25.317642	51.526913	196	3	0.566667	0.18
2	0	MONOPRIX (مونوبري)	25.317642	51.526913				
3	2	Carrefour	25.273246	51.499223				
4	2	Carrefour	25.258412	51.441897				
5	2	Carrefour	25.334287	51.467635				
6	2	Carrefour	25.257631	51.487681				
7	2	Carrefour	25.247412	51.489123				
8	2	Carrefour	25.241691	51.484480				
9	2	Carrefour	25.273246	51.499223				



Supermarkets Clusters Map

Discussion :

We found that the cluster 1 and 2 are similar with little bit of difference on the distance of the coffee shops.

The both clusters (1 & 2) have small numbers of coffee shops near by the supermarkets

Regarding the cluster 3 : having the same distance from the supermarkets however with big number of coffee shops around the target.

Conclusion :

We can go for the 1 cluster, however others points and parameters need to be considered :

- Opening time of the supermarkets.
- Customers frequency.
- Bus stations near by.
- Possibility to open at the entrance and the exit of the supermarkets.
- Property price.