Business Project
Open Coffee Shop Nearby Supermarket

Capstone Project - The Battle of Neighborhoods
Applied Data Science Capstone

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Business Problem :

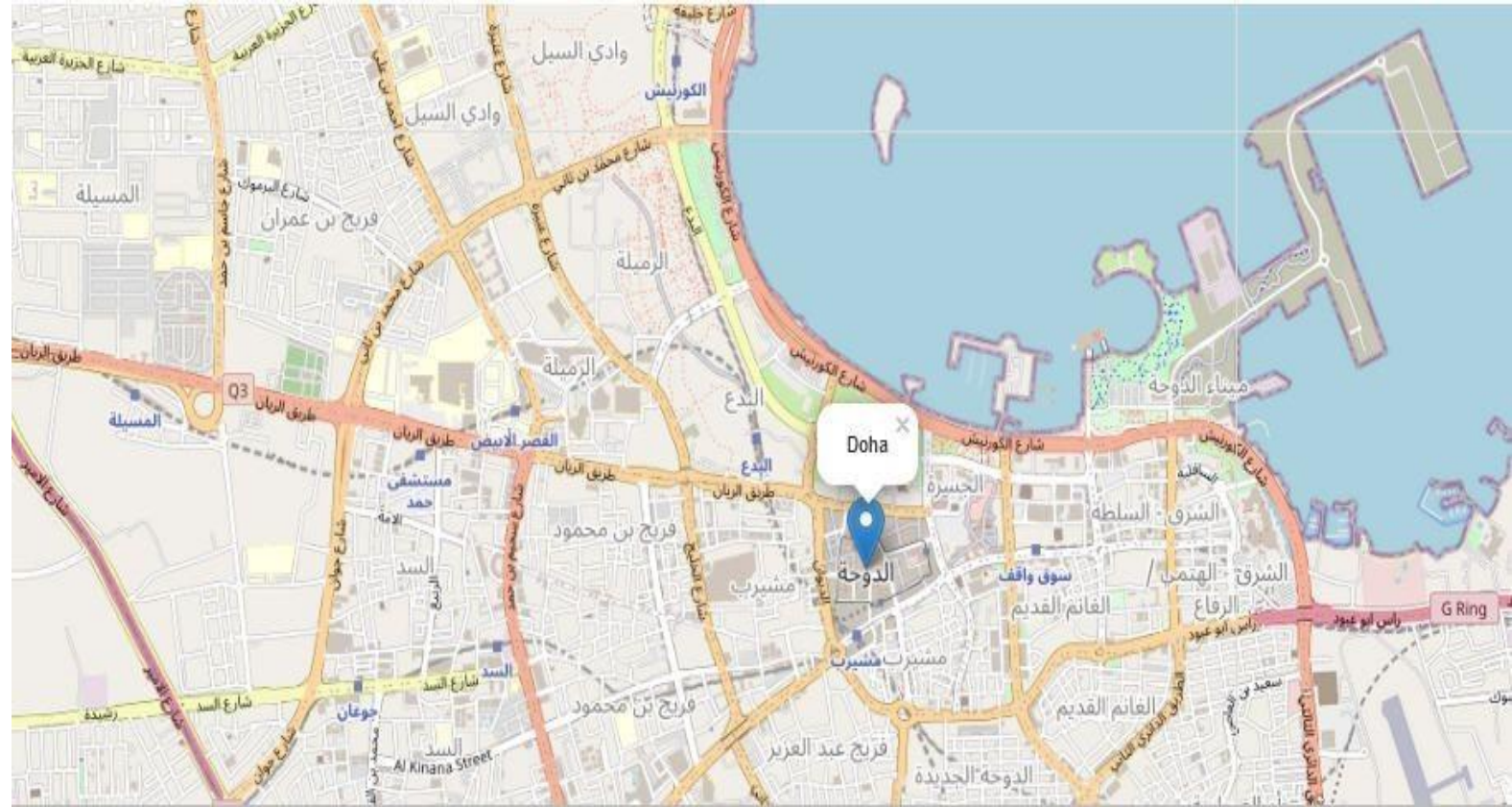Deciding to run my own business by opening new Coffee shop with only Take Away service.
For that we need to find suitable and proper location for it.
By considering :

☐ **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**
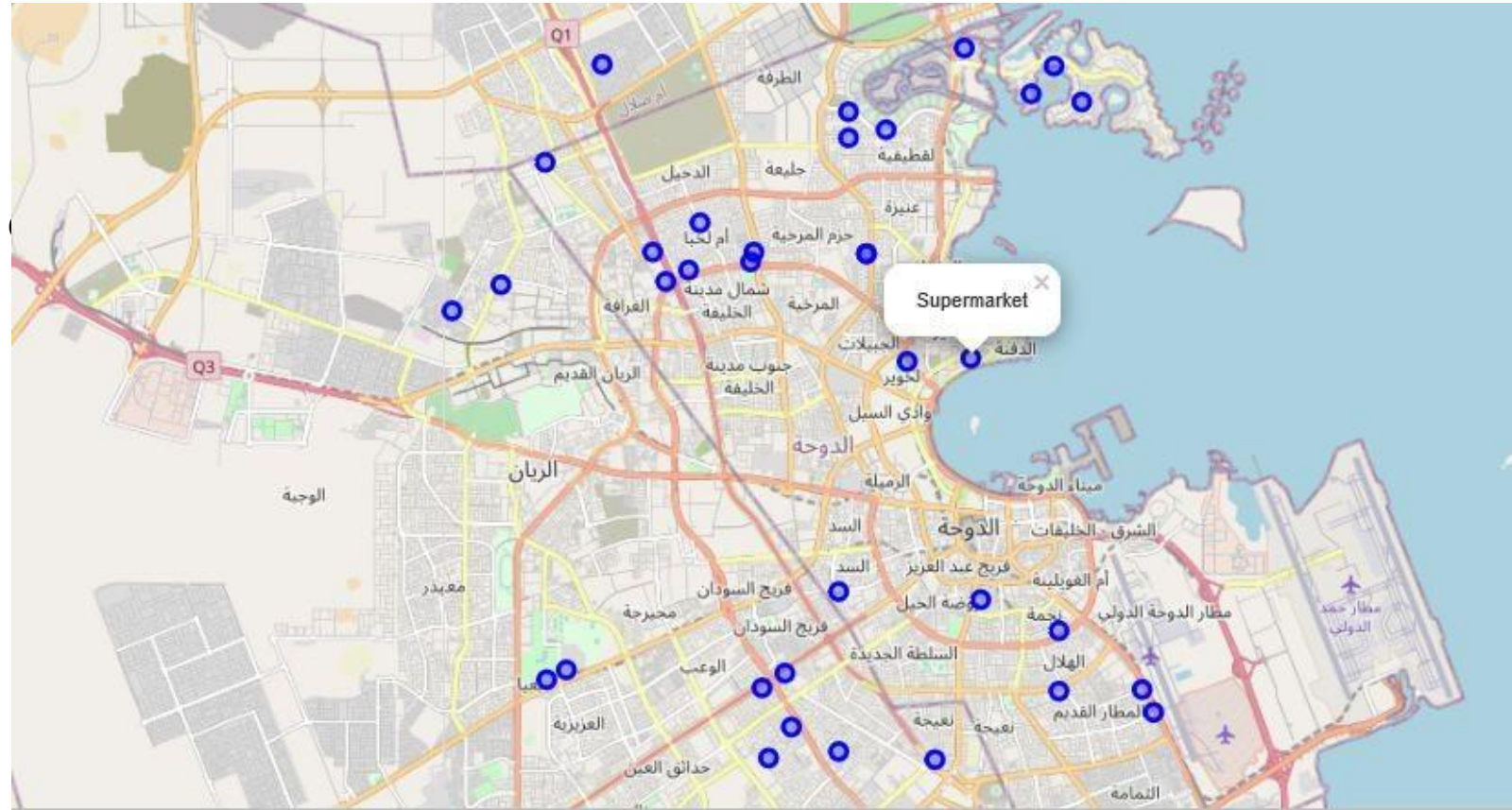
Data Wrangling and Cleaning :

Within perimeter of 25Km around the
we found :
-   **40 Supermarkets.**

Tracking the Coffee Shops existing
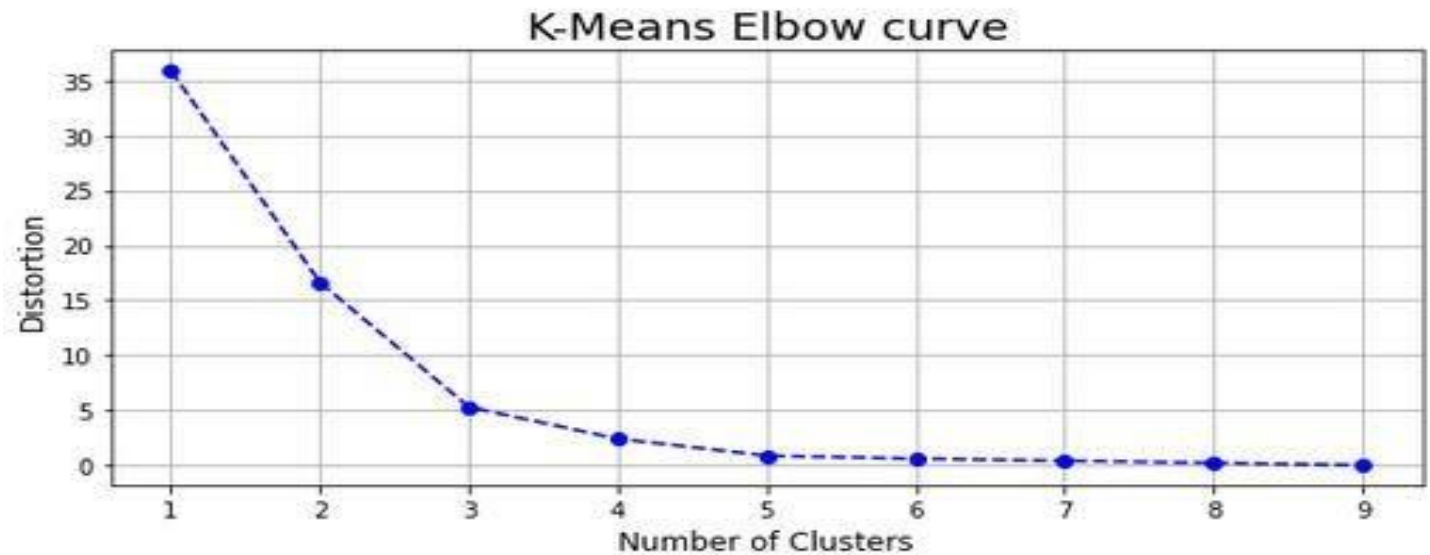near by the supermarkets:
 - **120 Coffee Shop and Café**

The both subcategory had been
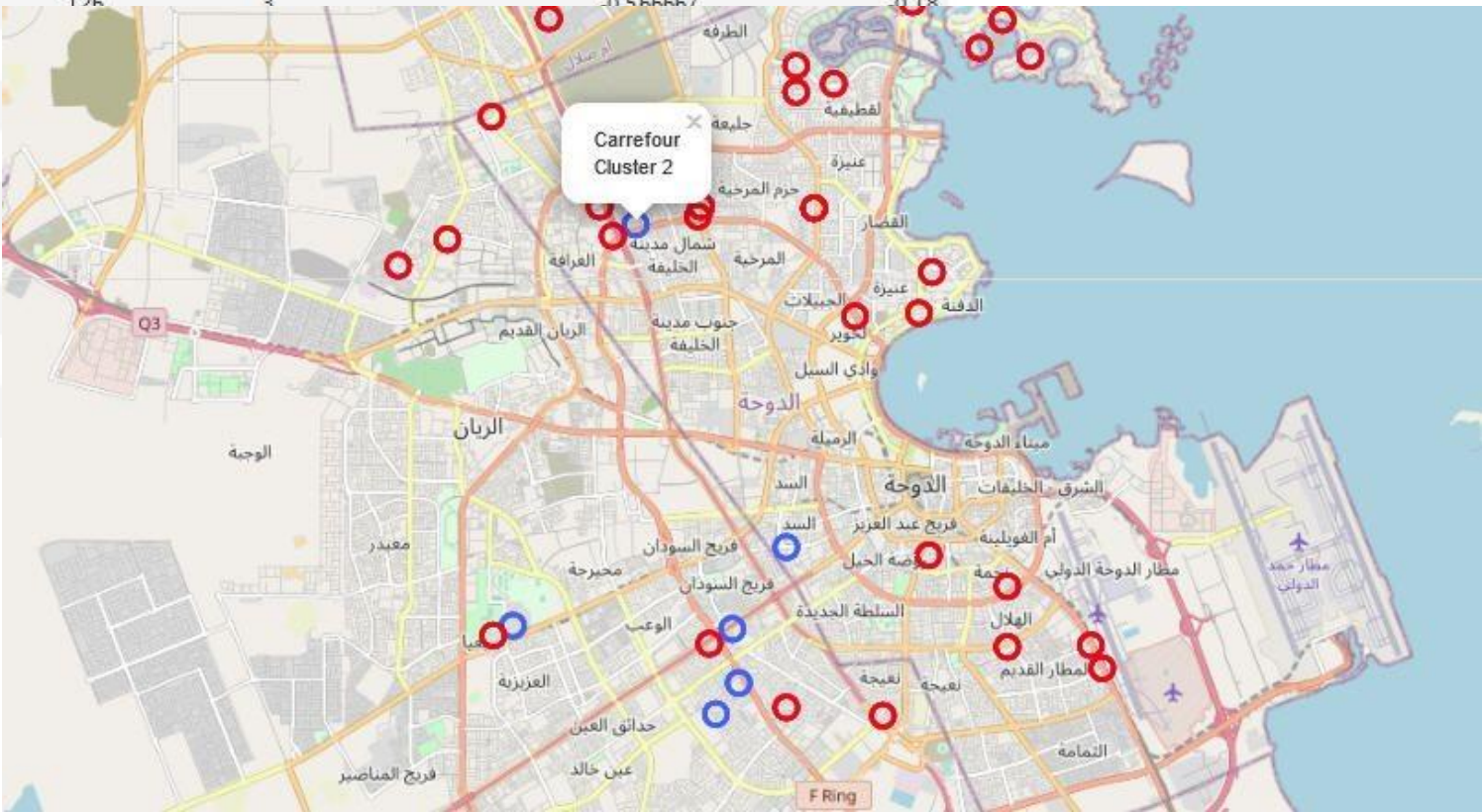considered in our Dataframe.

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	126	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 and 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.