

Introduction

According to the report, the average coffee consumption is nearly 1.1 kg per person in Turkey in 2018 and it has increased for 13%. In fact, I had been to Turkey in last year and I discovered that Turkish people really like coffee. The Turkish coffee represent the uniqueness of turkey's culture and development.

In this project, I would like to address the question "Where I could open my café to sell my coffee?" "Where should I go to taste coffee in Turkey?". Since Ankara has more than 5 million population, I think it has high potential to open coffee house and therefore I would try to suggest the better location for starting their business or taste the coffee.

Data

- Data source from wiki to get the district data
https://en.wikipedia.org/wiki/Ankara_Province
- Using "geocoder" to get the Latitude and Longitude
- Using Foursquare API and Python Libraries.

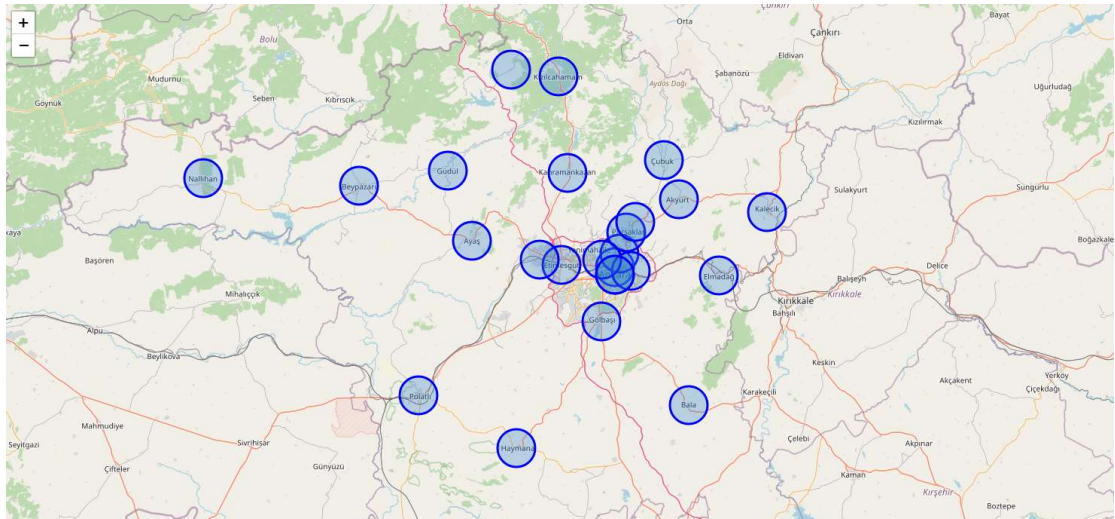
Methodology

Data Cleansing and Preparation

	District	Population (2017)	Area (km ²)	Density (per km ²)
0	Akyurt	32.863	369	89
1	Altındağ	371.366	123	3.019
2	Ayaş	12.289	1.041	12
3	Bala	21.682	1.851	12
4	Beypazarı	48.476	1.697	29

Find out the related data to prepare for the data analysis

	District	Latitude	Longitude
0	Akyurt	40.13082	33.08719
1	Altındağ	39.94171	32.85445
2	Ayaş	40.01516	32.33270
3	Bala	39.55391	33.12352
4	Beypazarı	40.16811	31.92052



Using the python library to find out the location of the district

	name	categories	lat	lng
0	Akyurt kültür parkı	Park	40.133123	33.085071
1	Meşhur Köfteci Bodur	Turkish Restaurant	40.130719	33.086776
2	Yurtalan Restaurant	Kebab Restaurant	40.132672	33.084306
3	Onur pide ve kebab salonu	Kebab Restaurant	40.130807	33.086422
4	Beyazıt Sofrası	Steakhouse	40.130542	33.081901
5	Yurtalan	Turkish Restaurant	40.132743	33.084385
6	Akyurt Sofrası	Turkish Restaurant	40.130854	33.086709
7	Akyurt	Farm	40.131012	33.083330
8	Yurtalan Restaurant	Doner Restaurant	40.132641	33.084492
9	Benliler Supermarket	Convenience Store	40.130252	33.081423
10	şişman pasta&cafe	Café	40.130820	33.085025
11	akyurt park cafe ve çay evi	Café	40.131018	33.086963
12	Akyurt Pan Çiğ Köfte	Food Court	40.131136	33.086729
13	Onur Cafe	Café	40.133324	33.084885
14	Onur Park Restaurant	Turkish Home Cooking Restaurant	40.133406	33.084906

```
print('{} venues were returned by Foursquare.'.format(nearby_venues.shape[0]))
```

15 venues were returned by Foursquare.

There are many different types of restaurant

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Akyurt	Farm	Turkish Restaurant	Park	Kebab Restaurant	Women's Store	Doner Restaurant	Plaza	Pharmacy	Mountain	Mobile Phone Shop
1	Altındağ	Café	History Museum	Historic Site	Hotel	Theater	Turkish Restaurant	Jewelry Store	Steakhouse	Antique Shop	Doner Restaurant
2	Ayaz	Turkish Restaurant	Café	Food Court	Lake	Auto Workshop	Restaurant	Snack Place	Shopping Mall	Mountain	Pool
3	Bala	Electronics Store	Turkish Restaurant	Business Service	Mountain	Steakhouse	Bus Station	Bakery	Garden	Nature Preserve	Convenience Store
4	Beyazıt	Turkish Restaurant	History Museum	Restaurant	Bakery	Scenic Lookout	Tea Room	Motel	Fast Food Restaurant	Park	Hotel
5	Elmadag	Café	Park	Campground	Bar	Convenience Store	Kebab Restaurant	Dessert Shop	Entertainment Service	Jewelry Store	Electronics Store
6	Etimesgut	Café	Turkish Restaurant	Restaurant	Steakhouse	Arcade	Bakery	Gym	Shopping Mall	Kebab Restaurant	Bagel Shop
7	Evren	Park	Waterfront	Grocery Store	Women's Store	Doner Restaurant	Food	Flower Shop	Fish Market	Fish & Chips Shop	Fast Food Restaurant
8	Gölpazarı	Café	Turkish Restaurant	Park	Restaurant	Coffee Shop	Breakfast Spot	Dessert Shop	Arcade	Bakery	Middle Eastern Restaurant
9	Gözü	Electronics Store	Castle	Botanical Garden	Pharmacy	Food Court	Department Store	BBQ Joint	Entertainment Service	Event Space	Farm

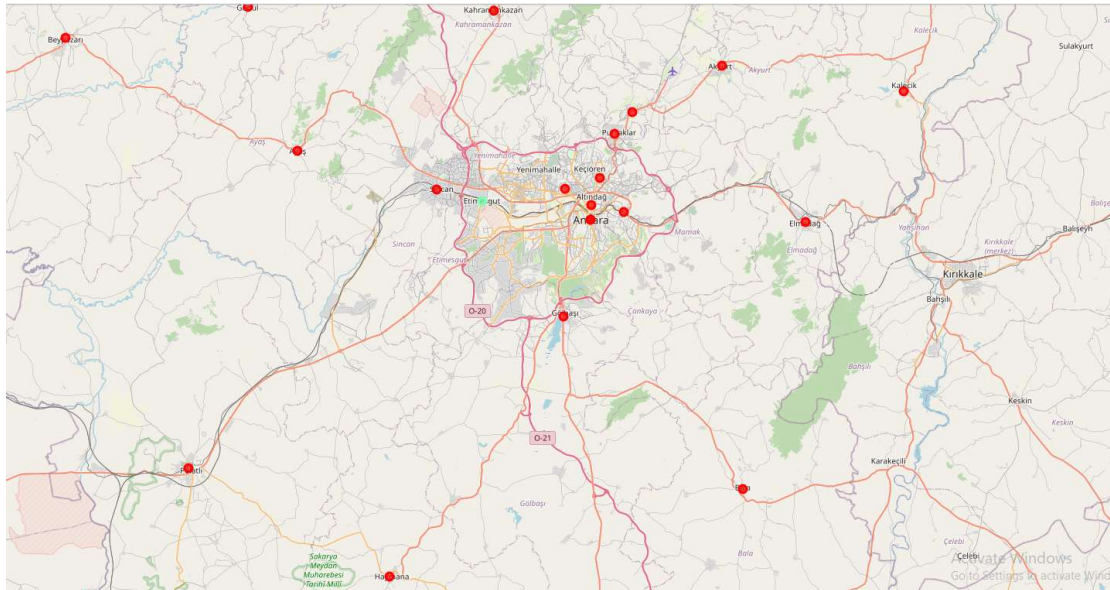
There are 3 types of cluster:

Cluster 1: “Cafe” and “Plaza”

Cluster 2: “Café” “Restaurant” and “Park”

Cluster 3: “Turkish Restaurant” and “Bistro”

Result:



The Cluster 1 contain many districts and there are lots of café right there.

Discussion:

Kmeans has been used to cluster the data. It helps to do the data analysis on whether we can open the new coffee house right here or not. With more and more coffee house right there, it helps to attract more and more people to come here and taste about the coffee.

Conclusion:

It is clear that the Cluster 1 has more districts and more café right here. It can help to boost the sales and promote for the coffee culture. On the one hand, the merchants can try to open the café right here to sell the coffee right here to increase their sales. On the other hand, the customer can know about this district and come here to taste for the coffee. Therefore, it would be great if we can open it in cluster1.

References

https://en.wikipedia.org/wiki/Ankara_Province

<https://developer.foursquare.com/>

Python Library