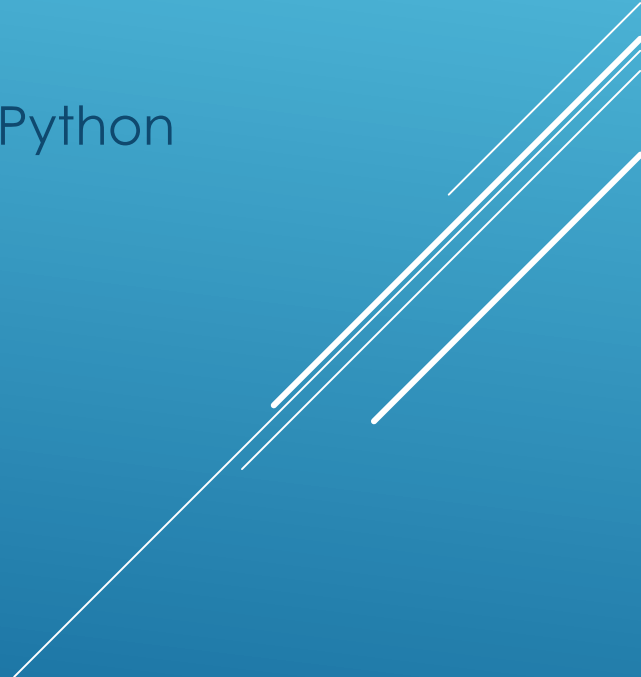


INTRODUCTION

- This project is for who is planning to open a Coffee House in Ankara, Turkey.
- This project suggests the best locations for Coffee Houses in Ankara. Ankara is the capital of Turkey with a population of 5M.
- This report explores which neighborhoods of Ankara have the most as well as the best Coffee Houses.
- Also, this project answers the questions “Where should I open a Coffee House?” and “Where should I stay If I want a tasty coffee?”



DATA

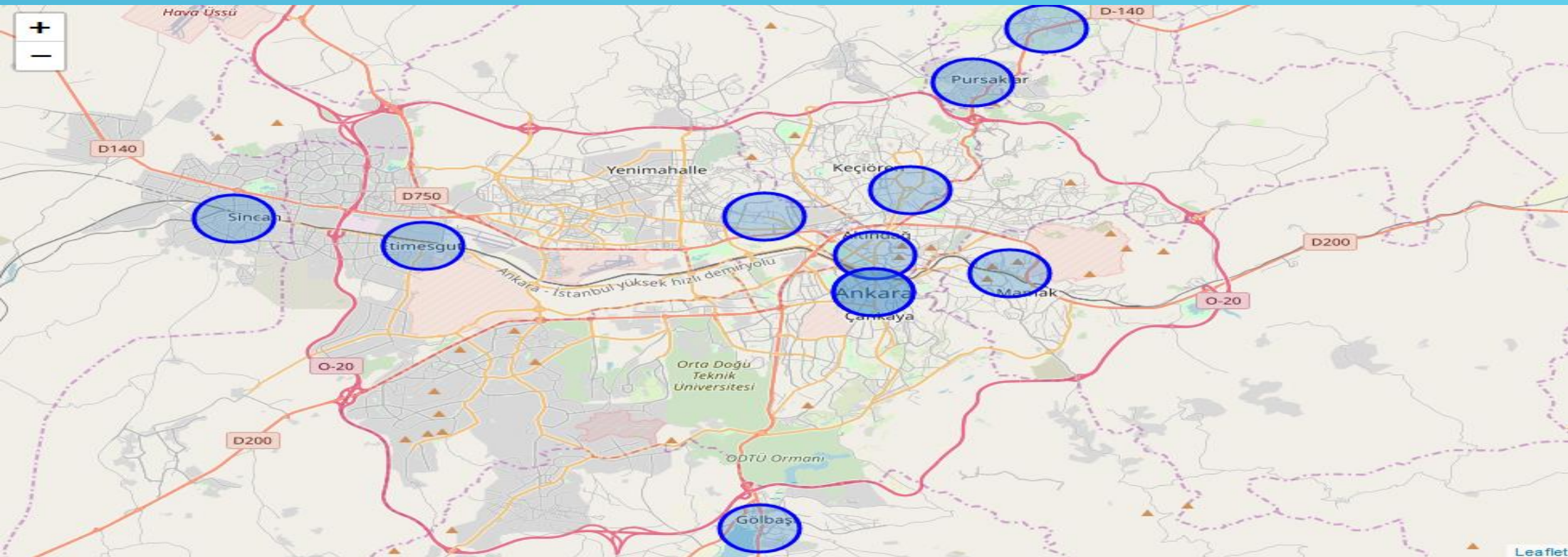
- ▶ District of Ankara are obtained from https://en.wikipedia.org/wiki/Ankara_Province[1]
 - ▶ Latitude and Longitude values are obtained by using "geocoder".
 - ▶ All data related to locations are obtained by using Foursquare API and Python Libraries. [2]
- 
- Several white lines of varying lengths and orientations are positioned in the bottom right corner of the slide, creating a modern, abstract graphic element.

METHODOLOGY

- ▶ Master data which includes “District”, “Latitude” and “Longitude” information of Ankara.
- ▶ Python Folium library was used to visualize map of Ankara and its districts. In order to get Latitude and Longitudes of Ankara, geopy and geocoder are used. The map below was obtained.
- ▶ In order to explore and categorize places Foursquare API was used. Limit was set to 100 and Radius was set to 500. Here is a head of the list Venues name, category, latitude and longitude information from Foursquare API. 15 venues are returned.

	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


METHODOLOGY



	name	categories	lat	lng
0	Meşhur Köfteci Bodur	Turkish Restaurant	40.130719	33.086776
1	Akyurt kültür parkı	Park	40.133123	33.085071
2	Yurtalan Restaurant	Kebab Restaurant	40.132672	33.084306
3	Beyazıt Sofrası	Steakhouse	40.130542	33.081901
4	Onur pide ve kebab salonu	Kebab Restaurant	40.130807	33.086422

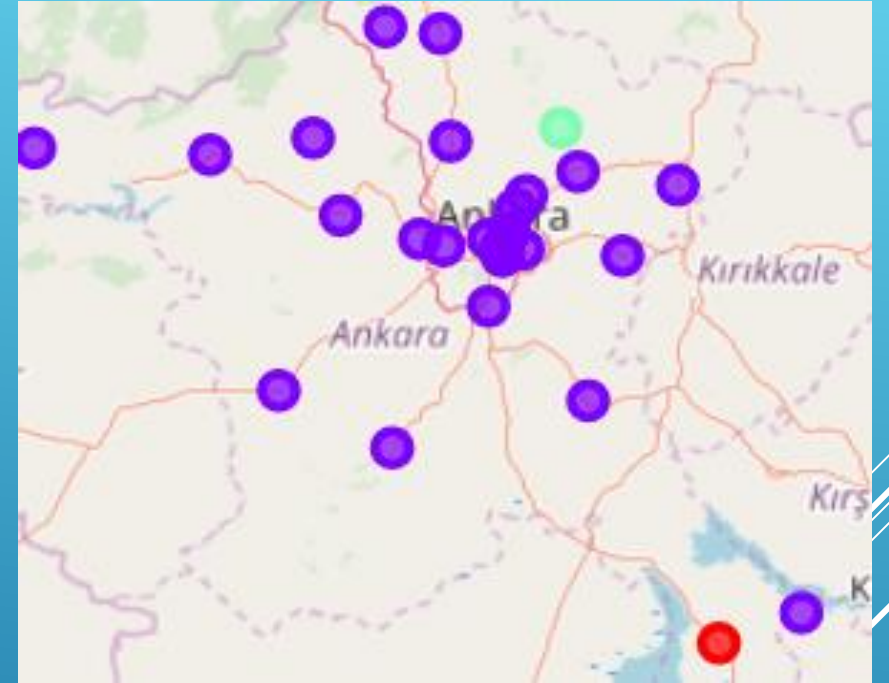
	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Akyurt	Park	Turkish Restaurant	Farm	Kebab Restaurant	Big Box Store	Stadium	Basketball Court	Basketball Stadium	Food Court	Shopping Mall
1	Altındağ	Hotel	Café	History Museum	Jewelry Store	Turkish Restaurant	Historic Site	Theater	Steakhouse	Antique Shop	Kebab Restaurant
2	Ayaş	Turkish Restaurant	Lake	Restaurant	Pool	Café	Food Court	Park	Kebab Restaurant	BBQ Joint	Farm
3	Bala	Electronics Store	Convenience Store	Turkish Restaurant	Mountain	Steakhouse	Bakery	Big Box Store	Business Service	Café	Soccer Stadium
4	Beypazarı	Turkish Restaurant	History Museum	Scenic Lookout	Restaurant	Bed & Breakfast	Bakery	Motel	Hotel	Tea Room	Plaza
5	Elmadağ	Café	Park	Convenience Store	Campground	Big Box Store	Bar	Dessert Shop	Kebab Restaurant	Jewelry Store	Forest
6	Etimesgut	Turkish Restaurant	Café	Steakhouse	Gym	Arcade	Restaurant	Dessert Shop	Shopping Mall	Kebab Restaurant	Park
7	Evren	River	Steakhouse	Grocery Store	Park	Yoga Studio	Fast Food Restaurant	Farmers Market	Farm	Event Space	Entertainment Service
8	Gölbaşı	Café	Turkish Restaurant	Park	Restaurant	Coffee Shop	Arcade	Breakfast Spot	Middle Eastern Restaurant	Kebab Restaurant	Dessert Shop

METHODOLOGY

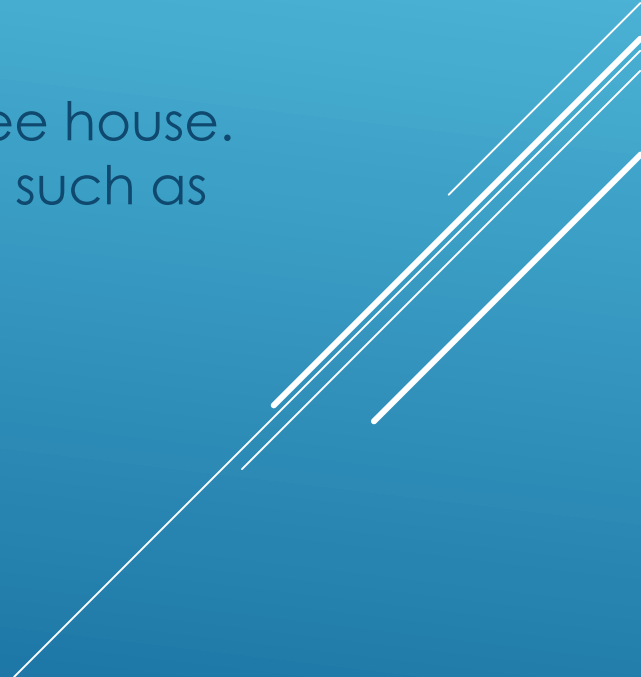
- ▶ There are common venues in districts, so unsupervised K-means algorithm was used to cluster districts. K-Means cluster was set to 3 clusters, to reach optimum accuracy.
 - ▶ Cluster 0: “Cafe” and “Plaza”
 - ▶ Cluster 1: “Café” “Restaurant” and “Park”
 - ▶ Cluster 2: “Turkish Restaurant” and “Bistro”
- 
- A series of three parallel white diagonal lines extending from the bottom right corner towards the center of the slide.

RESULTS

Cluster 1 includes most of the districts. Cafes are most common venues in Cluster 1.



DISCUSSION AND CONCLUSION

- ▶ Kmeans algorithm was used as part of this clustering study. K value was set to 3. For more detailed and accurate guidance, the data set can be expanded, and the details of the neighbourhood or street can also be drilled.
 - ▶ It is obvious that Cluster 1 is the most viable clusters to open a new coffee house. Especially Cluster 1 districts which have most common venues not Café such as Ayaş and Akyurt.
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