Segmenting and Clustering Neighborhoods in Istanbul

MOONLIGHT TRAVELS

Segmenting and Clustering Neighborhoods in Istanbul for Moonlight travels

▶ People travel through travel agencies which minimizes their time to find out the famous places to visit and residence.

▶ Moonlight Travels wants to open their service in the city of Istanbul, Turkey so that people can visit without any difficulty in finding best places to visit.

▶ Istanbul is a big city anit has many venues so agency wants to find out top places to visit while their customer stay in Istanbul i.e restaurants,cafes,gym,historical places etc.

▶ Knowing top venues beforehand increases the interests of the custoemrs and they can plan ahead of their travel.

Data acquisition and cleaning

▶ The data for the neighborhoods is collected from Wikipedia. To complement these datasets, I scraped https://en.wikipedia.org/wiki/List_of_districts_of_Istanbul .

▶ I used geopy geocoding web services to get the coordinates of these neighborhoods.

▶ Data downloaded or scraped from Wikipedia cleaned and transformed into a panda's data frame. There were a lot of missing values from, because of unarranged record keeping.

▶ Dataset returned population Area and density for these areas which were not useful for my purpose.

▶ Only neighborhood column was kept.

Data Visualization

- The data collected from Wikipedia.

	District	Population (2018)	Area (km²)	Density (per km²)
1	Adalar	16,119	11.05	1,458
2	Arnavutköy	270,549	450.35	600
3	Ataşehir	416,318	25.20	16,520
4	Avcılar	435,625	42.01	10,369
5	Bağcılar	734,369	22.36	32,842

- Geopy geocoding web services is used to
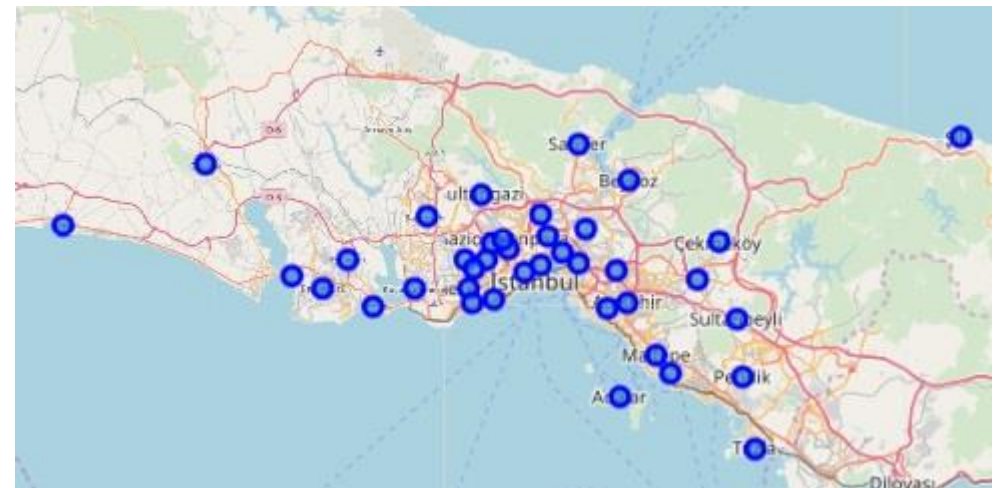 get the coordinates of these neighborhoods.

	Neighborhood	Latitude	Longitude
0	Adalar,TR	40.875931	29.094742
1	Arnavutköy,TR	41.068394	29.041154
2	Ataşehir,TR	40.984749	29.106720
3	Avcılar,TR	40.980135	28.717547
4	Bağcılar,TR	41.033899	28.857898

Data Visualization

▶ Venues for the first neighborhood I.e. 'Adalar' .

	venue.name	venue.categories	venue.location.lat	venue.location.lng
0	L'isola Guesthouse	Bed & Breakfast	40.877038	29.096136
1	İnönü Evi Müzesi	History Museum	40.878251	29.093647
2	Luz Café	Café	40.877528	29.097877
3	Heybeliada Şafak Askeri Gazino	Restaurant	40.873609	29.099478
4	Merit Halki Palace Hotel	Hotel	40.878802	29.090974

▶ Maps for visualizing the neighborhoods in Istanbul.

Conclusion

- Moonlight Travels can now interest their customers to the neighborhoods and their respective venues.

- Customers can visit those places and plan beforehand their travel designations.

- Agency will benefit from this segmentation and it will inceare the goodwill and revenue of the company.