

A wide-angle, high-angle photograph of the Dubai skyline at night. The Burj Khalifa stands prominently in the center, its spire reaching into the dark sky. The city is illuminated with various lights, and the foreground shows a complex network of highways with light trails from traffic. The sky is a deep blue with some stars visible.

FINDING THE BEST COMMUNITY IN DUBAI TO OPEN A NEW CAFÉ

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BUSINESS PROBLEM & OBJECTIVE

- An entrepreneur would like to open a café in Dubai. Being a city with diverse population and a tourist hub, Dubai is considered great choice for café and restaurant owners to begin or expand their business. The entrepreneur would like for the café to be affordable and easily accessible to the public.
- Taking into account the price level and easy access to public, the café needs to be located within a community in Dubai that has a good amount of footfall of the general public as well as the tourists.
- The primary objective of this project is to use K-Means Clustering to identify the optimal list of communities in Dubai that would be a great fit for our entrepreneur to open their café.

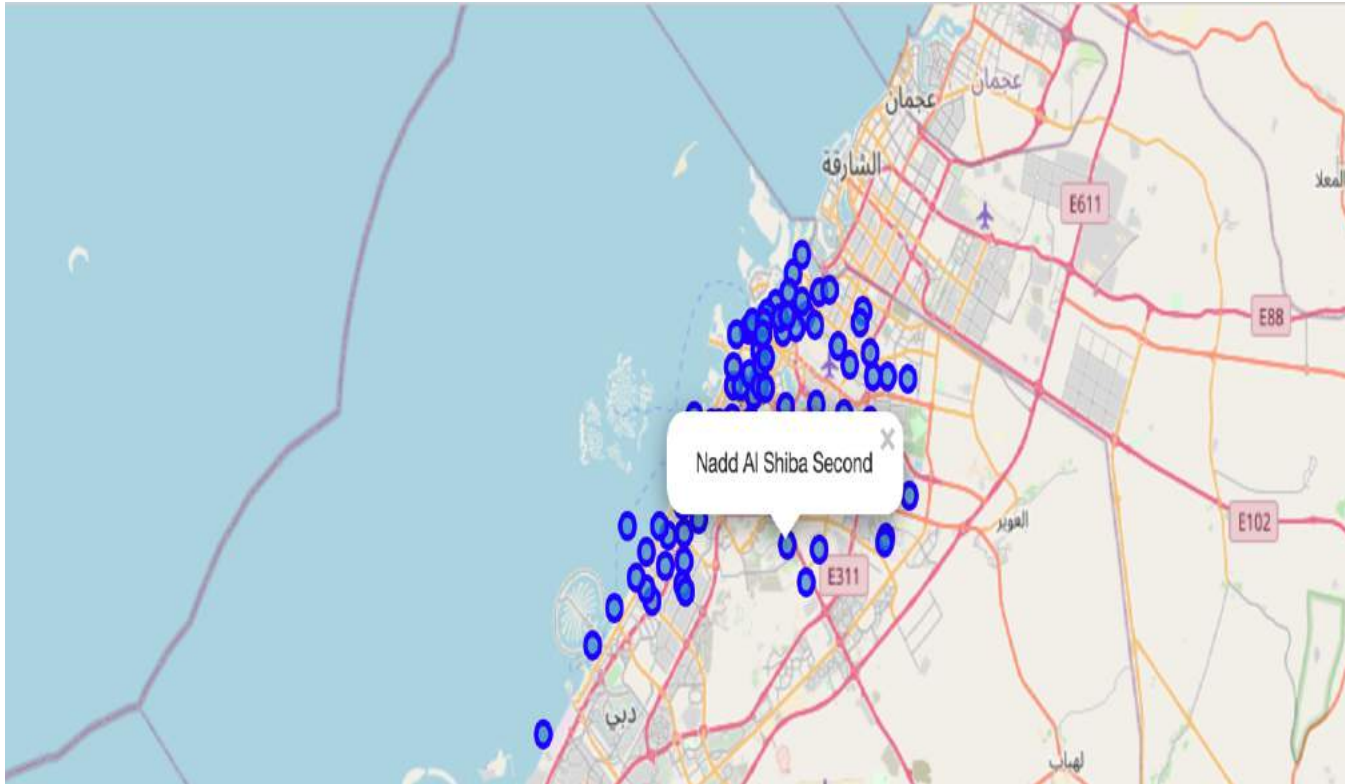


DATA SOURCES

- List of Communities in Dubai:
https://en.wikipedia.org/wiki/List_of_communities_in_Dubai
- Geospatial data of the Communities in Dubai from the above list: Manually from Google Search -
<https://github.com/varsha30051996/data-science-personal/blob/master/Dubai.csv>
- Top Venues per Community: The top venues per community will be retrieved by using Foursquare through an API by using the data collected in points 1&2 as base data.



DUBAI'S COMMUNITIES



The Dubai communities were superimposed over Dubai to obtain the above map using Folium library.



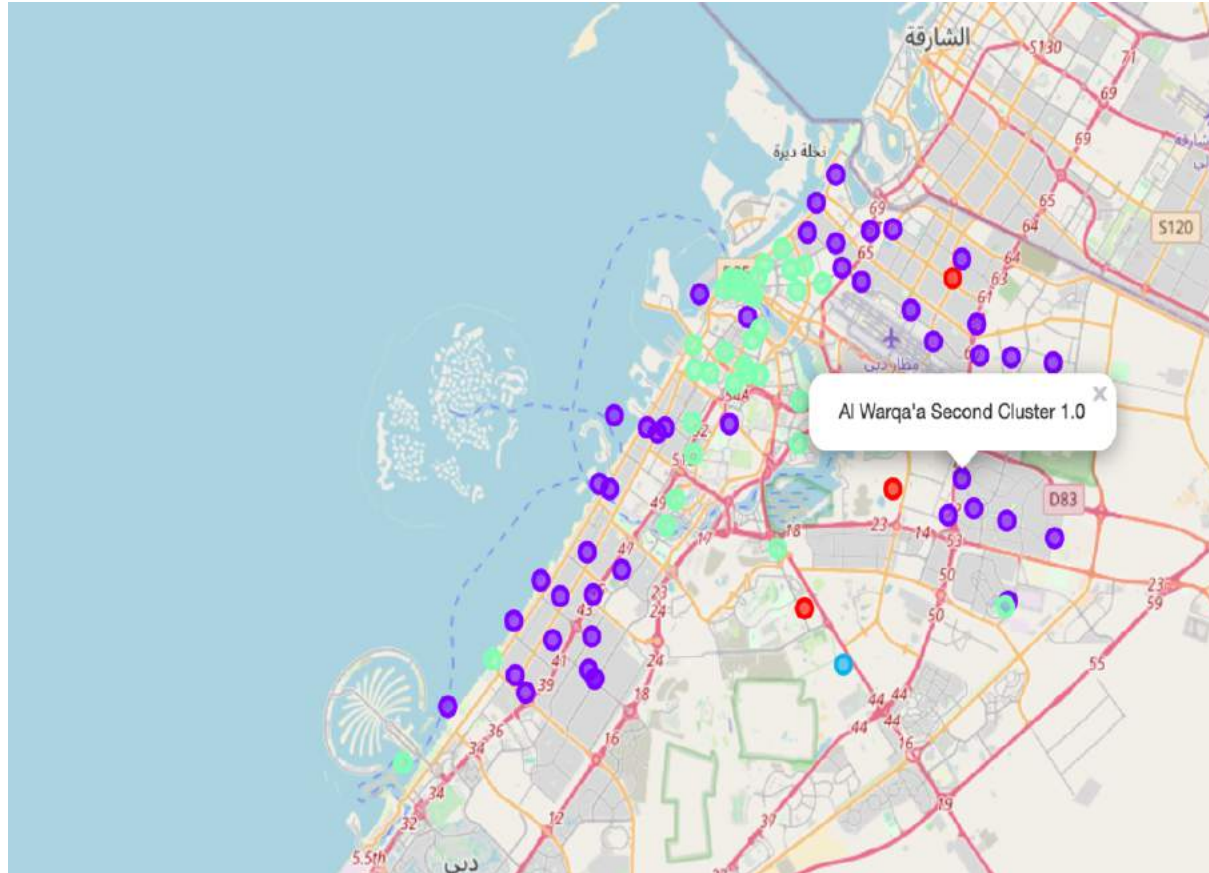
VENUES PER COMMUNITY

	Community	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	Abu Hail	Café	Middle Eastern Restaurant	Fast Food Restaurant	Gym	Iraqi Restaurant	Post Office	Burger Joint	Burrito Place	Shopping Mall	Shawarma Place
1	Al Bada	Café	Coffee Shop	Middle Eastern Restaurant	Shopping Mall	Fast Food Restaurant	Bakery	Gym / Fitness Center	Mediterranean Restaurant	Beach	Chinese Restaurant
2	Al Baraha	Hotel	Park	Post Office	Middle Eastern Restaurant	Café	Bar	Track	Fast Food Restaurant	Coffee Shop	Smoke Shop
3	Al Buteen	Hotel	Middle Eastern Restaurant	Café	Indian Restaurant	Asian Restaurant	Fast Food Restaurant	Historic Site	Museum	Art Gallery	History Museum
4	Al Dhagaya	Hotel	Middle Eastern Restaurant	Fast Food Restaurant	Café	Electronics Store	Market	Restaurant	History Museum	Historic Site	Museum

The base data obtained was then used to get the top venue categories visited by the population within 1000 m radius from the community's coordinates by using the FourSquare API.



K-MEANS CLUSTERING



K-Means Clustering was used to cluster the communities into 5 clusters. These clustered communities were then visualized on the map by using the Folium library.



RESULTS

Through K-Means Clustering, we could see that Cluster 1 and 3 were the most prevalent in Dubai. These clusters were then analyzed to spot the cluster with the optimum list of communities to open the café.

- In Cluster 1, Café was the top common venue for 12 of its communities.
- In Cluster 3, Hotel was the top common venue.

Therefore, Cluster 1 was chosen as the one which contained the communities to be considered for opening the café.



DISCUSSION

AL BADA



AL MAMZAR



When looking at the top 5 communities within Cluster 1 by population density, it seen that *Al Bada* and *Mamzar* have their top common venue as a café. So, these 2 communities could be the optimal ones in which to open the café.



CONCLUSION

- In this project, 12 communities were identified within Dubai which have most common visits to a café. Of these 12 communities, 2 of them had a high population density where we can expect high footfall – Al Bada and Mamzar. These 2 communities were chosen as optimal communities to open the café.
- Although this analysis was restricted to finding the optimal location for a café. This can be utilized by any entrepreneur to understand where to open their business such as a restaurant, bakery, gym, etc.

THANK YOU!

