



COURSERA CAPSTONE

IBM APPLIED DATA SCIENCE CAPSTONE
Opening a new coffee shop in Dubai, UAE

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BUSINESS PROBLEM

- Location of the coffee shop is one of the most important decisions that will determine whether the coffee shop will be a success or a failure.
- Objective: To analyse and select the best locations in the city of Dubai, to open a new coffee shop.

Business question

- If someone is looking to open a new Coffee shop in Dubai, where would you recommend that they open it?



Data

- **Data required**

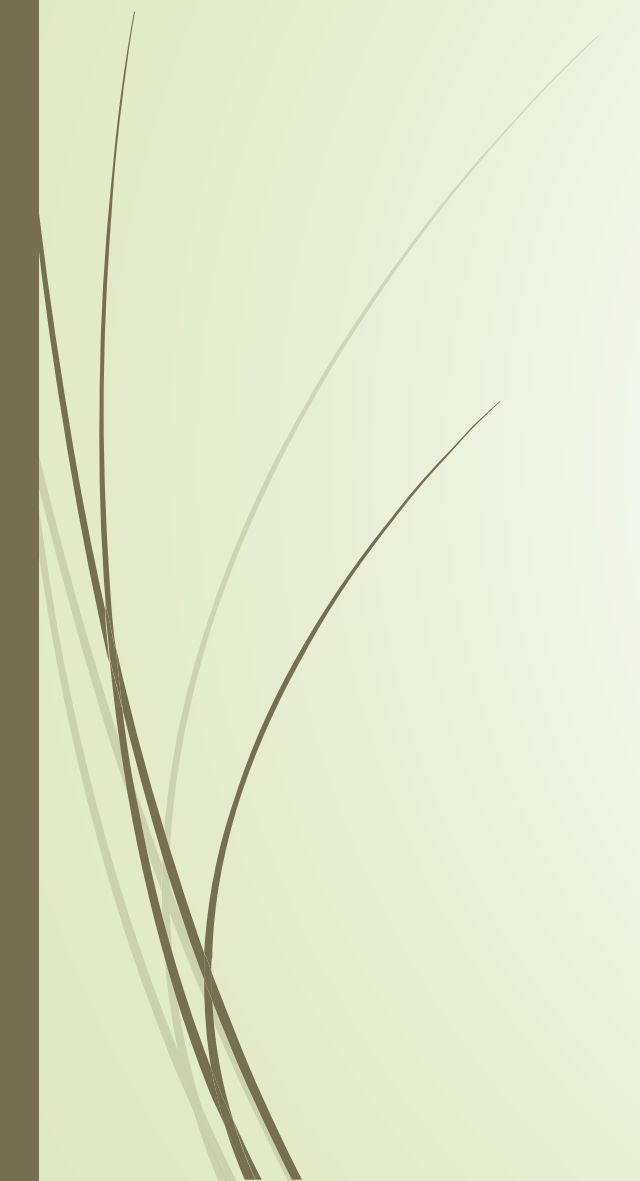
- List of neighborhoods in Dubai, UAE.
- Latitude and longitude coordinates of the neighborhoods.
- Venue data, particularly data related to shopping malls.

- **Sources of data**

- Wikipedia page for neighbourhoods.
(https://en.wikipedia.org/wiki/List_of_communities_in_Dubai)
- Geocoder package for latitude and longitude coordinates.
- Foursquare API for venue data .



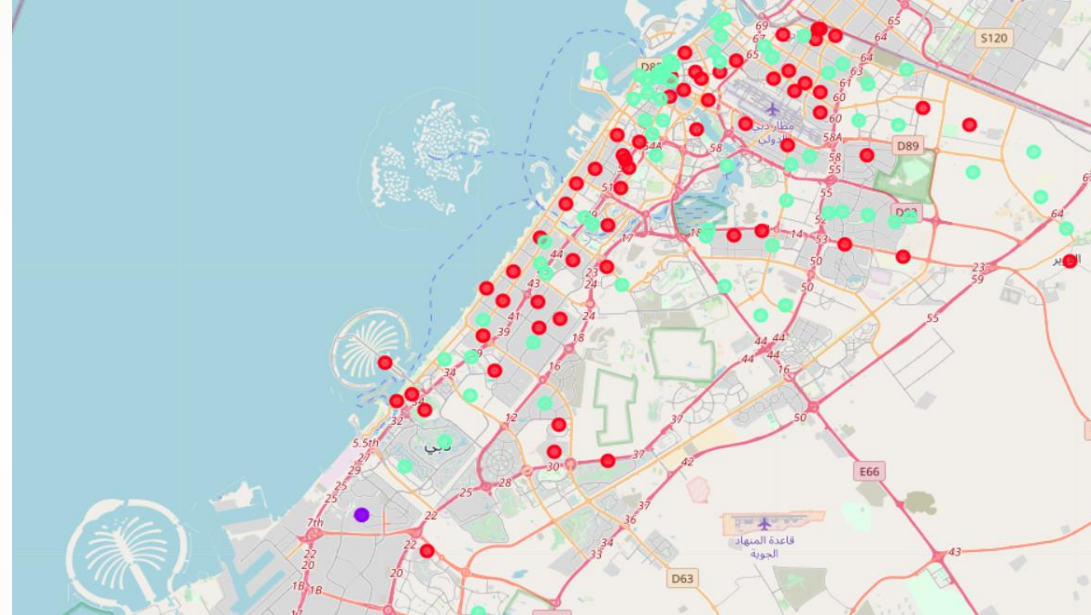
METHODOLOGY

- Web scraping Wikipedia page for neighbourhoods list.
 - Get latitude and longitude coordinates using Geocoder.
 - Use Foursquare API to get venue data.
 - Group data by neighborhood and take the mean of the frequency of occurrence of each venue category.
 - Filter venue category by 'coffee shop'.
 - Perform clustering on the data by using k-means clustering.
 - Visualize the clusters in a map using Folium.
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RESULT

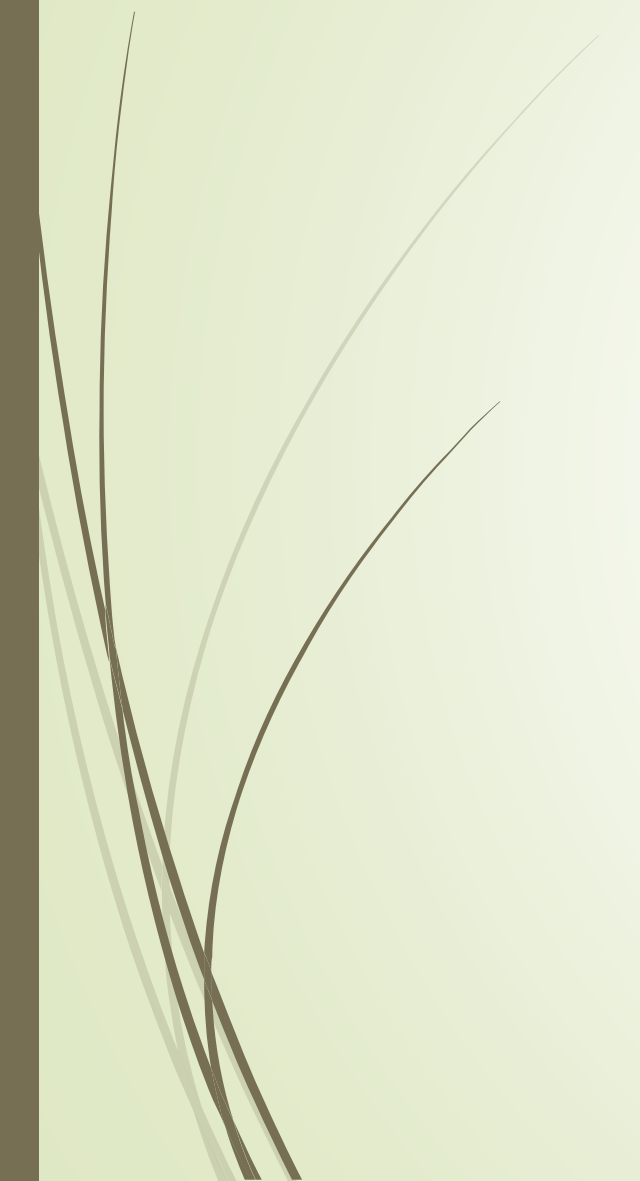
Clustering the neighborhoods into 3 clusters :

- Cluster 1 (red): Neighborhoods with moderate number of coffee shops
- Cluster 2 (purple): Neighborhoods with high number of coffee shops
- Cluster 3 (green): Neighborhoods with low number to no existence of coffee shops





RECOMMENDATIONS

- Open new coffee shop in neighbourhoods in cluster 3 with little to no competition.
 - There is an ability to open in neighbourhoods in cluster 1 with moderate competition if there is a unique selling propositions to stand out from the competitors.
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CONCLUSION

The answer to business question: The neighbourhoods in cluster 3 are the most preferred locations to open a new coffee shop

- Findings of this project will help the relevant stakeholders to capitalize on the opportunities on high potential locations while avoiding overcrowded areas in their decisions to open a new shopping mall.
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