



COURSERA CAPSTONE

Battle of the Neighborhoods

Coursera Capstone Project

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PROBLEM STATEMENT

Dubai is a renowned city for the wealthy. It is a popular destination for travelers on business as well as leisure. The city with its central location and warm climate on top of its capital flow presents a great opportunity for restaurants and hotel businesses.

In this exercise, we will explore FourSquare API data to determine where a new hotel/restaurant business would succeed in Dubai. Our business will need to be based in close proximity to near high-rent areas that offer a demographic of individuals most likely to have disposable income to spend on eating out or travelling to venues geared towards commercially active areas.

The venue will also need to be in a neighborhood that is commercially active but not flooding with competition.

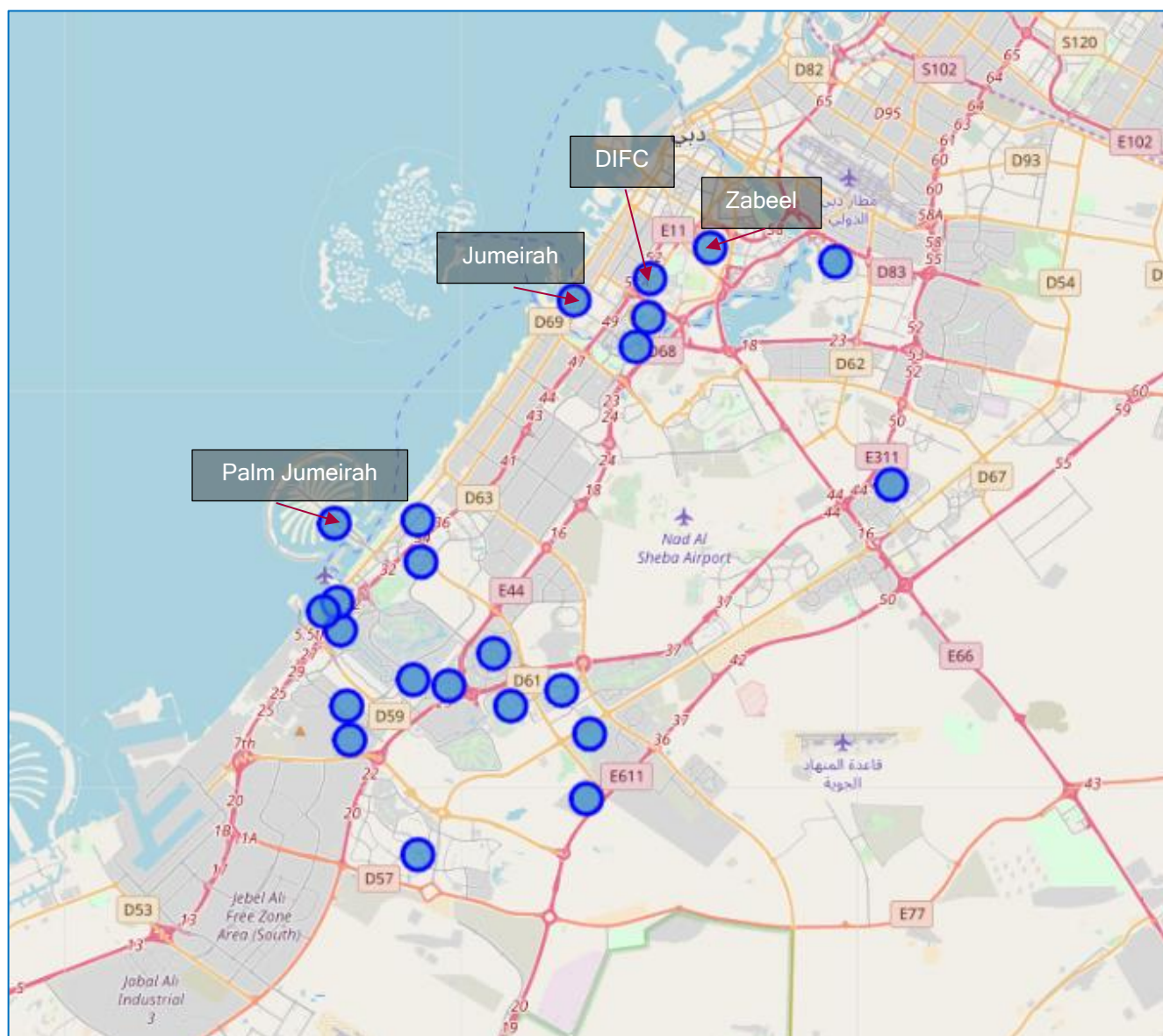
The exercise will explore venue data from FourSquare API and Dubai's average rent and proximity to the top high-rent areas, by neighborhood.

DATA OVERVIEW

We will utilize two sets of data from different sources: The FourSquare API to explore most common venues clustered by neighborhoods, and a csv file named “Dubai_neighborhoods.csv” that contains average rent, latitude / longitude data, and distance from major airports by neighborhood.

FourSquare API

Using the FourSquare API, we will gather data on most common venues to determine market share viability and competition in our areas of interest, to be discussed in the next section.



Looking at the folium map created above, we see that the closest proximity to at least two of the high-rent areas would be somewhere between Jumeirah and Zabeel. The final recommendation will be DIFC, and we will explore how that was derived in the coming sections.

Dubai_neighborhood.csv

First, we need to determine suitable neighborhoods for a new hotel / restaurant business based on neighborhood avg. rent and distance to the highest rent areas. According to the .csv file, Dubai's high-rent areas are Jumeirah, Zabeel, and Palm Jumeirah. We will use these neighborhoods as starting points in determining the most appropriate neighborhood to open in - the ideal location should be very close to at least two of these neighborhoods for easy access. Central to all three would not be best as it can make travel from all three neighborhoods equally difficult. We are looking for very easy access from at least two.

Neighborhood	Avg Rent Per Unit	Z-Score	Distance from Palm	Distance from Zabeel	Distance from Jumeirah	Latitude	Longitude
Discovery Gardens	44,672	-1.53	8.18	26.15	20.73	25.039	55.1445
Dubai Silicon Oasis	54,417	-1.30	24.96	13.31	16.39	25.1279	55.3863
Jumeirah Village Circle	60,068	-1.17	9.16	20.56	16.13	25.0602	55.2094
Dubai Sports City	62,753	-1.10	11.36	22.32	18.28	25.0391	55.2176
Remraam	67,284	-0.99	16.71	25.27	22.27	25.0014	55.2508
Al Furjan	73,648	-0.84	9.70	27.28	22.02	25.0252	55.1459
Jumeirah Village Triangle	82,014	-0.64	8.87	22.78	18.04	25.0473	55.19
Motor City	83,876	-0.60	12.61	20.90	17.42	25.045	55.2397
Damac Hills	94,630	-0.34	16.40	22.41	19.37	25.0275	55.2524
Al Sufouh	95,804	-0.31	0.70	17.88	12.02	25.1134	55.1762
DIFC	105,183	-0.09	17.86	3.02	3.57	25.2106	55.2794
Business Bay	105,682	-0.08	15.61	5.55	3.45	25.1832	55.2729
Jumeirah Lakes Towers	106,352	-0.06	4.80	23.80	18.03	25.0693	55.1417
Barsha Heights	111,804	0.07	4.10	19.08	13.48	25.097	55.1776
Emirates Living	114,422	0.13	7.82	23.43	18.36	25.0496	55.174
Dubai Marina	115,236	0.15	3.55	23.02	17.12	25.0805	55.1403
Dubai Investments Park	116,379	0.18	15.30	30.13	25.71	24.979	55.1762
Jumeirah Beach Residence	143,520	0.83	3.97	23.75	17.82	25.0769	55.1341
Dubai Festival City	151,341	1.02	25.23	5.60	11.81	25.2171	55.3614
Downtown	153,546	1.07	16.77	4.19	3.41	25.195	55.2784
Zabeel	176,213	1.61	20.84	0.00	6.57	25.2231	55.3061
Jumeirah	180,180	1.71	14.59	6.57	0.00	25.2016	55.2453
Palm Jumeirah	204,430	2.29	0.00	20.84	14.59	25.1124	55.139

From the .csv file, we can determine that, using the z-score, the most reasonable rent areas and proximity to the top three high-rent areas are from Al Sufauh to Dubai Marina, which have z-scores closest to 0. We will explore these areas and determine best locations.

Dubai_neighborhoods.csv

EXPLORATORY ANALYSIS

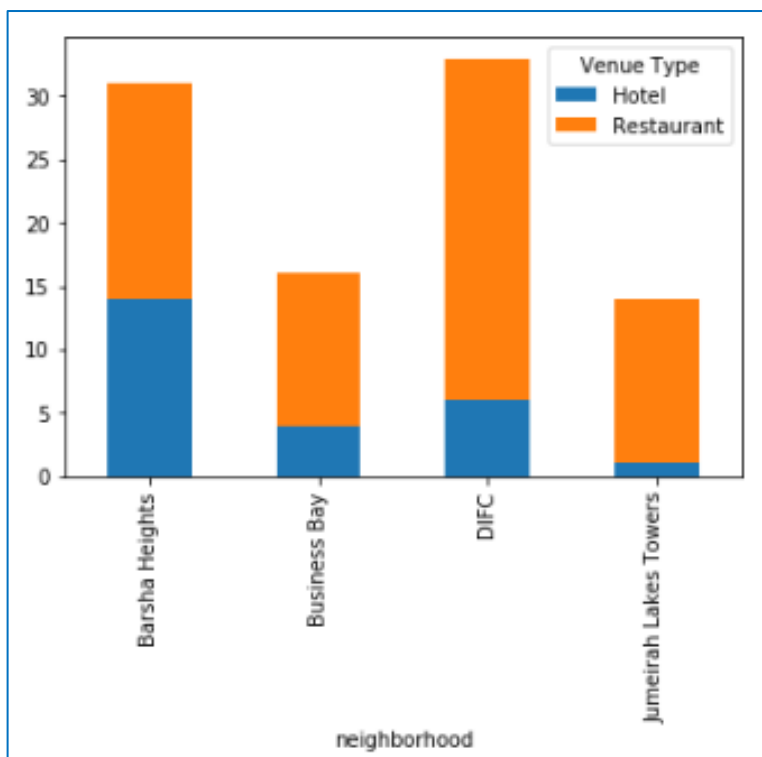
After reviewing our preliminary findings, we can determine that **Al Sufouh**, **DIFC**, **Business Bay**, **Jumeirah Lake Towers**, and **Barsha Heights** best fit our targeted neighborhood, and we will focus on these neighborhoods.

To start, a master dataframe was created in Pandas for analysis and visualization. As our business will be a hotel / restaurant, I focused on the count of venues for 'hotels' and 'restaurants' in these neighborhoods.

We want to find a neighborhood that is commercially active but not flooding with competition. With the business being a hotel / restaurant, I focused on competitive market for hotels since that's what our business will likely show up as a venue category.

neighborhood	count
Al Sufouh	5
Barsha Heights	60
Business Bay	23
DIFC	79
Jumeirah Lakes Towers	36

As the table above shows, DIFC and Barsha Heights seem to be the most commercially active and will be our two final candidates. The table below will show competitive analysis of Hotels and Restaurants in the neighborhoods



It seems that DIFC has both the highest number of venues in our category yet has the lower hotel-to-restaurant ratio, making it both a commercially active area yet less competitive.

CONCLUSION

DIFC, also known as Dubai International Finance Center, will be our final candidate to open a hotel / restaurant business as it is:

1. Close to two of our 3 highest rent areas, attracting people with disposable income
2. Commercially active with 79 hotel and restaurants combined in the area
3. Less competitive in the hotel market