



BATTLE OF THE NEIGHBORHOODS

IBM Data Science Capstone Project

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1. Inroduction

1.1 Background:

The capital of Saudi Arabia.

With a population of 7.3 millions, Riyadh is the capital of Saudi Arabia and the largest city on the Arabian Peninsula. Riyadh is becoming a leading and an attractive city for tourists and entrepreneurs.

Many citiziens of the capital city spend their time nowadays in Resaurants and cafes, specially that we are having many squares or venues that offer both good site places, high quality local, and franchised restaurants and cafés.

For entrepreneurs investing and opening speciality cafes and restaurants would be a great opportunity for them, specially after opening doors for foreign investors to invest in Saudi Arabia.

1.2 Problem :

Having a big city like Riyadh, We are aiming to find the best neighbourhood to open a shop specialized in desserts and unique coffee.

So we are choosing two neighborhoods in the capital of saudi Arabia where hundreds, even thousands of people visit everyday.

As a university student, I can see that we spend most of our time near collage, wether we are studying, doing projects or having fun during our breaks.

So I chose to compare two neighborhoods where two of the largest universities of Riyadh are located.

1.3 Target Audience:

This report can help entrepreneurs who are looking to open a coffee shop near one of two largest Universities in Riyadh, Saudi Arabia.

2. Data :

2.1 Data description :

I'll briefly speak about the two universities I have chosen as my main locations.

King Saud University:

Founded in 1957, King Saud University is a non-profit public higher education institution. Officially accredited and recognized by the Ministry of Education, Saudi Arabia. King Saud University (KSU) offers courses and programs leading to officially recognized higher education degrees such as pre-bachelor degrees (i.e. certificates, diplomas, associate or foundation degrees), bachelor degrees, master degrees, doctorate degrees in several areas of study.

In addition to scholarship and research, King Saud University provides health and social services to the entire Saudi community, as extending and expanding such services are an essential component of KSU's comprehensive development plans.

Free health services, vital to any society, are offered by King Khalid University Hospital (KKUH), which possesses highly qualified consultants, carefully chosen physicians, and the finest nursing staff and general personnel possible.

Al Imam Mohammed Ibn Saud University:

Founded in 1974, Al-Imam Muhammad Ibn Saud Islamic University is a non-profit public higher education institution located in the urban setting of the metropolis of Riyadh. Al-

Imam Muhammad Ibn Saud Islamic University (IMAMU) is a very large coeducational higher education institution formally affiliated with the Islamic religion. Al-Imam Muhammad Ibn Saud Islamic University (IMAMU) offers courses and programs leading to officially recognized higher education degrees such as pre-bachelor degrees (i.e. certificates, diplomas, associate or foundation degrees), bachelor degrees, master degrees, doctorate degrees in several areas of study.

Foursquare API :

I'll be using the Foursquare API to explore the nearby venues for both King Saud University (KSU) and Imam Mohammed Ibn Saud University(IMAMU) in order to find the most accurate place to open the Shop. I looked for venues up to 4 KM range from the latitude and longitude of both universities.

From the foursquare API, I'll be retriving the following for each nearby venue:

- Name
- Category
- Latitude
- Longitude

3. Methodology:

First, to start working in the project, we needed to choose the main location we want to compare between, so as mentioned we chose, King Saud University and Al Imam Mohammed Ibn Saud University. To get the coordinates I used the main universities sites to get them, so I wrote them manually.

To be able to use foursquare API and look for the nearby venues we had to creat a foursquare developer account in order to have a personal API key.

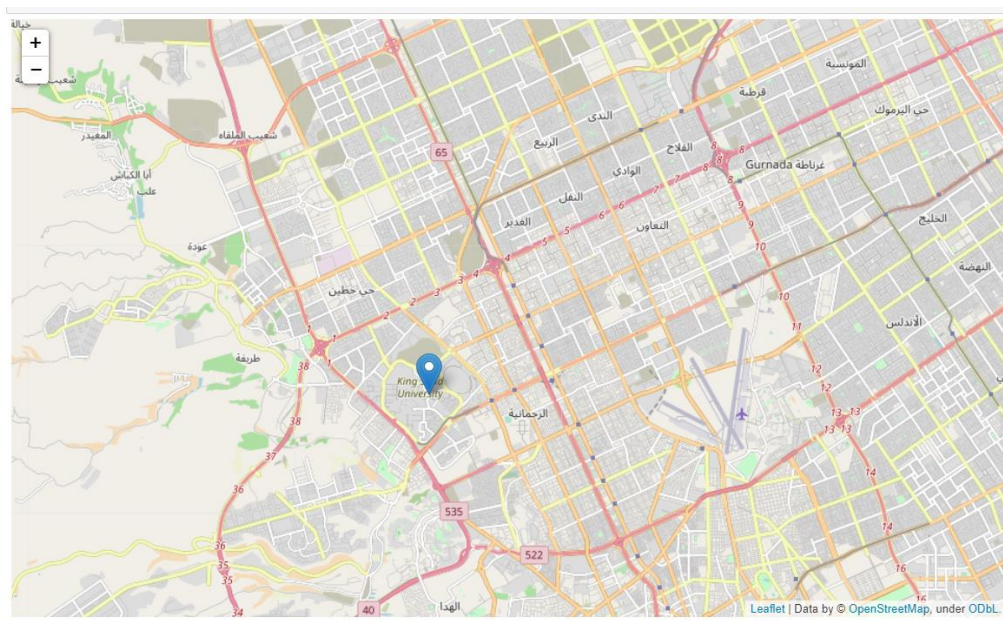
We can get the name, category, latitude and longitude of the venue using the API, I can also see the unique categories we have from the data we got.

To start exploring the nearby venues, we have put radius as 4000 meters (4 KM) around the main venues. And a limit of 100 venues so it can be easy to deal with and compare.

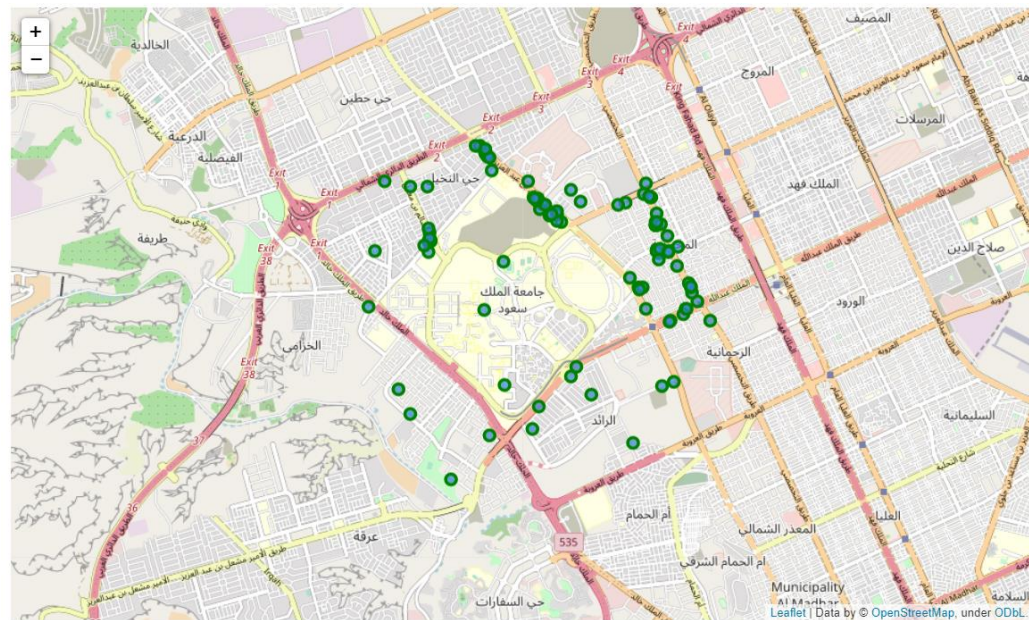
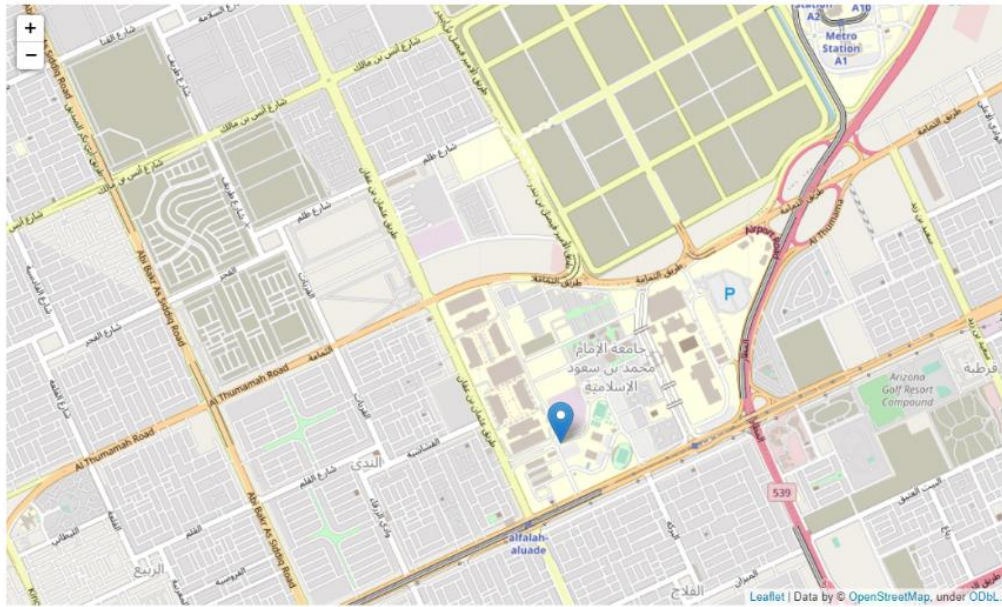
After getting the nearby venues, I wanted to see the unique categories we have near the two universities. To be able to filter the kind of venues we are looking for.

4. Results:

Folium map which shows the location of King Saud University



Folium map which shows the location of Al Imam Mohammed Ibn Saud University



We have the following lists of venues:

King Saud University

	name	categories	lat	Ing
0	Hilal F.C. Stadium (استاد نادي الهلال)	Soccer Stadium	24.729920	46.622850
1	dr.CAFE COFFEE كيب	Coffee Shop	24.723008	46.619754
2	Starbucks (ستاربكس)	Coffee Shop	24.712048	46.623012
3	Subway (صوب واي)	Sandwich Place	24.714673	46.634549
4	Dunkin' Donuts (دانكن دونتس)	Donut Shop	24.713287	46.633717
5	The Coffee Address عنوان القهوة	Coffee Shop	24.708918	46.628566
6	Muvi Cinemas	Movie Theater	24.735758	46.632082
7	Symposium	Greek Restaurant	24.736818	46.631466
8	66 Cups	Coffee Shop	24.735953	46.631425
9	Bicicleta (بيكلتة)	Coffee Shop	24.736767	46.630348
10	Al Hilal Store (متجر الهلال)	Sporting Goods Shop	24.737390	46.631508
11	3٤	Restaurant	24.736776	46.630541
12	ZARA	Clothing Store	24.738458	46.629012
13	AlRaid park حديقة الرائد	Garden	24.710723	46.636928
14	U Walk (يو ووك)	Plaza	24.739278	46.627695
15	Riyadh Hub (الرياض هب)	Plaza	24.732929	46.610894
16	يو ووك	Fountain	24.731348	46.610890
17	We Cre8 - Store	Clothing Store	24.738293	46.629583
18	Spnbnx	Gym / Fitness Center	24.727577	46.643139
19	Eggsactly	Breakfast Spot	24.733095	46.611147

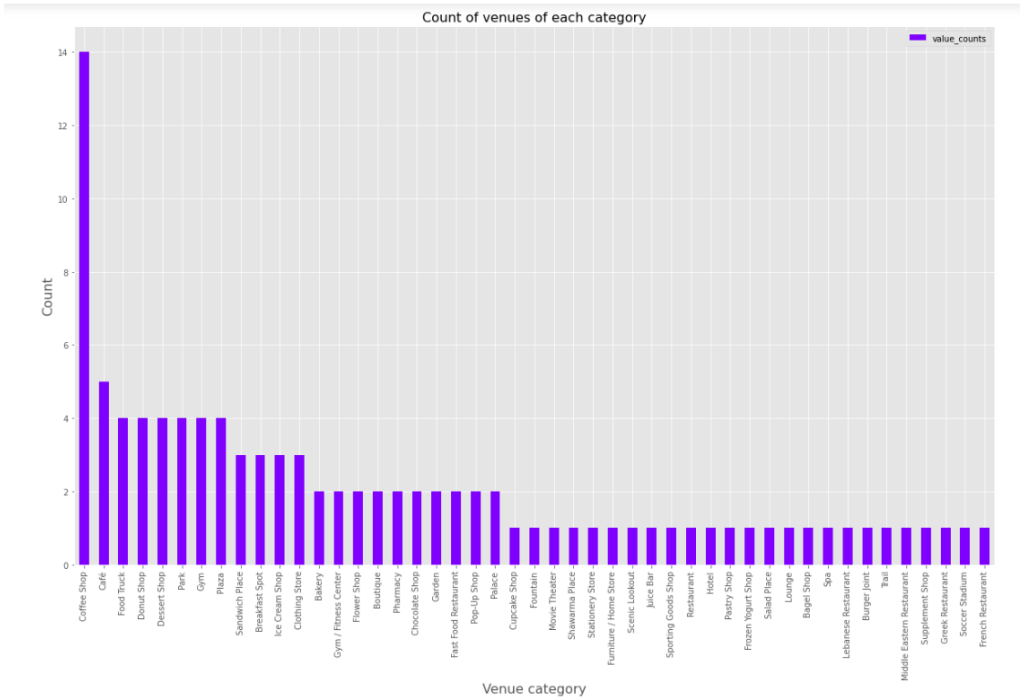
Al Imam Mohammed Ibn Saud University

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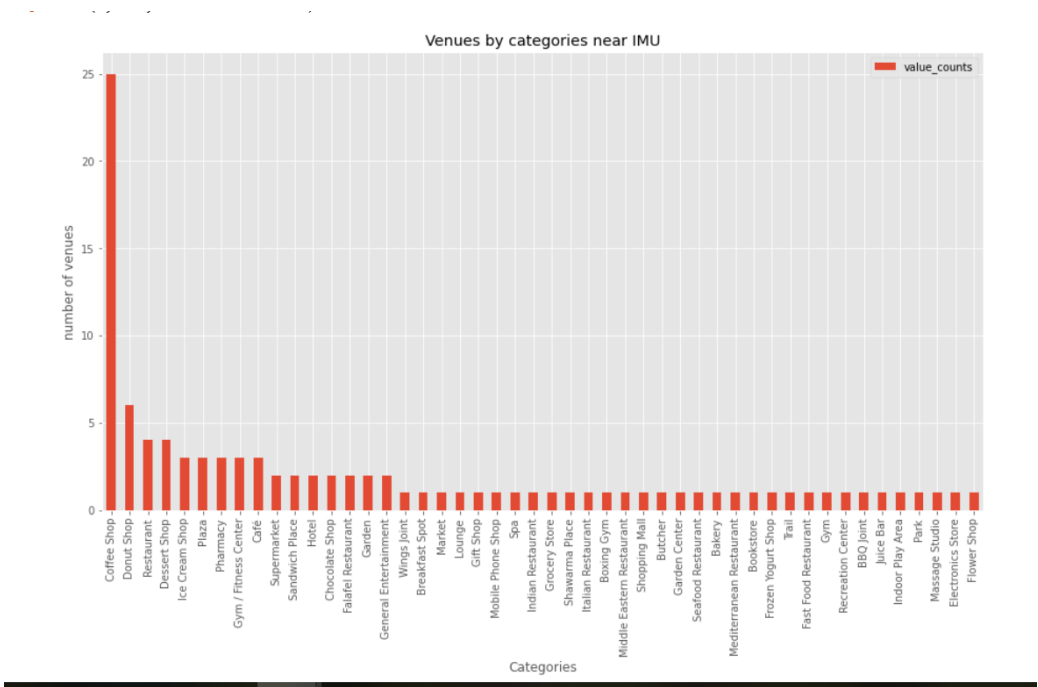
	name	categories	lat	Ing
0	Baskin Robbins (باسكن روبينز)	Ice Cream Shop	24.806167	46.692917
1	Fortore (فورغوري)	Shopping Mall	24.802786	46.694598
2	Starbucks (ستاربكس)	Coffee Shop	24.805699	46.693231
3	Dunkin' Donuts (دانكن دونتس)	Donut Shop	24.806280	46.692752
4	Boots Pharmacy (صيدلية بوتس)	Pharmacy	24.806269	46.692899
5	Fitness Time (وقت اللياقة)	Gym / Fitness Center	24.801235	46.694283
6	Half Million	Coffee Shop	24.803221	46.694836
7	Java Time	Coffee Shop	24.804298	46.694163
8	Torta And More (تورتا أند مور)	Bakery	24.805870	46.693021
9	BARASINGHA (باراسينغا)	Coffee Shop	24.804814	46.693722
10	Early Bird Cafe	Coffee Shop	24.802842	46.694796
11	Mol10	Dessert Shop	24.806305	46.692929
12	Falafel Thamar (فتلاف ثمار)	Falafel Restaurant	24.799606	46.697202
13	Dunkin' Donuts (دانكن دونتس)	Donut Shop	24.800665	46.693031
14	Forsan Groceries (اسواق الفرسان)	Butcher	24.799182	46.697692
15	سكة ٨	Café	24.814285	46.689366
16	EL FORNAIO (الفوردايو)	Café	24.802894	46.694865
17	Java Time (جافا تايم)	Coffee Shop	24.804166	46.706327
18	فتلاف القمه الشاميه	Falafel Restaurant	24.799236	46.696818
19	الفلاح بارك	Park	24.799951	46.699933
20	CAFFEINE INJECTION	Coffee Shop	24.802430	46.694958
21	Grill It (جريل ايت)	BBQ Joint	24.799298	46.697554

We put the categories in a separate data frame to be able to visualize them in a bar chart.

King Saud University



Al Imam Mohammed Ibn Saud University



As we see above, coffee shop is the highest category for both neighborhoods, and its number is way higher than other categories. We can see that there are coffee shops category and Café category, but I am going to treat them as one, as they both serve coffee.

King Saud University

	value_counts
Café	5
Coffee Shop	14

	value_counts
Dessert Shop	4
Donut Shop	3
Chocolate Shop	3
Ice Cream Shop	3
Cupcake Shop	1

Al Imam Mohammed Ibn Saud University

	value_counts
Café	3
Coffee Shop	25

	value_counts
Donut Shop	6
Dessert Shop	5
Ice Cream Shop	3
Chocolate Shop	2

We can see both neighborhoods have a high number of coffee shops, but we can say that opening a shop specialized in coffee and dessert in the first neighborhood (Near King Saud University) might be the better option that's because, Imam University has almost 10 more coffee shops. Although both neighborhoods have the same number of dessert shops.

We can say that the reason behind having a higher number near Imam Mohammed Ibn Saud University is because, is an older residential area, people recently started moving to the north side of Riyadh near KSU.

As for the Restaurants both Areas have low number of Restaurants, 7 or 12 are not considered a high numbers in such areas where a high number of employees and students visit everyday. So this also might be a great opportunity for enterpanuers.

Conclusion :

We have applied some simple comparison techniques to see the better place to open a shop specialized in coffee and desserts , but there is always a place for improvement and taking more factors in consideration such as, rates, prices and tips.

Resources :

<https://www.4icu.org/sa/riyadh/>

<https://ksu.edu.sa/en/about-ksu>