

Coffeehouses in Abu Dhabi

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1. Introduction

1.1 Introduction:

Since Covid-19 Hit the world earlier this year, lot of countries in the world got into lockdown status, and since restrictions are being lifted, lot of people are heading back to coffee places to enjoy having their drinks as usual as they did before this pandemic.

AD is a the Capital of UAE and the second-most populous city of the United Arab Emirates, neighborhoods or “Areas” are close to each other compacted together, recently new areas were developed a bit far from the center ,were its becoming more occupied, and since coffee shops are usually visited for various reasons whether to enjoy your daily cup of coffee, or to sit in a friendly environment with your friends, it’s usually a place where people spends an hour or two on a daily base there.

1.2 Problem:

These new developed areas and some of the less dense area lack the availability of these international coffeehouse places, and local coffee shops took over to compensate this lack.

This project is focused on three of the international coffeehouse places “Starbucks, Tim Hortons & Costa” on their distribution in the Capital City. The project will highlight on the location of these coffeehouses and the will show where future branches can be suggested for future.

1.3 Interest

Business developer for these coffeehouse places mentioned above, or anyone interested in opening a coffee shop might be interested in this project.

2. Data Acquisition and Cleaning

2.1 Data Sources

Unfortunately, accurate Free data on the City major areas and location latitude & longitude are not available online, these was the first challenge it to find reliable data that cover the most common city area.

Since I live in the city, it was better to do this from scratch and to create geo file for the City where major areas included in this file.

Foursquare API was used for obtaining the coffee houses data & location in the city.

2.2 Data Cleaning

Creating the data from scratch was not easy, you need to create an imaginary point to defy it as a center of the neighborhood and set a radius that is acceptable for all areas.

On Foursquare API for some reason imported data were mixed when searching for specific Coffeehouse Name, Data needed to be cleaned to create Dataframe for each coffeehouse.

3. Exploratory Data Analysis & Results

3.1 Collected Data:

Since I am a resident in the city, and not enough free data were available on the web, extracting manually the area and with help of google maps, getting coordination of Areas were more reasonable.

```
AD_Areas= pd.read_csv('AD Areas.csv')  
AD_Areas.head()
```

	Area	Latitude	Longitude
0	Al Mushrif	24.443699	54.386875
1	Al Manhal	24.465607	54.365719
2	Al Khalidiyah	24.470393	54.349521
3	AL Hisn	24.484465	54.355500
4	Al Bateen	24.450852	54.355163

```
AD_Areas.shape[0]
```

32

Figure 1 – Areas/Neighborhood in Abu Dhabi

There are 32 major Areas used in this Project that covers most of AD Area, location of these will be shown on the next section.

3.2 Geopy Data:

Geopy was used with the search word “Abu Dhabi” to get the coordination of the City and show it on the Folium Map, the results will be as seen below.

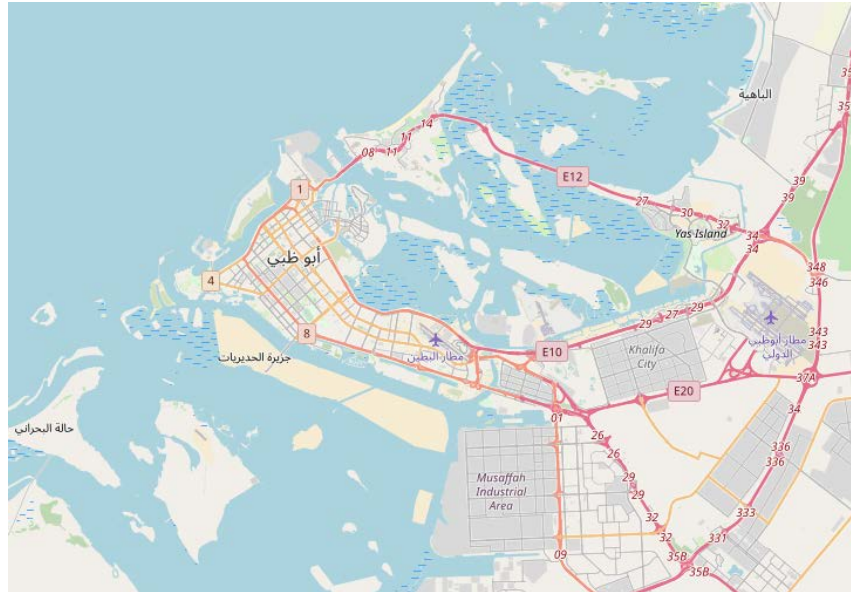


Figure 2- Abu Dhabi map shown on Folium

3.3 Foursquare:

Four square API will be used in this project to extract Coffee places in Abu Dhabi and filter them based on the 3 main Coffeplaces in the City. First, we will start the search individually for each Coffeplaces

Starting with “Starbucks” location, shown with Green icon.

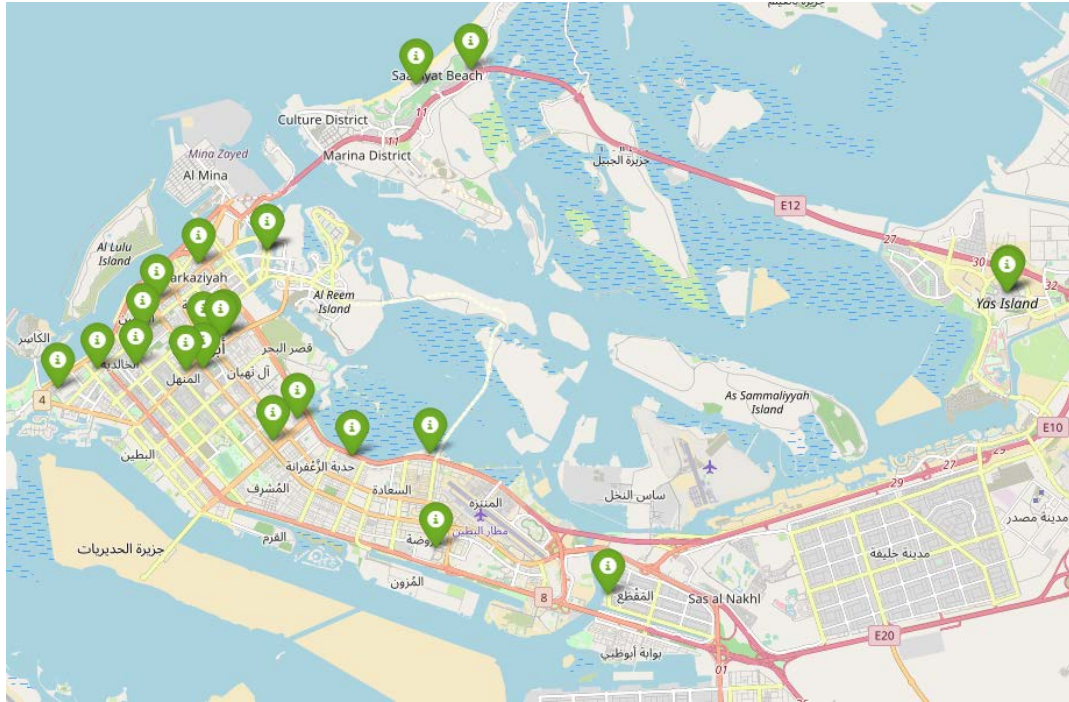


Figure 3 - Location of Starbucks in the City

Now let's add second Coffeehouse "Costa" to the map, shown with Red icon.

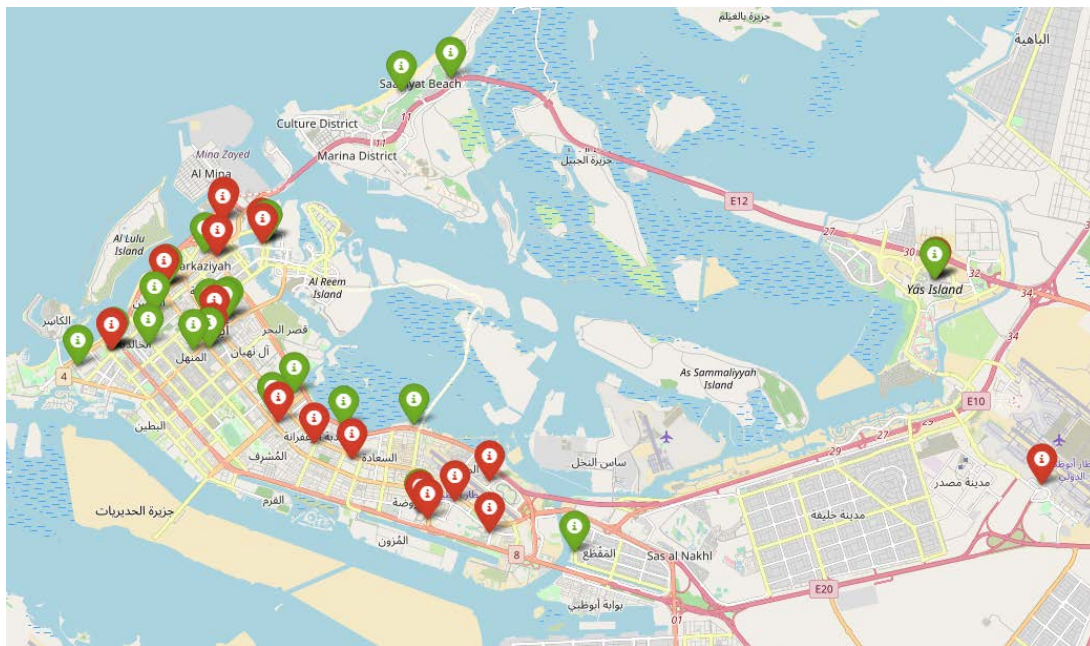


Figure 4 - Location of Starbucks & Costa in Abu Dhabi

Next ,we will add the last Coffeehouse "Tim Hortons" to the map shown in light red.



Figure 5-Location of All Coffeeplaces Starbucks, Costa & Tim Hortons in Abu Dhabi

After adding the Coffeeplaces, following up let us add the indication of the neighborhood to show the range within each neighborhood.

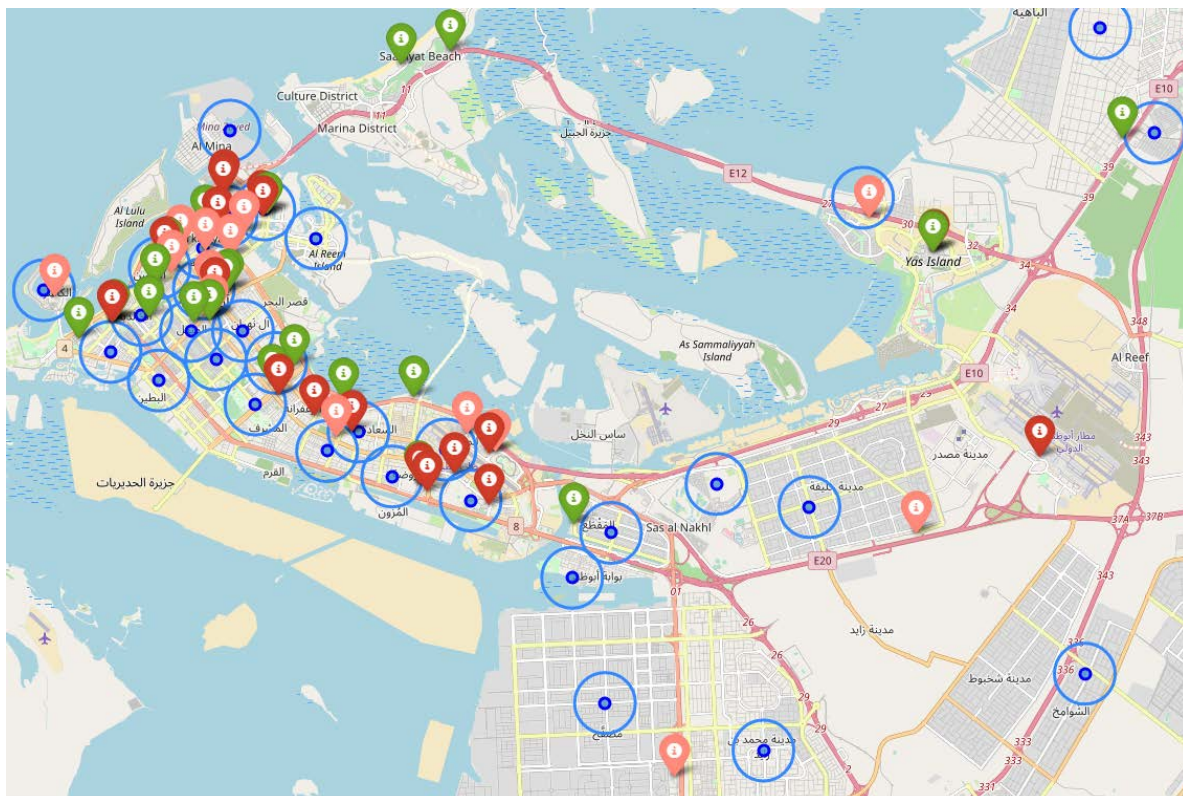


Figure 6- Location of Coffeeplaces in range with the Neighborhood

```
AD_Coffee_Costa['Neighborhood'].unique()
```

```
array(['Al Mushrif', 'Al Manhal', 'Al Khalidiyah', 'AL Hisn',  
      'Al Karamah ', 'Al Danah', 'Al Zahiyah', 'Al Maqta', 'Al Falah ',  
      'AL Saadah', 'Al Maarid', 'Al Muntazah', 'Al Bateen-Cornish',  
      'Zayed Sport City', 'Al Qurm', 'Maryah Island',  
      'Al Mushrif- Arab Gulf road'], dtype=object)
```

```
AD_Coffee_SB['Neighborhood'].unique()
```

```
array(['Al Mushrif', 'Al Manhal', 'Al Khalidiyah', 'AL Hisn',  
      'Al Nahyan Camp', 'Al Danah', 'Al Reem island', 'Al Zahiyah',  
      'Al Maqta', 'New Al Falah', 'Al Shahama', 'Al Falah ', 'AL Saadah',  
      'Al Maarid', 'Al Muntazah', 'Al Bateen-Cornish', 'Al Qurm',  
      'Maryah Island', 'Al Mushrif- Arab Gulf road'], dtype=object)
```

```
AD_Coffee_TH['Neighborhood'].unique()
```

```
array(['Al Manhal', 'AL Hisn', 'Al Marina', 'Al Nahyan Camp',  
      'Al Karamah ', 'Al Danah', 'Al Zahiyah', 'Yas North', 'Al Shahama',  
      'Al Falah ', 'AL Saadah', 'Al Muntazah', 'Maryah Island',  
      'Al Mushrif- Arab Gulf road'], dtype=object)
```

Figure 7 - list of Neighborhood that include the Coffeeplace

On the section above, we check the coffee place availability in the neighborhoods.

Number of “Costa” Places in range of AD Neighborhoods is 41.

Number of “Starbucks” Places in range of AD Neighborhoods is 39.

Number of “Tim Hortons” Places in range of AD Neighborhoods is 25.

Let’s check the area where there is none of the coffeehouses in it

```
['Al Bateen',  
 'Zayed Port',  
 'Mangrove Village',  
 'Khalifa City',  
 'Al Bahyah',  
 'Al Raha',  
 'Mussafah',  
 'MBZ',  
 'Shakhbout City']
```

Khalifa City & MBZ Area can be excluded from the list above, since the neighborhood range radius is bigger than the average, it was not included in the city.

That keeps us with 7 Areas

‘Al Bateen', 'Zayed Port', 'Mangrove Village', 'Al Bahyah', 'Al Raha', 'Mussafah', 'Shakhbout City'

4. Discussion & Conclusion Section

We can divide the city into two main category, old & new Abu Dhabi , most of new areas have big capacities to include or start new businesses or new branches of different categories not only coffehouses.

Now checking Figure 6- we can clearly see that most of the coffeeplaces are in the left side of the map (Old Abu Dhabi) and small percentage of the branches are in the newly developed area as in Khalifa City, MBZ

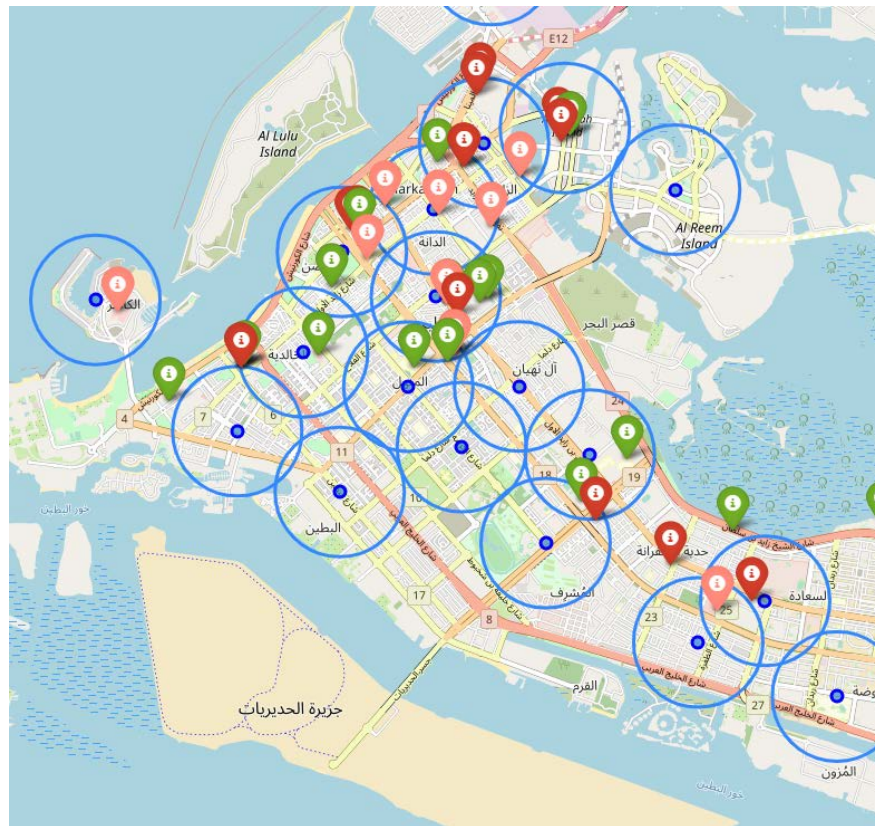


Figure 8-

As shown above we can conclude that some of the areas can be a good investment to open new branches, as seen Al Reem island considering its rising population , it's lacking any of the three major coffehouses in it.

Going to the bottom side of the map, “Al Bateen” & “Al Mushrif” aswell can be a good place to consider any openings.

Earlier we mentioned that there are 7 neighborhoods don't include any of the coffeehouses. Focusing on these would be a smart idea aswell to ensure covering most of the areas in the city.