Best Café in Bronx, NY

Background

Coffee has played an important role to more and more people, especially for office workers who rely on a cup of coffee every morning to start with the day. Therefore, this report is to look for the best café around in Bronx based on two most valuable factors by analyzing data from Foursquare location data. Due to the limitation of data that can be accessed mainly for premium calls, this report can only focus on rating and pricing by people to start with. Further analysis will be discussed in discussion session in this report.

Object of this report

To find out the best café around Bronx area for office workers who can enjoy the best coffee for a day. This will improve efficiency of work and remain enthusiasm to office.

Data used for analysis

In this session, a workflow of data analysis for this report will be provided.

Location data about venues and details venues were retrieved from Foursquare. We first define the location as "Bronx, New York, NY" as we will only focus on café in Bronx.
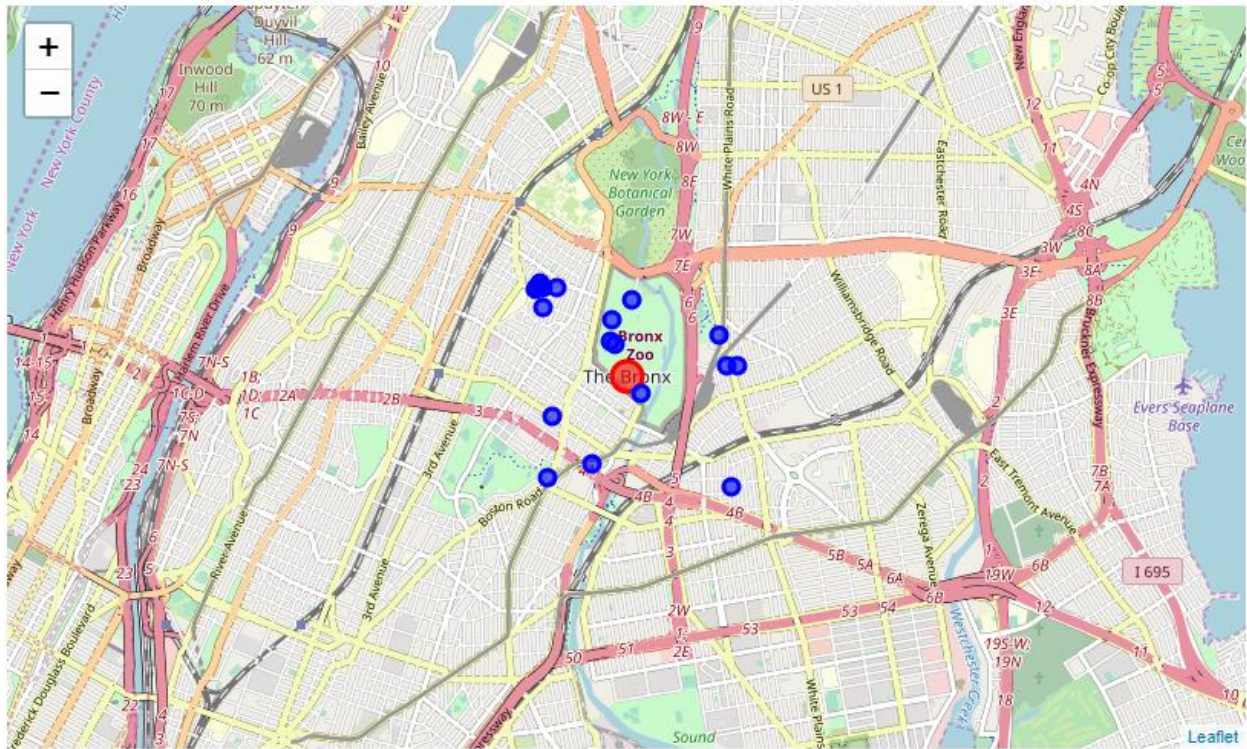
```
address = 'Bronx, New York, NY'

geolocator = Nominatim(user_agent="foursquare_agent")
location = geolocator.geocode(address)
latitude = location.latitude
longitude = location.longitude
print(latitude, longitude)
```

This gave us a latitude and longitude of Bronx which is: 40.8466508 -73.8785937. As we successfully obtained the coordinate of Bronx, we can then apply the search function in Foursquare near Bronx. In order to get fair number of café near Bronx, we define the radius as 1000 which represents 1 kilometer around Bronx.

By applying search value "café", we are able to retrieve 17 rows of data in Bronx, we will then reshape the data frame by removing columns that contains redundant information, it gave us a result shown below.

	name	categories	address	lat	lng	labeledLatLngs	distance	postalCode	cc	city	state	country
0	Morrone Pastry Shop & Cafe	Dessert Shop	2349 Arthur Ave	40.854636	-73.888400	[{'label': 'display', 'lat': 40.85463575037460...	1213	10458	US	Bronx	NY	United States
1	Cafe al Mercato	Italian Restaurant	2344 Arthur Ave	40.854176	-73.888085	[{'label': 'display', 'lat': 40.85417649340613...	1157	10458	US	Bronx	NY	United States
2	Arthur Avenue Cafe	Italian Restaurant	2329 Arthur Ave	40.854068	-73.888838	[{'label': 'display', 'lat': 40.85406831774407...	1194	10458	US	Bronx	NY	United States
3	The Dancing Crane Cafe	American Restaurant	2300 Southern Blvd	40.849698	-73.880404	[{'label': 'display', 'lat': 40.84969808989766...	371	10460	US	Bronx	NY	United States
4	Wild Asia Cafe	Fast Food Restaurant	NaN	40.845300	-73.877109	[{'label': 'display', 'lat': 40.84530017553037...	195	10460	US	Bronx	NY	United States
5	Picnic Cafe	French Restaurant	NaN	40.849447	-73.880012	[{'label': 'display', 'lat': 40.84944735766703...	333	10460	US	Bronx	NY	United States
6	North Star Cafe	Café	850 E Tremont Ave	40.843336	-73.886982	[{'label': 'display', 'lat': 40.84333558876738...	796	10460	US	Bronx	NY	United States
7	Terrace Cafe	Café	Bronx Zoo	40.851532	-73.880303	[{'label': 'display', 'lat': 40.85153166966169...	562	10460	US	Bronx	NY	United States
8	Havanna Cafe	Cuban Restaurant	NaN	40.839314	-73.882527	[{'label': 'display', 'lat': 40.83931427825235...	881	NaN	US	NaN	New York	United States
9	Cafe Maggiolino	Coffee Shop	2370 Belmont Ave	40.854217	-73.886500	[{'label': 'display', 'lat': 40.854217, 'lng':...	1073	10458	US	Bronx	NY	United States
10	Istanbul Cafe	Hookah Bar	Rhinelander Ave, Bronx, NY	40.847595	-73.867405	[{'label': 'display', 'lat': 40.847595, 'lng':...	948	10461	US	Bronx	NY	United States
11	Parisienne Cafe	Café	Arthur aveue	40.854191	-73.888763	[{'label': 'display', 'lat': 40.85419095132885...	1199	NaN	US	Bronx	NY	United States
12	Bronx Zoo	Zoo	2300 Southern Blvd	40.853107	-73.878094	[{'label': 'routing', 'lat': 40.84401833985193...	719	10460	US	Bronx	NY	United States
13	Cafe Lasalle	Coffee Shop	1478 Beach Ave	40.837380	-73.866960	[{'label': 'display', 'lat': 40.83737999999999...	1422	10460	US	Bronx	NY	United States
14	Laonda Cafe	Coffee Shop	2009 White Plains Rd	40.850176	-73.868271	[{'label': 'display', 'lat': 40.850176, 'lng':...	953	NaN	US	Bronx	NY	United States
15	Jerusalem cafe	Hookah Bar	NaN	40.847586	-73.866288	[{'label': 'display', 'lat': 40.84758578786568...	1041	10462	US	Bronx	NY	United States
16	Karied Mexican deli cafe	Mexican Restaurant	634 E 183rd St	40.852555	-73.888023	[{'label': 'display', 'lat': 40.85255499999999...	1030	10458	US	Bronx	NY	United States
17	Sunkofa Cafe & Juice Bar	None	NaN	40.838080	-73.887523	[{'label': 'display', 'lat': 40.8380801, 'lng'...	1214	NaN	US	Bronx	NY	United States

Since we now have full location data of 17 café, we can then visualize those data as a map to show the density of café in Bronx. We can see that within the area the number of café is in a fair range, and majority of those café locate around Bronx Zoo. By this we assume that the price range of café may be narrow, and competition is at low level.
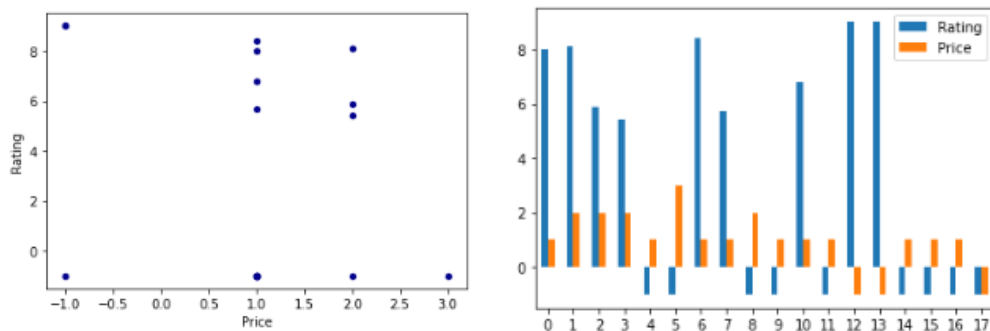

After having an overview of café in Bronx, we will then retrieve more details of each venue from Foursquare. In this case, rating and price of each café will be retrieved and set into a data frame. Efforts to retrieve more details such as hours and tips have been tried, but due to the limitation on the number premium calls this is not workable at this stage. More will be discussed in further session.

Data frame of café has been successfully created as below. Please note that data has been adjusted for each column for consistent type. Value with "-1" indicates that no rating or no price information has been given to the café on Foursquare. In terms of price, the smaller number a café has, the lower price it offers.

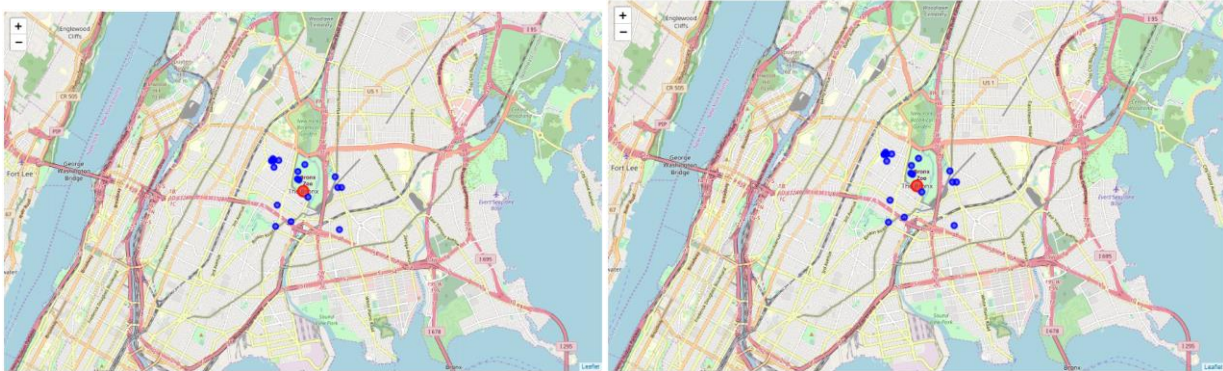|	Name	Rating	Price
0	Morrone Pastry Shop & Cafe	8.0	1
1	Cafe al Mercato	8.1	2
2	Arthur Avenue Cafe	5.9	2
3	The Dancing Crane Cafe	5.4	2
4	Wild Asia Cafe	-1.0	1
5	Picnic Cafe	-1.0	3
6	North Star Cafe	8.4	1
7	Terrace Cafe	5.7	1
8	Havanna Cafe	-1.0	2
9	Cafe Maggiolino	-1.0	1
10	Istanbul Cafe	6.8	1
11	Parisienne Cafe	-1.0	1
12	Bronx Zoo	9.0	-1
13	Cafe Lasalle	9.0	-1
14	Laonda Cafe	-1.0	1
15	Jerusalem cafe	-1.0	1
16	Karied Mexican deli cafe	-1.0	1
17	Sunkofa Cafe & Juice Bar	-1.0	-1

Methodology

As two factors has been considered in this report, methodology to find the best café is relatively simple and efficient. We will then compare the rating and price of each café for the best café. A scatter chart and a bar chart has been created for comparison.

From the scatter chart we can see that majority of café in Bronx offer a fair price, which is in line with the expectation. Considering rating of café, we can see from the bar chart that two café receive 9 points and both can be the strong candidates to be deemed as the best. Combining the data frame we can now names of both café, Bronx Zoo and Café Lasalle.

Result

The difficulty to figure out the result is that both strong candidates with 9 points rating do not offer price information, hence we are not able to compare the price of each for the best. And if we further compare the location of both café they are actually neighbor in Bronx zoo, which may also indicate that both will most likely to offer at similar price range for competitiveness.

By the two-factor comparison, we can only conclude that Bronx Zoo and Café Lasalle both can be the best choice for a coffee in Bronx.

Discussion

We will need more information to finally get the only one as the best café in Bronx. If permitted, more details such as menu (to compare which café offer wider range of coffee and dishes), tips (to compare how many good comments left for each café), and popular hour (to compare the traffic of each café in different period of time). By having those dataset, we can then do a more thorough comparison among the list which may give a different café name against the result of this report.