



Capstone Project - The Battle of the Neighborhoods - REPORT (Week 2)

Applied Data Science Capstone by IBM/Coursera

Carlos Alberto Gómez Prado | IBM Data Science Professional Certificate

Table of contents

- [Introduction](#)
 - [Data](#)
 - [Methodology](#)
 - [Analysis](#)
 - [Results and Discussion](#)
 - [Conclusion](#)
-

Introduction

Background: When we try to start something new, our mind fills with ideas to get into the most profitable business possible, the one that provides us with financial stability and extra money for our guilty whims and tastes. However, finding the perfect business is a utopian and somewhat emotional idea, considering that the world economy is in a very delicate state, limiting the purchasing power of certain sectors and hindering the path of the entrepreneur who does not have the right tools and strategies to grow his business or start a business. However, in Argentina, as in the case of Cordoba Capital, there are several categories that prevail over time despite the economic crisis that the country has gone through; gastronomy is a clear example of the competitive market since everyone has the need to feed themselves. Some of the most important issues to consider before investing in some of the categories would be to research and explore.

A bit of history: Cordoba is located in the central region, on the banks of the Suquia River. It is the second most populated city in Argentina after Buenos Aires and the largest in the country and is an important cultural, economic, educational, financial and entertainment center in the region. It was founded by the Sevillian Jerónimo Luis de Cabrera on July 6, 1573, as a Spanish city that would serve as a refuge against the natives, so you can move around and trade freely. It is an important cultural factory, which receives university students from all over the country and the world. Its University, founded in 1613, is the first in Argentina and the fourth oldest in America and is considered one of the most important in the continent.

Business problem: The objective of the project is to explore the most popular categories in the city of Córdoba, Argentina, and thus provide the investor with a free tool to analyze the general panorama of the most popular categories in this waterway of the people. This will help to improve many aspects in the decision making process and will provide great knowledge to be able to plan the success of the business using it as information or simply to be able to put our business idea into action. To do this we will focus on 5 strategic points of the city, which we will break down supported by the Foursquare tool.

Objective: With the geographic and demographic information extracted from the research, we will have a generalised picture of the preferences and opportunities in different parts of the city. In this way we can ask ourselves: What is the best option to consider? What types of categories dominate the market? Which places are the most preferred? What type of place prevails over time? You will have this knowledge and be able to evaluate the best way forward.

Data

About the data: The data to be used are of free access, we will rely on the wikipedia from which the information will be scraped to obtain a data frame with the information of the neighborhoods of Cordoba Capital. With all this information we will proceed to extract the relevant information for the investigation and thus be able to represent it graphically with its real geographical location and be able to analyze the different sectors in a radius of up to 500 meters from the point of origin of each area. The strategic points to be investigated are located in strategic areas that are widely used by the population and by my own knowledge living in this city. In the resources section you will find detailed links to the sites used.

- The coordinates of Cordoba Capital will be obtained using the geocoding of the GeoPy library, as well as the areas of research will be obtained using the reverse geocoding of the GeoPy library.
- The information about the business categories in a range of 500 meters, their type and location in each neighborhood will be obtained using the Quadrangular API.

Scraping & Exploration

With the information taken from wikipedia a data frame will be created filtering the necessary information from the areas of interest.

Grouping by Borough

They will be grouped by zones to evaluate the amount of available neighborhoods in the table.

Out[73]:

Borough	NAN	ZONA ARGÜELLO	ZONA CENTRAL	ZONA CERRO	ZONA GUINAZÚ	ZONA INTERMEDIA ESTE	ZONA INTERMEDIA NORDESTE	ZONA INTERMEDIA NOROESTE	ZONA INTERMEDIA NORTE	ZONA INTERMEDIA OESTE	...	ZONA PERICENTRAL SUDOESTE	ZONA PERICENTRAL SUDOESTE	ZONA PERICENTRAL SUR	ZONA PERIFÉRICA ESTE	ZONA PERIFÉRICA NORDESTE	ZONA PERIFÉRICA NORTE	ZONA PERIFÉRICA OESTE
Neighborhood	7	38	16	18	7	6	19	6	12	15	...	14	22	2	4	6	4	
Surface	7	38	16	18	7	6	19	6	12	15	...	14	22	2	4	6	4	
Population 2001	7	38	16	18	7	6	19	6	12	15	...	14	22	2	4	6	4	
Density	7	38	16	18	7	6	19	6	12	15	...	14	22	2	4	6	4	
Increase x decade	7	38	16	18	7	6	19	6	12	15	...	14	22	2	4	6	4	

5 rows × 28 columns

The area filter focuses on 5 key locations with a lot of social movement distributed in 2 important zones.

- **Zona central :** Plaza San Martin ,Paseo del Buen Pastor, Museo iberoamericano de artesanias de Fundart ,Paseo Sobremonte.
- **Zona pericentral este:** Plaza Alberdi.

Filtering the first group: From the central group there are 4 places, 2 of which are in the same neighborhood.

Size: (16, 6)

Out[74]:

	Neighborhood	Surface	Population 2001	Density	Increase x decade	Borough
10	BARRIO ALBERDI	2,454 KM²245,36 HA 24.536 A 2.453.600 M²	31.594	NAN	-25.0	ZONA CENTRAL
61	BARRIO BAJADA SAN ROQUE	0,0528 KM²5,28 HA 528 A 52.800 M²	296.0	5.606,06 HAB/KM²56,061 HAB/HA	-4488.0	ZONA CENTRAL
66	BARRIO BELLA VISTA	0,53 KM²53 HA 5.300 A 530.000 M²	4.437	8.371,7 HAB/KM²83,717 HAB/HA	-1103.0	ZONA CENTRAL
80	BARRIO CENTRO	2,887 KM²288,73 HA 28.873 A 2.887.300 M²	28.949	NAN	-1699.0	ZONA CENTRAL
110	BARRIO CUPANI	0,213 KM²21,33 HA 2.133 A 213.300 M²	2.133	NAN	-129.0	ZONA CENTRAL
111	BARRIO CÁCERES	0,133 KM²13,33 HA 1.333 A 133.300 M²	1.143	8.574,64 HAB/KM²85,746 HAB/HA	-2139.0	ZONA CENTRAL
115	BARRIO DUCASSE	0,161 KM²16,12 HA 1.612 A 161.200 M²	935.0	5.800,25 HAB/KM²58,003 HAB/HA	NAN	ZONA CENTRAL
147	BARRIO GÜEMES	NAN	11.679	NAN	-1491.0	ZONA CENTRAL
231	BARRIO MAURIZI	0,119 KM²11,9 HA 1.190 A 119.000 M²	683.0	5.739,5 HAB/KM²57,395 HAB/HA	-1537.0	ZONA CENTRAL
240	BARRIO NUEVA CÓRDOBA	1,234 KM²123,37 HA 12.337 A 1.233.700 M²	29.412	NAN	2498.0	ZONA CENTRAL
245	BARRIO OBSERVATORIO	0,815 KM²81,53 HA 8.153 A 815.300 M²	7.352	9.017,54 HAB/KM²90,175 HAB/HA	-1067.0	ZONA CENTRAL
272	BARRIO PARQUE SARMIENTO	3,046 KM²304,64 HA 30.464 A 3.046.400 M²	181.0	59,41 HAB/KM²0,594 HAB/HA	NAN	ZONA CENTRAL
276	BARRIO PASO DE LOS ANDES	0,393 KM²39,32 HA 3.932 A 393.200 M²	2.786	7.085,45 HAB/KM²70,855 HAB/HA	-1076.0	ZONA CENTRAL
287	BARRIO PROVIDENCIA	0,545 KM²54,46 HA 5.446 A 544.600 M²	4.916	9.026,81 HAB/KM²90,268 HAB/HA	-3572.0	ZONA CENTRAL
290	BARRIO QUINTA SANTA ANA	0,137 KM²13,74 HA 1.374 A 137.400 M²	934.0	6.797,67 HAB/KM²67,977 HAB/HA	NAN	ZONA CENTRAL
310	BARRIO ROGELIO MARTINEZ	0,317 KM²31,68 HA 3.168 A 316.800 M²	1.6280000000000001	5.138,89 HAB/KM²51,389 HAB/HA	137.0	ZONA CENTRAL

Filtering the second group: From the eastern pericentral group : there is only 1 place, which interests us "Barrio Gral Paz".

size: (7, 6)

Out[78]:

	Neighborhood	Surface	Population 2001	Density	Increase x decade	Borough
64	BARRIO BAJO GENERAL PAZ	0,125 KM²12,54 HA 1.254 A 125.400 M²	1.203	9.593,3 HAB/KM²95,933 HAB/HA	-1474.0	ZONA PERICENTRAL ESTE
138	BARRIO GENERAL PAZ	1,151 KM²115,13 HA 11.513 A 1.151.300 M²	8.085	7.022,5 HAB/KM²70,225 HAB/HA	-1038.0	ZONA PERICENTRAL ESTE
139	BARRIO GENERAL PUEYREDÓN	2,988 KM²298,77 HA 29.877 A 2.987.700 M²	21.598000000000003	7.228,97 HAB/KM²72,29 HAB/HA	-132.0	ZONA PERICENTRAL ESTE
149	BARRIO HOGAR PROPIO	0,495 KM²49,48 HA 4.948 A 494.800 M²	6.199	NAN	3297.0	ZONA PERICENTRAL ESTE
175	BARRIO JUNIORS	0,836 KM²83,63 HA 8.363 A 836.300 M²	7.053	8.433,58 HAB/KM²84,336 HAB/HA	-292.0	ZONA PERICENTRAL ESTE
277	BARRIO PATRIA	0,249 KM²24,87 HA 2.487 A 248.700 M²	2.036	8.186,57 HAB/KM²81,866 HAB/HA	-1362.0	ZONA PERICENTRAL ESTE
410	BARRIO YAPEYÚ	0,755 KM²75,46 HA 7.546 A 754.600 M²	8.338	NAN	-674.0	ZONA PERICENTRAL ESTE

With the filtered neighborhood groups we sort it into a new data frame by adding the postal code.

Size: (5, 5)

Out[80]:

	Neighborhood	Population 2001	Increase x decade	Borough	Location
0	BARRIO CENTRO	28.949	-1699.0	ZONA CENTRAL	Plaza San Martin, X5000
1	BARRIO CENTRO	28.949	-1699.0	ZONA CENTRAL	Paseo Sobremonte, X5000
2	BARRIO GÜEMES	11.679	-1491.0	ZONA CENTRAL	Museo iberoamericano de artesanias de Fundart,...
3	BARRIO NUEVA CÓRDOBA	29.412	2498.0	ZONA CENTRAL	Paseo del Buen Pastor, X5000
4	BARRIO GENERAL PAZ	8.085	-1038.0	ZONA PERICENTRAL ESTE	Plaza Alberdi, X5004

Note: Since the key places are public areas and are within a similar range there are only 2 zip codes.

- ZONA CENTRAL - Postal Code X5000
- ZONA PERICENTRAL ESTE - Postal Code X5004

Figure 1: You can see how the most important areas according to the distribution of their population by area.

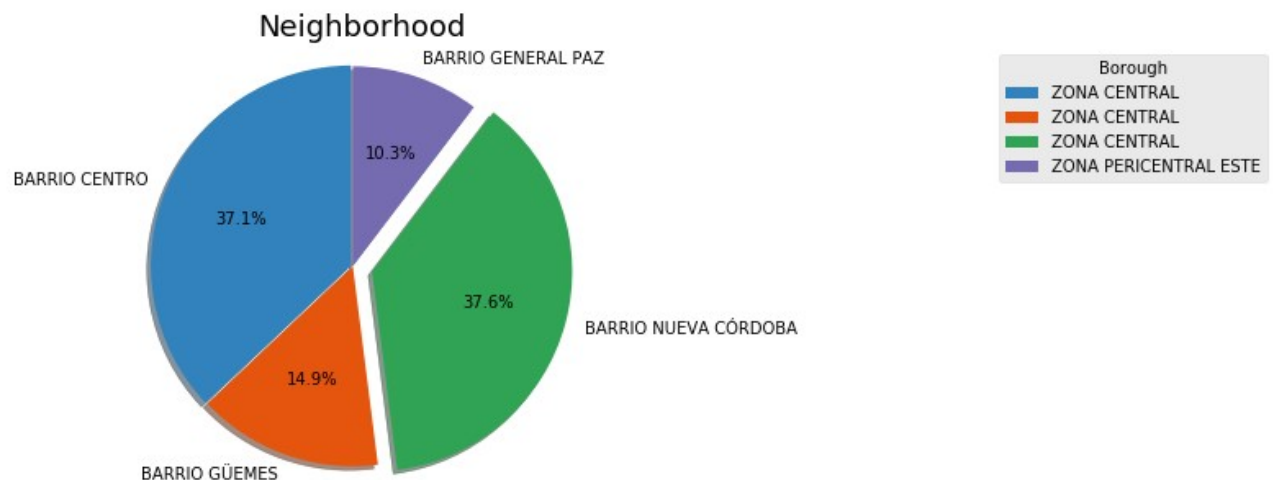
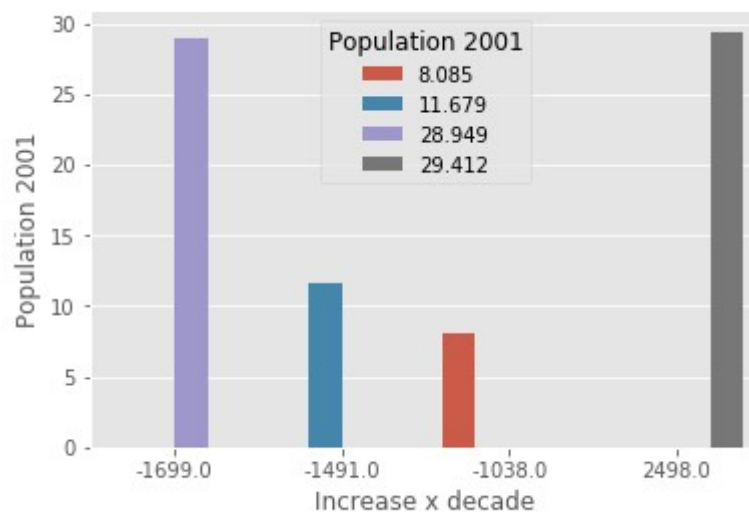


Figure 2 : The population can be distinguished over the decades, with a maximum of 24,412 people in the area of Nueva Cordoba and increasing positively far exceeding the others.



Out[15]:

	Neighborhood	Population 2001	Increase x decade	Borough	Location
3	BARRIO NUEVA CORDOBA	29.412	2498.0	ZONA CENTRAL	Paseo del Buen Pastor, X5000
0	BARRIO CENTRO	28.949	-1699.0	ZONA CENTRAL	Plaza San Martin, X5000
1	BARRIO CENTRO	28.949	-1699.0	ZONA CENTRAL	Paseo Sobremonte, X5000
2	BARRIO GÜEMES	11.679	-1491.0	ZONA CENTRAL	Museo iberoamericano de artesanias de Fundart,...
4	BARRIO GENERAL PAZ	8.085	-1038.0	ZONA PERICENTRAL ESTE	Plaza Alberdi, X5004

Methodology

- We will start by extracting the data from the wikipedia by the data scraping method, which will filter the most relevant information to represent, 5 selected key locations.
- We will understand the proportion of the population that lives in the neighborhoods according to information from a census conducted in 2001, and we will be able to compare

their percentage of growth measured in decades.

- We will obtain their coordinates to be able to geolocate them and represent the neighborhoods on the map, to create the 5 points of interest and based on each point, within a radius of 500 meters, filter the most frequent places to establish a framework of informative data, which will be analyzed and discussed for understanding.
- Finally we will segment it by means of clusters to devise different paths and conclusions to follow. creating groups (using k-means grouping) will try to optimize the distances between the 5 zones and be able to determine which categories are most important by grouping them according to this method.

For the development of the project we used the Fundamental Methodology for Data Science.

Analysis

Using information from wikipedia's filtered data frame, geographic coordinates are extracted and new information is added to the data frame for further exploration and analysis.

```

100% ██████████ 5/5 [00:04:00:00, 1.07s/it]
100% ██████████ 5/5 [00:00:00:00, 5897.50it/s]
100% ██████████ 5/5 [00:00:00:00, 6339.64it/s]

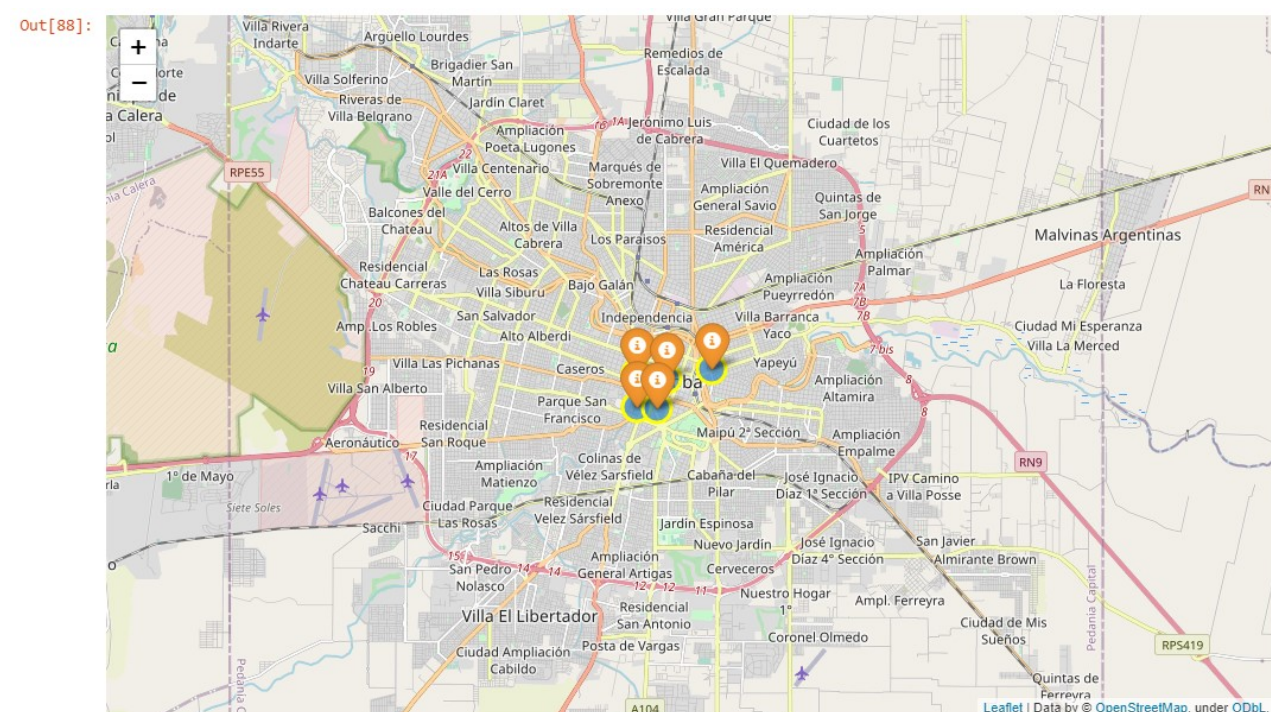
```

Out[17]:

	Neighborhood	Population 2001	Increase x decade	Borough	Location	Address	Latitude	Longitude
0	BARRIO CENTRO	28.949	-1699.0	ZONA CENTRAL	Plaza San Martin, X5000	(Plaza San Martín, Centro, Córdoba, Municipio ...	-31.416735	-64.183580
1	BARRIO CENTRO	28.949	-1699.0	ZONA CENTRAL	Paseo Sobremonste, X5000	(Paseo Sobremonste, Centro, Córdoba, Municipio ...	-31.415514	-64.192101
2	BARRIO GÜEMES	11.679	-1491.0	ZONA CENTRAL	Museo iberoamericano de artesanías de Fundart...	(Museo iberoamericano de artesanías de Fundart...	-31.423827	-64.192175
3	BARRIO NUEVA CÓRDOBA	29.412	2498.0	ZONA CENTRAL	Paseo del Buen Pastor, X5004	(Paseo Del Buen Pastor, Buenos Aires, Nueva Có...	-31.424083	-64.186420
4	BARRIO GENERAL PAZ	8.085	-1038.0	ZONA PERICENTRAL ESTE	Plaza Alberdi, X5004	(Plaza Alberdi, General Paz, Córdoba, Municipi...	-31.414336	-64.170391

Creating a map of Córdoba City

The coordinates of the city of Cordoba are extracted to be represented on the map.



Foursquare's API

- According to the points of interest, the information will be filtered in a radius of 500 mts , it will be loaded in a Json file and it will be transformed in a data frame to be able to work it.
- The API information will be filtered and we will keep the most relevant information forming a new data frame to explore its categories.

Total Categories
BARRIO CENTRO - Plaza San Martin & Paseo Sobremonste: 84
BARRIO GÜEMES - Museo: 77
BARRIO NUEVA CORDOBA - Paseo del Buen Pastor: 100
BARRIO GENERAL PAZ - Plaza Alberdi: 38

Out[22]:

Venue Category	Argentinian Restaurant	Sandwich Place	Cocktail Bar	Hotel	Coffee Shop	Café	Bar	Nightclub	Gastropub	Gym	...	Grocery Store	Gym Pool	Hotel Bar	Irish Pub	Japanese Restaurant	Juice Bar	Middle Eastern Restaurant	Miscellaneous Shop	Monument / Landmark	Historic Site
Neighborhood	21	16	13	12	12	12	11	10	9	9	...	1	1	1	1	1	1	1	1	1	1
Neighborhood Latitude	21	16	13	12	12	12	11	10	9	9	...	1	1	1	1	1	1	1	1	1	1
Neighborhood Longitude	21	16	13	12	12	12	11	10	9	9	...	1	1	1	1	1	1	1	1	1	1
Venue	21	16	13	12	12	12	11	10	9	9	...	1	1	1	1	1	1	1	1	1	1
Venue Latitude	21	16	13	12	12	12	11	10	9	9	...	1	1	1	1	1	1	1	1	1	1
Venue Longitude	21	16	13	12	12	12	11	10	9	9	...	1	1	1	1	1	1	1	1	1	1

6 rows x 88 columns

- We can see the most relevant categories ordered from highest to lowest frequency.
- We can emphasize that the gastronomy in the category of restaurants of Argentine food is the one that dominates.

Quick view

We can see a list of the most outstanding trade names from 3 different categories.

Argentinian Restaurant

In [23]: cat1 = CBA_venues['Venue Category'] == 'Argentinian Restaurant'
CBA_venues[cat1]['Venue'].to_frame().transpose()

Out[23]:

	24	27	36	42	65	124	129	131	139	155	...	236	240	248	265	268	273	274	281	284	295
Venue	Mandarinal	La Candela	Alfonsina	La Perla Restaurant	Estacion 27	Los Infiernales de Guemes	Alfonsina	Alcoria - Carnes y Vinos	Casa de Fuego	Sisel - Tienda bar	...	Los Infiernales de Guemes	Alfonsina	El Club de la Milanesa	San Honorato	Viejo Lobo	Lo de Villaipando	Casa Criolla	Junior B	El Club de la Milanesa	La Perla Restaurant

1 rows x 21 columns

Hotel

In [24]: cat2 = CBA_venues['Venue Category'] == 'Hotel'
CBA_venues[cat2]['Venue'].to_frame().transpose()

Out[24]:

	2	3	20	56	57	71	102	103	150	164	238	247
Venue	Windsor Hotel & Tower	Azur Real Hotel Boutique Córdoba	Sacha Mistol	Merit Gran Hotel Victoria	Hotel Felipe II	Howard Johnson Hotel & Suites - La Cañada	Y111 Hotel	Hotel de la Cañada	Sol De Piedra	Y111 Hotel	Sol De Piedra	Amerian Executive Córdoba Hotel

Nightclub

In [25]: cat3 = CBA_venues['Venue Category'] == 'Nightclub'
CBA_venues[cat3]['Venue'].to_frame().transpose()

Out[25]:

	18	72	115	119	159	201	207	218	237	250
Venue	Studio Theatre	Pétalos de sol	Minns	Le Parc	María María	Paris	Minns	Le Parc	UK	El Sol

Top 5 frequencies venues

----BARRIO CENTRO----

	venue	freq
0	Coffee Shop	0.10
1	Hotel	0.07
2	Café	0.07
3	Pharmacy	0.06
4	Sandwich Place	0.06

----BARRIO GENERAL PAZ----

	venue	freq
0	Argentinian Restaurant	0.18
1	Bar	0.05
2	Mexican Restaurant	0.05
3	Café	0.05
4	Sushi Restaurant	0.05

----BARRIO GÜEMES----

	venue	freq
0	Bar	0.09
1	Cocktail Bar	0.09
2	Argentinian Restaurant	0.06
3	Gastropub	0.05
4	Hotel	0.04

----BARRIO NUEVA CÓRDOBA----

	venue	freq
0	Sandwich Place	0.07
1	Gym	0.05
2	Gastropub	0.05
3	Cocktail Bar	0.05
4	Nightclub	0.05

Top 10 venues

(4, 11)

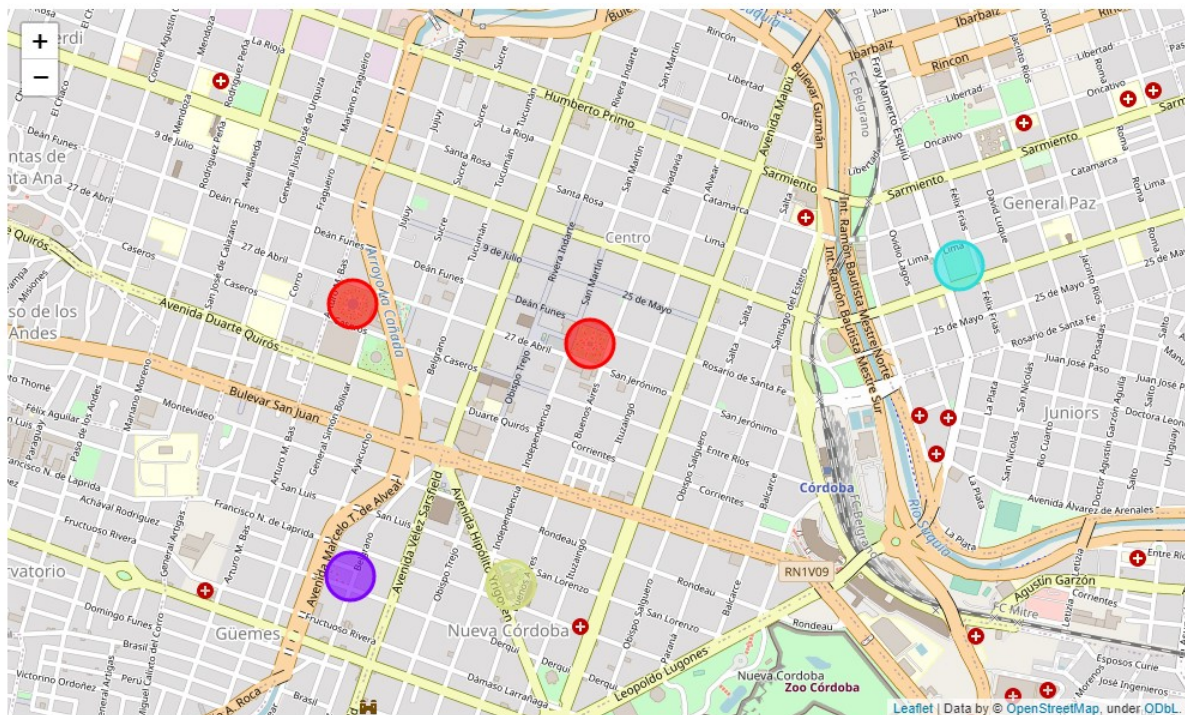
Out[28]:

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	BARRIO CENTRO	Coffee Shop	Café	Hotel	Pharmacy	Sandwich Place	Argentinian Restaurant	Fast Food Restaurant	Diner	Plaza	Ice Cream Shop
1	BARRIO GENERAL PAZ	Argentinian Restaurant	Mexican Restaurant	Ice Cream Shop	Café	Sushi Restaurant	Bar	Restaurant	Park	Cocktail Bar	Middle Eastern Restaurant
2	BARRIO GÜEMES	Bar	Cocktail Bar	Argentinian Restaurant	Gastropub	Bakery	Hotel	Sandwich Place	Nightclub	Brewery	Beer Garden
3	BARRIO NUEVA CÓRDOBA	Sandwich Place	Cocktail Bar	Nightclub	Gym	Gastropub	Argentinian Restaurant	Fast Food Restaurant	Café	Hotel	Bakery

Cluster Neighborhoods

Run k -means to cluster the neighborhood into 4 clusters.

Out[101]:



Cluster 1

```
In [32]: CBA_merged.loc[CBA_merged['Cluster_Labels'] == 0, CBA_merged.columns[[1] + list(range(5, CBA_merged.shape[1]))]]
```

Out[32]:

	Borough	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	ZONA CENTRAL	Coffee Shop	Café	Hotel	Pharmacy	Sandwich Place	Argentinian Restaurant	Fast Food Restaurant	Diner	Plaza	Ice Cream Shop
1	ZONA CENTRAL	Coffee Shop	Café	Hotel	Pharmacy	Sandwich Place	Argentinian Restaurant	Fast Food Restaurant	Diner	Plaza	Ice Cream Shop

Cluster 2

```
In [33]: CBA_merged.loc[CBA_merged['Cluster_Labels'] == 1, CBA_merged.columns[[1] + list(range(5, CBA_merged.shape[1]))]]
```

Out[33]:

	Borough	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
2	ZONA CENTRAL	Bar	Cocktail Bar	Argentinian Restaurant	Gastropub	Bakery	Hotel	Sandwich Place	Nightclub	Bravery	Beer Garden

Cluster 3

```
In [34]: CBA_merged.loc[CBA_merged['Cluster_Labels'] == 2, CBA_merged.columns[[1] + list(range(5, CBA_merged.shape[1]))]]
```

Out[34]:

	Borough	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
4	ZONA PERICENTRAL ESTE	Argentinian Restaurant	Mexican Restaurant	Ice Cream Shop	Café	Sushi Restaurant	Bar	Restaurant	Park	Cocktail Bar	Middle Eastern Restaurant

Cluster 4

```
In [35]: CBA_merged.loc[CBA_merged['Cluster_Labels'] == 3, CBA_merged.columns[[1] + list(range(5, CBA_merged.shape[1]))]]
```

Out[35]:

	Borough	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
3	ZONA CENTRAL	Sandwich Place	Cocktail Bar	Nightclub	Gym	Gastropub	Argentinian Restaurant	Fast Food Restaurant	Café	Hotel	Bakery

Results

BARRIO CENTRO: the analysis shows a greater demand for cafeterias and hotels, leaving the houses of Argentine food or some snack or fast food in a fourth place; in the central area investigated, two green spaces with a lot of social movement stand out, which are the San Martín Square located next to the town hall and the cathedral church (historical symbol), the other place is the Sobre-monte walk, a place very close to public work entities such as provincial courts of justice, surrounded by a lot of cultural movement.

It is quite clear that for these two locations the cafeterias or lodging places predominate since the movement is very varied people who live here eat in other places and those who do not live

here are just passing through.

BARRIO GÜEMES: This is a well-known sector of the city of Córdoba, where it is very popular with visitors or natives of the province. The area studied is an area of immigrants from many different cultures, and there are many different activities such as shows, crafts, food, beer ... As for the most popular categories, according to the results, cafeterias with drinks and fast and regional food predominate.

In the last years the commerce was growing in many categories and many areas close their streets and become pedestrian during the weekends so that the great flow of people can transit, walk and consume. The place has lately become fashionable for breweries and night clubs.

BARRIO NUEVA CÓRDOBA: One of the most dynamic sectors of Córdoba's economic, cultural and recreational life. Very popular with students and with a high increase in population growth. The categories that predominate are the houses of sandwiches or fast food, gym night clubs and houses of drinks.

The nightlife is very busy in this area as it is overcrowded with many students. It is an area close to the university city. Young people prefer the night, fast food and exercise

BARRIO GENERAL PAZ: Is a neighborhood that was developed in the mid-nineteenth century. It has a lot of social movement and it is one of the most frequented for the gastronomic movement, the international Argentine food covers the biggest frequency of interests, there is a lot of variety of ice cream shops and bars.

It is a neighborhood near the government house, with a lot of history and gastronomic movement.

Conclusion

The purpose of this project was to identify the most frequent categories by people in 4 areas with 5 specific places with a lot of socio-cultural movement, in order to provide information about the category movement to the person who is starting it or by way of information as a tool to improve decision making. The final decision on the best categories or places may vary according to the investigated area and the desired heading, the precision can be improved by changing the code by replacing the values of interest based on the specific characteristics of the neighborhoods and the locations in each recommended area.

___ Created by Carlos Alberto Gómez Prado for the IBM coursera course. ___