

Opening a Peruvian restaurant in Barcelona, Spain

Objectives

- Analysis of the city of Barcelona and its neighborhoods using this web page https://en.wikipedia.org/wiki/Districts_of_Barcelona
- Convert address data into their equivalent latitude and longitude values defining a function
- Use the Foursquare API to explore the neighborhoods and to get venues in neighborhoods.
- Use the k-means clustering to complete clustering task
- Visualize the neighborhoods, venues , clusters using Folium

Introduction

Peruvian cuisine nowadays is really well known around the world, with 2 restaurants in the top 50 best restaurants in the world. However, it hasn't been exploited at its maximum, as it has many different types of dishes, thanks to its location in South America. Ocean, mountains and jungle offer a vast a different type of dishes. Barcelona is a city on the coast of northeastern Spain. It is the capital and largest city of the autonomous community of Catalonia, as well as the second most populous municipality of Spain. This project will interest businessman's that want to open a restaurant in this part of Europe.

Data

Data of the neighborhoods of Barcelona was scraped from Wikipedia (https://en.wikipedia.org/wiki/Districts_of_Barcelona) and converted into a dataframe for its better manipulation

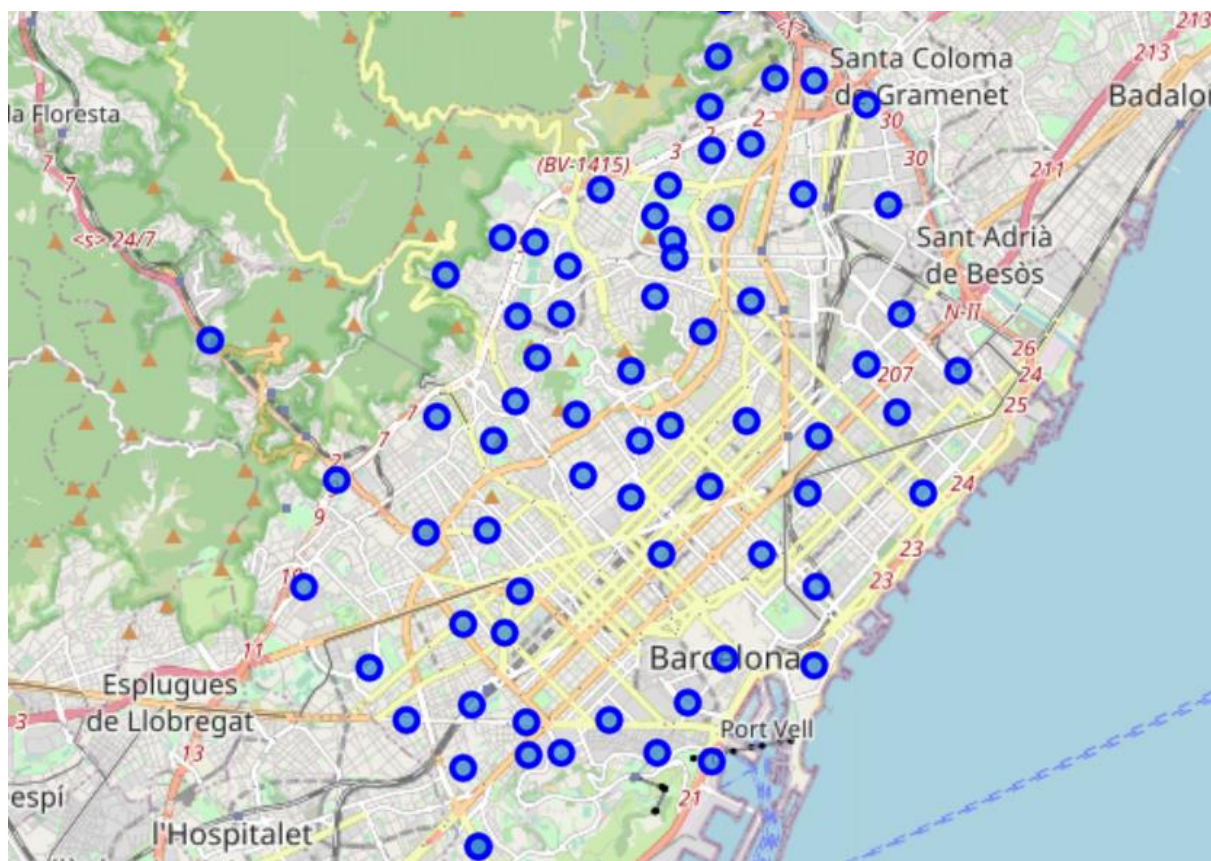
	Number	District	Population	Neighbourhoods
0	1	Ciutat Vella	111,290	La Barceloneta, El Gòtic, El Raval, Sant Pere,...
1	2	Eixample	262,485	L'Antiga Esquerra de l'Eixample, La Nova Esque...
2	3	Sants-Montjuïc	177,636	La Bordeta, la Font de la Guatlla, Hostafrancs...
3	4	Les Corts	82,588	les Corts, la Maternitat i Sant Ramon, Pedralbes
4	5	Sarrià-Sant Gervasi	140,461	El Putget i Farró, Sarrià, Sant Gervasi - la B...

The data frame was then exploited by its neighborhoods

	Number	District	Population	Neighbourhoods
0	1	Ciutat Vella	111,290	La Barceloneta
1	1	Ciutat Vella	111,290	El Gòtic
2	1	Ciutat Vella	111,290	El Raval
3	1	Ciutat Vella	111,290	Sant Pere
4	1	Ciutat Vella	111,290	Santa Caterina i la Ribera

Then and longitude for each neighborhood was found using geocoder.arcgis and add it to the dataframe, A map was created to visualize these neighborhoods in Barcelona

	Number	District	Population	Neighbourhoods	Latitude	Longitude
0	1	Ciutat Vella	111,290	La Barceloneta	41.38185	2.19151
1	1	Ciutat Vella	111,290	El Gòtic	41.38280	2.17727
2	1	Ciutat Vella	111,290	El Raval	41.37763	2.17145
3	1	Ciutat Vella	111,290	Sant Pere	41.40177	2.16258
4	1	Ciutat Vella	111,290	Santa Caterina i la Ribera	42.28390	2.01892



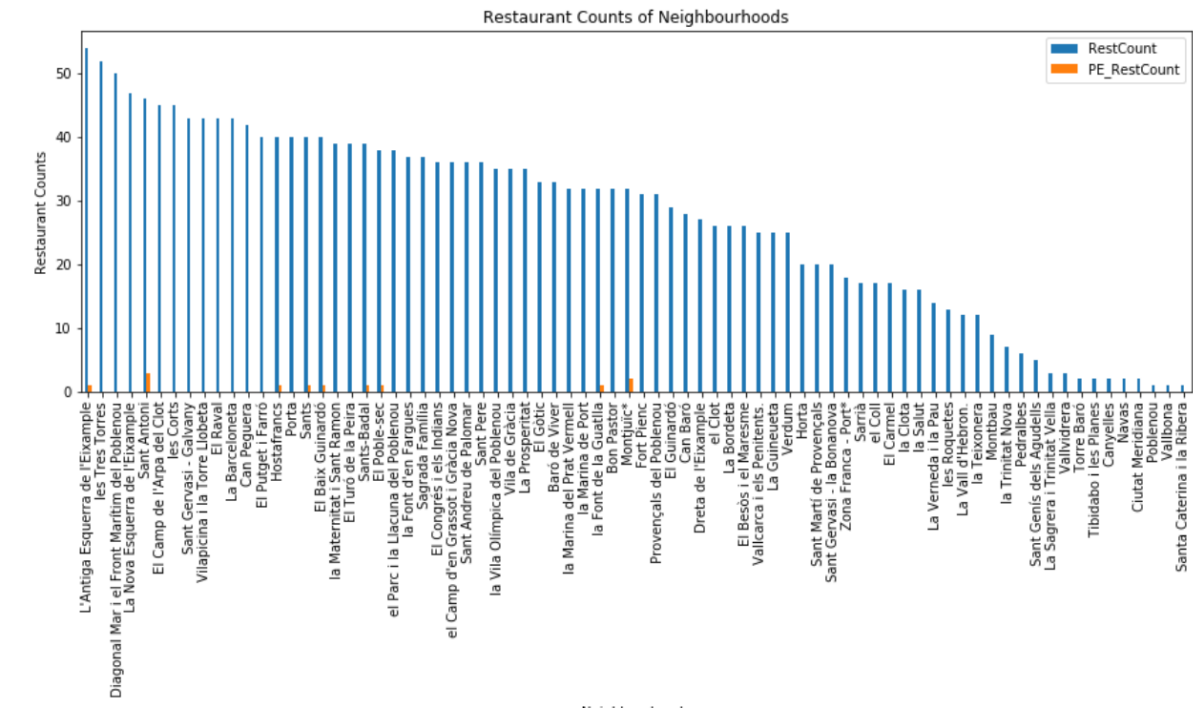
Methodology

Using Foursquare API the top 100 venues of each neighborhoods were found within a 1 km of it

	Neighbourhoods	Latitude	Longitude	VenueName	VenueId	VenueLatitude	VenueLongitude	VenueDistance	VenueCategory
0	La Barceloneta	41.38185	2.19151	Baluard Barceloneta	4c5144e3375c0f475ed8ae93	41.380047	2.189250	275	Bakery
1	La Barceloneta	41.38185	2.19151	BRO	535ea7db498e522c6b801a4f	41.380214	2.189007	277	Burger Joint
2	La Barceloneta	41.38185	2.19151	Platja de la Barceloneta (Playa de la Barcelon...	4c0d3610d64c0f47665e265d	41.379610	2.193038	280	Beach
3	La Barceloneta	41.38185	2.19151	Somorrostro	4b9165c4f964a5202bb933e3	41.379156	2.189100	361	Spanish Restaurant
4	La Barceloneta	41.38185	2.19151	acqua&farina	5b3bd6684420d8003919ee61	41.381023	2.190152	146	Pizza Place

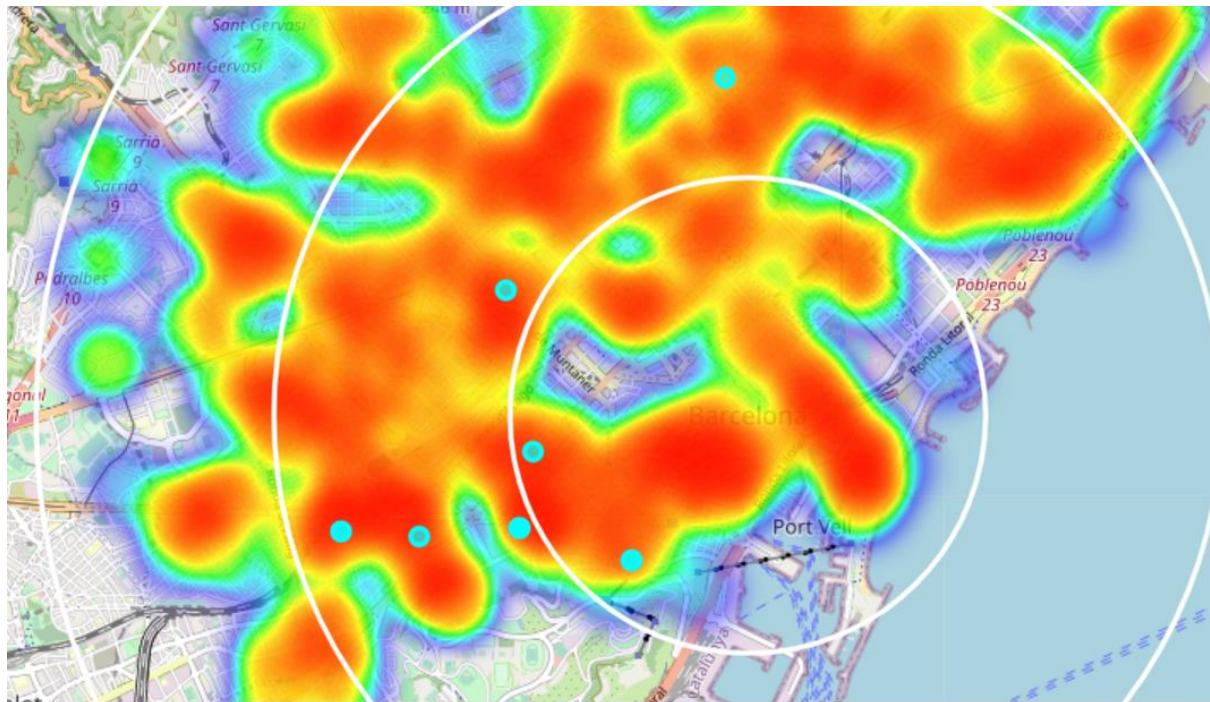
	Count
VenueCategory	
Spanish Restaurant	137
Tapas Restaurant	120
Mediterranean Restaurant	109
Restaurant	108
Hotel	98
Café	86
Bakery	82
Plaza	77
Pizza Place	70
Bar	64

67 neighborhoods do not have any Peruvian restaurant



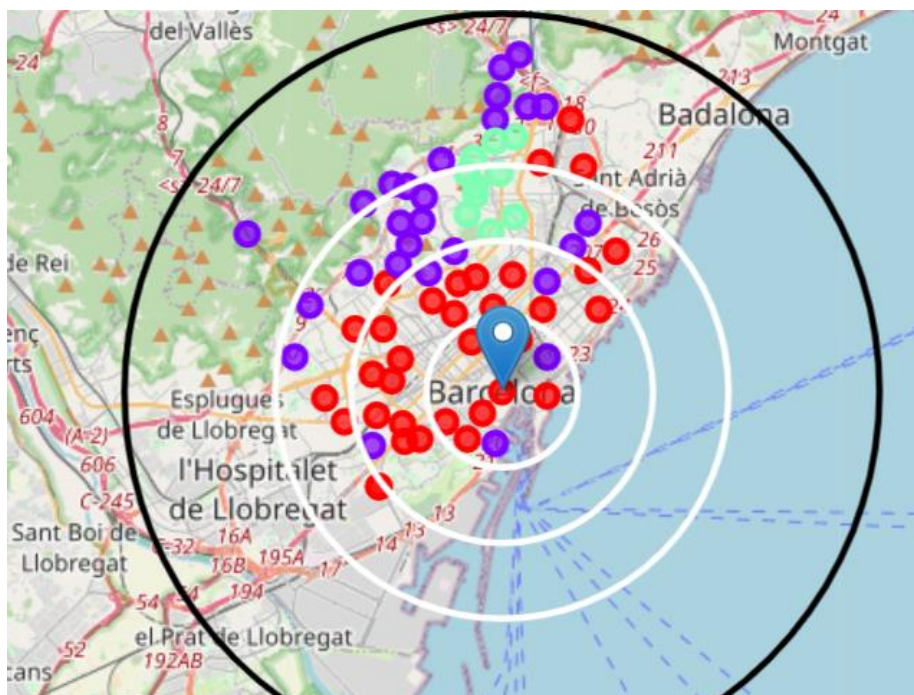
It was found that only exists 7 Peruvian restaurants in the whole city of Barcelona also it can be seen from this first analysis that the Spanish cuisine is well exploited in this city.

This 7 restaurants were located in the Barcelona map in a heat map with all the restaurants in the city



It can be seen that the neighborhoods that have Peruvian restaurants are mostly located between 2 to 4 km away from the center of Barcelona, still there are not that many. Also the whole city is full of restaurants some areas near playa Catalonia don't have that many.

Finally the neighborhoods were cluster into 3 clusters,



- Cluster 0 (Red) : Spanish food type Restaurant, Restaurant, Hotels
- Cluster 1 (Purple) : Grocery, cafes and Spanish type

- Cluster 2 (Green) : Tapas and Grocery

Results and Discussion

- The Cluster in Red is related with the tourist place, hotels full with typical food and cafes, all clusters have Spanish food. However opening a peruvian restaurant is more related with people that want to try a different cuisine as peruvian food is known for being expensive and one the best ones in the world. So we will not see the traditional restaurant as competition.
- It appears that the city and each neighbourhood has similarity between each other, all of them have spanish type cuisine, cafes, grocery. Only the center is related with other type of cuisines and hotels.

Conclusion

- El Gotic or Dreta de l'Eixample: If the peruvian that is going to be open is an expensive the best place to put will be near the center of the city, as we saw these two neighbourhoods are the ones with less number of food related places and the ones that dont have any peruvian restaurants nearby.
- el Parc i la Llacuna del Poblenou: By looking to the current location of peruvian restaurants, they are located 4km away from the center, this neighbourhood is located in this area and doesnt have as many restaurants as other neighbourhoods.
- Further investigation of the segmentation of the population and other cities close to Barcelona as Espluges and Hospitalet, that are well known for having a high quantity of migrants,is needed. Maybe these places can open an economic version of a peruvian restaurante for these people