A new cafeteria in Mexico City

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Introduction

Mexico City is a one of the most representative cities in this country, where food, arquitecture and design are all in one place. Each neighborhoods has something to offer. In this notebook we will try to find the best possible location for a new cafeteria. With a population of 8.855 million in 2015 and an area of 1,485 kilometers squared is one of the densest cities in the world. Mexico City is also a beautiful city for tourism where people are eager to know the culture through its famous dishes. This report is specially targeted to stakeholders interested in opening a new cafeteria in Mexico City. We would try to find the best location in terms of competition and income of neighborhoods. In order to solve this problem we would use the Foursquare API to acquire the data and use data science techniques to clean it and analyze it.

The data

As mention before we use the Foursquare API in order to retrieve data, so there might be some locals that are in the database. Also because we are using the free version we are limited for the number of requests, for each request we are limited to 50 establishments. This is why we only focus on the municipalities of Benito Juarez, Coyoacán, Cuauhtémoc, Miguel Hidalgo. Why? According to the Centro de Estudios y Finanzas Públicas in 2015 (CEFP) these municipalities show a reduction in poverty and this ones are common places for tourists.

The data is structured as follows

Uid	Name	Shortname	Address	Postal Code	Lat	Lng
540673ad498e44dafcaed029	Casa Tassel	Tea Room	Álvaro Obregón 86	06700	19.418051	-99.158343
51ba6ba9498e9bcd16eee9ec	Cachito Mío Quiches & Tartas	Coffee Shop	Álvaro Obregón 86	06700	19.416528	-99.160931
56d76bac498ecdce6449901f	Tierra Garat	Coffee Shop	Álvaro Obregón 86	06700	19.418890	-99.161417
57f56557498ef66f03d1da46	MARI'S PASTRY shop & taller	Coffee Shop	Álvaro Obregón 86	03020	19.394866	-99.159646

The Uid columns includes the identifier for each local, Name columns is the name of the local, Shortname shows what kind of local is, in this 4 local we can see two kinds, Tea Room and Coffee Shop, as the name points out the first ones tell us that the shop is specialize in tea and the second one is specialized in Coffee. The Address column

in this case is the same for all rows this is due to the method is to retrieve the information but the real location can be find using the Lat and Lng that represent the latitude and longitude of the local.

Methodology

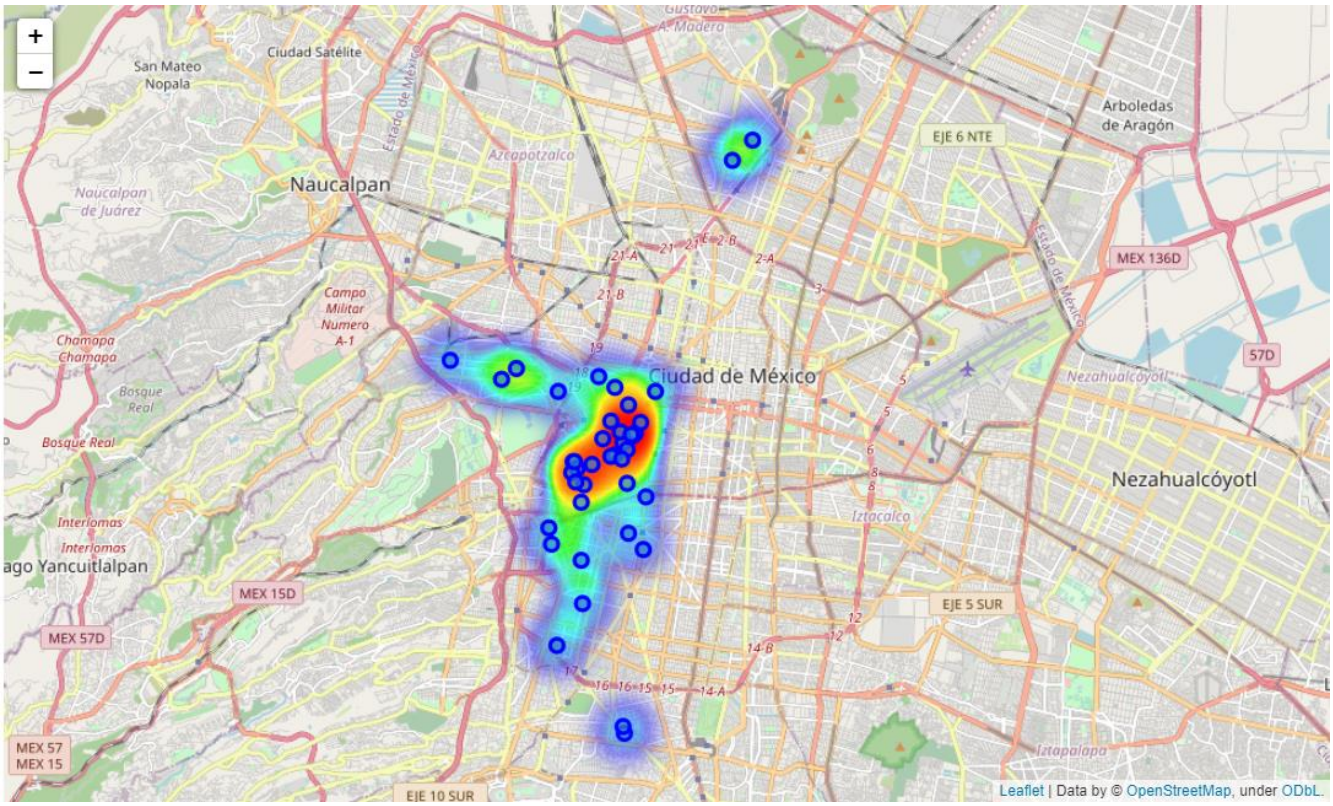
Once we find and clean the data (usually this is the hardest part in a data science project) we proceed to do an analysis of the information. Given the nature of the problem we would no use any ML algorithm.

In this project we need to identify the densest neighborhoods in terms of cafeterias because these ones will be highly competitive. We are looking for places in highly transit streets.

For this we plot a heat map of Mexico City with the cafeterias. The code for this methodology can be found in Github[1].

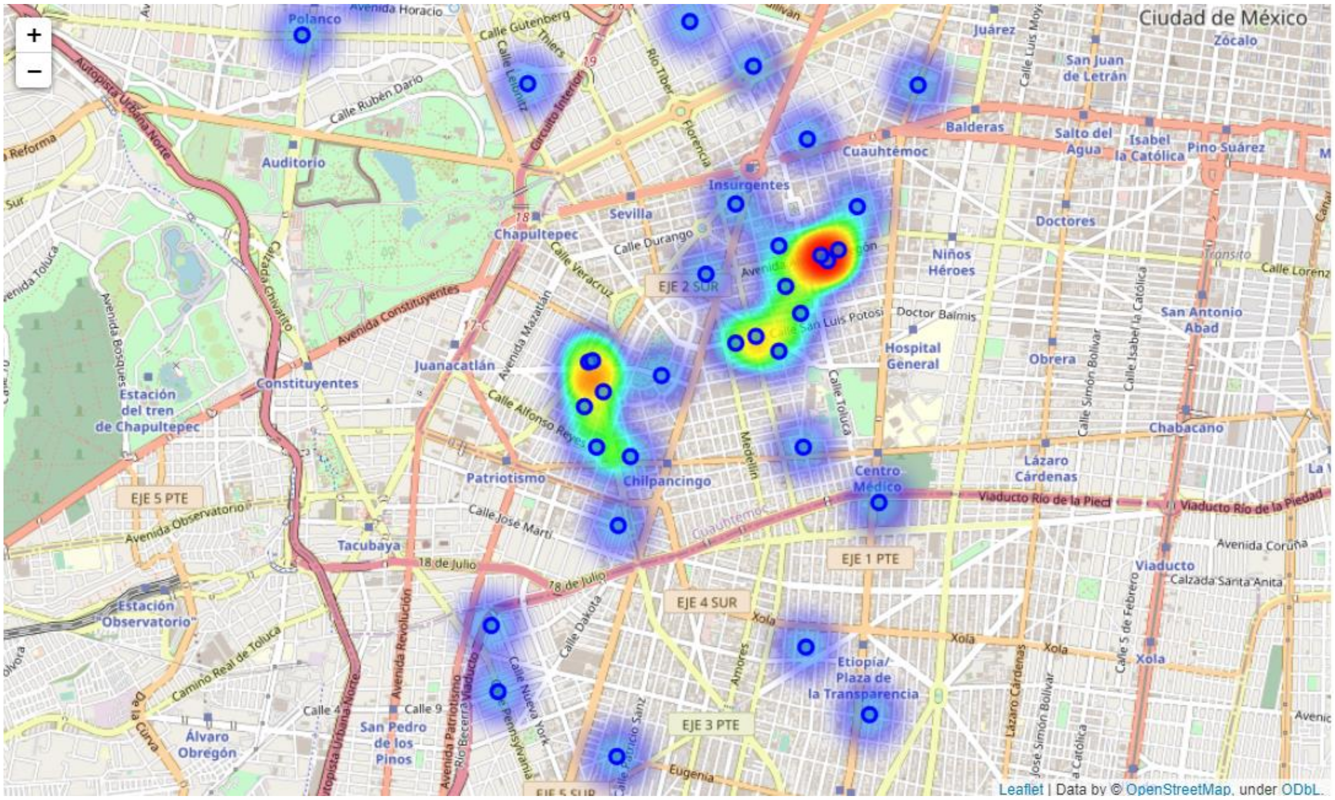
Results

Heat map of cafeterias in Mexico City

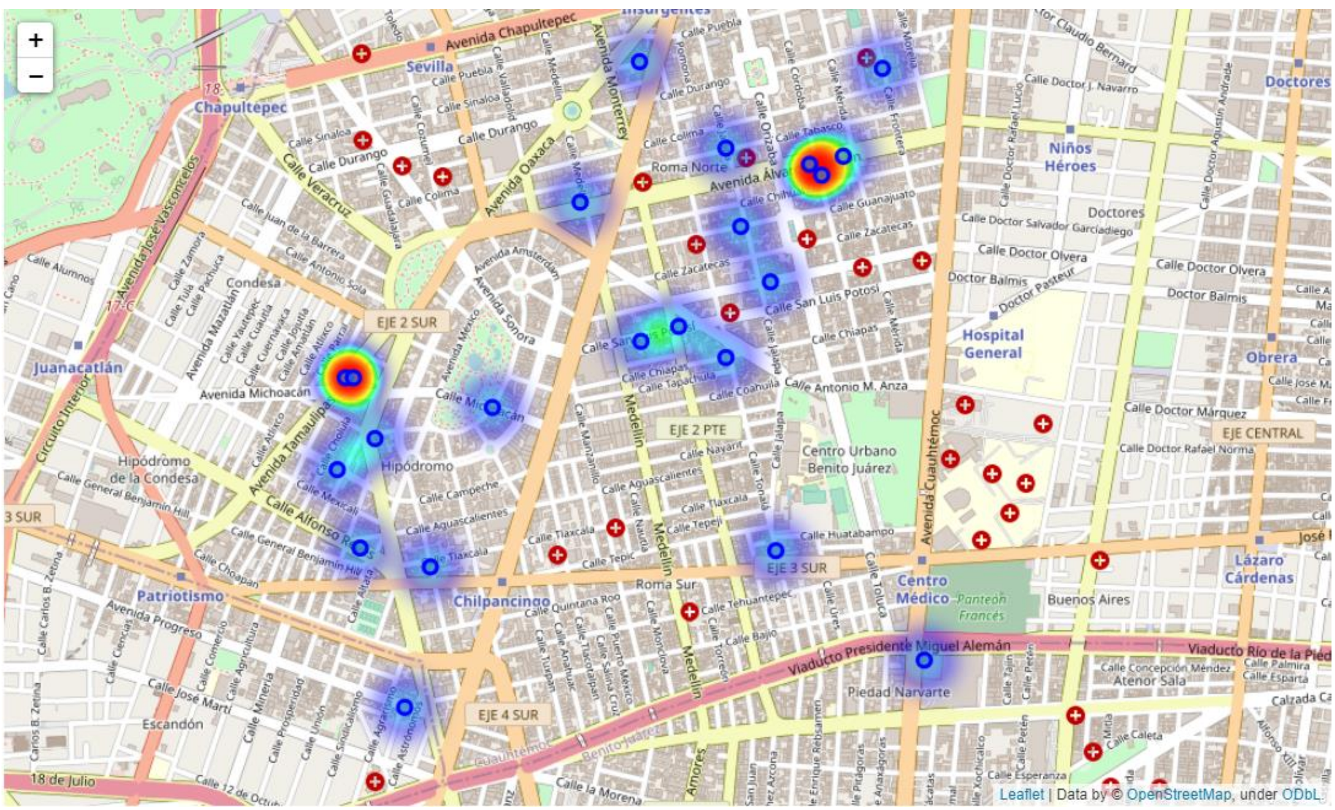


Zooming in the red zone we have

[1] https://github.com/MOSA96/Coursera_Capstone



Zooming in again the densest place we can find that

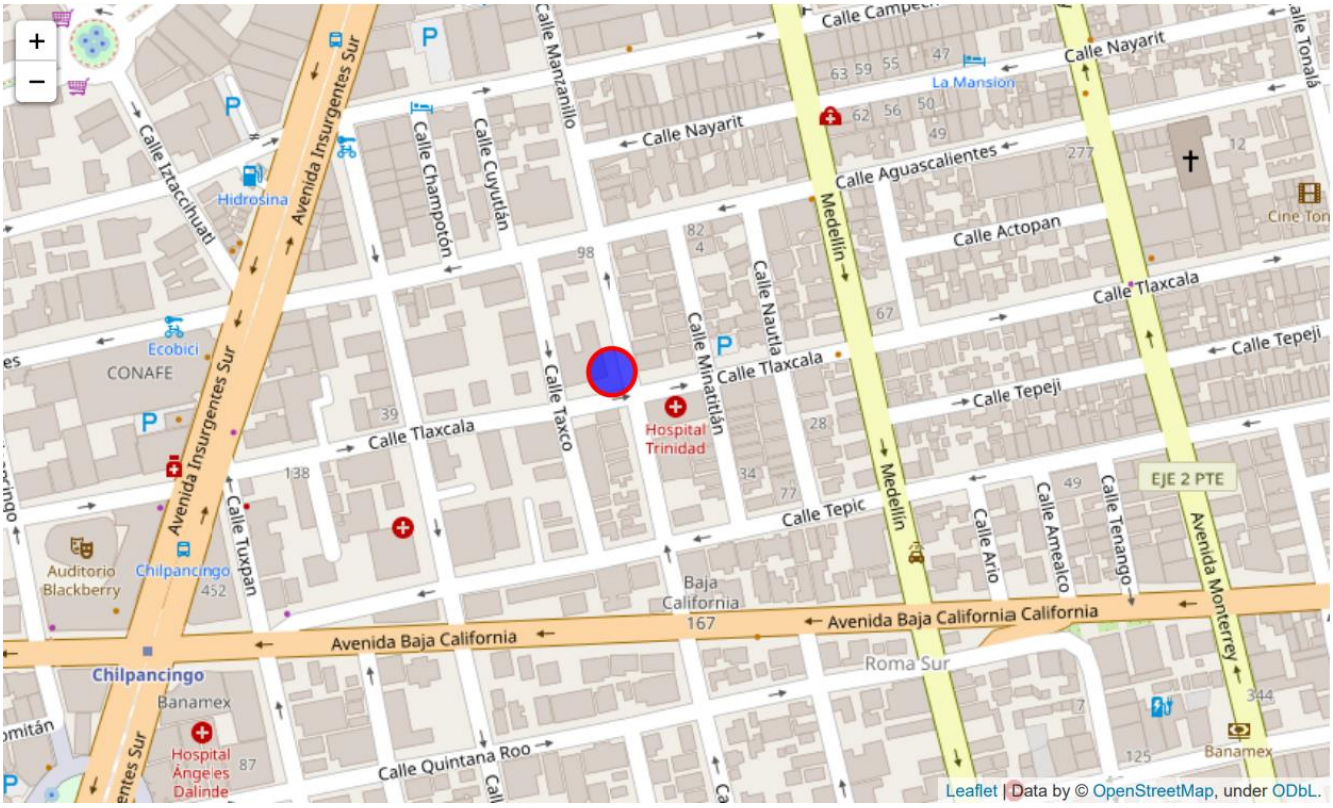


Conclusions

We can see that there are a lot cafeterias in the neighborhood of Roma Norte but we can see that there are some sections of that are practically empty. There is an especially interesting zone between the streets of Tepic and Tapachula and this zone has 2 hospitals near. Hospitals are highly transited places and people and doctors need to stay awake for several hours and coffee is the famous drink to do so. This is why we choose the next location to open the new cafeteria.

Cafeteria located around Tlaxcala 92, Roma Sur.

This is one of the many analysis that should be made in order to start a physical project. Prices, rents, and the concept of the cafeteria are other of the main points.



References

- CEFP. (s.f.). *Medición de la pobreza multidimensional.* Distrito Federal.