Opening a bar in the centre of Milan

Alessandro Pizzini

March 31 2021

1. Introduction

1.1 Background

Milan is a city in northern Italy, well known for its nightlife and considered to be the capital of European fashion. Milan is also the business capital of Italy and has several universities in its historic centre. For these reasons and more, Milan has numerous bars and restaurants distributed around its narrowest circle of the city, bounded by the "circonvallazione".

1.2 Problem

Using the Foursquare API we will determine how many bars there are near the centre and how these are distributed in the city. Using the location of metro stations and a heatmap of the locations with the most bars, we will define the ideal place to open a bar in the city centre. Obviously, a knowledge of the city is essential for the success of the project.

1.3 Interest

The project aims to provide a general idea of the distribution of bars in the city, taking into account the limitations of the Foursquare API. This analysis can be useful for those interested in opening a new bar or for a franchise that wants to expand its number of bars in the city.

2. Data acquisition and cleaning

2.1 Data sources

All data with the corresponding locations (latitude and longitude), bar names and categories were obtained through the Foursquare API. The location of the centre of Milan was also obtained through the Foursquare API. In addition, I inserted markers on the map representing the subways, for these I had to look up the positions on wikipedia.

2.2 Data cleaning

No data cleaning or data wrangling was applied.

3. Project

3.1 Define of Milan city

By defining the address as 'Milan, Italy' we define the geographical position (latitude and longitude) of Milan.

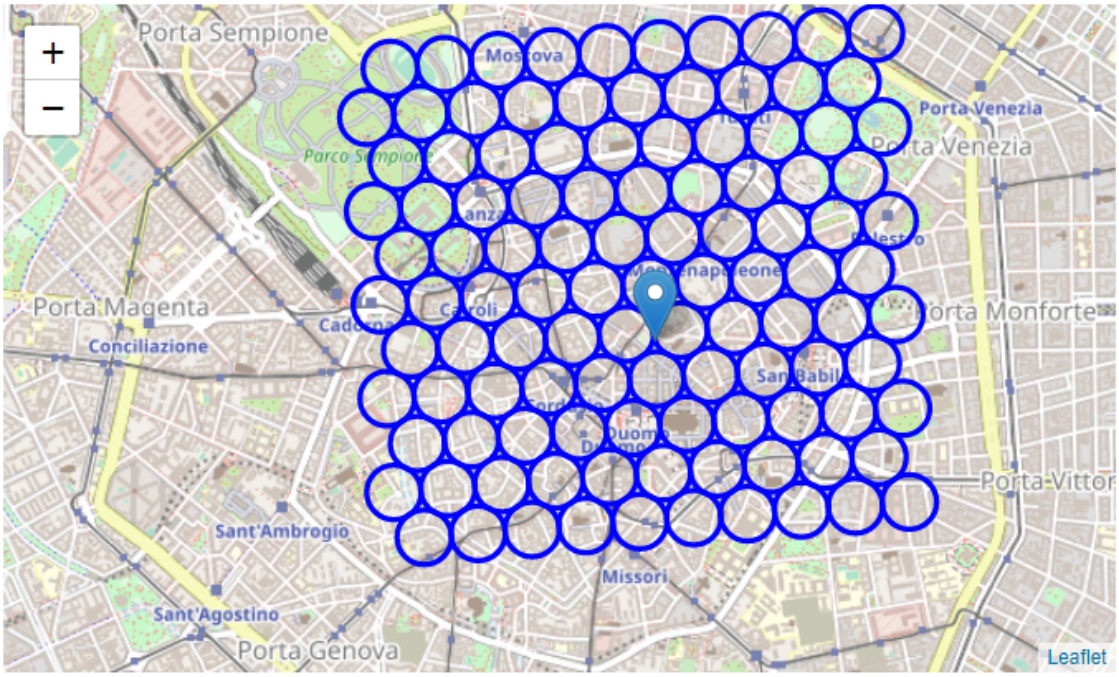
```
In [8]: address = 'Milan, Italy'

        geolocator = Nominatim(user_agent="foursquare_agent")
        location = geolocator.geocode(address)
        latitude = location.latitude
        longitude = location.longitude
        Milan_center = [latitude, longitude]
        Milan_center

Out[8]: [45.4668, 9.1905]
```

3.2 City partitioning

Once I had defined circles of equal size, I distributed them uniformly around the centre of Milan.



3.3 Importing data about Milan bars

Thanks to the Foursquare API we obtained the list of bars in Milan, which were obtained through a get request and then processed to obtain a pandas dataset.

```
In [30]: df[["name","shortname"]]
```

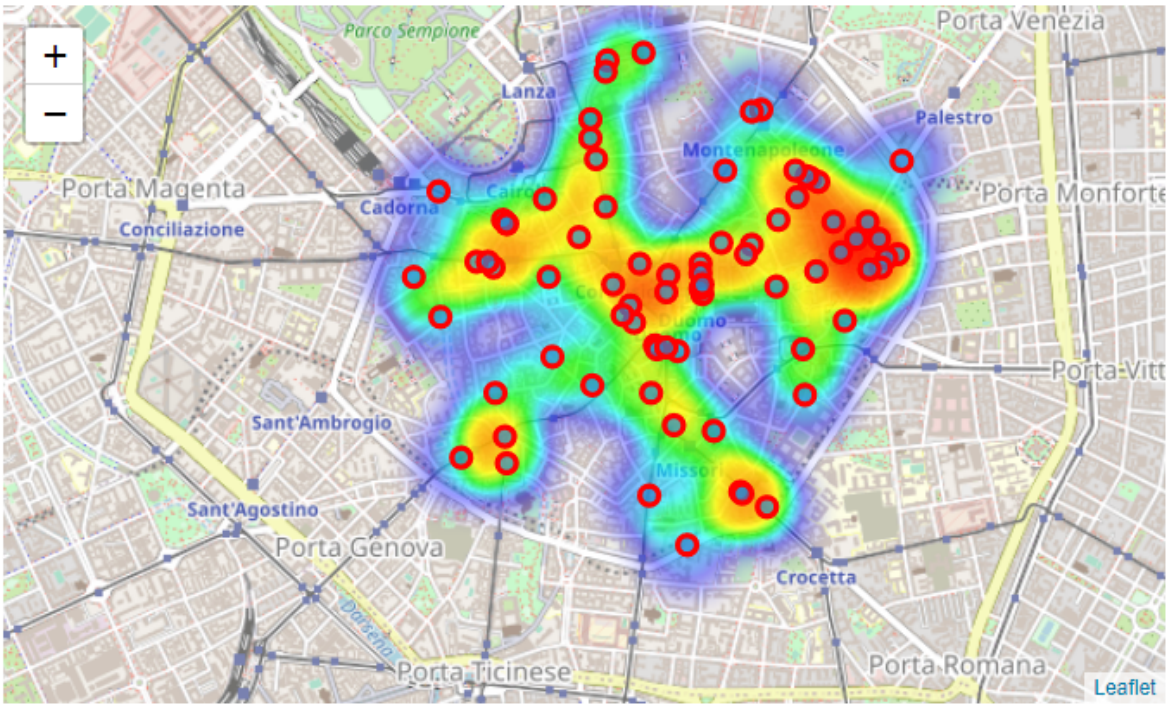
Out[30]:

	name	shortname
0	Pasticceria Marchesi	Pastry
1	Starbucks Reserve Roastery	Coffee Shop
2	Caffè Napoli	Café
3	Lavazza Coffee Design	Coffee Shop
4	Princi	Bakery
...	...	...
71	Cafè San Babila	Café
72	Bar San Carlo	Café
73	Bar Brera	Cocktail
74	Cinc	Cocktail
75	Bar Meda	Café

76 rows × 2 columns

3.4 Milan heatmap

With the data obtained through the get request, we also obtained their various locations in the city and so I defined a heatmap of the city of Milan, where the "hottest" areas represent the one with the most bars. It is immediate to note that the area of the Duomo and San Babila are the one with the highest concentration of bars, as they represent a key location for movement in the city and are also half for tourists.



3.5 Combining different map layers

By combining the heatmap layer of the bars and the grid layer on the city of Milan, we have a general idea of which micro-areas have the highest concentration of bars and which ones have a lower concentration.

4 Conclusion

From this brief analysis it can be deduced that there are areas of Milan where there is a higher density of bars. These are always characterised by the fact that they are very central and close to the metro (Duomo/San Babila). From the graph, however, it can be seen that the "Scala" area has no bars. If you know the city, however, you can immediately understand why: in fact, that area has no bars for the simple reason that they are all museums and historic structures. A closer look reveals that there are not many bars in the south-west of the city, despite the fact that this is a very popular area.Certainly this analysis can be deepened, for example by obtaining the locations of subways or buildings such as universities and department stores.