INTRODUCTION

Let’s say you have never been in Italy and you want to visit only basilicas while you are there. So you want to go to a city with a high density of basilicas around you. The problem we aim to solve is to analyze the basilicas' locations in the most beautiful north-center Italy Cities, such as Rome, Milan and Florence in order to find the best place for our pilgrimage.

DATA

I will use the FourSquare API to collect data about locations of Basilicas in Rome, Milan and Florence. These are one of the most beautiful Italy cities.

METHODOLOGY

My main target here is to asses which city would have the highest spiritual places density. I used the Four Square API through the venues channel. I used the near query to get venues in the cities. Also, I use the CategoryID to set it to show only Spiritual Places. An Example of my requests:

https://api.foursquare.com/v2/venues/explore?&client_id=&client_secret=&v=20180605&Roma, RM&limit=100&categoryId=4bf58dd8d48988d131941735

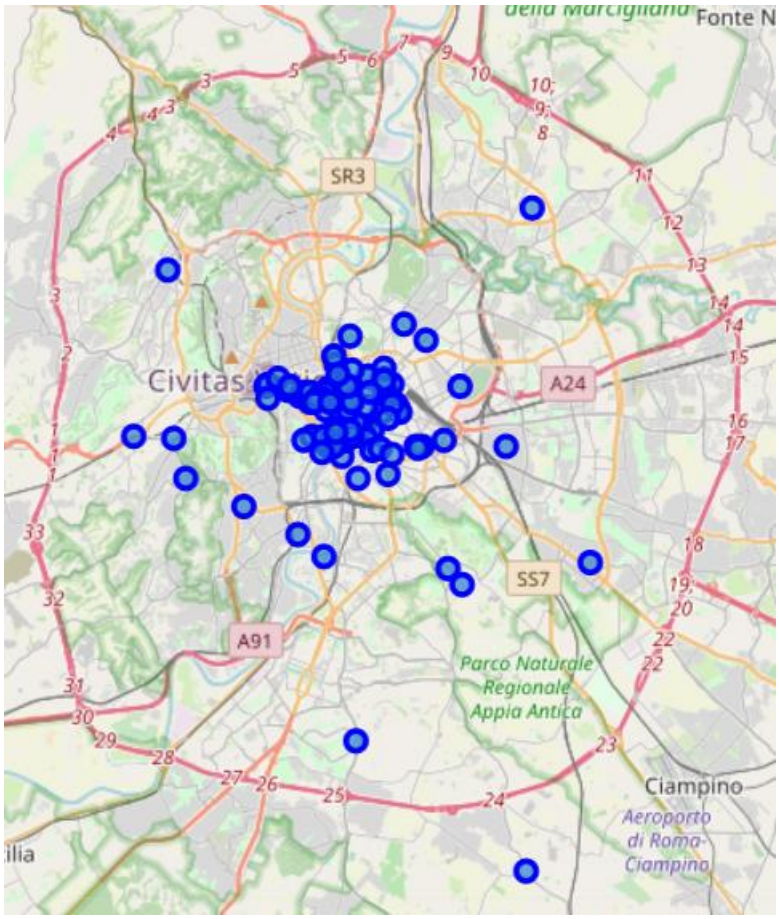
That 4bf58dd8d48988d131941735 is the ID of the Spiritual Place Category. Also, Foursquare limits us to maximum of 100 venues per query.

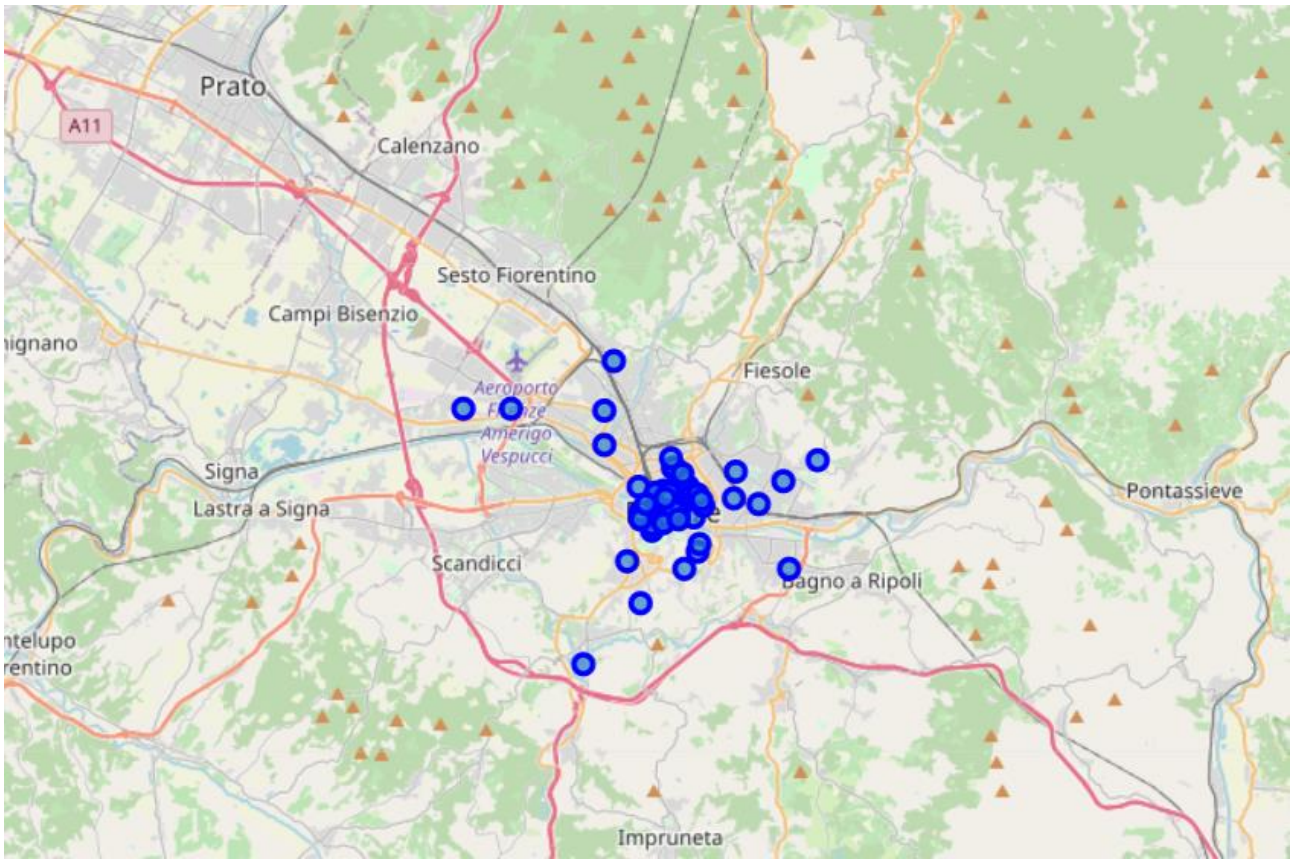
Moreover, I repeated this request for the 3 studied cities and got their top 100 venues (Firenze only has 68 places registered). I saved the name and coordinate data only from the result and plotted them on the map for visual inspection.

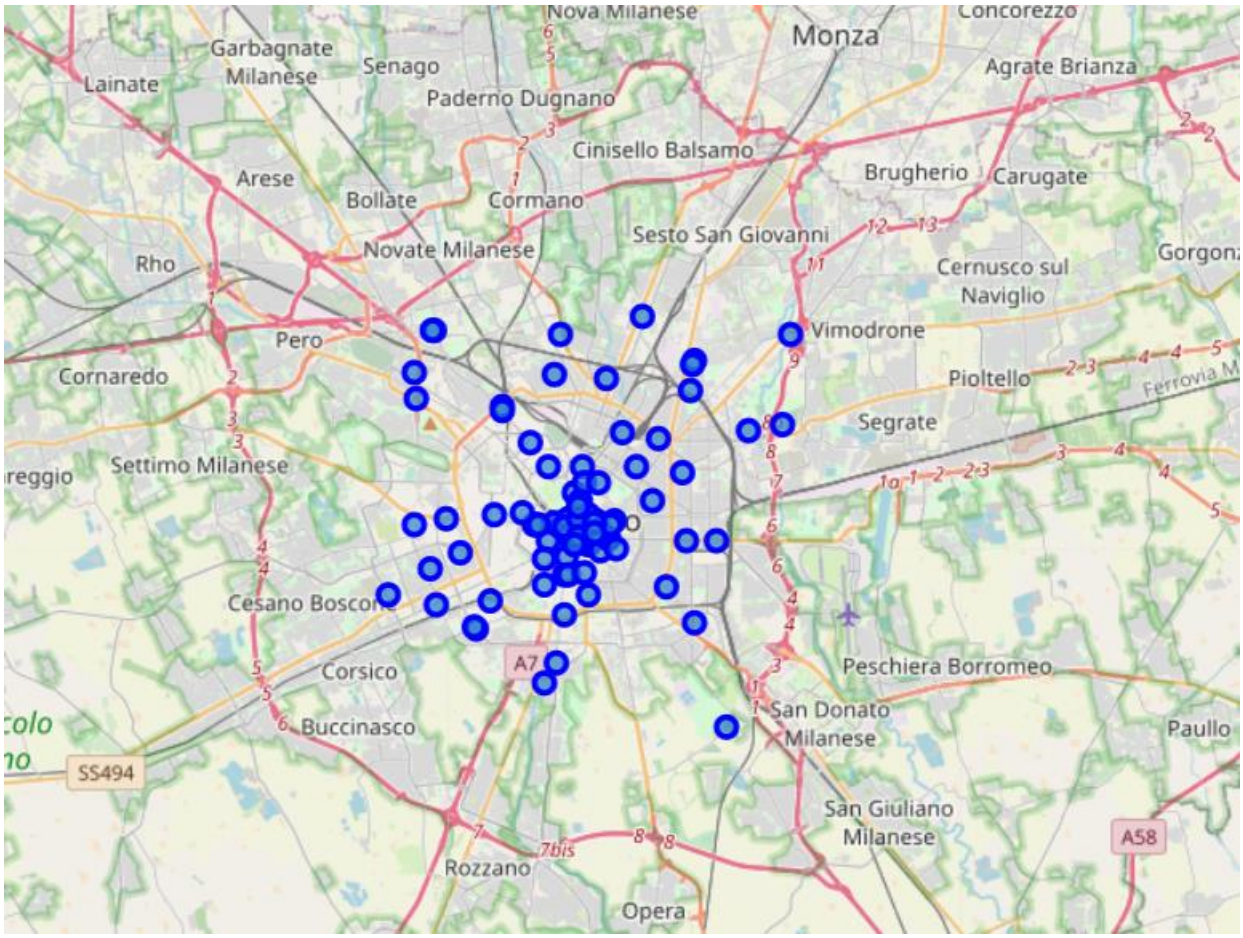
Next, to get an indicator of the density of Spiritual Places, I calculated a center coordinate of the venues to get the mean longitude and latitude values. Then I calculated the mean of the Euclidean distance from each venue to the mean coordinates. That was my indicator; mean distance to the mean coordinate.

RESULT

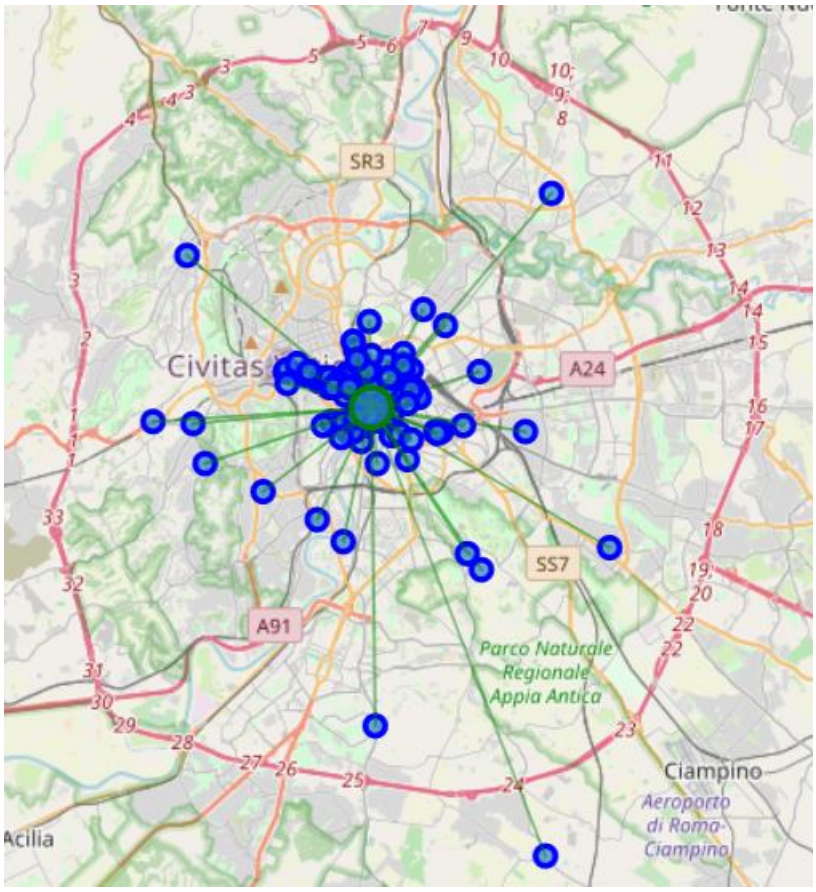
For our initial visual inspection we see that they all have multiple spiritual places and often more than Foursquare would like to supply us. The following here are the pictures of the geoplot generated with folium:

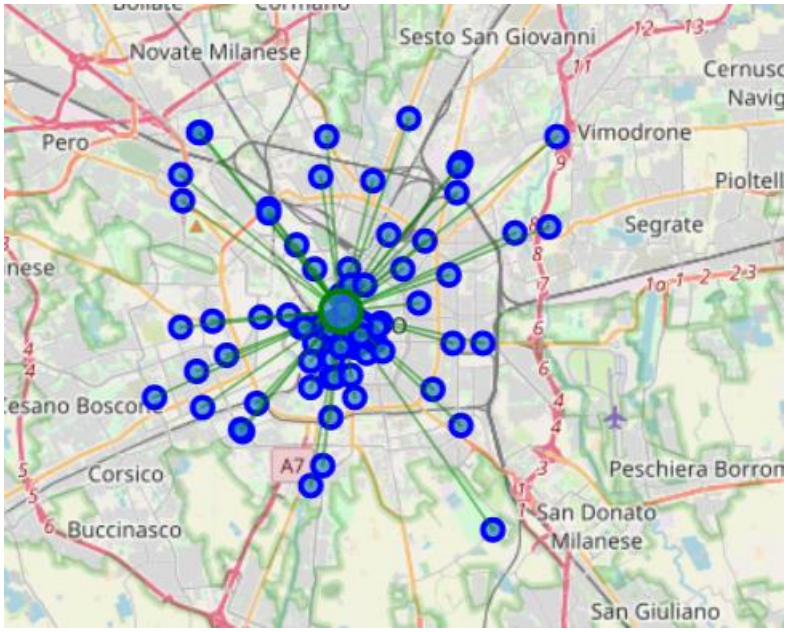

Fonte N
SR3
Civitas
A24
SS7
A91
Parco Naturale
Regionale
Appia Antica
Ciampino
Aeroporto
di Roma-
Ciampino

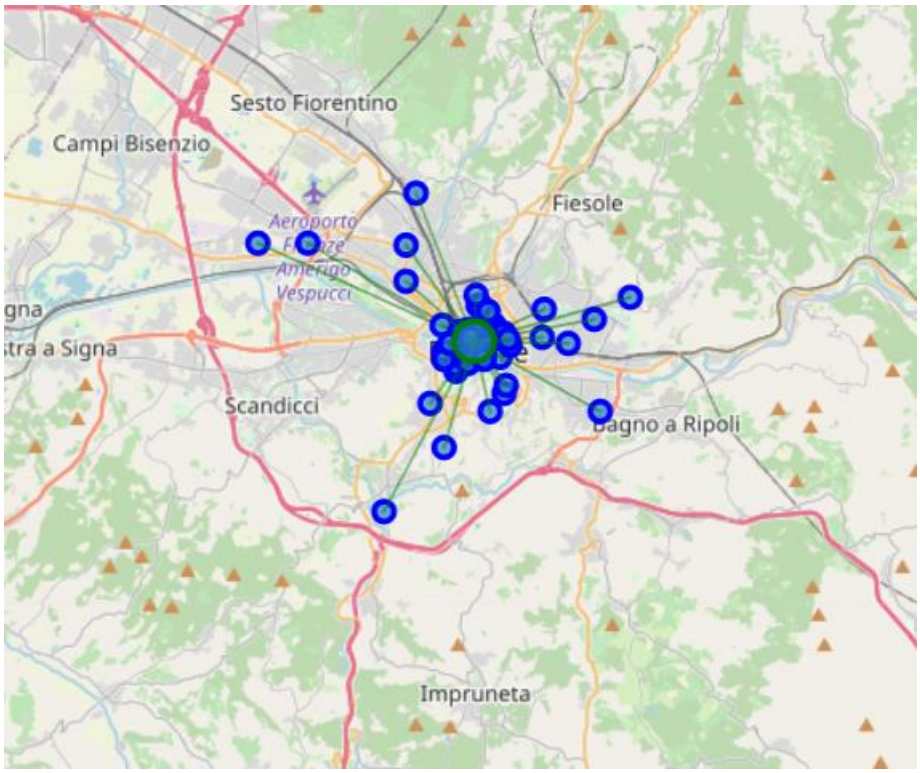

Prato
A11
Calenzano
Sesto Fiorentino
Campi Bisenzio
Fiesole
Aeroporto
Amerigo
Vespucci
Signa
Lastra a Signa
Scandicci
Pontassieve
Bagno a Ripoli
Impruneta



Upon First inspection we see that Roma seems to be the most densely cities. In the next phase we Calculate the Mean coordinate and the mean distance to mean coordinate(MDMC). We represent the mean coordinate with a big green circle and distances with green lines


SR3
A24
SS7
A91
Parco Naturale Regionale Appia Antica
Ciampino
Aeroporto di Roma-Ciampino


Novate Milanese
Sesto San Giovanni
Vimodrone
Segrate
Pero
Corsico
A7
Buccinasco
Peschiera Borromeo
San Donato Milanese
San Giuliano



Therefore our results are :

1. Firenze
2. Roma
3. Milano

DISCUSSION

One thing I noticed in the figure is that in Rome we have a lot of outliers because Rome is a lot bigger than Firenze so this is probably giving it a higher MDMC. Moreover, we have only 68 points for Firenze. So I checked what if I take into account only the first 68 places for Rome too

The new MDMC was: 0.01014990, putting Rome at the first place.

CONCLUSION

Now there is no doubt that Roma is the best place to visit many Spiritual Places. Also, if our tourist is done with all the Roma spiritual places he can go to Firenze in just 2-3 hours and enjoy more spiritual places.