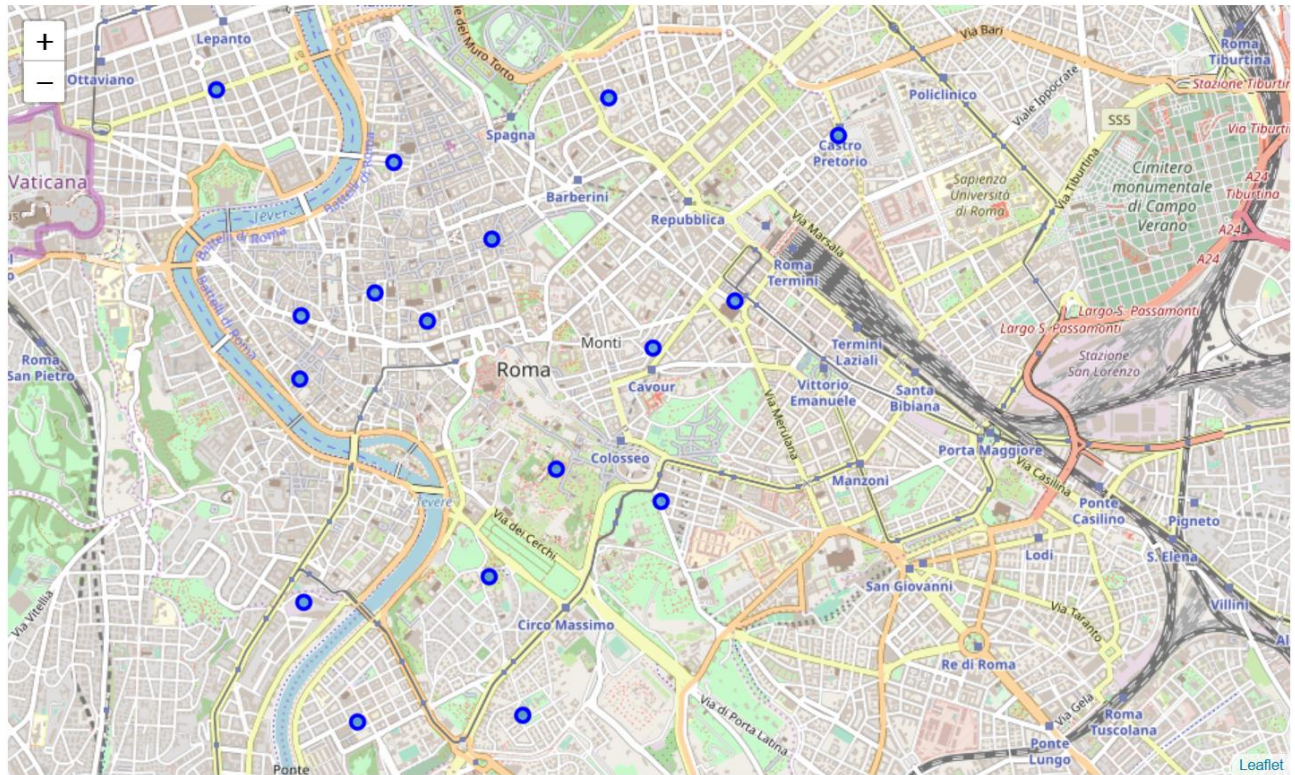# City comparison

Data section

The data are retrieve mainly on internet. An easy research made me create 3 csv files containing the neighborhoods of each downtown of interest, which were enriched with the geo coordinates.

Here an example for Rome, the other 2 cities follows the same examples.

	Neighbourhood	latitude	longitude
0	MONTI	41.895813	12.493587
1	TREVI	41.900978	12.483285
2	COLONNA	41.833718	12.753184
3	CAMPO MARZIO	41.904647	12.477055
4	PIGNA	41.897116	12.479196
5	PONTE	42.040346	12.853573
6	PARIONE	41.897358	12.471103
7	REGOLA	41.894375	12.471030
8	S. EUSTACHIO	41.898437	12.475792
9	CAMPITELLI	41.890085	12.487416
10	S. ANGELO	42.134941	12.838770
11	R. XII – RIPA	41.884987	12.483107
12	TRASTEVERE	41.883765	12.471270
13	BORGO	41.840235	12.889186
14	CELIO	41.888552	12.494115
15	ESQUILINO	41.898044	12.498863
16	LUDOVISI	41.684213	12.776364
17	SALLUSTIANO	41.907724	12.490797
18	CASTRO PRETORIO	41.905911	12.505453
19	TESTACCIO	41.878065	12.474757
20	S. SABA	41.878352	12.485295
21	PRATI	41.908078	12.465706

Such Neighborhoods have been also mapped thanks to folium:

Using Foursquare API, each neighborhood have been explored and its most popular venues (including their categories) have been save in a dataframe

	Neighbourhood	Neighboyrhood Latitude	Neighboyrhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	MONTI	41.895813	12.493587	Fatamorgana	41.895610	12.493304	Ice Cream Shop
1	MONTI	41.895813	12.493587	Trieste	41.896305	12.494132	Pizza Place
2	MONTI	41.895813	12.493587	Grezzo	41.896681	12.494535	Pastry Shop
3	MONTI	41.895813	12.493587	Black Market	41.897096	12.494645	Cocktail Bar
4	MONTI	41.895813	12.493587	Analemma Cafe	41.894763	12.491536	Bar
5	MONTI	41.895813	12.493587	Montipalace Hotel	41.895384	12.493839	Hotel
6	MONTI	41.895813	12.493587	Libreria Caffè Bohemien	41.895444	12.492863	Cocktail Bar
7	MONTI	41.895813	12.493587	Aromaticus	41.896840	12.494611	Salad Place
8	MONTI	41.895813	12.493587	Relais Monti	41.896606	12.494637	Bed & Breakfast
9	MONTI	41.895813	12.493587	Gelateria dell'Angeletto	41.894815	12.491431	Ice Cream Shop
10	MONTI	41.895813	12.493587	The K Boutique Hotel	41.894849	12.493646	Hotel

Repeating this process for all 3 cities we obtain the dataframe that will be used for the cluster analysis