

A thick black L-shaped frame is positioned on the left and bottom edges of the slide, framing the central text.

THE BATTLE OF NEIGHBORHOODS

Comparison of Rome and Oslo

Introduction

- The idea is to compare the capitals of two different countries in Europe, that is **Italy** and **Norway**. The aim of this project is to find answers on below questions:
 - Do people living in western countries have different ways of spending time than in the colder North?
 - What kind of business is the most profitable in these places?
- This project may be especially interesting for those, who have money and an idea of some kind of a business, but are not sure, where should they start it.



Data

- A list of Oslo's and Rome's districts have been scrapped with [BeautifulSoup](#) library from [Wikipedia](#) website. After that I'm going to use [OpenCage](#) Geocoder API to look for the coordinates and [Foursquare](#) API to get more details about the venues.
- The sources used:
 - [Wikipedia](#) page (to look for the boroughs and their neighborhoods)
 - [OpenCage](#) Geocoder API (to look for latitudes and longitudes)
 - [Foursquare](#) API (to look for nearby venues)
- Examples of a table can be found down below.

WIKIPEDIA
The Free Encyclopedia



FOURSQUARE



OpenCage

	District	Urban zone	Latitude	Longitude
0	Historical Center	Trastevere	41.883765	12.471270
1	Historical Center	Aventino	41.882825	12.486819
2	Historical Center	Esquilino	41.898044	12.498863
3	Historical Center	XX Settembre	41.906151	12.496895
4	Parioli/Nomentano	Villaggio Olimpico	41.932966	12.474157
...
98	Cassia/Flaminia	Santa Cornelia	42.029061	12.451673
99	Cassia/Flaminia	Prima Porta	42.001975	12.485970
100	Cassia/Flaminia	Labaro	41.990223	12.489245
101	Cassia/Flaminia	Cesano	42.077635	12.341911
102	Cassia/Flaminia	Foro Italico	41.930011	12.455765

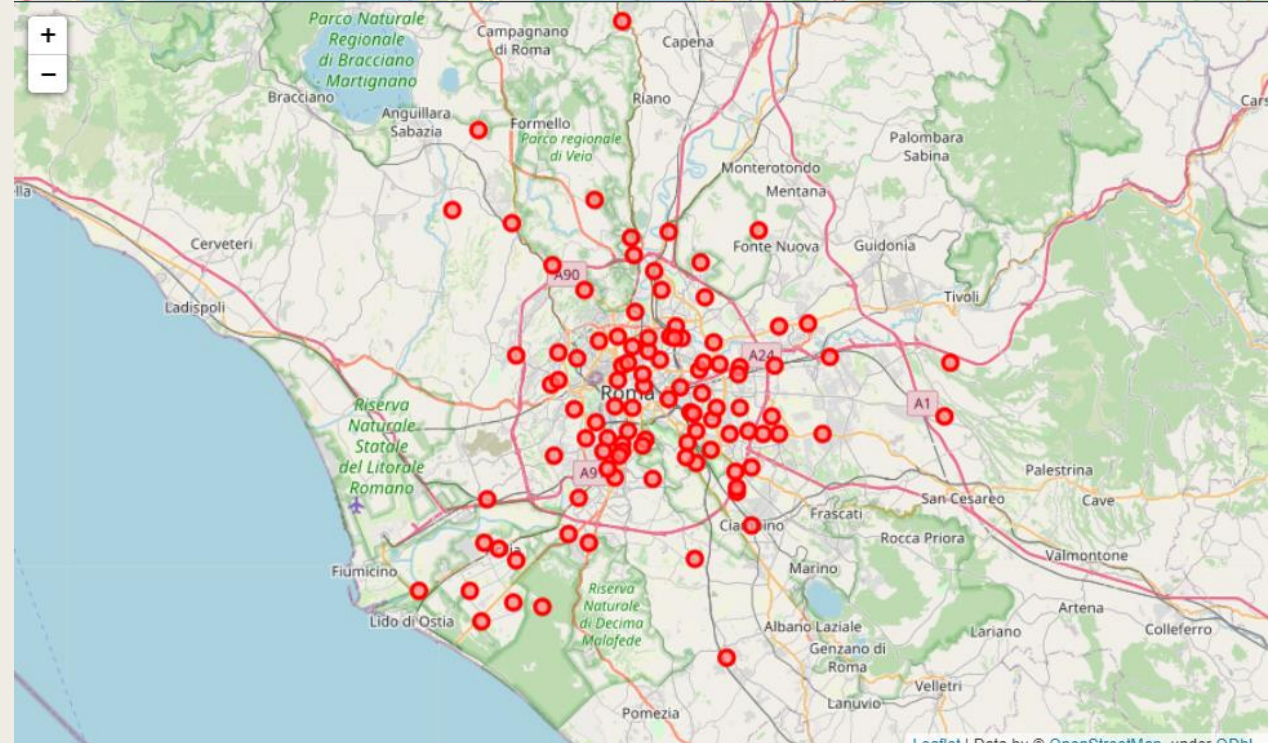
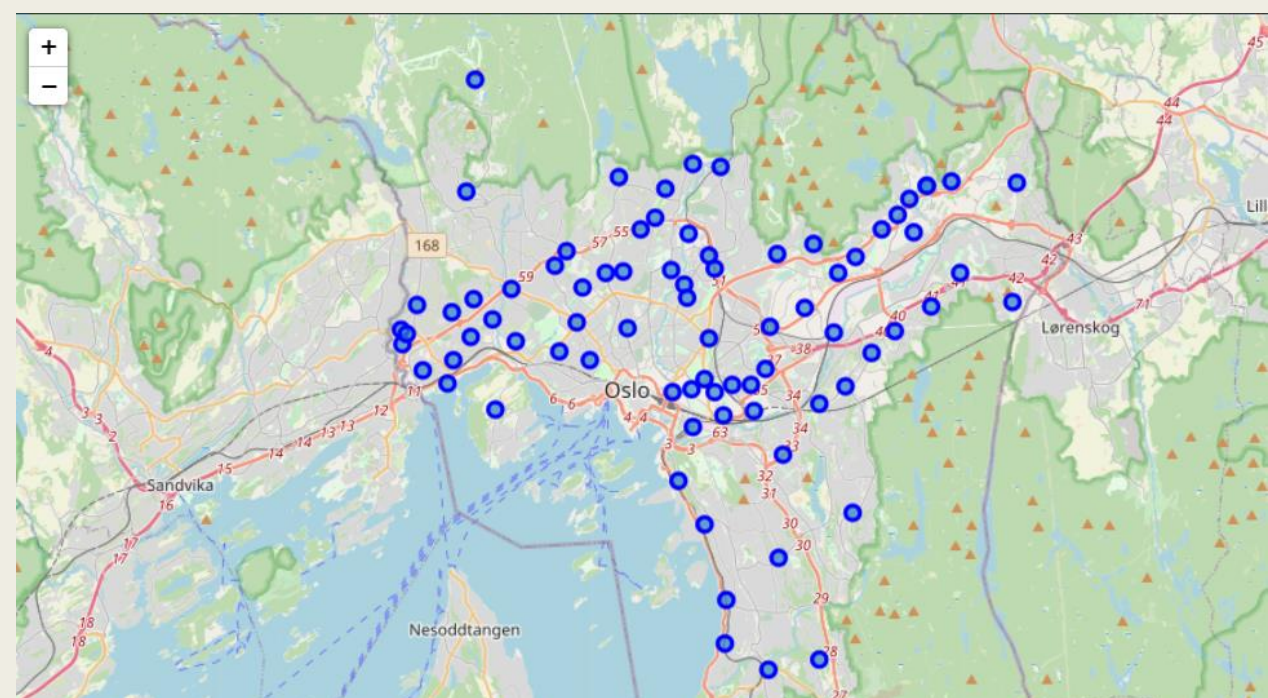
Rome's boroughs, neighborhoods and their coordinations.

	Borough	Neighborhood	Latitude	Longitude
0	Alna	Alnabru	59.926682	10.836498
1	Alna	Ellingsrud	59.934191	10.920897
2	Alna	Furuset	59.941067	10.896399
3	Alna	Haugerud	59.922116	10.854522
4	Alna	Hellerud	59.910067	10.829839
...
91	Vestre Aker	Sørkedalen	60.016105	10.612502
92	Vestre Aker	Smestad, Oslo	59.937212	10.684161
93	Østensjø	Bøler	59.884271	10.845545
94	Østensjø	Oppsal	66.961121	13.985395
95	Østensjø	Manglerud	59.898002	10.812755

Oslo's boroughs, neighborhoods and their coordinations.

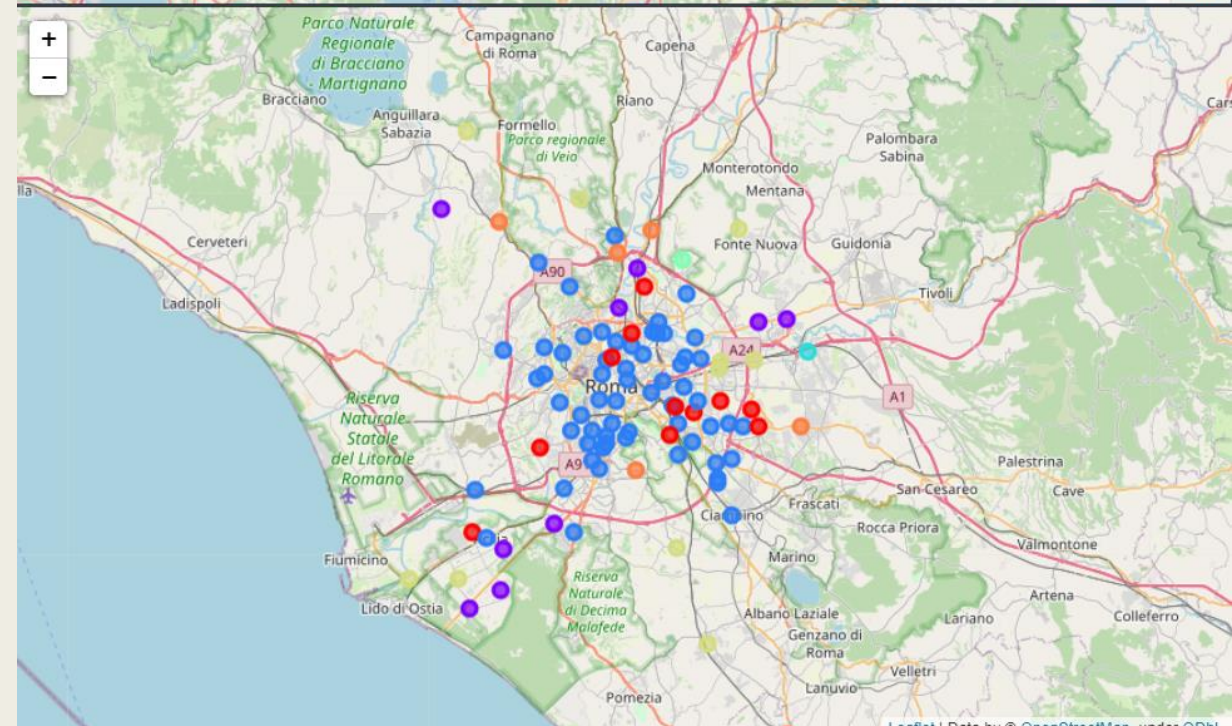
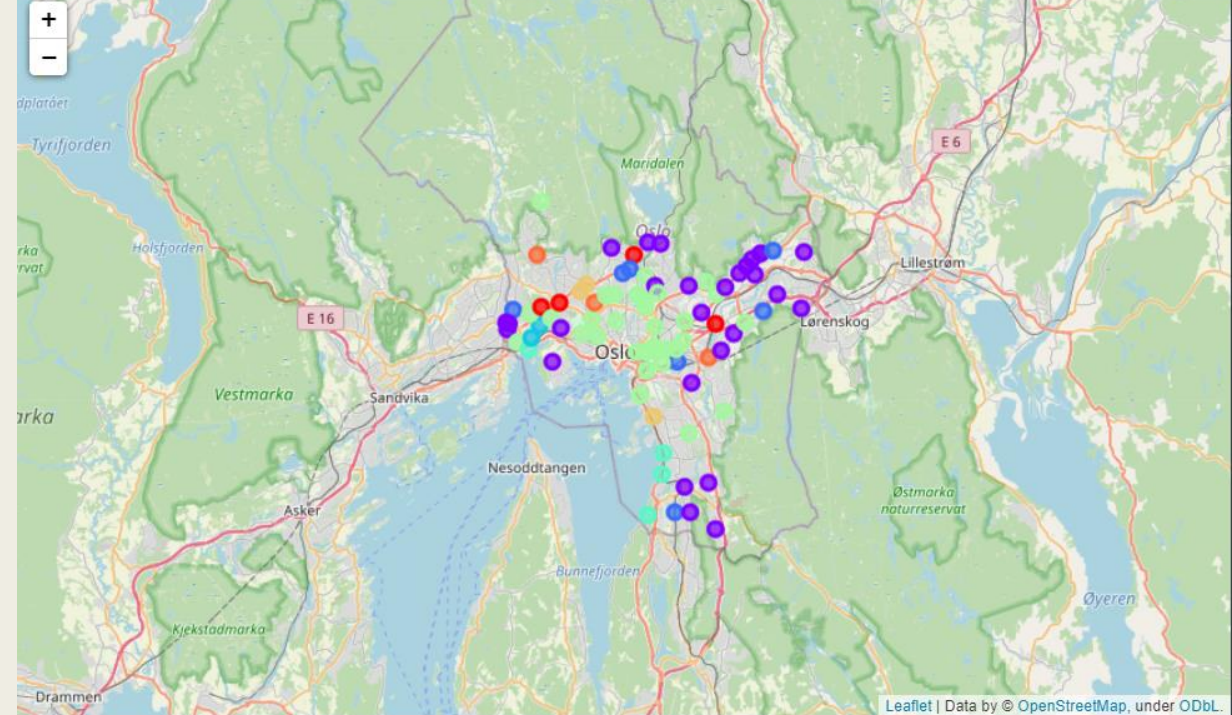
Methology

- Data Scrapping:
 - *Scrapping the neighborhoods' data from Wikipedia*
 - *Converting the data to a structured format*
- Filling missing data with OpenCage and Foursquare APIs
- K-Means Machine Learning
 - *Segmenting and Clustering similiar neighborhoods*
 - *Grouping the neighbrhoods, based on most common venues*



Result

- Clustering Similiar Neighborhoods
 - *Grouping based on common venues*
- Top most common venue
 - *Ranking the neighborhoods based on common venues for:*
 - Clothing
 - Food
 - Entertainment
 - Supermarket
 - Sport
 - Tourists lodging



Discussion

- Before starting a business, some further data analysis of the optimal location of shop may be required. The location of stores still changes so it's important to rerun the venue finding part of the code once in a while to update tables. The results below apply to mid 2020.
- Business recommendation based on clustering:
 - *In Oslo there is more sport related activities than in Rome, where it's more focused on Restaurants and Cafes.*
 - *For food business it is recommended to look for central neighbourhoods in Italy or the suburbs of Oslo*
- *Entertainment business is most profitable on the south of Italy and northern part of Oslo*
- *People look for entertainment in the western and eastern part of Rome and on the West from centre of Oslo*
- *It is recommended to build supermarkets in the middle of Oslo or on the suburbs of Rome*

Table: first cluster from Oslo clustering, shopping district.

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue
2	Furuset	Shopping Mall	Metro Station	Hockey Arena	Supermarket	Flower Shop	Fish Market
30	Ammerud	Metro Station	Grocery Store	Athletics & Sports	Supermarket	Soccer Field	Department Store
42	Tåsen	Metro Station	Shopping Mall	Grocery Store	Flower Shop	Fish Market	Fast Food Restaurant
44	Berg	Metro Station	Shopping Mall	Grocery Store	Flower Shop	Fish Market	Fast Food Restaurant
61	Mortensrud	Shopping Mall	Grocery Store	Metro Station	Convenience Store	Bus Station	Flower Shop
73	Ullernåsen	Trail	Hotel	Bus Station	Metro Station	Electronics Store	Food
74	Montebello	Metro Station	Hotel	Yoga Studio	Food	Flower Shop	Fish Market

Conclusion

- Located on south **Rome** seems to have more restaurants, cafes and food related places. On the other hand there aren't many sport related places like gyms or yoga studios. What's surprising, looks like there aren't many cultural places like galleries, libraries etc. either.
- **Oslo** consists of myriads of stores and shops. There are also many restaurant, cultural and sport-related places. On the other hand there aren't many hotels, tourist lodging or entertainment places.



Thank you for your attention



Made by Weronika Żak