Coffee shop in Oslo, Norway 2018

October 6

Coffee researchers

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Open a new coffee shop

Find the best location in Oslo, Norway

Norwegians are very fond about their coffee. They belong to the top of coffee consumers in the world, and you notice this when you visit them, or when you just walk on the street in the cities. Coffee shops are around, and they range from cheap coffee from one of the kiosks, to higher quality baristas.

To open a new store in the city of Oslo, is challenging. You need to find the right balance between location, attraction and competition.

> *"The top three coffee-drinking countries in the world are Finland, Norway, and Iceland.* (Bernard, 2018)"

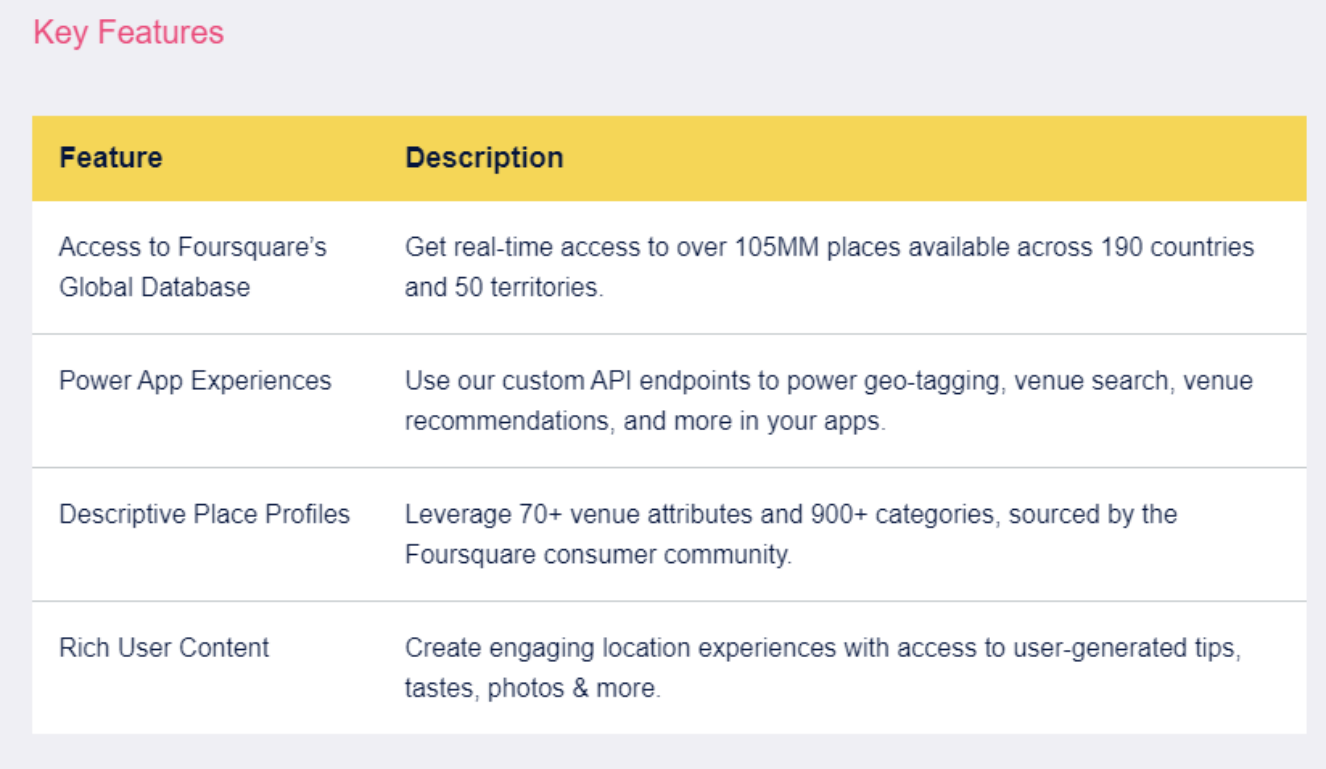
To find the best spot, I want to analyze the most important attractions, and of course understand where the current coffee shops are located.

Contents

Data description

To do this analysis, I need to source data. The best source for location data which is available is from Foursquare. The API is available for developers, and the documentation is well written. Querying this database with various requests, enables me to make a good selection of the data, which then can be used in combination with Python to visualize and decision making.

The API is documented on the Foursquare website, in the developer section[1].



Key Features

Feature	Description
Access to Foursquare's Global Database	Get real-time access to over 105MM places available across 190 countries and 50 territories.
Power App Experiences	Use our custom API endpoints to power geo-tagging, venue search, venue recommendations, and more in your apps.
Descriptive Place Profiles	Leverage 70+ venue attributes and 900+ categories, sourced by the Foursquare consumer community.
Rich User Content	Create engaging location experiences with access to user-generated tips, tastes, photos & more.

Figure 1: Foursquare api features

Once the right queries have been formed, it is a matter of running those queries and put them in data frames, using the Pandas library in Python.

The results from the query are in json format, and described in the Foursquare API documentation[2]

Methodology

First, I need to understand the Foursquare API and create the right url to query their database. I am intending to use Jupyter notebooks on the IBM cloud platform[3] to create a notebook using the

[1] https://developer.foursquare.com/docs/api
[2] https://developer.foursquare.com/docs/api/venues/search
[3] https://cloud.ibm.com

Python (version 3.7) language and create the visualizations and supporting data and graphs. Jupyter notebooks have the advantage that you can easily markup your comments, use and run scripts and code and easily install additional libraries and programs if necessary. The main libraries I intend to use are:

- Python 3.7 main programming language
- Pandas important library to use with data, tables, and data wrangling
- Folium library to use to plot data on maps from Openstreetmaps.

Results

The second step is to find the longitude and the latitude of a central place in Oslo, which I am going to use to find "near" venues.

```
# Find the coordinates for the city hall in central Oslo
address = 'Fridtjof Nansens plass, Oslo, Norway'

geolocator = Nominatim(user_agent="foursquare_agent")
location = geolocator.geocode(address)
latitude = location.latitude
longitude = location.longitude
print(latitude, longitude)
```

Figure 2: code to find coordinates

This gave me the coordinates:

- Latitude: 59.9128945
- Longitude: 10.7338271

And from here I can construct the GET request from Foursquare, with the search query, location, radius and limit.

After the query has been submitted, I normalize the results which I received in json format and put them in a Pandas dataframe. The results contain noise, and additional data I don't need for this exercise. So, a bit of data wrangling is necessary to clean things up. The final results is a list of venues, of a particular category, within a certain range.

I repeated the process for both the coffee selling venues and the parks in the vicinity. I increased the limit to 1500 meters to get a decent amount of results and used the city hall as the center.

Once I had all the results in two data frames, I plotted them on the map of Oslo, using the folium library.

Discussion

The city hall – the center – is marked with a red dot. The coffee venues with blue dots and the parks with green circles. The result is shown in the picture below.

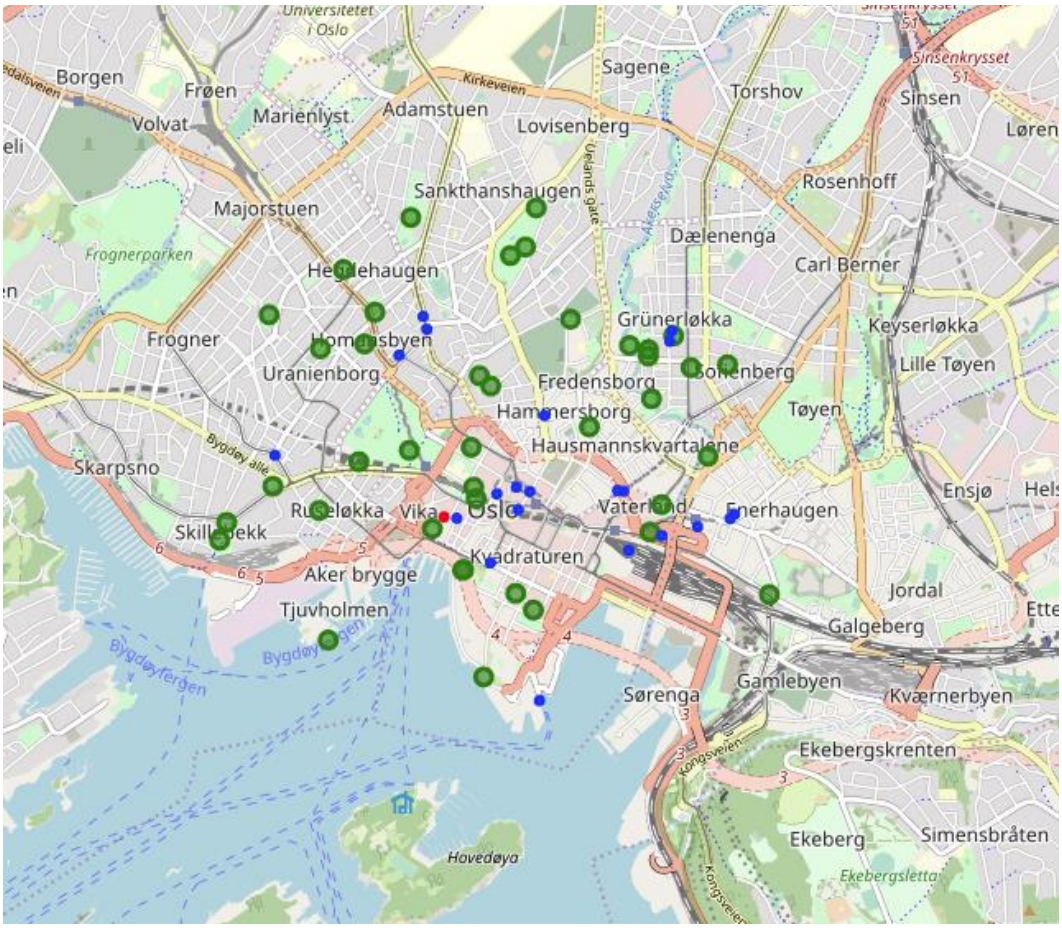


Figure 3: Parks (green) and Coffee shops (blue)

Oslo has many green areas, and in the central area there are plenty of coffee venues.The same for the area of Grünerløkka. Strangely enough, in the area around the palace, there are no venues known. Let’s zoom in.

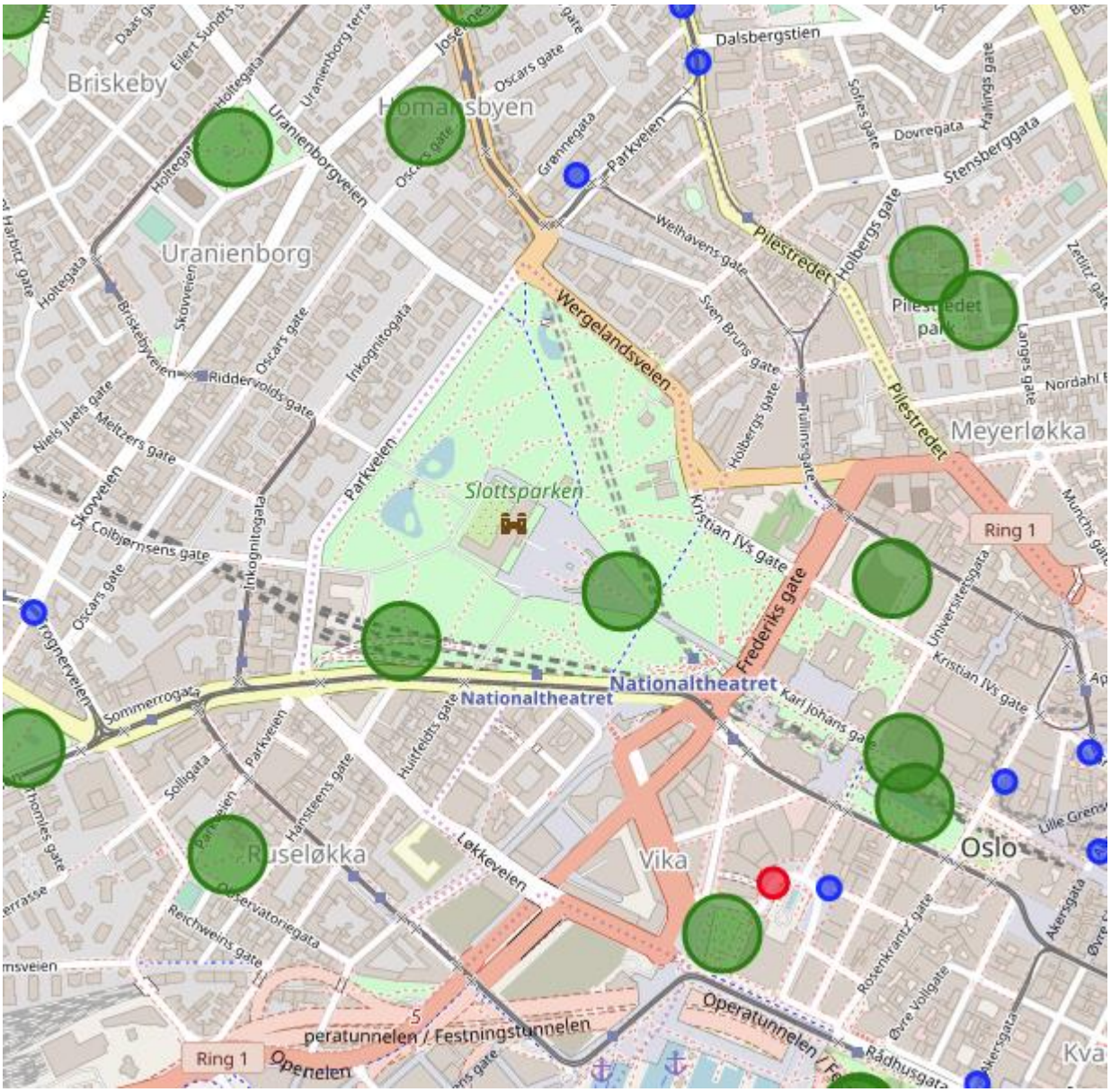


Figure 4: recommended area to open a coffee shop

This is a very touristic area, it is close to the most central place in Oslo, and it is around the royal palace. It doesn't look like there is much competition around either. This is the best place to open a coffee shop in Oslo.

Conclusion

Finding the best spot for a coffee shop in Oslo is – based on this data – not that difficult. There are very popular places that currently don't have a place nearby where you can enjoy a cup of coffee. You could argue that the data set is incomplete, and that maybe other pieces of data should be sourced.

I wonder if the Foursquare data is sufficiently accurate enough for these exercises outside the United States of America, but it is the best there is.

For this exercise it has been enough to reach the goal: which is for me to train and practice with data science, python, libraries and data.

October 2019

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References

Works Cited

Bernard, K. (2018, January 5). *Top 10 coffee consuming nations.* Retrieved from Worldatlas: https://www.worldatlas.com/articles/top-10-coffee-consuming-nations.html