

Introduction

Carl is living in Stockholm and is a big fan of high quality coffee and has great distain for the big coffee chains and their watery coffee. So he's planning on creating his own chain of take-away coffee shops, with only high quality coffee in environmentally friendly take away cups. For this he needs to find a location. Seeing as Carl will sell take-away coffee, the location needs to be in a place with a lot of people in movement.

One type of place where people are always on the move are metro stations. Usually these are already occupied by one or more venues selling coffee. So our mission is to find tube entrances where there are no coffee shops/cafes in the vicinity, to make sure there is not too much competition.

Description of data

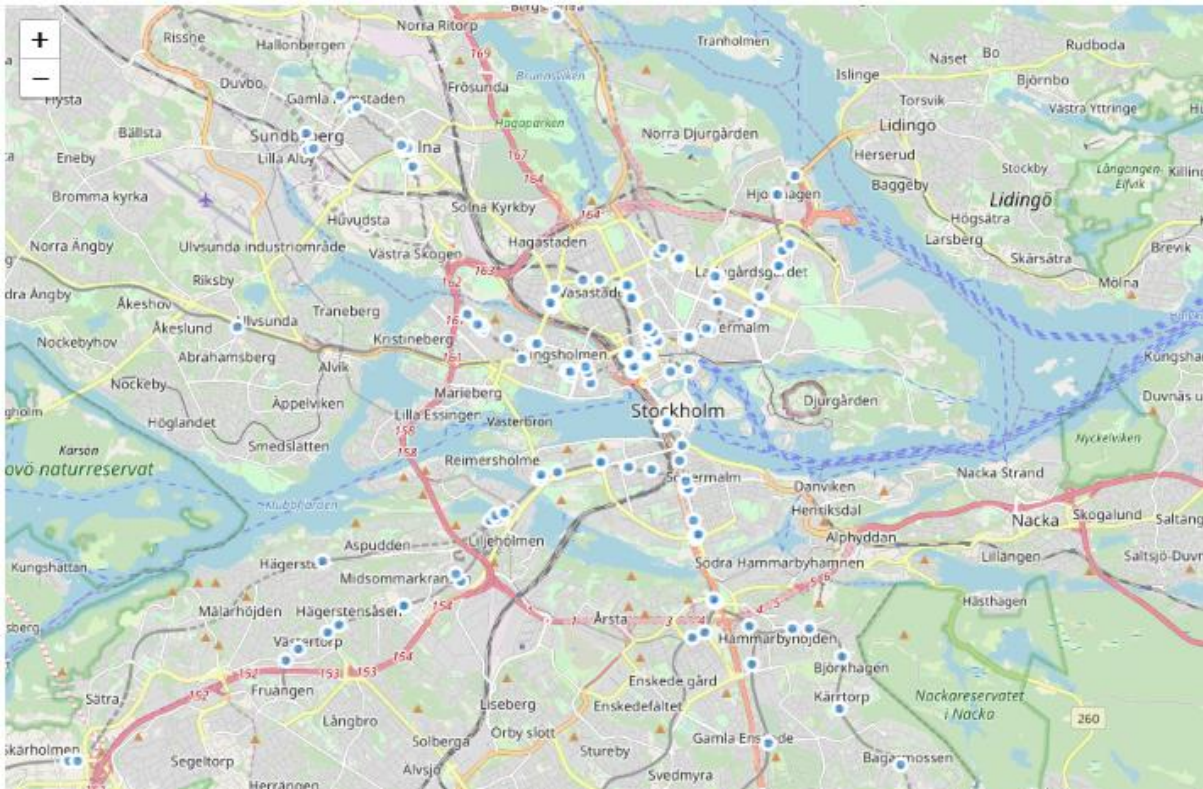
There are two main sets of data. One is a .csv file with coordinates of the majority of Stockholm's metro station entrances alongside Fourquare's API data.

I will check for venues selling coffee in the vicinity of metro entrances. These venues will then be put on a heatmap of Stockholm alongside the metro entrances which will allow us to pinpoint several possible locations to establish Carl's coffee shops.

Example of metro entrance location:

	Station	Entrance Name	Latitude	Longitude
0	Abrahamsberg	Abrahamsbergsvägen	59.336516	17.9521
1	Axelsberg	Axelsbergs Torg	59.304359	17.9749
2	Bagarmossen	Bagarmossens centrum	59.276318	18.1313
3	Bergshamra	Gamla vägen.	59.379409	18.038
4	Bergshamra	Bergshamra centrum	59.381551	18.0363
5	Björkhagen	Björkhagen	59.291148	18.1155
6	Blåsut	Blåsut	59.290030	18.0911
7	Danderyds Sjukhus	Mörbylund Inverness	59.389910	18.0421
8	Danderyds Sjukhus	Bussterminal	59.390118	18.0429
9	Danderyds Sjukhus	Mörbyskolan, Vendevägen	59.392167	18.0417
10	Danderyds Sjukhus	Danderyds sjukhus	59.392309	18.0402
11	Farsta	Farsta centrum	59.243294	18.0931

Metro stations located on a map of Stockholm

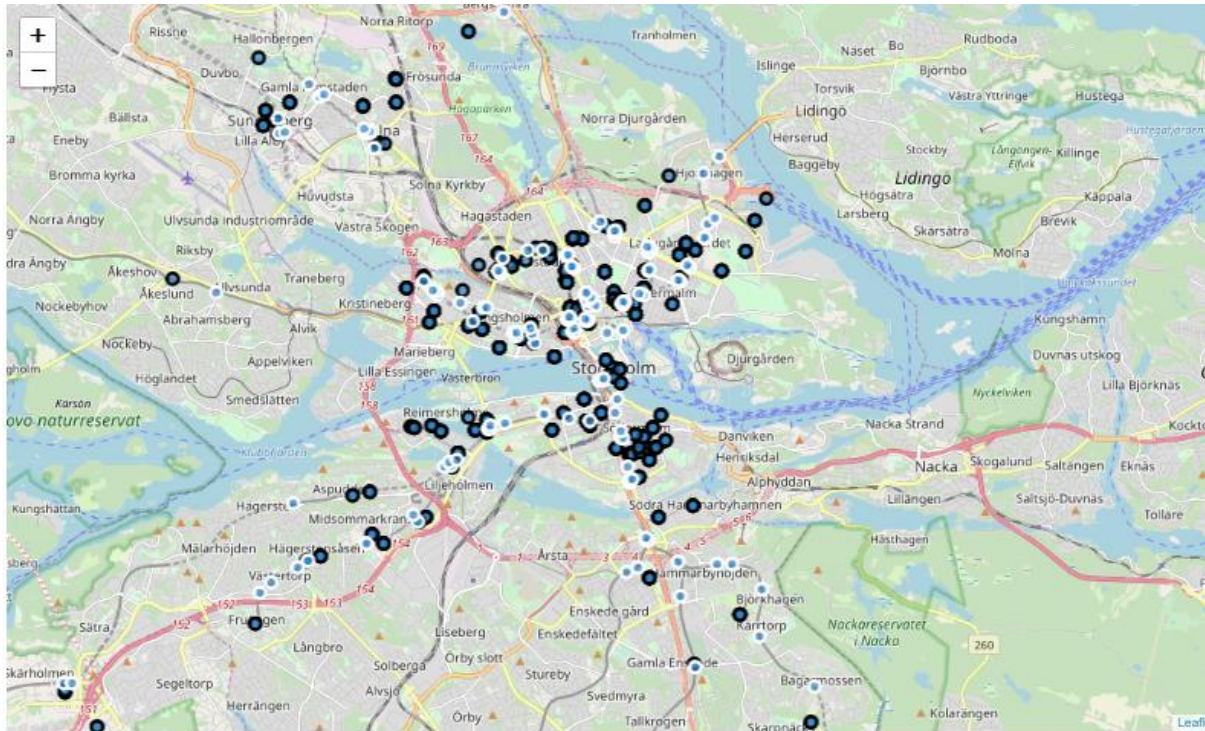


Foursquare is then used to find all venues around each metro station.

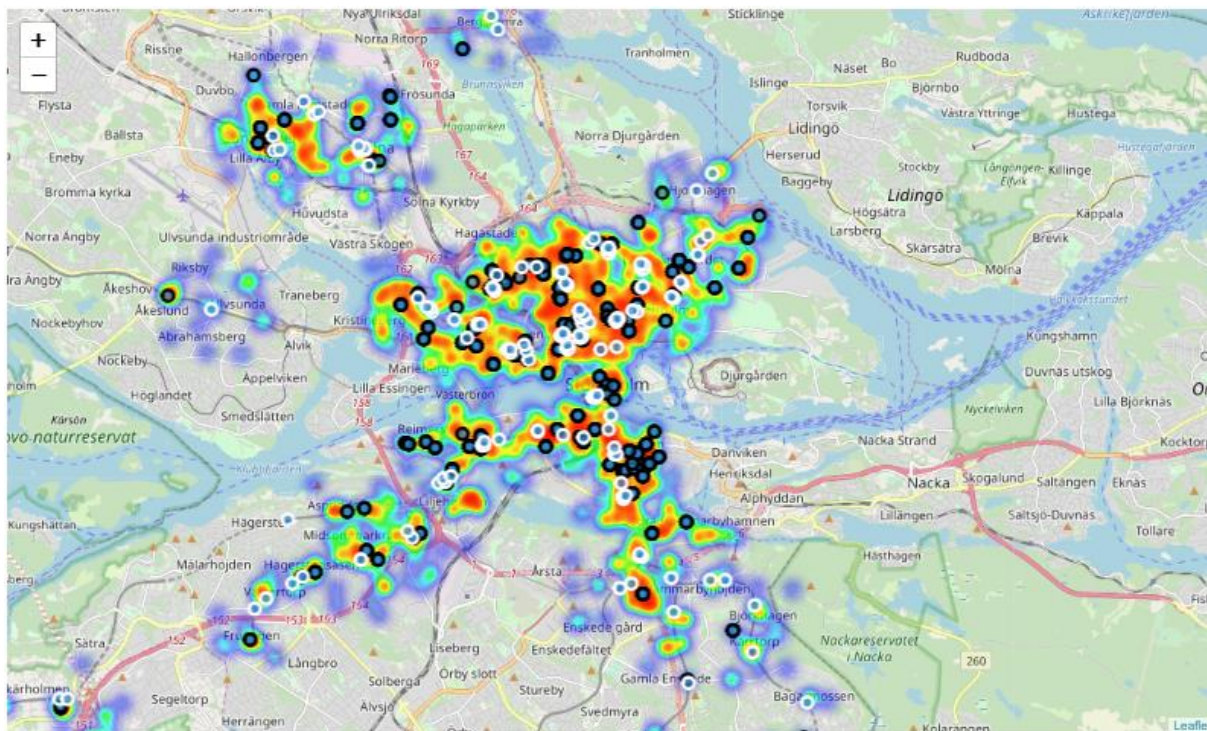
	Entrance	Entrance Latitude	Entrance Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Abrahamsbergsvägen	59.338518	17.952102	Daisy's	59.340587	17.951140	Fast Food Restaurant
1	Abrahamsbergsvägen	59.338518	17.952102	Friskis & Svettis Abrahamsberg	59.337785	17.948774	Gym / Fitness Center
2	Abrahamsbergsvägen	59.338518	17.952102	Feng Yuan Dumpling Sushi	59.330052	17.950888	Sushi Restaurant
3	Abrahamsbergsvägen	59.338518	17.952102	Ullsunda Slott	59.340859	17.964221	Castle
4	Abrahamsbergsvägen	59.338518	17.952102	Pizzeria La Bella	59.333929	17.947791	Pizza Place

Where there are 11,885 venues in Stockholm spread out on 249 unique types of venues. However, we are only interested in venues mainly serving coffee. So we filter for Coffee shops and cafes which leaves us with 1,075 venues to map out.

Map now looks as follows:
Metro stations are white and coffee shops are black.



But this alone won't help us. A good indicator if people are active in the areas are other types of venues. We will therefore create add all types of venues to the map using HeatMap. The redder and area is, the more active it is and the more potential customers to our coffee shops.



If we now explore the map we will be able to find locations with few or no coffee shops that are also very active. For example Västertorp, where there are plenty of venues, a metro station but no

coffee shops. A perfect opportunity to sell coffee to hurried commuters!



Discussion:

Using location data is a very good way of doing initial research on possible locations for a new venue. It could be even more useful if more factors are used. This project only used three major factors (Metro entrances, presence of direct competitors, presence of other venues). While other venues might be a good indicator of activity in an area, there are most likely better indicators on how much movement there is in an area and how likely these people are in buying coffee on the run. Other factors to include is for example rent prices in the area, alongside employment costs and what demography the people who are usually in the area.

As previously mentioned, the methods used in this report are very useful to get a good indication on possible locations for a new venue and a good base to stand on to do further research. Based on the research of this project, Carl should definitely have a look at the Västertop area for a possible first coffee shop.