

# Introducing new bicycle parking locations

# Introduction

- ▶ Düsseldorf is a city on the River Rhine in western Germany and is the capital city of the state of North Rhine-Westphalia. It is one of the economic centers of the country,
- ▶ City have some official bicycle parking spots but most all of them are located on railway station. Can we endorse a location in Duesseldorf to open a new bicycle parking?.
- ▶ New bicycle parking spot will motivate people to go shopping or hangout on bicycles which can reduce the traffic and car parking problem in the city.

# Data sources

	LATITUDE	LONGITUDE	Name	PLZ
0	51.195687	6.768617	Aachener Straße - Aachener Platz	40223
1	51.241592	6.737520	Am Seestern U	40547
2	51.326056	6.775968	An den Kämpen	40489
3	51.329916	6.782346	Angermund S	40489
4	51.328519	6.779024	Auf der Krone	40489
...	...	...	...	...
70	51.209476	6.793592	Volksgarten S	40227
71	51.229640	6.797494	Wehrhahn S	40211
72	51.193260	6.815090	Werstener Dorfstraße	40591
73	51.318502	6.745620	Wittlaer U	40489
74	51.236378	6.797515	Zoo S	40237

75 rows × 4 columns

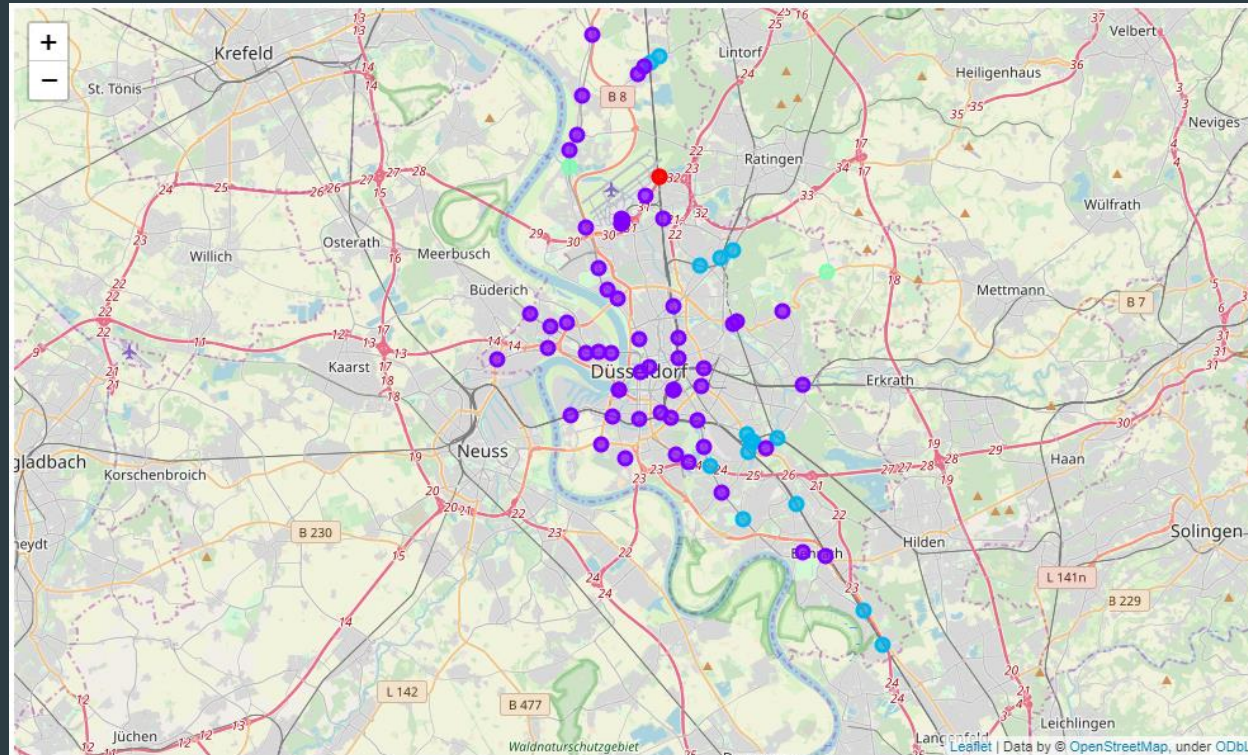
# Analysis

- ▶ utilizing the Foursquare API to explore the neighborhoods and segment them.

	Parking Latitude	Parking Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
ParkingName						
Aachener Straße - Aachener Platz	21	21	21	21	21	21
Am Seestern U	17	17	17	17	17	17
An den Kämpfen	2	2	2	2	2	2
Angermund S	6	6	6	6	6	6
Auf der Krone	5	5	5	5	5	5
...	...	...	...	...	...	...
Völklinger Straße S	33	33	33	33	33	33
Wehrhahn S	34	34	34	34	34	34
Werstener Dorfstraße	6	6	6	6	6	6
Wittlaer U	5	5	5	5	5	5
Zoo S	40	40	40	40	40	40

# Clustering

- Run k-means to cluster the parkings into 5 clusters





# Results

- ▶ As shown in the figure above a new bike parking station between 'Werstener Dorfstrasse' and 'Eller Süd' may provide an efficient bicycle parking place for the for the riders.

