# Battle of Neighborhoods - Gyms in Amsterdam

Course Capstone - Python Data Science
09.01.2020

# Business Problem

- Fitness industry is booming but the competition is getting tougher and property costs are high

→ How can the investors find the best location for a new gym?

# Questions to guide our analysis

- What are the potential districts to expand to? And why?
- Which districts should we avoid?
- How saturated is the market?
- Are the differences in the ratings in different areas?

# Data

**Amsterdam Neighborhood Data**

- Data Source:
  https://claircitydata.cbs.nl/dataset/districts-and-neighbourhoods-amsterdam/resource/d02c5f12-1cfa-4d7c-91d3-41af8e4ed634?view_id=5bae9d1c-2bfc-4f00-b15a-69a27632c41c
- Description: This dataset describes the different neighborhoods in Amsterdam with their respective latitudes and longitudes. It also contains useful information about the population of different age groups in each neighborhood. This dataset also contains the GEOJSON features that will be used to visualize the data on a choropleth map.

**Gyms/Fitness Centers in Amsterdam Neighborhoods**

- Data Source: FourSquare API
- Description: FourSquare API can provide us venue information that we can retrieve based on the Amsterdam Neighborhood latitudes and longitudes. We will further limit this data to include only information about sports venues (gyms) in Amsterdam Area. We will retrieve information such as: Venue Name, Category, Location, Rating, Likes etc.
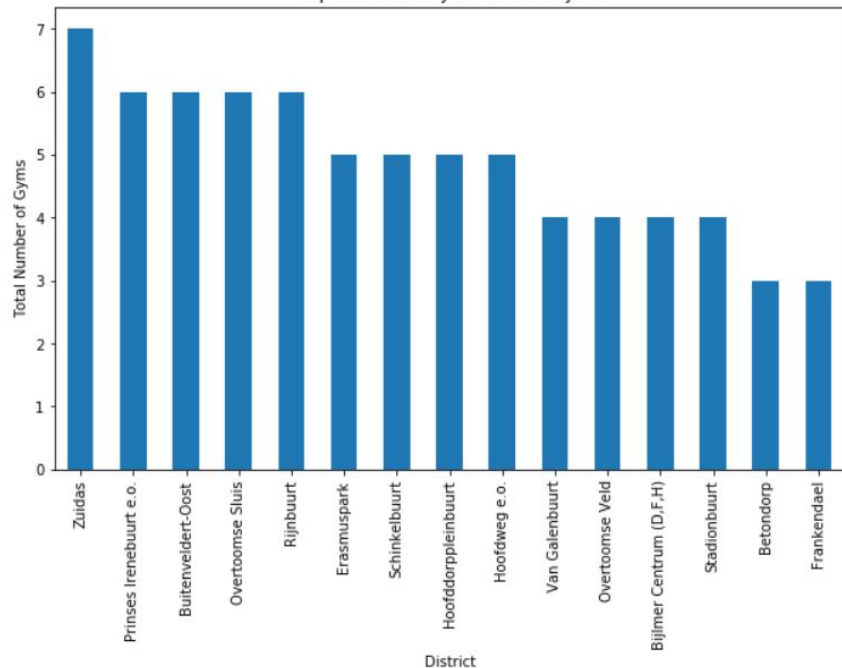
# Analysis

- 99 Unique Districts
- 68 Gyms
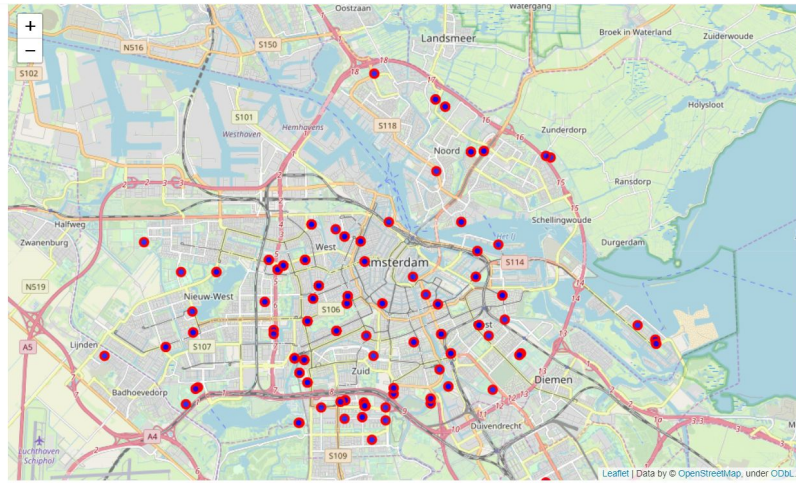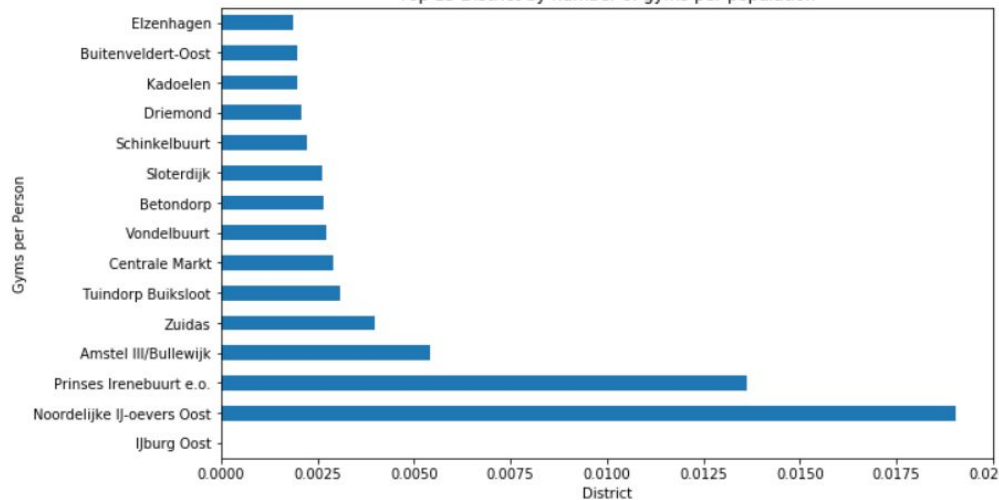
- Number of gyms ranging from 0 - 7
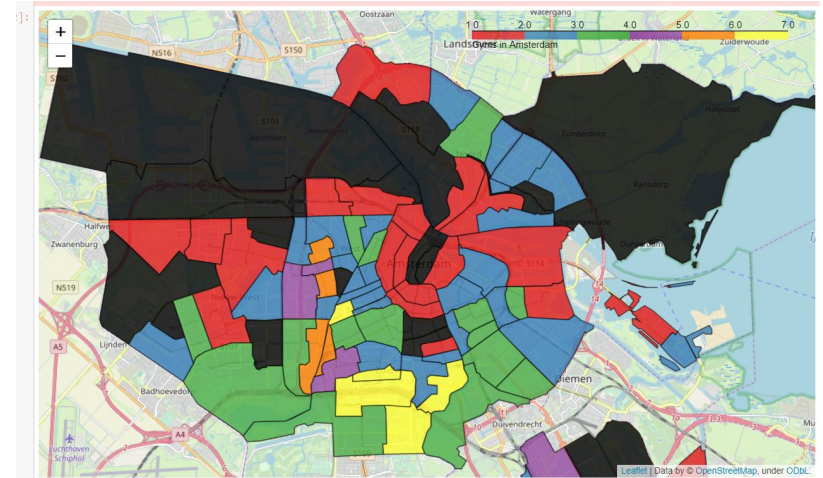
# Top(Not) Neighborhoods By...
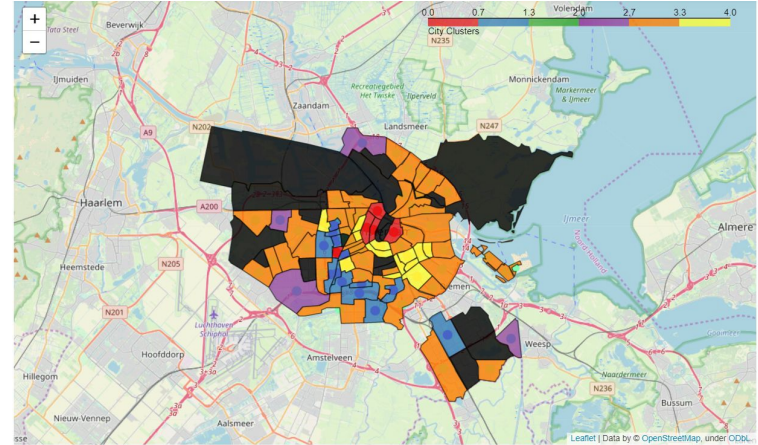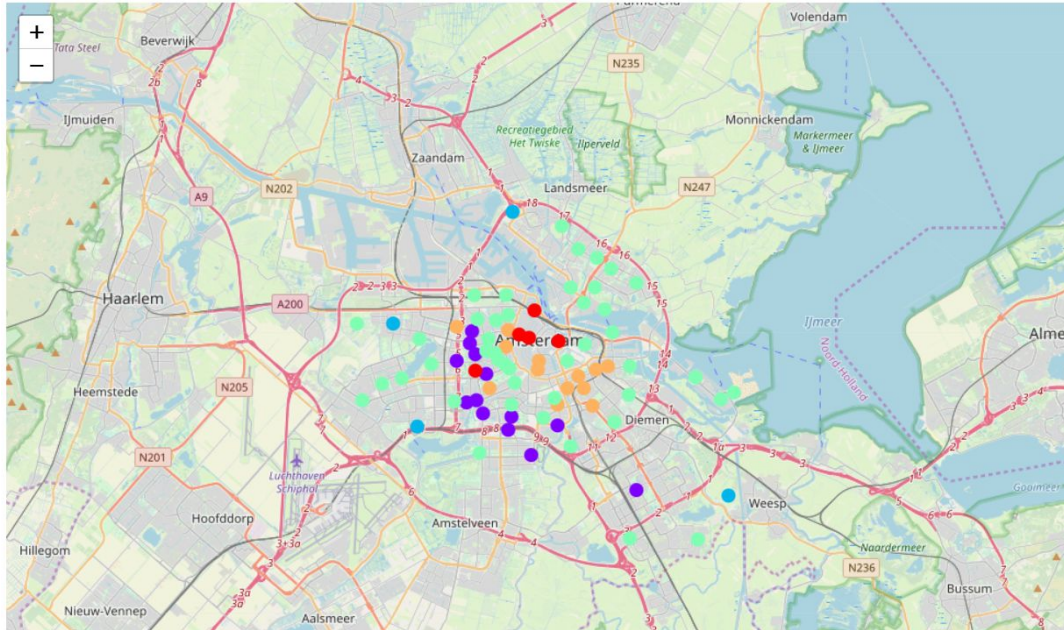


Top 15 District by Number of Gyms



Top 15 District by number of gyms per population

# Analysis - Clustering Neighborhoods

- Method: K-Means Clustering

# Analysis - Cluster Categories

The districts were categorized to 5 categories as follows:

- High Pop/High Rating/Low Gyms pp
- High Pop/Med Rating/High Gyms pp
- Med Pop/No Ratings/Med Gyms pp
- Med Pop/Low Rating/Med Gyms pp
- Med Pop/High Rating/Low Gym pp

(High Pop= High Population, Gyms pp = Gyms per person in the district)

# Recommendations

| Cluster | Recommendation | Note |
| --- | --- | --- |
| ● High Pop/High Rating/Low Gyms pp | Expand | This district is perfect for expansion. Big potential. customer populations, average high ratings and not a saturated market |
| ● High Pop/Med Rating/High Gyms pp | No go | This district is already saturated and customers are relatively satisfied. Not worth it! |
| ● Med Pop/Low Rating/Med Gyms pp | Moderate Go | This district has still some room for new gyms, and has a low rating. Hence with a great gym experience you can dominate the district! However, the move has to be quick before somebody else does it. |
| ● Med Pop/High Rating/Low Gym pp | Expand | This district is also very potential for a new gym, low saturation, and satisfied customers. Go for it! |
| ● Med Pop/No Ratings/Med Gyms pp | Further Analysis Needed | These district lack rating data. We can carry out additional analysis on them. |

# Highly Recommended Districts on a Map
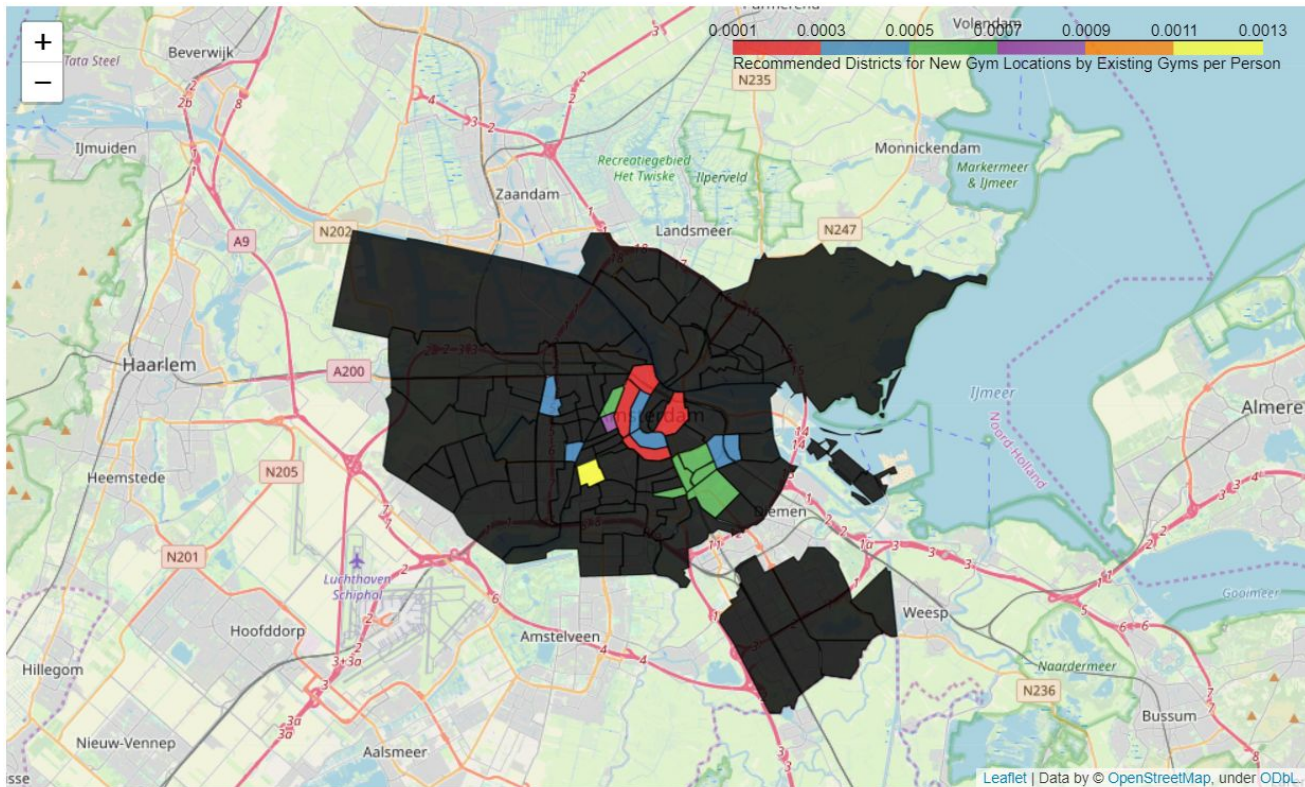


- Willemspark
- Da Costabuurt
- IJselbuurt
- Weesperzijde
- Frederik Hendrikbuurt
- Transvaalbuurt
- Frankendael
- Oosterparkbuurt
- Westindische Buurt
- Dapperbuurt
- Indische Buurt West
- De Kolenkit
- Grachtengordel-Zuid
- Grachtengordel-West
- De Weteringschans
- Haarlemmerbuurt
- Nieuwmarkt/Lastage
- Jordaan

# Limitations

- These analysis are limited by the nature of data used in the analysis
- The accuracy of the gym details is depended on the data available from the Foursquare API
- The carrier of this project is a beginner in Python and the analysis are still limited to superficial level

# Sources

- [Github Link to Analysis](#)
- [Link to Full Report](#)
- "Trends in the Netherlands", Figures Leisure, https://longreads.cbs.nl/trends18-eng/society/figures/leisure/
- "Leading Fitness Centers in the Netherlands, by number of clubs (2018)
  https://www.statista.com/statistics/819238/leading-fitness-centers-in-the-netherlands-by-number-of-clubs/