

Smart Relocation

Assisting a letting agency

Agenda

- Business understanding
- Data understanding
- Data preparation
- Data visualisation
- Modelling
- Results

Business understanding

- Optimizing letting process
- Creating profile of client
- Clustering potentials neighborhoods
- Faster turnaround

Data understanding

- Four sources of data
 - venues
 - rental costs
 - crime rates
 - distance to school

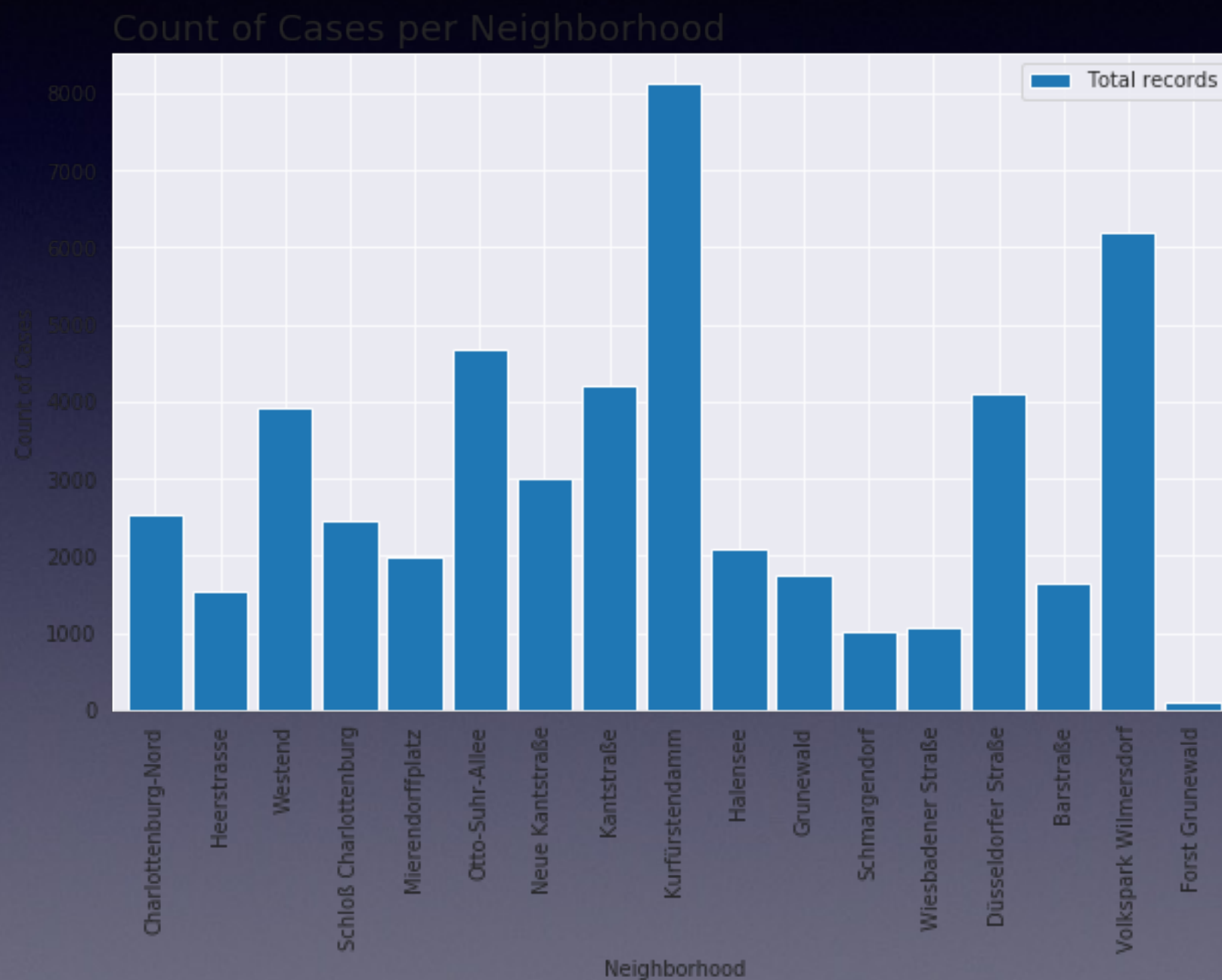
Data preparation

- Location: Berlin, Germany
- FourSqaure website for the top sites
- Open source crime statistics for Berlin
 - Download corresponding historical data from 2012 to 2018 as an excel file

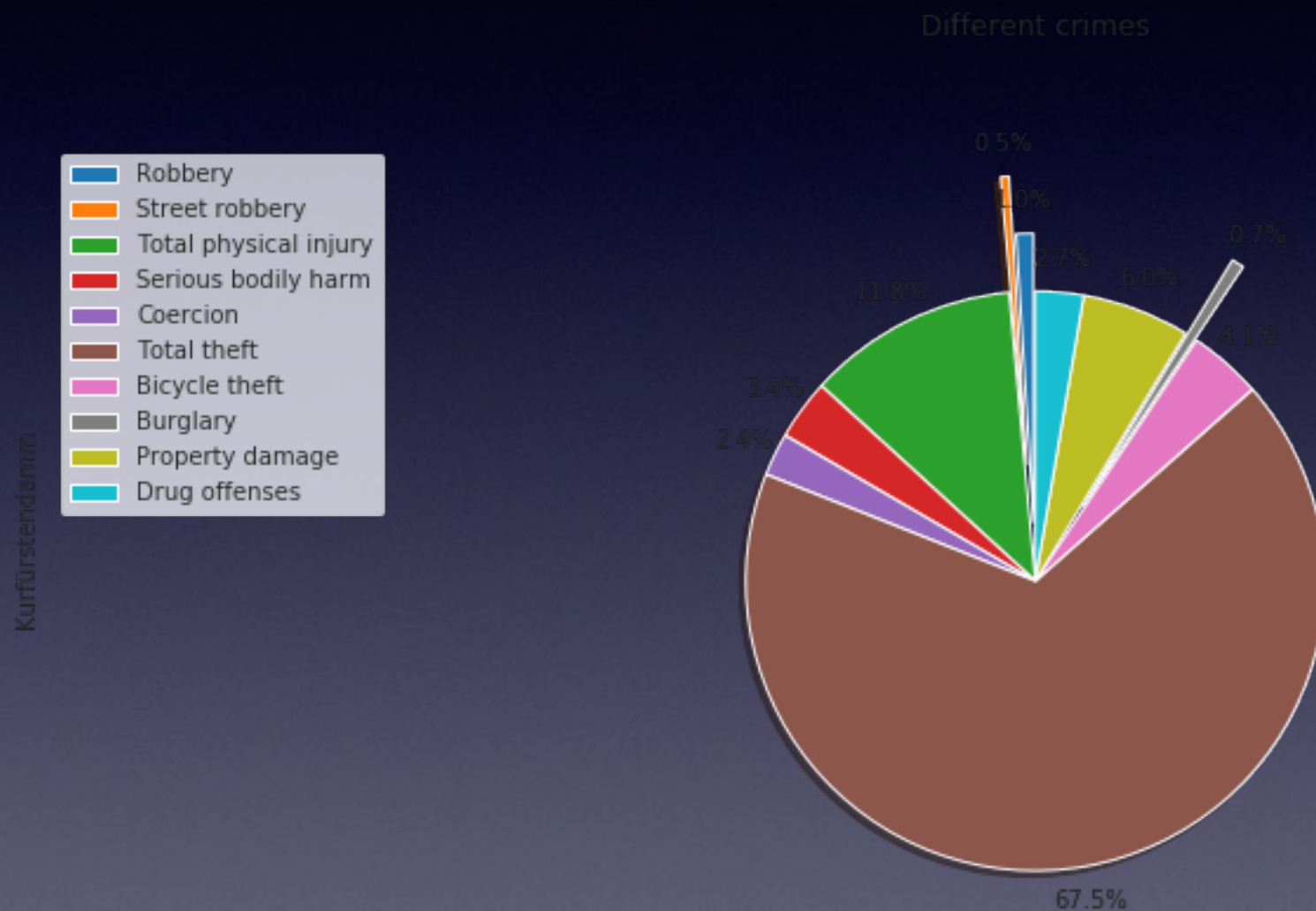
Data preparation

- Location: Berlin, Germany
- Open source letting data
 - Scrap for the average monthly rental costs per square meter
- Berlin government site for collection to collect information on the average grade
 - Scrap for the average grade of schools in the borough for years 2012-2018

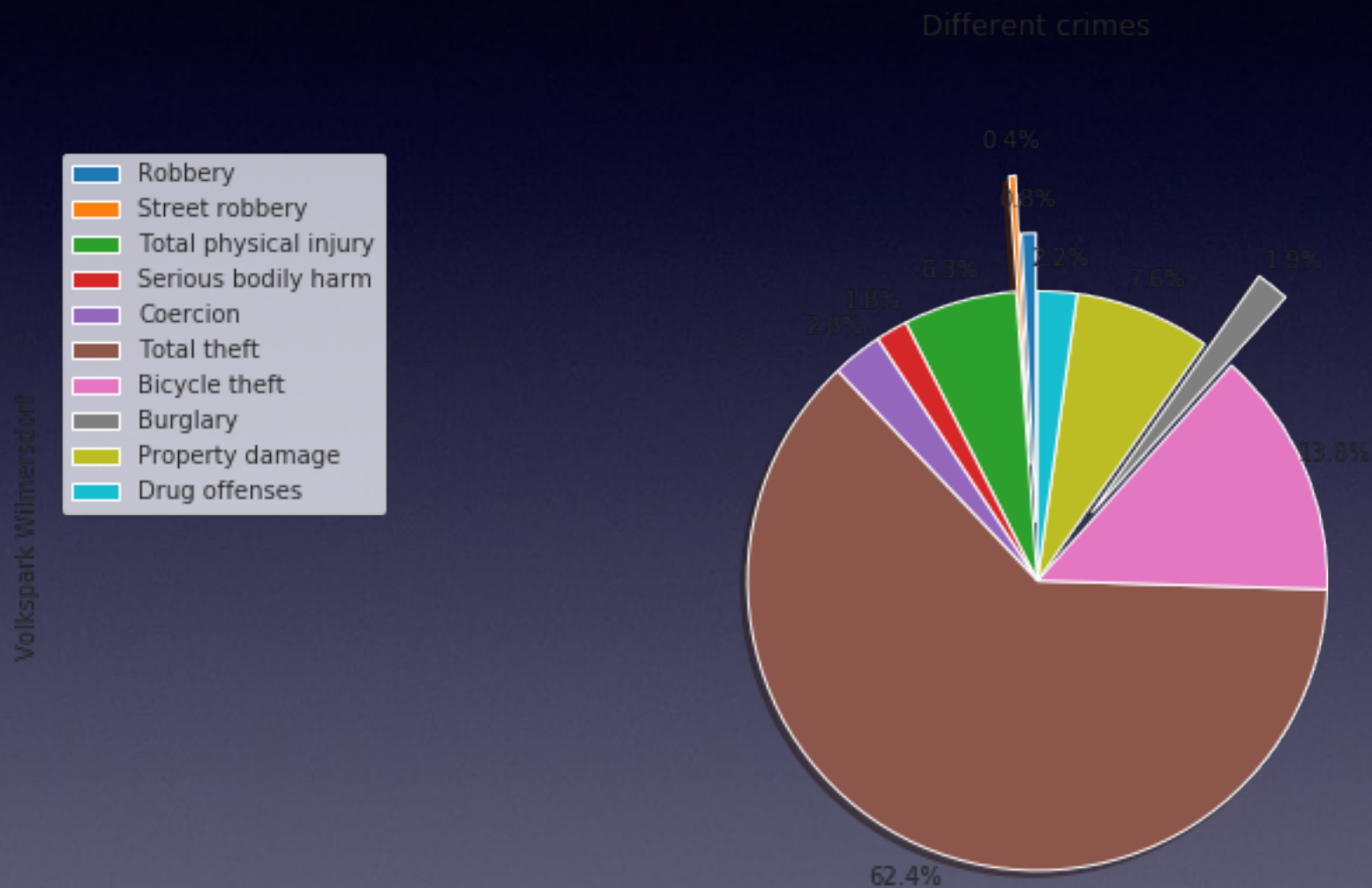
Data Visualization: crimes



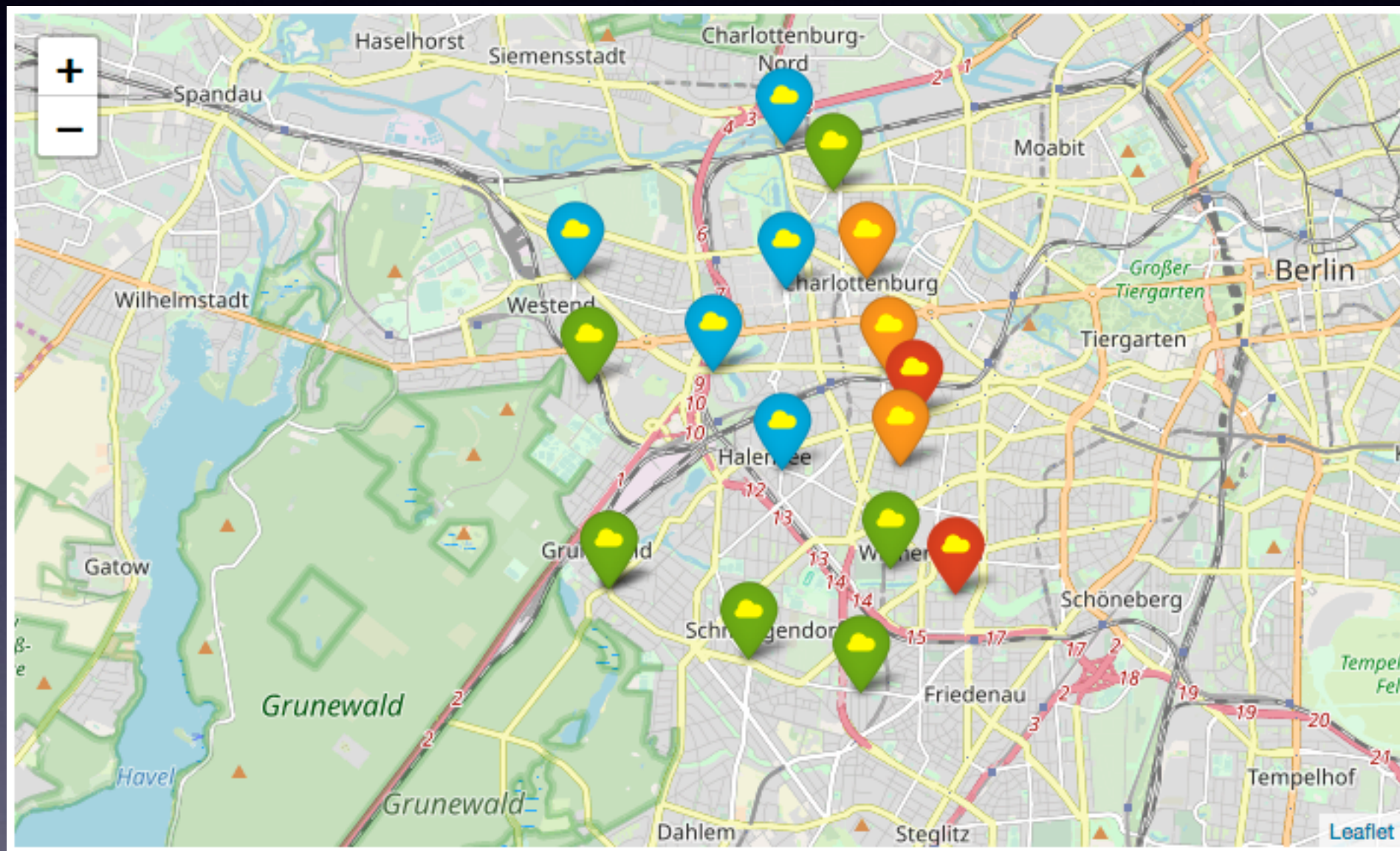
Data Visualization: crimes



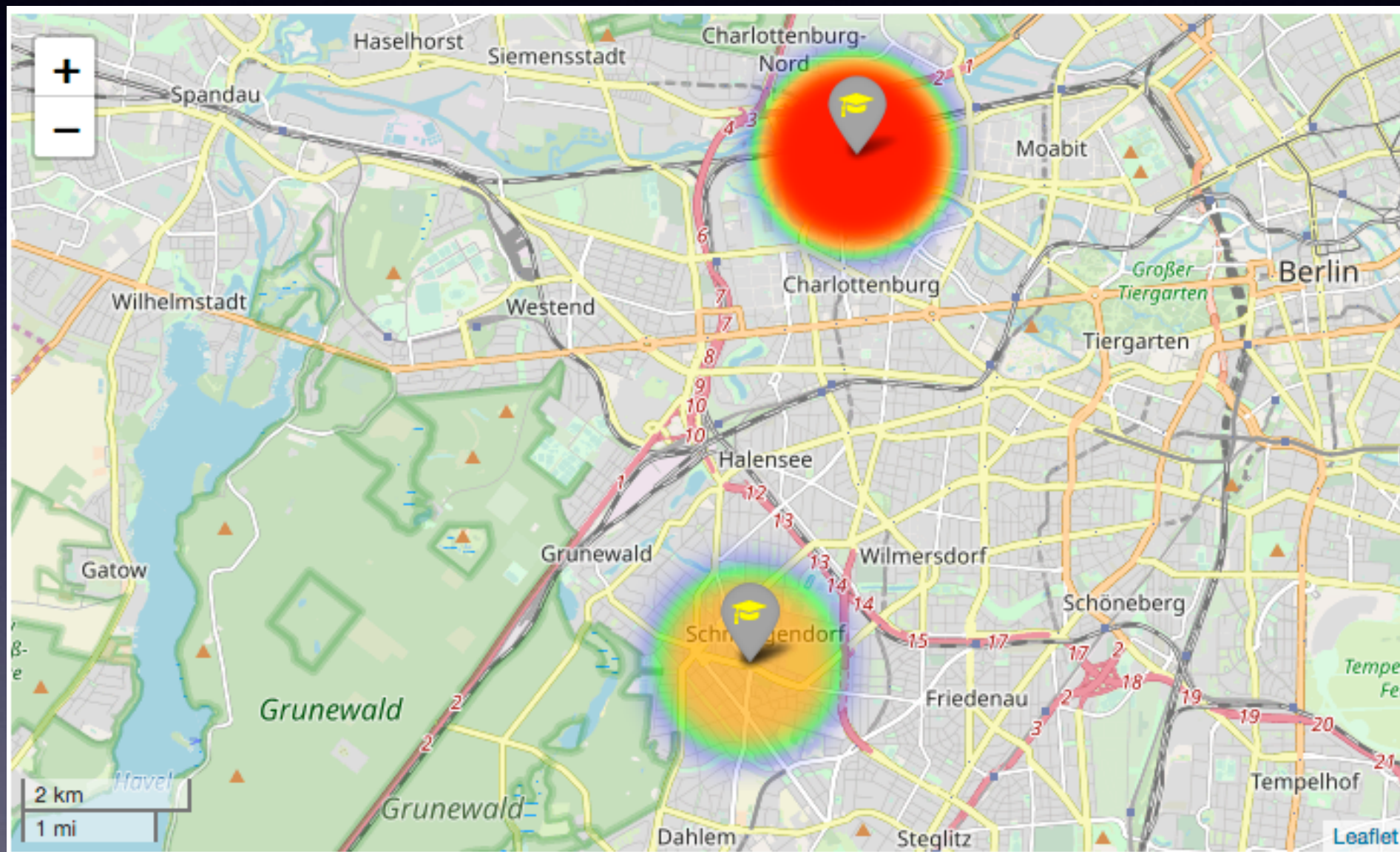
Data Visualization: crimes



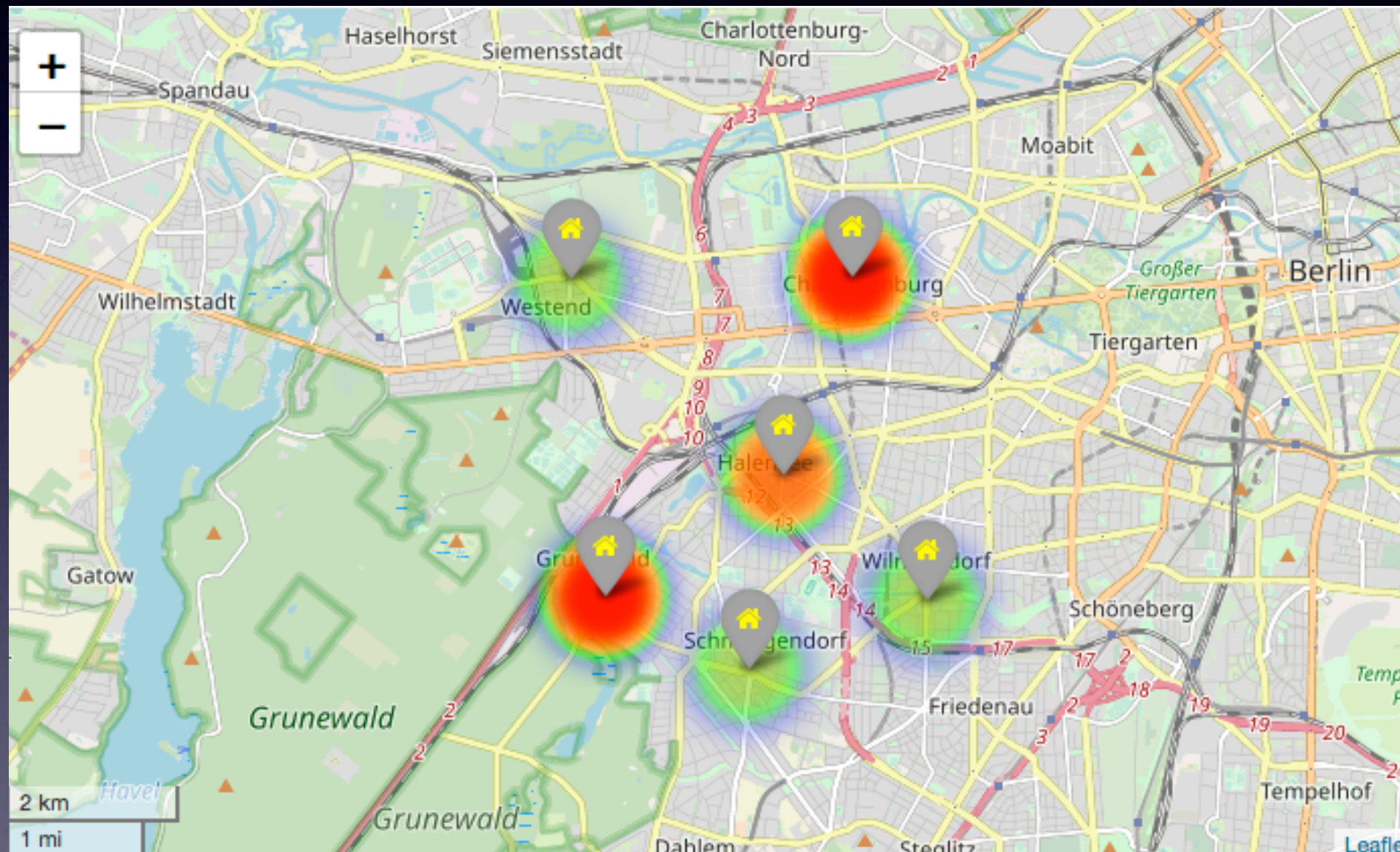
Data Visualization: crimes



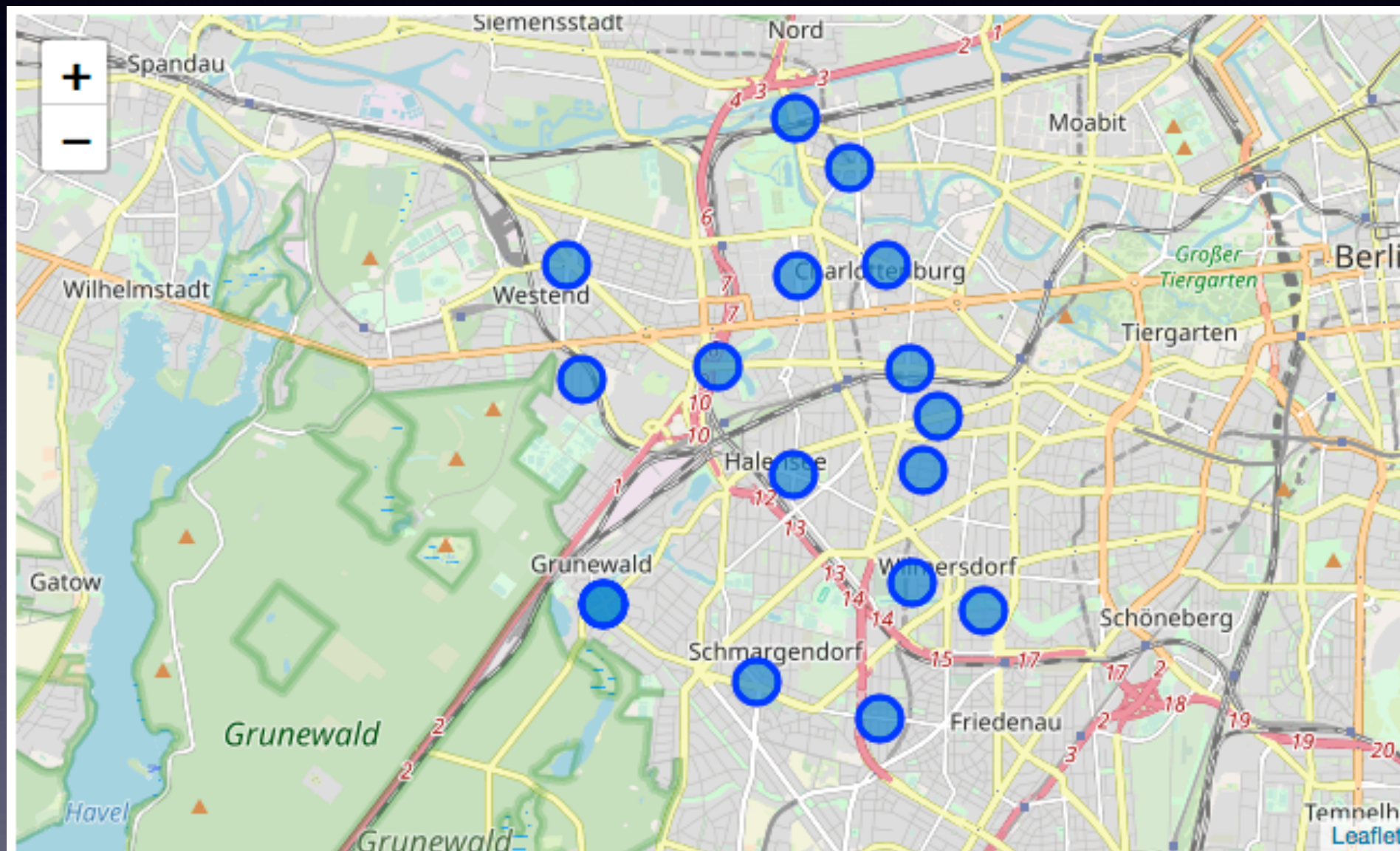
Data Visualization: schools



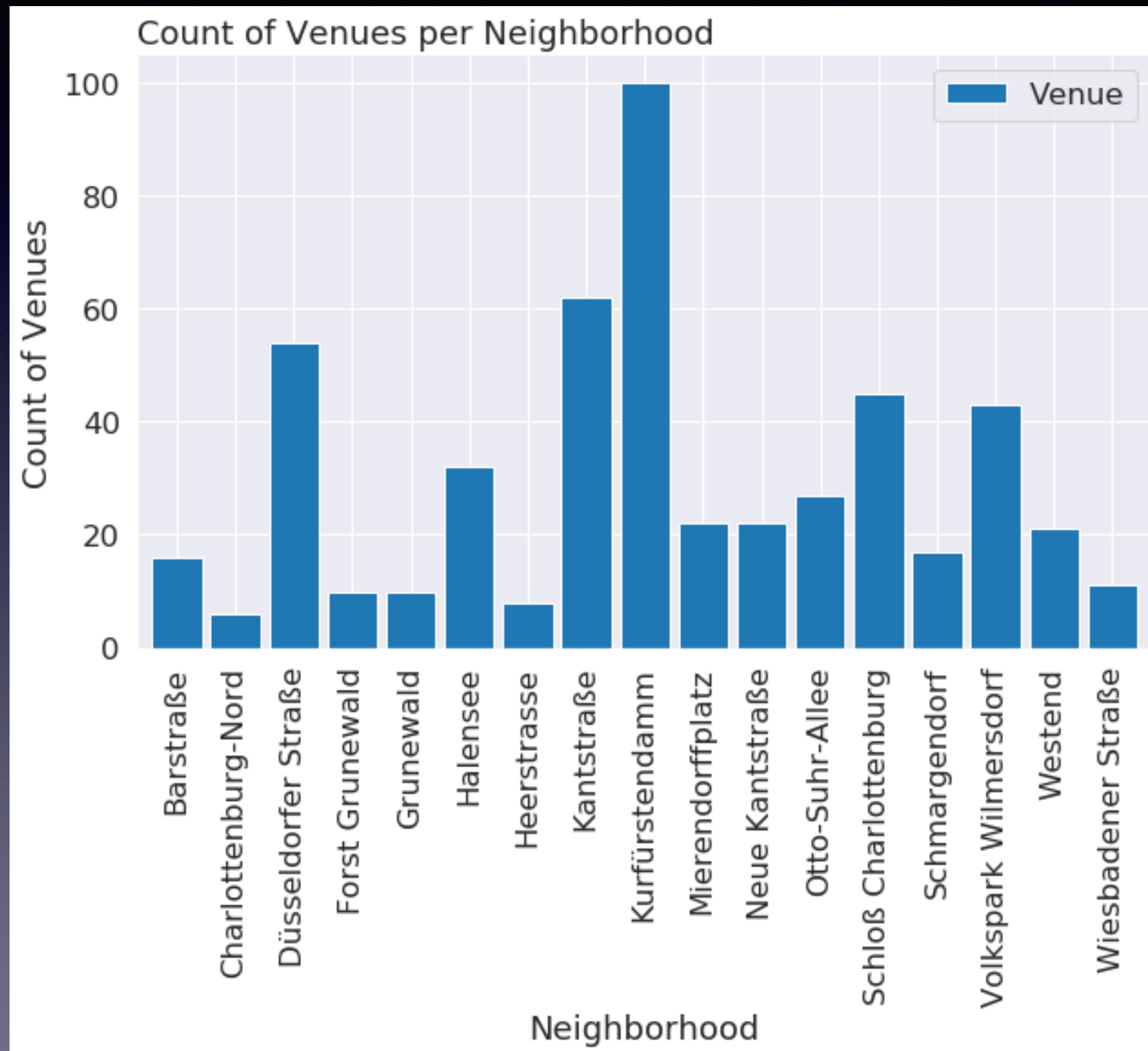
Data Visualization: rents



Data Visualization: venues



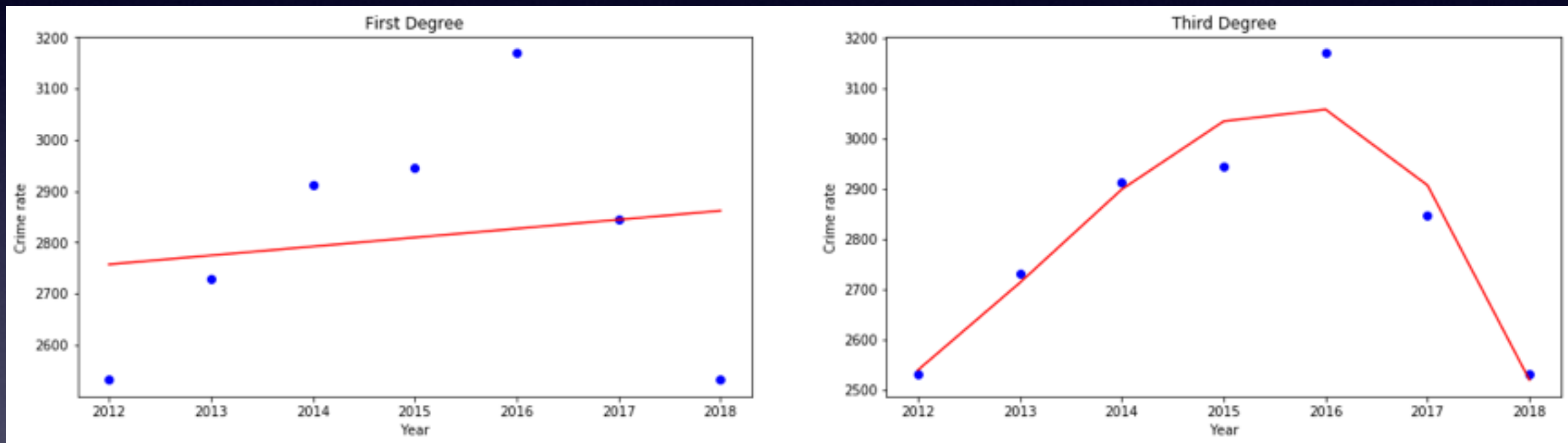
Data Visualization: venues



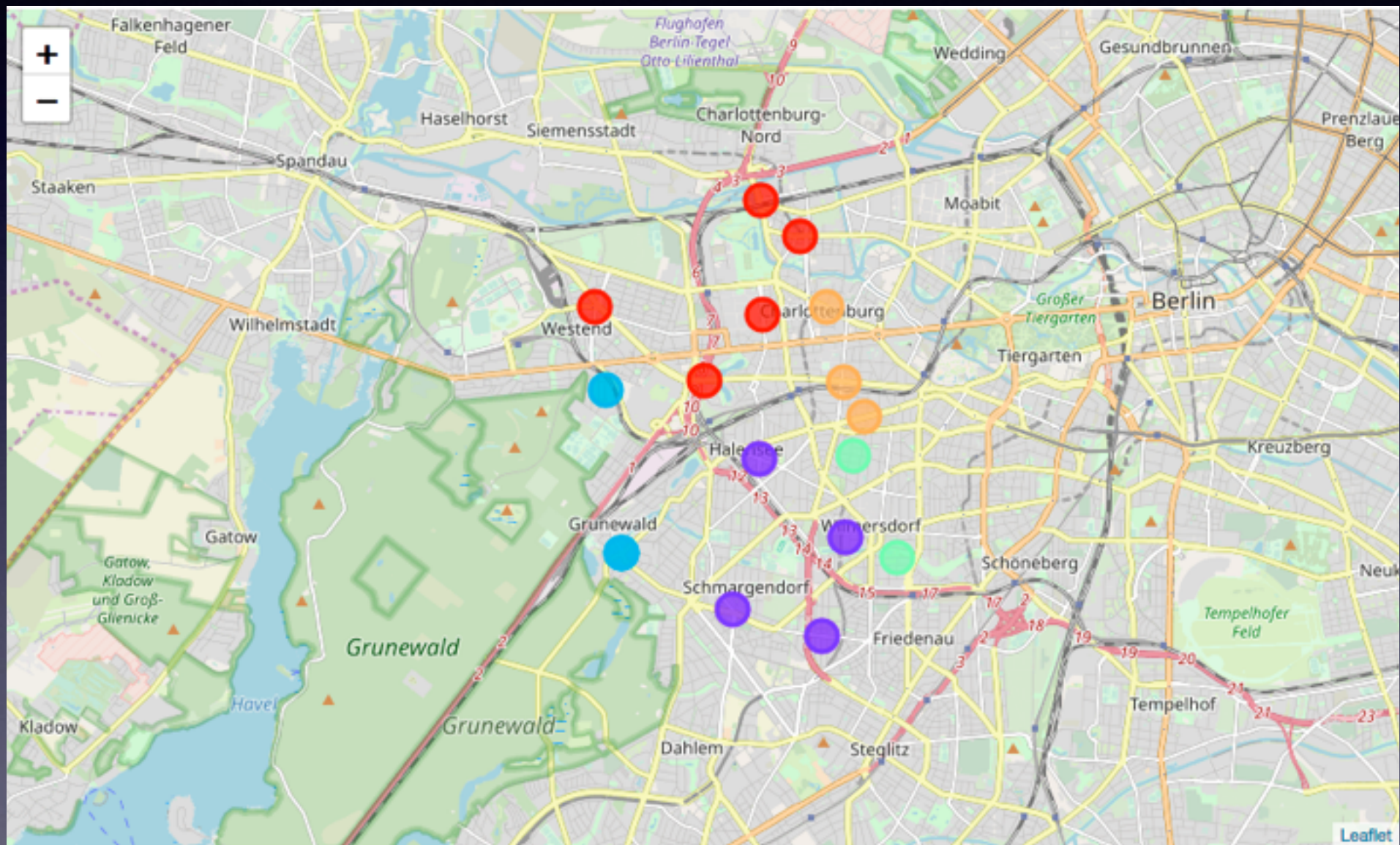
Modeling

- k-nearest neighbors algorithm (k-NN)
- linear regression
- k-means clustering and agglomerative clustering

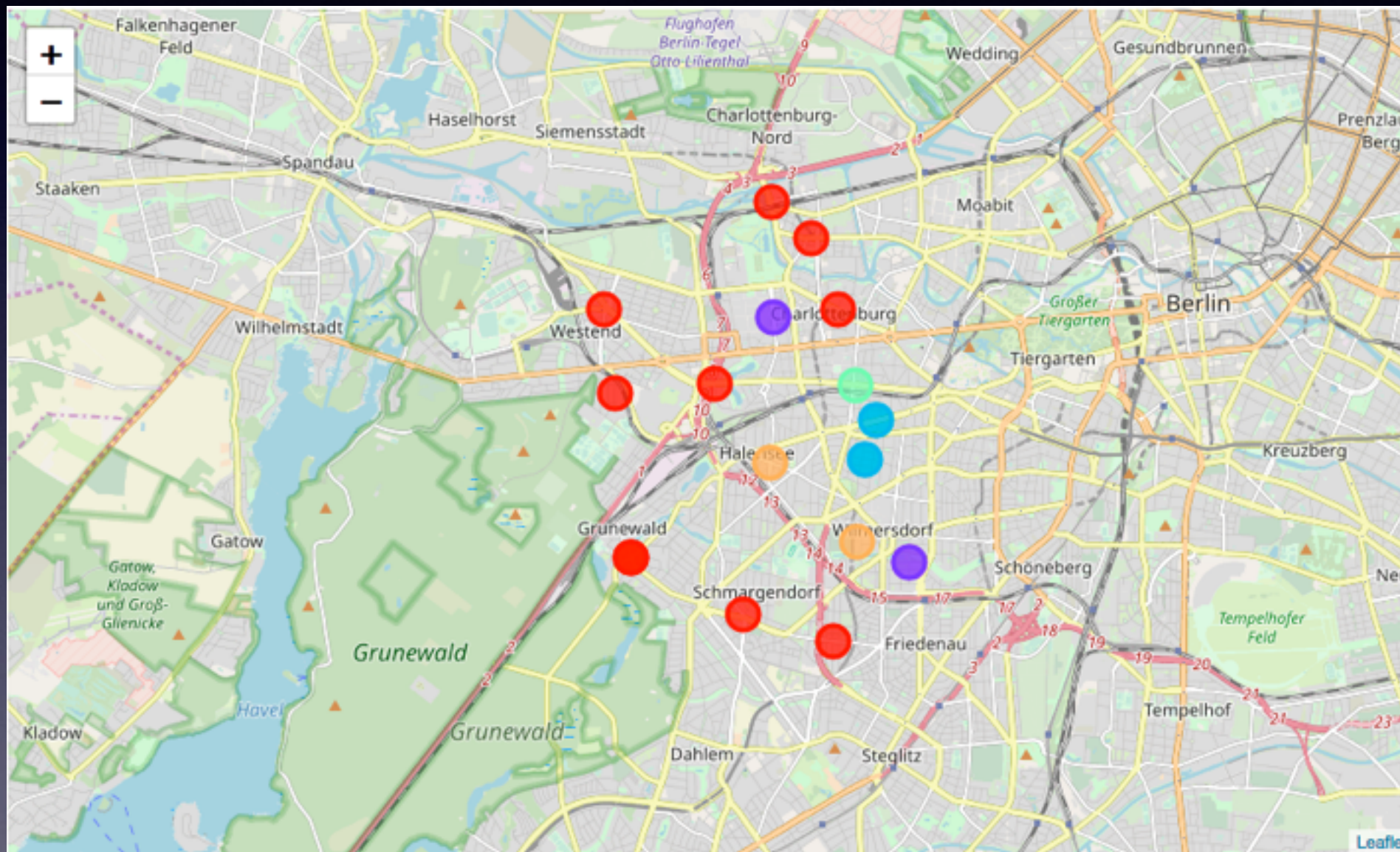
Linear Regression



Results: k-means



Results: agglomerative



Conclusions

- Optimizing the letting process
- Category driven clustering
- Including profile of clients
- Good performance of k-means clustering