

Apartment house for seniors in Prague

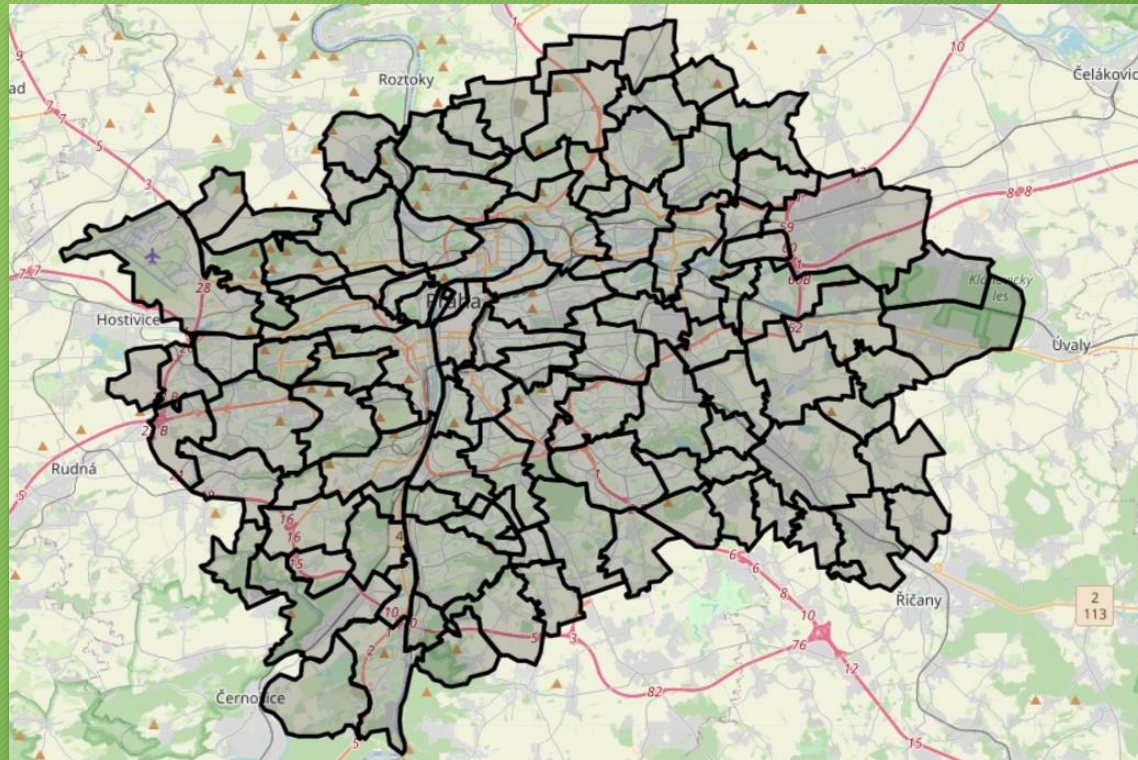
Project of selecting most suitable districts for building new apartment house for seniors in Prague

Introduction

- In this project, different districts of Prague, which is city in central Europe, were analyzed.
- Main target was to find district that would be most suitable for real estate development company, that wants to build a new apartment house, where individual apartments would be sold or rent mainly to seniors and older people.
- For this task, different criteria, that defined how each district is “good” for the purpose, were selected

Prague, Czech republic

City shown on map, divided into 112 cadastral areas. The task was to find most suitable district where apartment house for seniors should be built.



Motivation

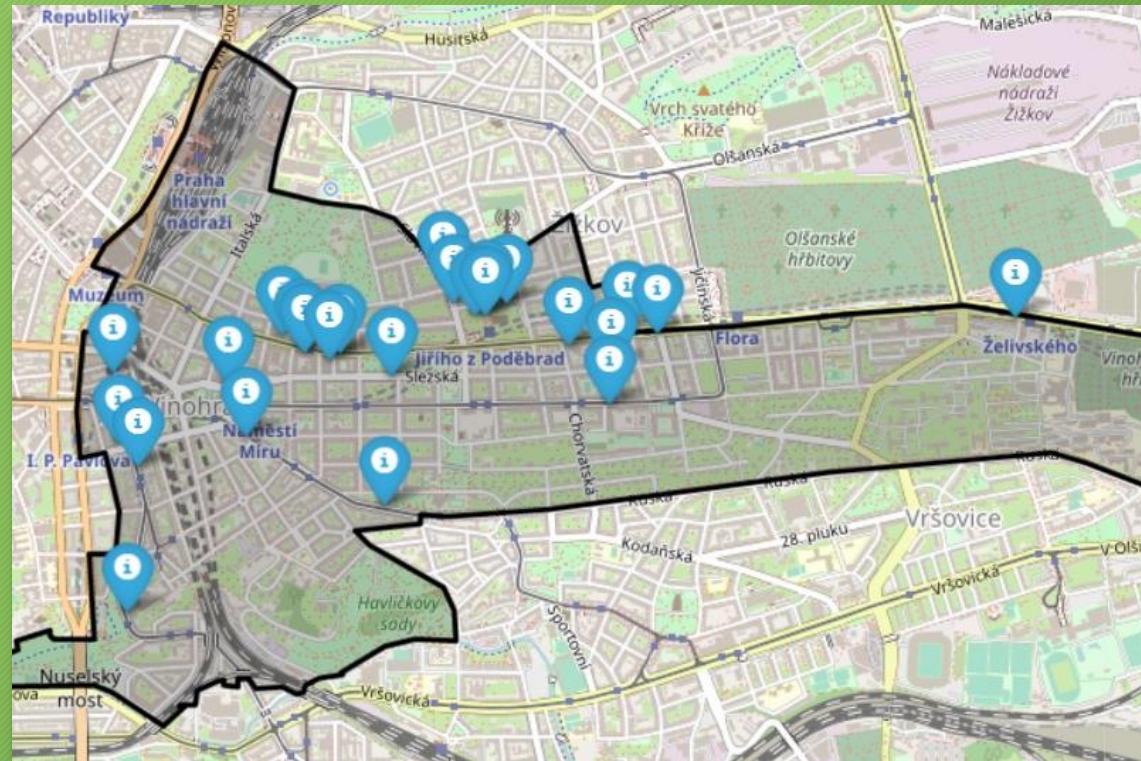
- Initial motivation is that fact, that for real estate development companies this information could be interesting for following reasons:
 - Average age in Europe is getting higher, so there is going to be more on more potential apartment renters or buyers of higher age
 - Seniors or elderly people usually have more money they collected during their lives, than young people
 - Seniors or elderly people are very reliable potential renters, in compare with students (potential problems with paying rent soon) or families with kids (potential apartment damage)

Criteria

- Several measureable criteria had to be selected for selecting best Prague district
- Criteria reflecting how much is a district noisy
 - Number/density of hotels, pubs, bars, clubs, and similar venues
 - Size of industrial or (with much smaller importance) commercial areas
 - Population density per square kilometer
- Criteria reflecting how many useful venues a district has
 - Size of nature areas (available to public) - this is also criteria that tells what is overall feel from district
 - Number/density of foodstores, health venues (such as pharmacies or hospitals) and public transport stations/stops.

Foodstores in Vinohrady

Vinohrady is name of one of Prague districts. Marks shows foodstores that are placed inside the district.



Land usage in Vyšehrad

Vyšehrad is another Prague district / cadastral area. Orange polygon shows shape of whole district, green polygons shows nature areas, gray polygons shows residential areas, and black polygons shows industrial areas.



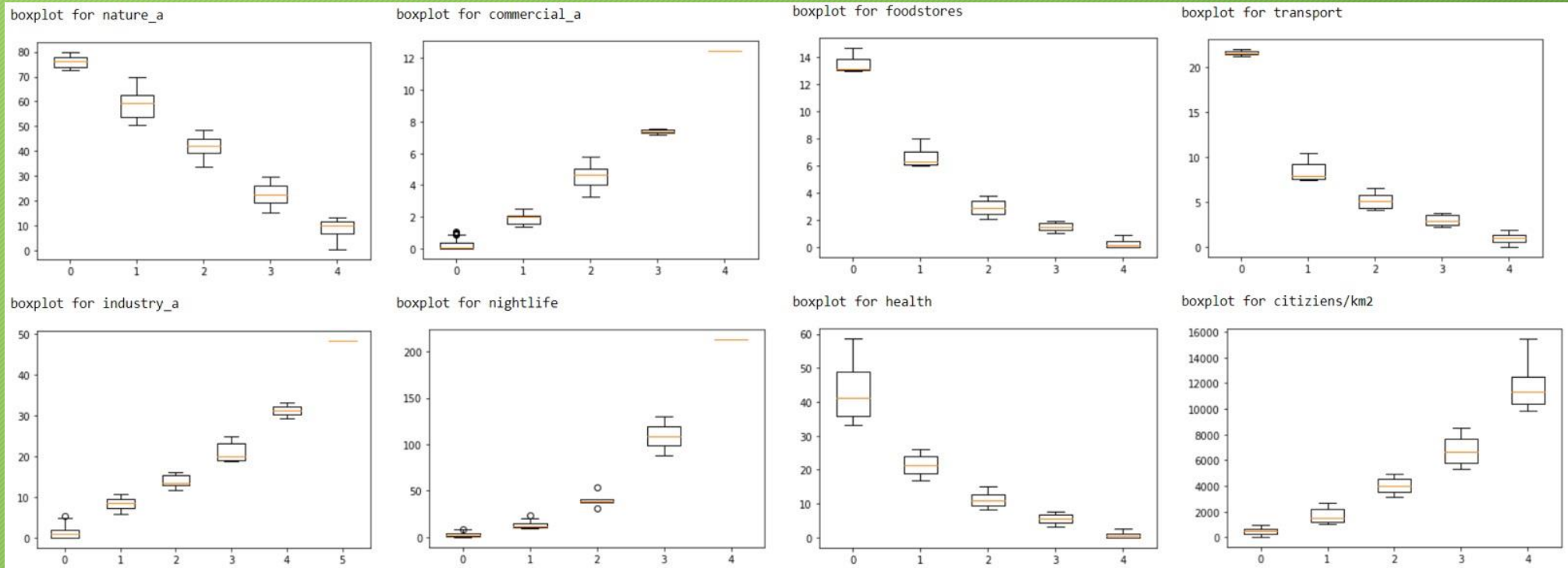
Data sources

- Wikipedia - names of districts, population density of each district
- Foursquare - numbers of venues
- OpenStreetMaps - sizes of different types of areas (parks, industry, forests, etc.), borders and shapes of districts
 - In combination with Foursquare data: density of venues of different types per square kilometer

How the data was used

1. All criteria values were download for each district
2. It was decided for each criteria, whether higher value means better district, or lower value means better district. For example, high number of foodstores means good district, while high size of industrial areas, means bad district
3. Districts were clustered according to each criteria, but separatedly, to find how values for different criteria are distributed and how they should be grouped.
4. Intersection of districts that were in clusters good enough (for each criteria) was found, these were our final districts

Distributions of values in all clusters for different types of criteria



Results and conclusion

- It was found, that ideal combinations of some criteria, are almost impossible to find.
- However, if some compromises are done, it is possible to find some interesting districts, that have enough nature, enough useful venues, and are not very noisy.
- Found districts were mostly placed between city center and city suburbs

Selected districts and their values for different types of criteria

district	nature_a	industry_a	nightlife	foodstores	health	transport	commercial_a	citizens/km ²	Is selected
Košíře	62.3%	6.3%	8.2	1.8	5.4	3.6	0.2%	4525	Yes
Dejvice	65.4%	0.7%	5.8	1.6	6.8	5.4	0.3%	3138	Yes
Modřany	57.0%	7.4%	4.8	1.5	7.1	3.1	0.3%	4125	Yes
Břevnov	57.2%	1.0%	11.0	1.9	13.7	4.6	0.4%	4569	Yes
Hradčany	60.8%	1.5%	13.7	1.7	6.8	6.4	0.7%	1184	Yes
Braník	52.6%	4.1%	6.8	1.3	8.4	4.1	1.9%	4048	Yes
Libeň	50.9%	7.8%	15.4	2.2	9.5	3.6	2.0%	4493	Yes
Hlubočepy	54.5%	1.5%	4.7	1.2	4.8	4.8	5.0%	3663	Yes
Vokovice	79.8%	0.5%	5.1	1.5	7.3	2.4	5.8%	3106	Yes