

The Battle of Neighbourhoods

Applied Data Science Capstone Project

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1. Introduction

This project primarily helps people who have to move to Brussels, Belgium for professional reasons to find a suitable and similar residential area to what they were used to before. For this purpose, a comparison is made between the neighbourhoods in Brussels, Belgium and Berlin, Germany. This project is therefore particularly helpful for expats who have to move from Berlin to Brussels or vice versa.

Background

Brussels grew from a small rural settlement on the river Senne to become an important city-region in Europe. Since the end of the Second World War, it has been a major centre for international politics and home to numerous international organisations, politicians, diplomats and civil servants. Brussels is the de facto capital of the European Union, as it hosts a number of principal EU institutions. Its name is sometimes used metonymically to describe the EU and its institutions. The secretariat of the Benelux and headquarters of NATO are also located in Brussels. As the economic capital of Belgium and one of the top financial centres of Western Europe with Euronext Brussels, it is classified as an Alpha global city.

Problem

This circumstance includes the fact that a large number of employees, also called expats, who come from all countries in Europe and worldwide, have to find accommodation in Brussels on a temporary, but also on a longer-term basis and look for suitable residential areas to feel at home.

The analysis of neighbourhoods in Brussels is intended to help future expats find a suitable area to live in more easily and to help people moving from Brussels to Berlin and vice versa to find a similar neighbourhood as they were used to before.

Berlin is one of the capitals with the highest number of established diplomatic representations. Relocations between these cities take place frequently.

2. Data

In this project, three different datasets will be used to solve the problem – Monitoring of the Neighbourhoods in Brussels, Brussels Recorded Crime and Foursquare API. After scraping them from original and reliable sources, they will be wrangled and cleansed for further analysis into more useful forms.

Neighbourhood Monitoring Brussels (monitoringdesquartiers.brussels)

Code	Territoire	Densité de po -2020-	Densité de bu -2018-	Part des bât -1997-	Part des surt -2006-	Taux de mobi -2001-2006-	Part des isolé -2019-	Part des isolé -2019-	Part des isolé -2019-	Part des coup -2019-	Part des coup -2019-	Part de l'Euro -2019-	Part des nou -2015-	Revenu impos -2012-	Part de la pop -2001-	Part des mén -2001-	Part des m -2001-
1	Grand Place	8896,06	535254,58	15,43	94,05	119,11	20,25	50,18	6,79	7,46	12,66	32,51	4,34	4	60,89	89,18	9
2	Dansert	17105,34	227800,38	17,84	89,49	101,46	12,77	45,17	7,98	14,44	13,50	19,67	4,56	2	60,99	88,62	10
3	Béguinage - C	117973,30	379895,97	17,40	86,41	103,49	15,76	42,16	6,98	15,45	13,50	19,47	3,87	2	100,00	90,77	8
4	Martyrs	7075,01	908364,20	28,47	95,35	108,55	19,73	47,02	7,20	9,12	12,90	20,48	5,15	3	77,93	95,24	4
5	Notre-Dame-e	8855,44	1711022,91	22,53	90,68	122,91	20,51	46,86	5,59	10,29	11,49	25,04	6,08	3	100,00	92,24	6
6	Quartier Royle	458,18	851468,97	33,93	67,00	108,89	12,78	36,67	4,44	17,78	17,78	33,94	3,94	5	99,99	86,36	11
7	Cathédrale	8894,45	345664,07	15,29	97,00	109,49	19,45	54,20	10,77	10,45	12,45	34,70	4,70	4	87,94	86,45	10

Shown above is a section of the table of the Neighbourhood Monitoring in Brussels. The dataset includes a list of all neighbourhoods in the Brussels-Capital Region and the related and required data:

- Municipality and Postal Code
- Population data like population density
- Building structure like share of high-rise buildings, office density
- Income structure
- Resident structure like family share, single person share
- Environment like access to green spaces
- Mobility like access to public transport

The dataset shown above will be simplified and prepared for further analysis.

Brussels Recorded Crime (stat.policefederale.be)

The second data set contains the crime statistics of the individual municipalities of Brussels. The crime statistics will be transferred to the individual neighbourhoods.

Nombre total des délits	2000	2012	2013	2014	2015	2016	2017	2018	2019	2020 (*)
▼ National	1.002.087	1.040.232	997.802	977.506	921.805	893.873	883.834	891.441	898.057	479.775
▼ Région de Bruxelles-Capitale	158.064	178.347	167.119	159.975	146.937	142.463	145.917	149.903	158.452	78.276
▼ Bruxelles-Capitale	158.064	178.347	167.119	159.975	146.937	142.463	145.917	149.903	158.452	78.276
Bruxelles (Bruxelles-Capitale)	158.064	178.347	167.119	159.975	146.937	142.463	145.917	149.903	158.452	78.276
► BRUXELLES CAPITALE IXLLES	60.567	71.975	67.054	64.372	55.702	52.609	55.535	59.248	64.964	29.932
► BRUXELLES-OUEST	19.339	20.378	19.584	19.364	19.504	20.051	18.727	18.858	19.043	12.130
Pas de ZP attribuée - Eurostar	1.976	821	265	0	0	0	1	1	0	0
► ZP POLBRUNO	21.821	21.496	21.576	20.454	19.659	19.179	19.423	20.342	20.483	9.578
► UCCLLE/W-B/AUDERGHEM	13.481	14.644	13.470	13.225	11.402	11.067	11.101	11.114	11.724	5.669
► ZONE MONTGOMERY	12.372	12.836	12.498	12.387	11.452	11.422	11.666	10.930	11.261	6.122
► ZONE MIDI	28.508	36.197	32.672	30.173	29.218	28.135	29.464	29.410	30.977	14.845

The crime statistics are transferred to the individual neighbourhoods. For further analysis, crimes are not differentiated by category and are calculated by proportion of the population in the municipality. An average of the last years will be calculated.

Foursquare API

Finally, Foursquare API will be used to call the top 10 popular venues in each neighbourhood. This will be done by the “explore” function of requesting URL. The data will be looking like the following section of the dataset.

	BoroughName	Borough Latti	Borough Latti Venue	Venue Lattitu	Venue Longitu	venue Category		
0	Grand Place	51.4253	0.4587	Grand Place	51.4253	0.4587	Place	
1	Grand Place	51.4254	0.4588	Restaurants	51.4254	0.4588	Restaurants	
2	Grand Place	51.4255	0.4589	Cafe	51.4255	0.4589	Cafe	
3	Grand Place	51.4256	0.4590	Bar	51.4256	0.4590	Bar	
4	Grand Place	51.4257	0.4591	Hotel	51.4257	0.4591	Hotel	