Luxembourg City Neighbourhoods Clustering

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Contents

1 Introduction

Luxembourg City is the capital of Grand Duchy of Luxembourg with continuously growing population. As of 31/12/2018 the population of Luxembourg City is 119,214 inhabitants with 168 nationalities [1], making it a very multicultural city. Which is shown in the diversity of venues present in the city. The city has the population density of 1,700 inhabitants/km^2[2].

Luxembourg City is composed of 24 quarters which corresponds *to the major neighbourhoods and suburbs of Luxembourg City* [2]. Each quarter is of different size and shape.

Every year, new people from all over the world move into Luxembourg (mainly for professional reasons). And it might be difficult for a person to chose the neighbourhood to live in. Thus, we will try to tackle this problem by giving a comprehensive analysis of each neighbourhoods in the city.

2 Data

To perform our analysis we will use the the following data sources and tools:

- *Foursquare API* [3]. In order to get the venues present in Luxembourg we will use the . For each quarter we will retrieve the venues from *Foursquare* and use their geographical coordinates and their category for further analysis.
- *Open Street Map* [4]. In order to get the map data we will use the open street map service and extract the boundaries of quarters in Luxembourg City.
- *QGIS*. Using *QGIS* desktop version we will extract the polygons from *OpenStreetMap* and create centroids for each of those polygons.

3 Bibliography

References

[1] Ville de Luxembourg, "Etat de la population 2018 : statistiques sur la ville de luxembourg." https://www.vdl.lu/sites/default/files/media/document/etat_de_la_population_de_la_ville_au_31.12.2018.pdf, 2018. [Online; accessed 17-November-2019].

[2] Wikipedia contributors, "Luxembourg city — Wikipedia, the free encyclopedia." https://en.wikipedia.org/w/index.php?title=Luxembourg_City&oldid=925137136, 2019. [Online; accessed 17-November-2019].

[3] Foursquare API, "Foursquare API." https://developer.foursquare.com/, 2019.

[4] OpenStreetMap contributors, "Planet dump retrieved from https://planet.osm.org ." https://www.openstreetmap.org, 2017.