

Opening a new supermarket in Bratislava, Slovakia

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Introduction: Business Problem

As there has been a steady growth in Bratislava in recent years, it has attracted more and more people to a point where there is a shortage of infrastructure and facilities in various neighborhoods.

One of the shortcomings is the lack of supermarkets in neighborhoods close to the city center of Bratislava, affecting the quality of life of many of its residents as these areas are now considered densely populated and the few grocery shops are always overcrowded with long queues.

This is an opportunity for stakeholders who are interested in running a supermarket in one of these areas as they will have a monopoly nature.

Our goal is to highlight these areas and propose the optimal neighborhood or neighborhoods for running a business of that kind based on various criteria.

Data

From wikipedia page

https://en.wikipedia.org/wiki/Boroughs_and_localities_of_Bratislava we will retrieve the boroughs of Bratislava by using web scraping techniques.

Then we will get the geographical coordinates of the neighborhoods by using Python Geocoder package which will give us the latitude and longitude coordinates of the neighborhoods.

We will also get the venue data for these boroughs by making use of Foursquare API. Our focus will be in venues related to supermarkets, grocery shops or shopping malls in order to visualize the current presence of this kind of business in its area of the city. After that we will explore those neighborhoods with lack of supermarkets that are closer to the historical city center (Stare Mesto) instead of areas that belong to the suburbs of Bratislava and propose the optimal area for a new supermarket.

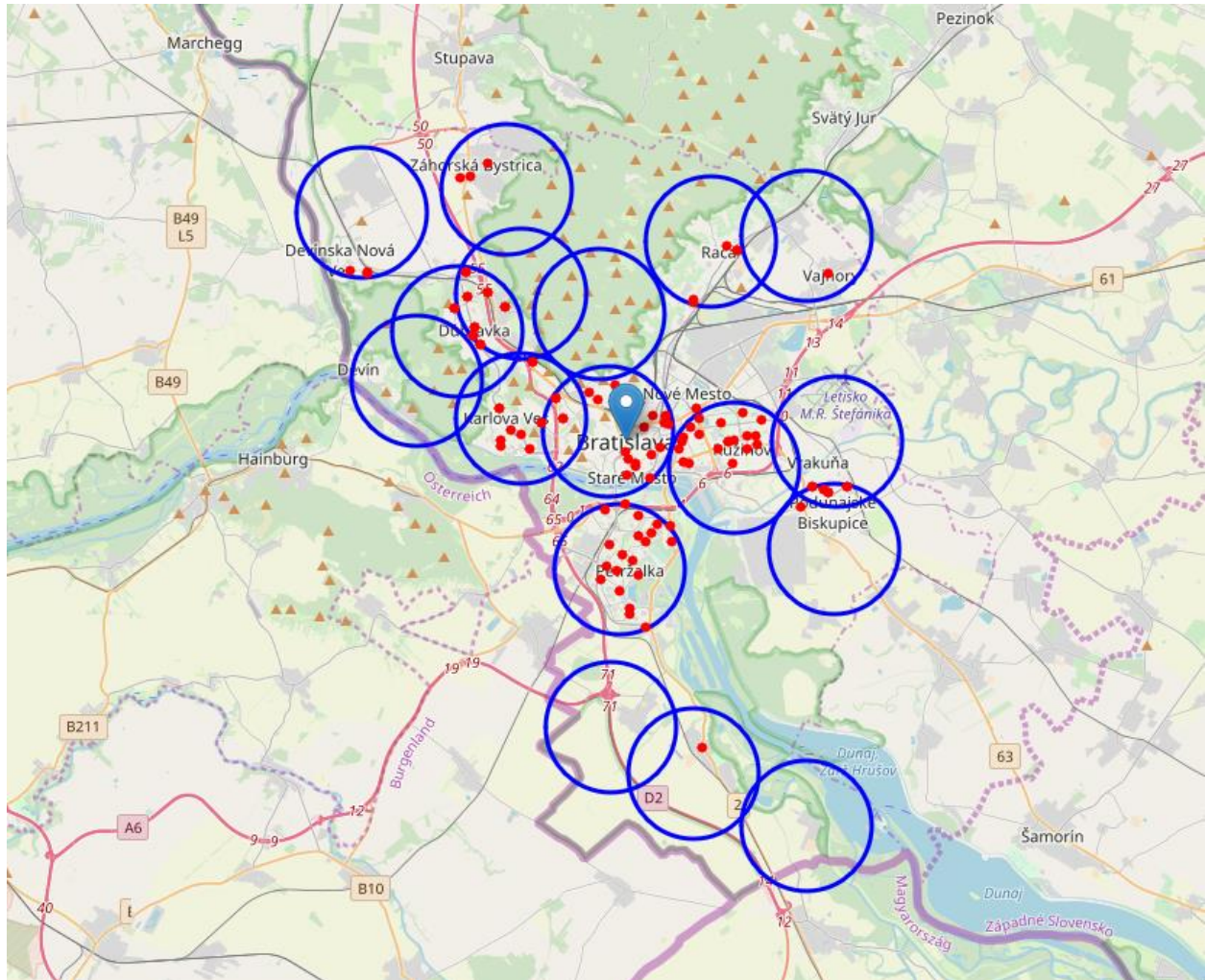
Data cleaning/preparation

From the wiki source we just kept the data related to Borough & District, but we had to add the city of Bratislava at the end of each Borough in order to produce accurate results when pulling the latitude and longitude of each Borough.

When pulling the venues around each Borough from Foursquare API, we filter by category = supermarket in order to get only venues related to supermarkets, grocery shops, etc.

Methodology

First step would be to visualize all the stores from our venue dataframe on a map in parallel with Borough area circles in order to have an overview of supermarket distribution across the Boroughs.

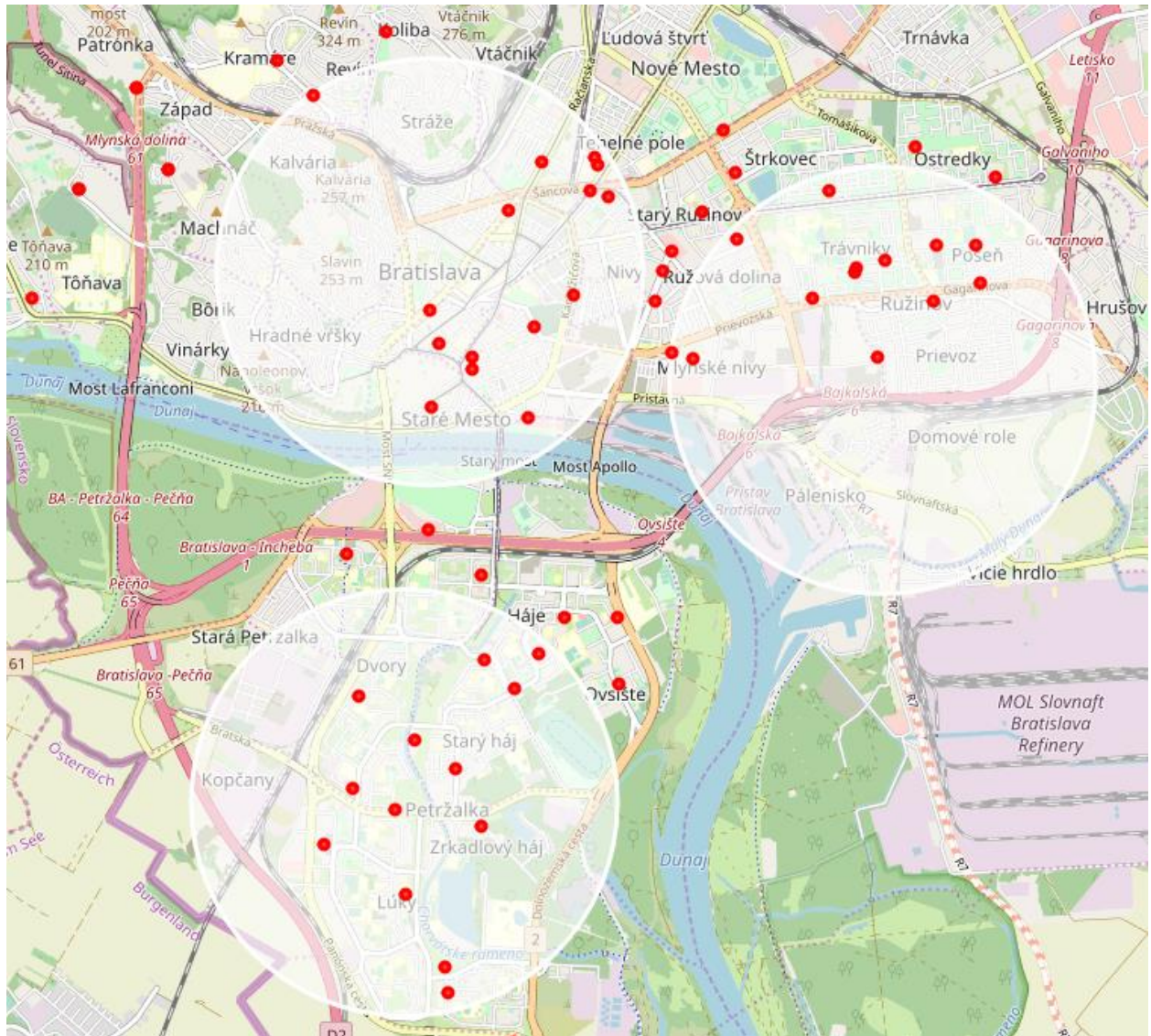


Then will focus on the 3 most populated Boroughs and look for areas that have no supermarket in close range.

Finally, will suggest one or two areas where the stakeholders could look into and consider running a business.

Analysis

Let's zoom a little bit in order to have a better view of the 3 most populated Boroughs.



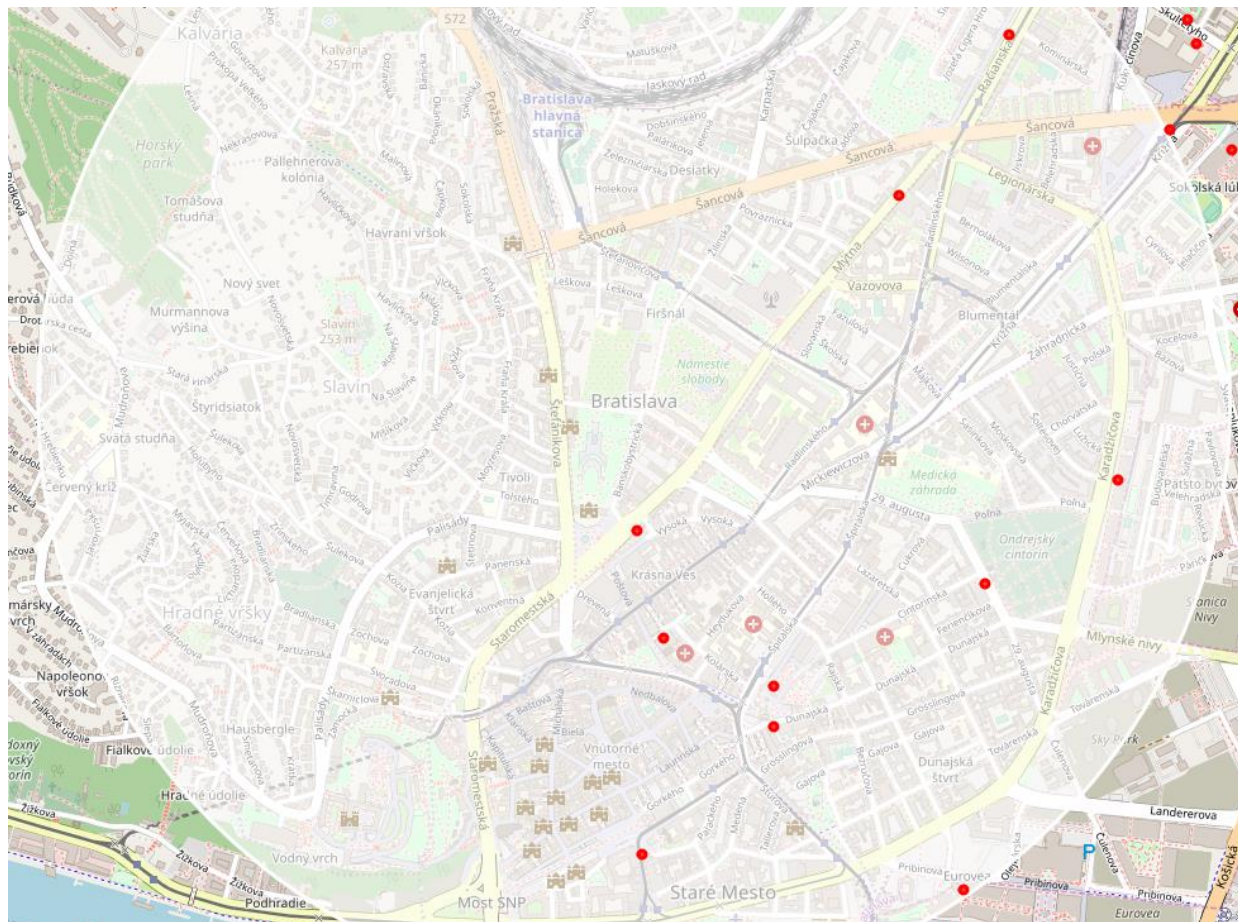
As I'm currently living in Bratislava, I can easily say where our focus should be. But let's see what I mean...

Starting with **Petrzalka**, I would say that there is a fair amount of supermarkets as it is not a crowded area like stare mesto and there is no opportunity based on current view.

Regarding **Ruzinov**, we are able to see that the north part has a fair amount of supermarkets that are distributed across the areas that most people live while as we are going south we see almost nothing. This makes sense as there is no opportunity there due to the small amount of residents.

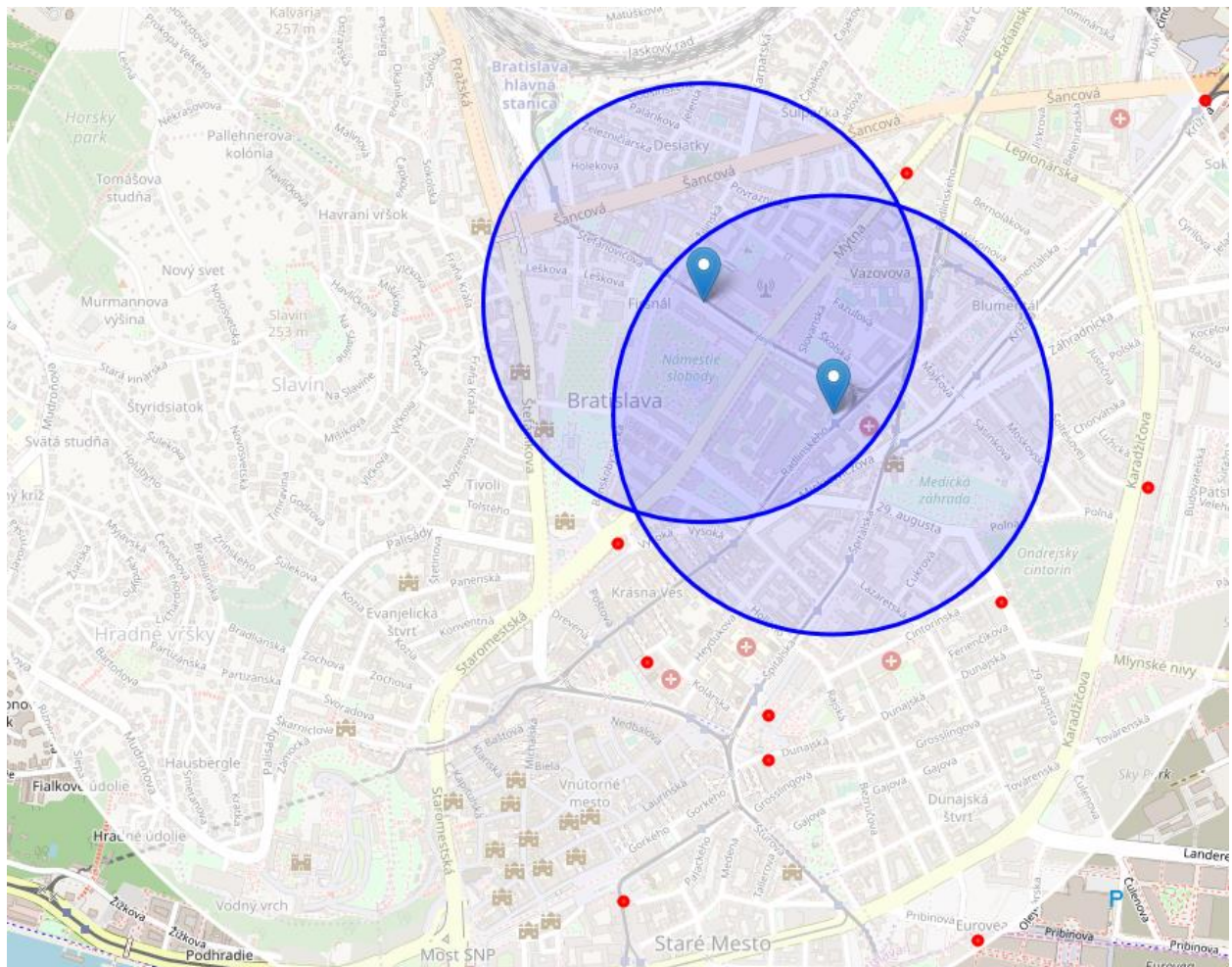
Finally, let's examine Stare mesto. To the west of **Stare mesto** there is an area at altitude which is not offering an opportunity and this is why there is no supermarket. On the contrary we see that there is one area slightly north from the center and another area slightly east from the center where there is lack of supermarkets although there are many people living there and we talk about areas that are really close to the city center, so except of the permanent residents, there are many tourists and people from other areas that passing by regularly.

Let's focus on Stare mesto and try to see if there is any real opportunity.



What we see here is that our claiming for lack of supermarkets close to the city center was correct from the introduction and there is no better proof than the current view.

Now it's time to propose 1-2 spots to the stakeholders for further examination with radius = 500 and no supermarket in range.



Results and Discussion

We ended up with 2 spots close to the city center of Bratislava where there is no competition in range of 500 meters. This is a great opportunity for stakeholders in order to start running a business in those areas as the monopoly nature that exists will return high profits.

From another point of view, this will also give more shopping options to the residents of Bratislava, reduce the queues from the overcrowded supermarkets and contribute to a better quality of life.

Our initial claiming that there are not enough supermarkets in the capital of Slovakia was proven right. By using geographical data from wikipedia and foursquare, related to Boroughs and venues we managed to highlight an area that is seeking improvement and affects mainly the life of residents around those neighborhoods.

In general, we didn't pay a lot of attention to the rest of the boroughs as they do not offer a good opportunity and it doesn't worth it to invest in those areas, as the majority of Bratislava's residents are living and working close to the city center.

Conclusion

Our goal was achieved. We managed to provide insights related to the lack of supermarkets close to the city center and finally ended up with a suggestion based on our data analysis. Without using unnecessary calculations, we tried to keep it simple and rely heavily on data visualization and analysis on something that was obvious but seeking attention in order to produce an outcome based on our observations that was also driven by the author's real knowledge of the city and its special considerations regarding the population and the sites of interest.