

Contents

1	Introduction	1
2	Data	2
3	Methodology	3
4	Results	4
5	Discussion	5
6	Conclusion	5

1 Introduction

I was born in a small town Langepas in Western Siberia and haven't been there for a long time. Consider the following situation: I want to return home and open a coffee shop. The question is: "Is it possible to compete with other cafes and coffee shops in the town?"

To answer this question I will use the methods learnt in previous Coursera IBM courses.



2 Data

To achieve the goal of the project we require data about venues in the town. It can be received through requests to the *Foursquare API*.

We can get the required information by creating an object of our city and executing built-in methods. Objects should be provided with Foursquare client information, name of location (address) and with radius of search and limit of items. Also, it is necessary to specify kind of query when we use method *get_data*.

The result of this request consists of the following sections: 'geocode', 'headerFullLocation', 'headerLocationGranularity', 'totalResults', 'suggestedBounds', 'groups'. The required information lies in the 'groups' section. For the purposes of the project we make two requests: first associated with cafes in the area, second - with coffee shops. Total number of results is 4 and 6.

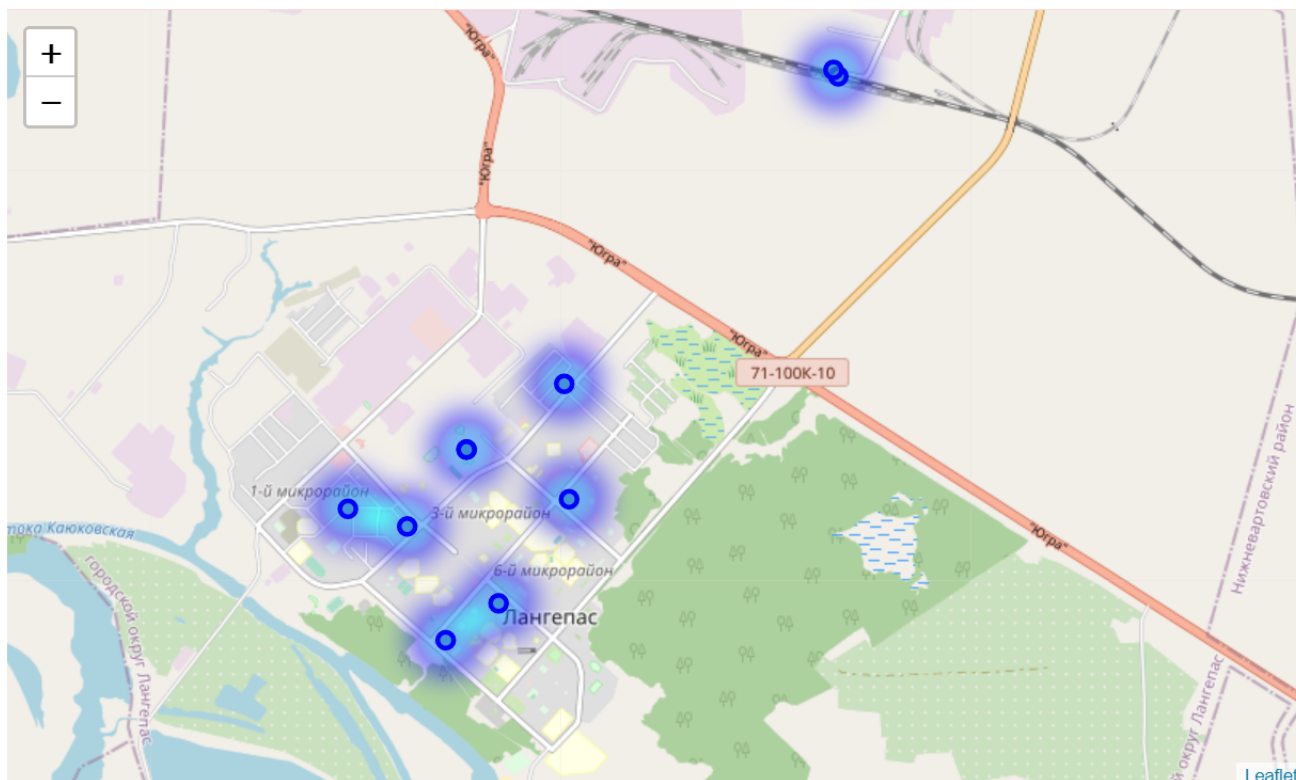
The next step is to extract the information and filter it out. We create datarames and drop unnecessary columns with NaNs. As we don't have lots of data, both dataframes are concatenated. The result is the following:

	uid		name	shortname	lat	lng
0	4f2ceec7e4b040eafeb39112		Cherry	Eastern European	61.253353	75.191354
1	500784b2c84c614d5a6f1f73		Олимпия	Hotel	61.255913	75.180334
2	50fbad05e4b0396365f45535	Ж/Д станция Лангепасовский		Train Station	61.275138	75.220189
3	505ab903e4b0279819cd48db		ЖД Вокзал	Platform	61.275470	75.219677
4	51251615e4b088917cc635cc		Анапа	Café	61.259221	75.190859
5	4fdd5dbfe4b094b0d1901f4d	Кофейня В Универмаге Лагнepasа		Café	61.247920	75.183689
6	53aeb314498eae4fb4f1c435a		Кафе "Олимп"	Café	61.255863	75.180224
7	5131e74ae4b008f2628d269b		Ресторан "Юбилей"	Café	61.246075	75.178075
8	5b49e073e96d0c0039627ab0		Тендер, Кофейня	Coffee Shop	61.251934	75.173980
9	53aed31a498e345e4a238d34		1001 ночь	Café	61.252789	75.167664

3 Methodology

The class *GeoAnalysis* is able to give us the required information about venues in any city. Class ideology is chosen for the project because it can greatly lower required efforts in investigation of different locations. Nevertheless, in the current work I want to analyze my hometown, the same methods are applicable for any other cities. It is enough to initialize another object with its new address.

Folium library is used for the purposes of the visualization of the data. It is enough to use method *get_map* with appropriate variables to get an image of the city with venue labels on it.

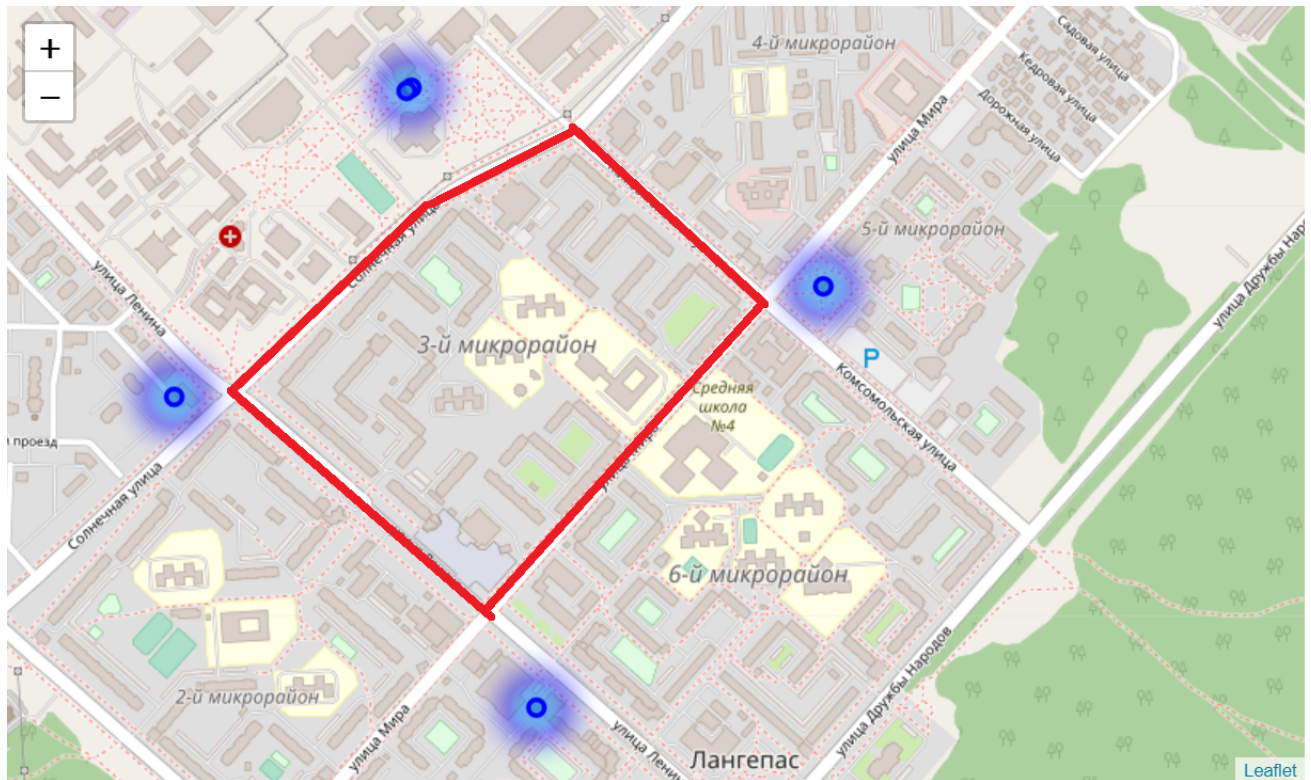


4 Results

We can easily see that the density of cafes in Langepas is low and uniform in the sense of distribution. Also, part of cafes are situated separately from others as they are close to the city bus station.

So, judging by the map, we can conclude that it could be a great decision to open cafe in "3-й микрорайон" by the following reasons:

- It can be considered as the center of the town.
- There are no other cafes in the same area.



5 Discussion

As we can see, the dataset is quite small, so no true machine learning techniques can be applied efficiently.

6 Conclusion

Preliminary analysis was successfully done. The answer to the question is that it is possible to open a new coffee shop in the centre of Langepas without high competition with other cafes.