

Coursera Capstone

IBM Applied Data Science Capstone

Opening a New Gym / Fitness Center in
Moscow, Russia

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Business problem

- Location of the fitness center is one of the most important decisions that will determine whether the gym will be a success or a failure;
 - The objective: to analyze and select the best locations in the city of Moscow, Russia to open a Fitness Center;
 - Business question:
 - in the city of Moscow, Russia, if a property developer is looking to open a new Fitness Center, where would you recommend that they open it?
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Data

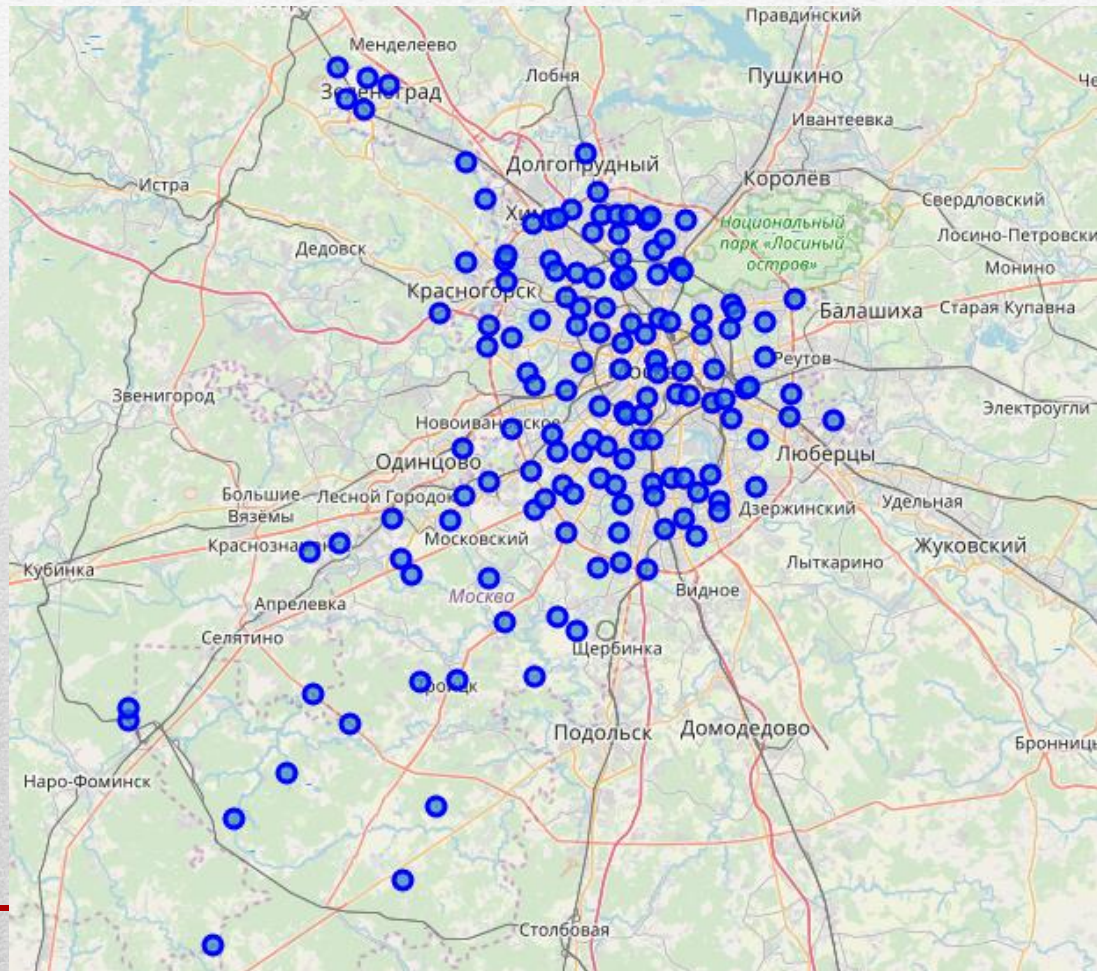
- Required data
 1. List of neighborhoods in Moscow.
 2. Latitude and longitude coordinates of those neighborhoods.
 3. Venue data, particularly data related to fitness centers.
 - Sources of data
 1. Administrative divisions of Moscow Geodata. (<https://gis-lab.info/qa/moscow-atd.html>)
 2. Foursquare API to get the venue data
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Methodology

- Reading geojson file using JSON
 - Use Foursquare API to get venue data
 - Group data by neighborhood
 - Filter venue category by Gym/Fitness Center
 - Perform clustering on the data by using k-means clustering
 - Visualize the clusters in a map using Folium
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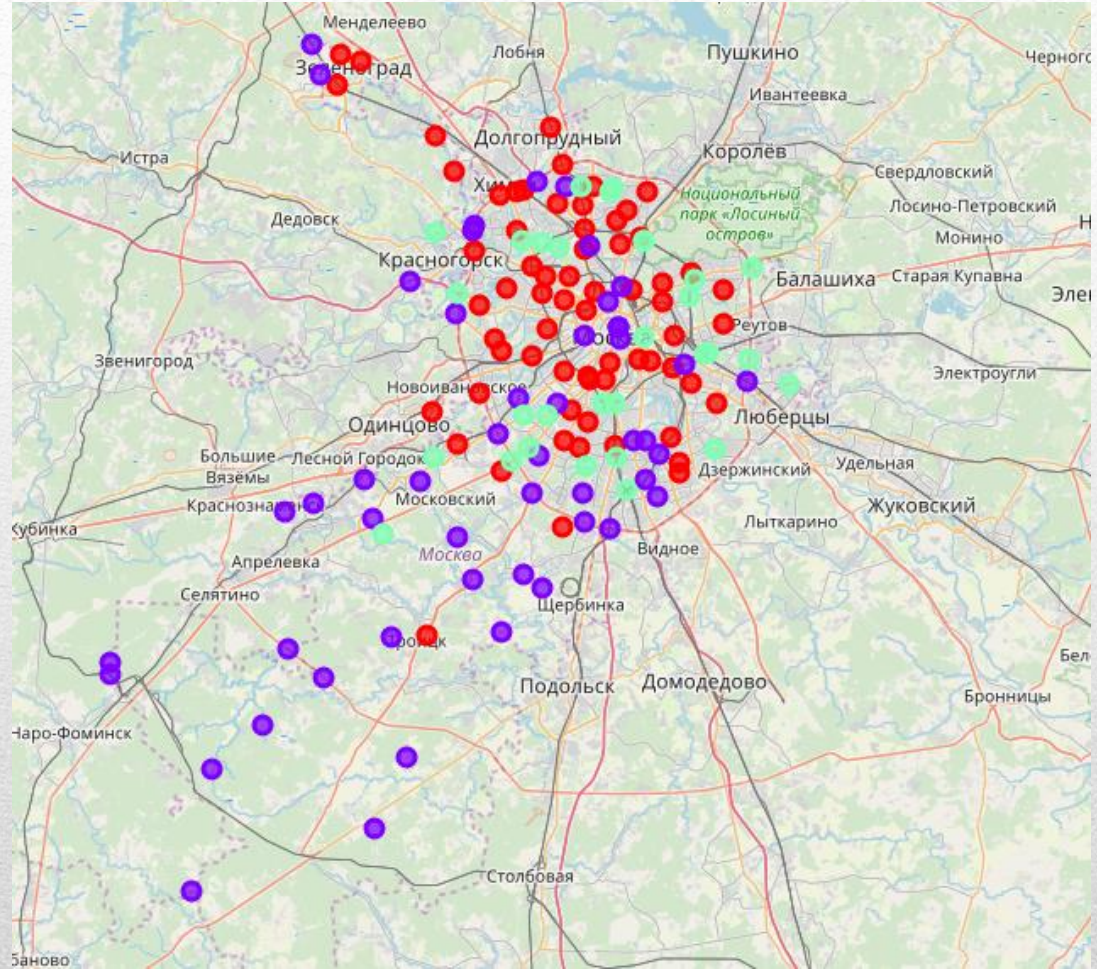
Results

All Moscow's Neighborhoods



Categorized the neighborhoods into 3 clusters:

- Cluster 0:
Neighborhoods with moderate number of fitness centers;
- Cluster 1:
Neighborhoods with low number or no fitness centers;
- Cluster 2:
Neighborhoods with high concentration of fitness centers.



Discussion

- The highest number of gyms in cluster 2 and moderate number in cluster 0;
 - cluster 1 has very low number or no fitness centers in the neighborhoods;
 - Oversupply of fitness centers mostly happened on the south of the city with the central area and west of the city still have very few fitness centers.
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Recommendations

- Open new fitness centers in neighborhoods in cluster 1 with little to no competition;
 - can also open new fitness centers in neighborhoods in cluster 0 with moderate competition with good offer on season/year subscription to stand out from the competition;
 - avoid neighborhoods in cluster 2 which already have high concentration of fitness centers and suffering from intense competition.
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Conclusion

- Answered the business question: The neighborhoods in cluster 1 are the most preferred locations to open a new fitness center;
 - The findings of this project will help the relevant stakeholders to capitalize on the opportunities on high potential locations while avoiding overcrowded areas (cluster 2) in their decisions to open a new fitness center.
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