




# BATTLE OF THE NEIGHBORHOODS: ACCESSIBLE MOSCOW

Clustering Moscow Hotels Accessible to Visitors with  
Disabilities and Impairments



# Moscow:

- Capital of Russia
- Important Hub
- Hosts Many Visitors



Moscow to be as accessible and inclusive as possible.

# Business Problem

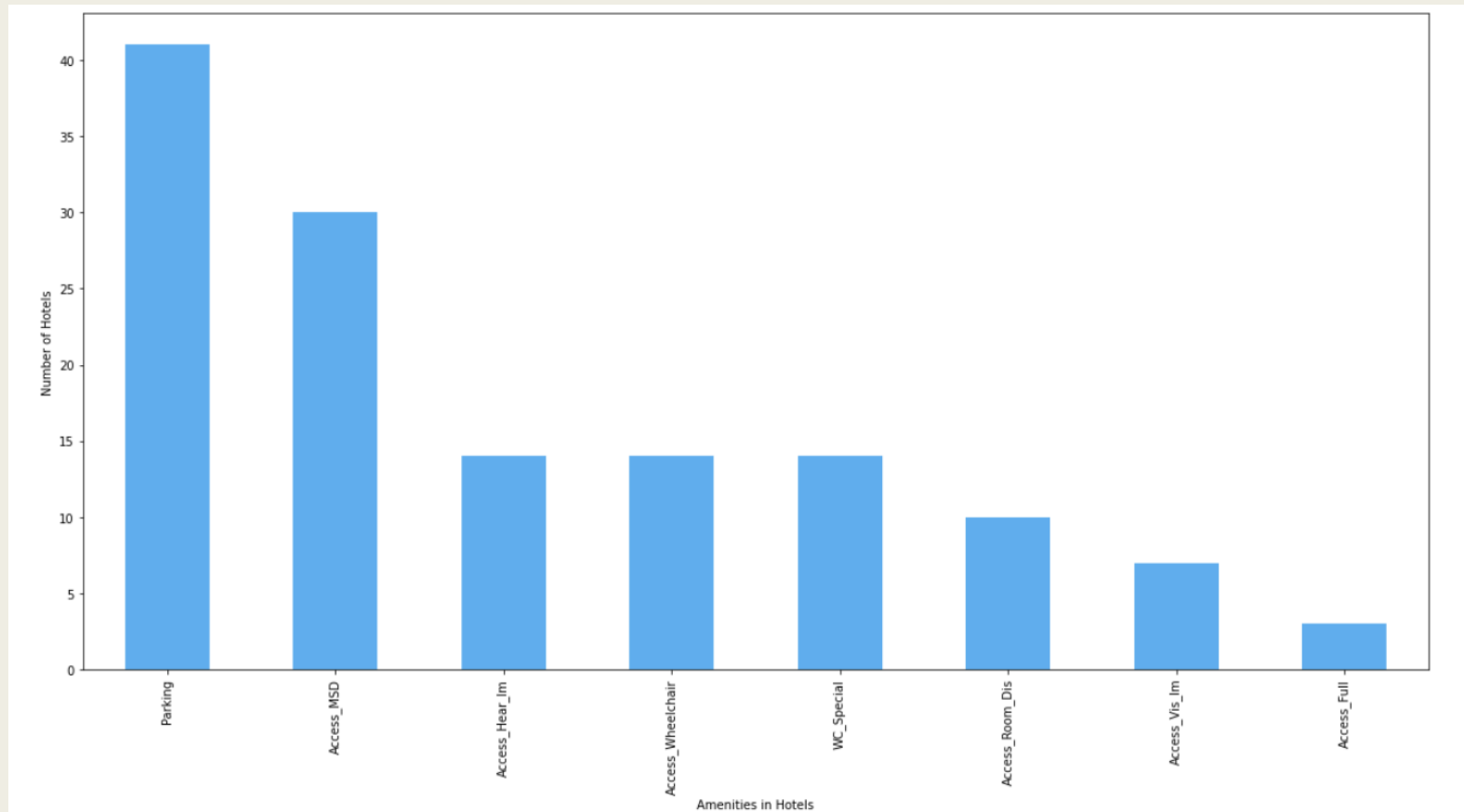
Help **visitors with disabilities and impairments** choose their **destination hotel** suited to their needs, taking into the account the **facilities nearby**.

# Data

- Geolocational data for Moscow hotels via the Open Data portal;
- Foursquare API for gathering information about venues neighbouring the hotels.

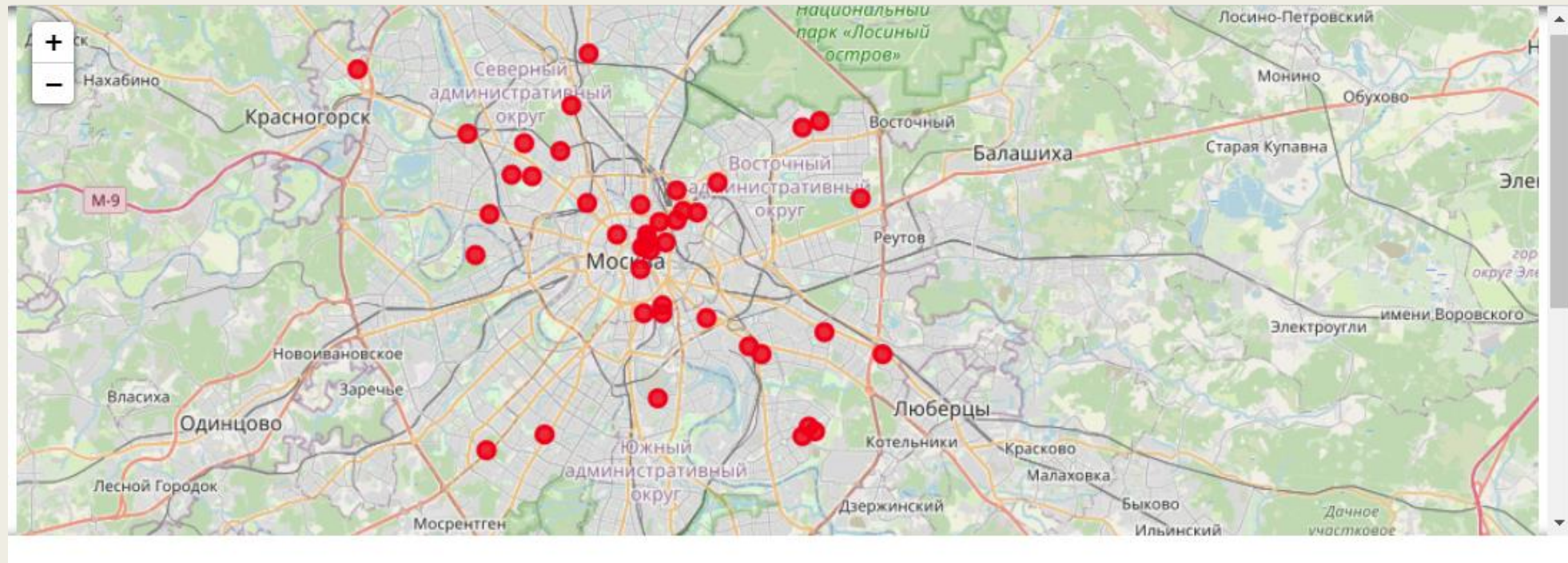
# Methodology: Hotel Categories

- Hotels were grouped by their amenities for visitors with disabilities and impairments.



# Methodology: Visualization

- Folium package and collected data were used to display the hotels on the map of Moscow.





# Methodology: One Hot Encoding

- Venues were found using Foursquare API, categorical variables were encoded into numerical form for application of K-Means clustering.
- 10 most common venues for each hotel were chosen.

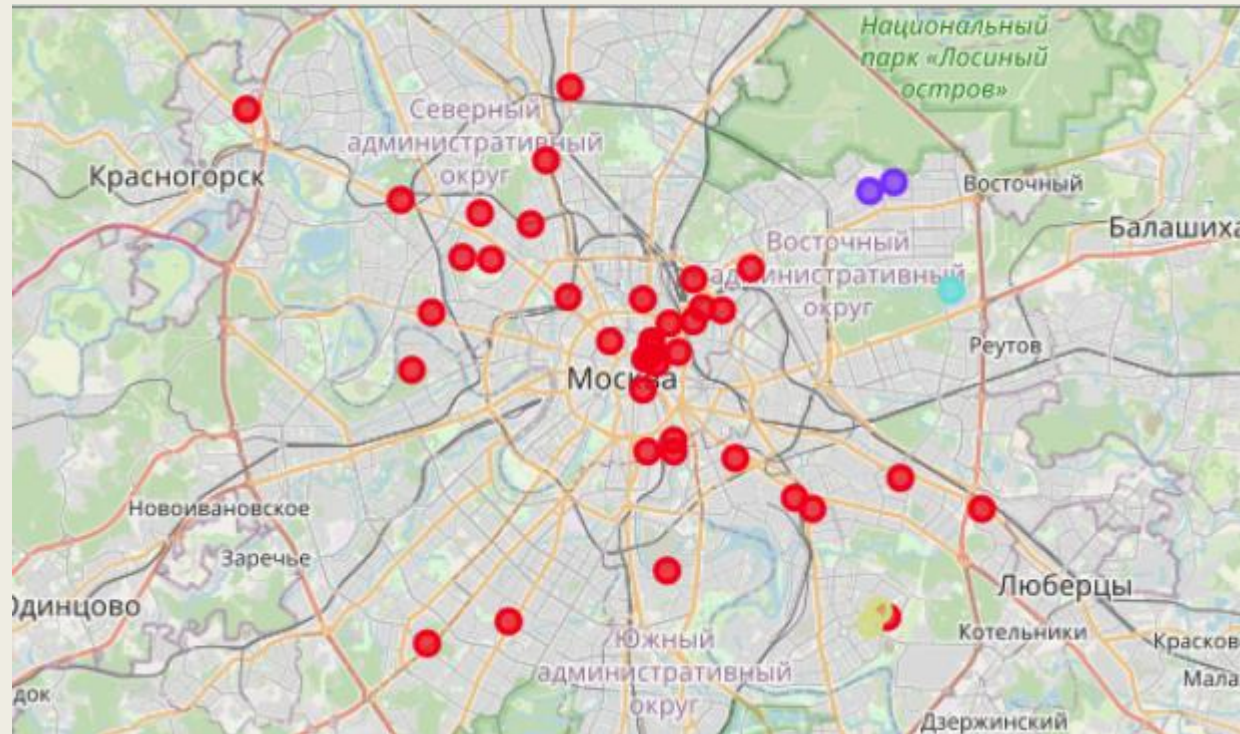
	Yoga Studio	Accessories Store	Adult Boutique	African Restaurant	American Restaurant	Amphitheater	Aquarium	Arcade	Art Gallery	Arts & Crafts Store	...	Tunnel	Turkish Restaurant	Udon Restaurant	Ukrainian Restaurant
0	0	0	0	0	0	0	0	0	0	0	...	0	0	0	0
1	0	0	0	0	0	0	0	1	0	0	...	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	...	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	...	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	...	0	0	0	0

5 rows × 212 columns

	Hotel	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	"Art Hotel"	Restaurant	Tennis Court	Gym / Fitness Center	Sporting Goods Shop	Spa	Bus Stop	Gym	Soccer Stadium	Café	Gourmet Shop
1	"Citadel Comfort Hotel"	Yoga Studio	Bar	Clothing Store	Café	Bookstore	Plaza	Vegetarian / Vegan Restaurant	Theater	Russian Restaurant	Flower Shop
2	"Grand Hotel Belorusskaya"	Coffee Shop	Steakhouse	Seafood Restaurant	Cocktail Bar	Tea Room	Health Food Store	Other Repair Shop	Clothing Store	Gym / Fitness Center	Bar
3	Avita Krasnye Vorota Hotel	Coffee Shop	Dance Studio	Caucasian Restaurant	Accessories Store	Yoga Studio	Plaza	Modern European Restaurant	Belgian Restaurant	Mobile Phone Shop	Cosmetics Shop
4	Boutique Hotel "De Marie"	Middle Eastern Restaurant	Gym / Fitness Center	Steakhouse	Gourmet Shop	Café	Athletics & Sports	Pet Store	Supermarket	Donut Shop	Italian Restaurant

# Methodology: K-Means Clustering

- 4 clusters were created based on similarities of the most common venues.





# Discussion

- The number of hotels suited for people with disabilities and impairments is small for a city as large as Moscow, but there are various facilities in the vicinity.
- Some of the hotels have hospitals nearby.
- The biggest, red cluster contains all the hotels in the center and the majority of the hotels in the more prestigious districts, with a wide variety of restaurants, cafes and shops available nearby.
- The purple cluster is located near the northern transportation hub in Moscow. There are also car facilities nearby, so it might be preferred by those travelling by car.

# Discussion

- The turquoise cluster is located in the vicinity of a large park in Moscow with lots of walking trails and a small Kremlin to explore (the Izmailovo Kremlin). It also has a lot of sports facilities, including a gym with a swimming pool. As the hotel is adapted to people with MSD, they might opt to choose rehabilitation programs in the sports facilities, provided they suit their needs and individual conditions.
- The yellow cluster is located in a quiet neighborhood near a medium-sized park, with supermarkets and convenience stores nearby.

# Conclusion

- Despite the initial large number, few hotels are making the experience of visiting Moscow accessible to anyone. The majority of the hotels with only parking listed as the available feature could be made more accessible by introducing more amenities for visitors with disabilities and impairments.
- There are useful venues near the hotels analyzed belonging to different categories, such as food, health, shops, etc. The hotels are located near major roads and metro stations, which allows for easier transportation around the city.

# Conclusion

All in all, there are a number of facilities to choose from based on the visitors' expectations. Hopefully, with the future development of the city, Moscow would be more accessible to everyone, and there will be plenty more hotels to choose from.

# Image Sources

- [https://www.google.com/url?sa=i&url=https%3A%2F%2Frealrussia.co.uk%2Finfo%2Fdestinations%2Fmoscow&psig=AOvVaw3UWw87VjNZ3kGvzQP\\_kEFI&ust=1627160688684000&source=images&cd=vfe&ved=0CAsQjRxqFwoTCJtkomM-vECFQAAAAAdAAAAABAD](https://www.google.com/url?sa=i&url=https%3A%2F%2Frealrussia.co.uk%2Finfo%2Fdestinations%2Fmoscow&psig=AOvVaw3UWw87VjNZ3kGvzQP_kEFI&ust=1627160688684000&source=images&cd=vfe&ved=0CAsQjRxqFwoTCJtkomM-vECFQAAAAAdAAAAABAD)