



Predicting the Best Location for Arabian Restaurant in New York City

ZIA UR REHMAN

APRIL 23, 2020

Introduction

- ▶ New York City (NYC) is the most populous city in the United States
- ▶ Estimated 2018 population of 8,398,748 distributed over about 302.6 square miles (784 km²)
- ▶ Demographics of the city show that it is a large and ethnically diverse metropolis
- ▶ Starting up a new restaurant in such condense city will be a brilliant idea

DATA

- ▶ This project explored the best location for opening Arabian restaurant in New York City
- ▶ Data on neighborhoods, boroughs, latitude, longitude, restaurants, and the most common and popular was collected
- ▶ Sources:
 - https://cocl.us/new_york_dataset
 - <https://data.cityofnewyork.us/City-Government/Borough-Boundaries/tqmj-j8zm>
 - FourSquare API utilized via the Request library in Python

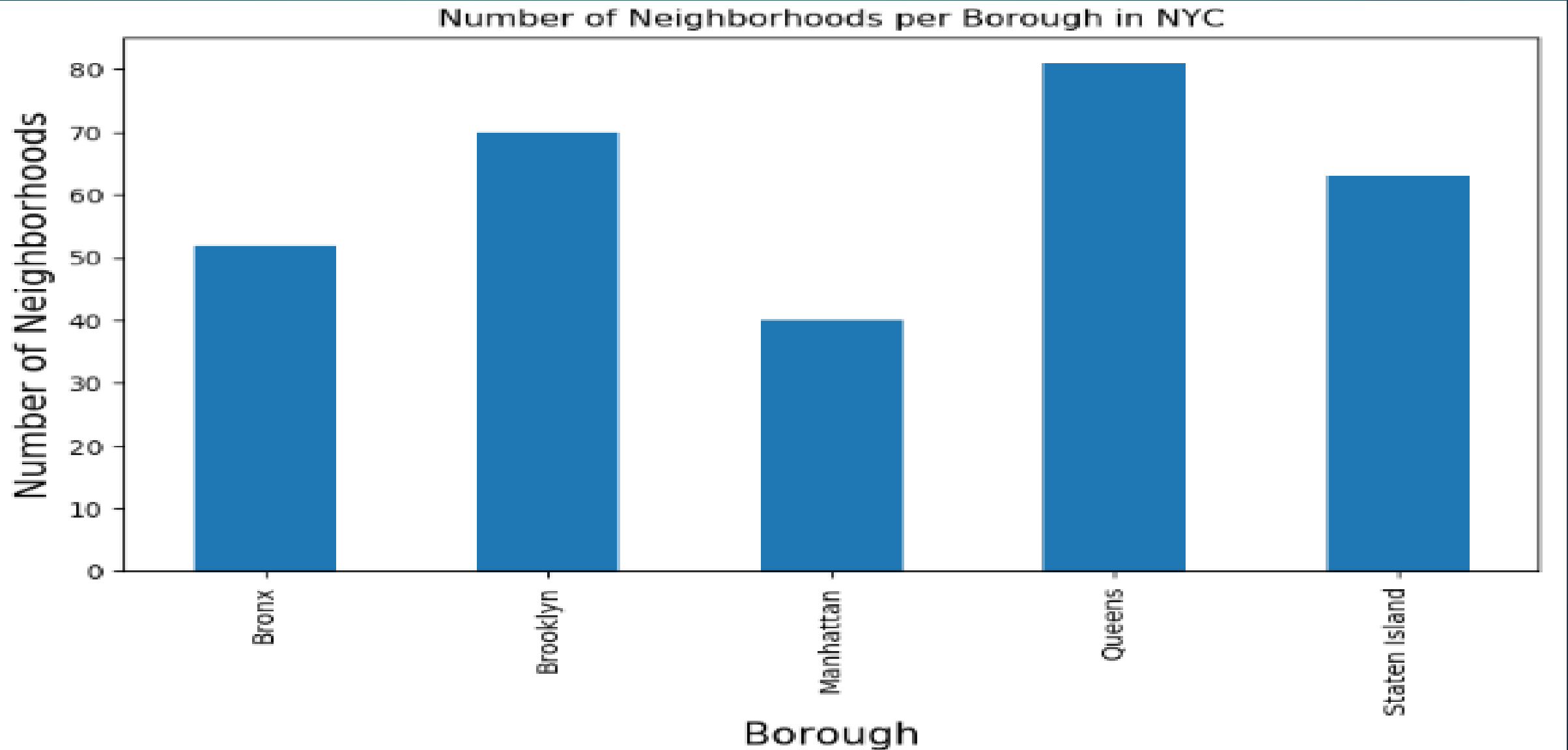
Methodology

- ▶ Data collection process was started by getting them from the links
- ▶ Venues and restaurants were found for each neighborhood by using the FourSquare API
- ▶ Some individual neighborhoods were explored
- ▶ Python's Folium library was used for visualizing maps
- ▶ Some mean values were computed to check the most common restaurants
- ▶ k-means clustering algorithms were used to figure out the different prominent location to open a new Arabian Restaurant

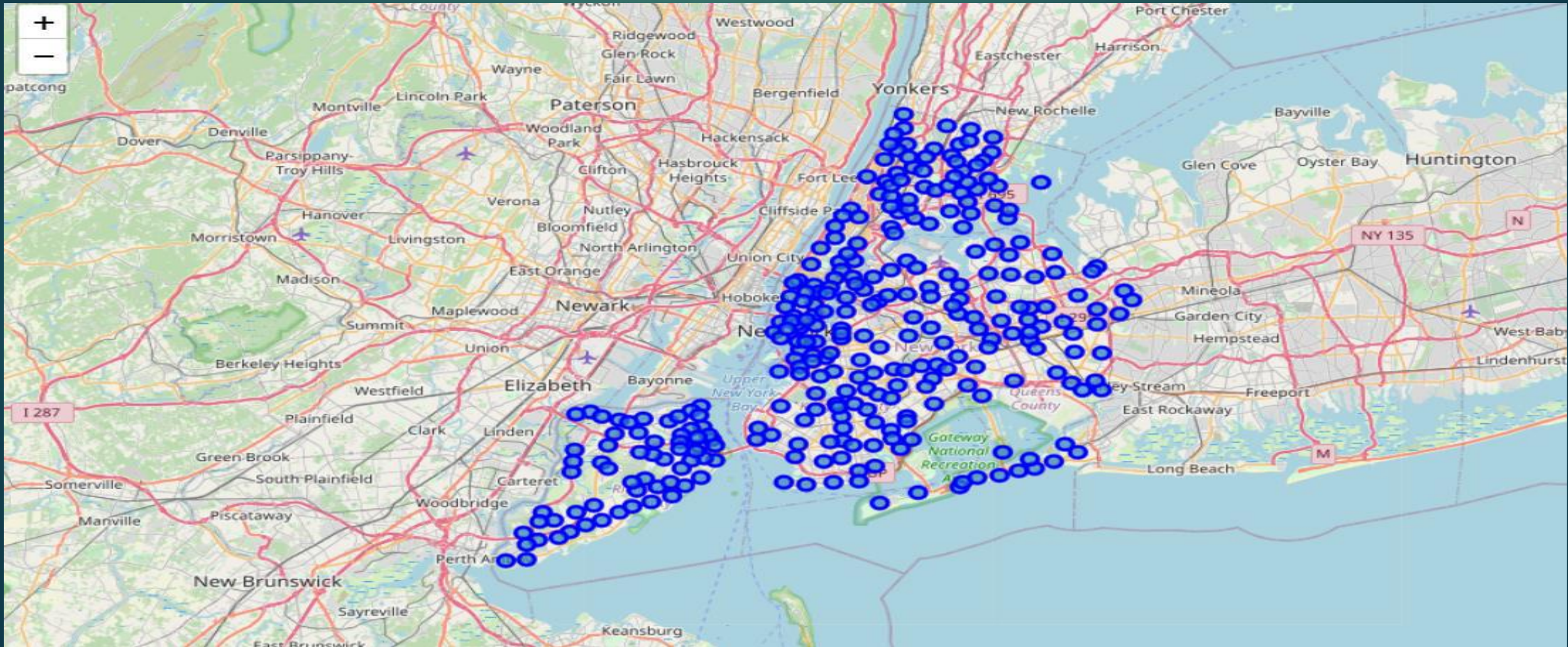
Results & Discussion

- ▶ The initial data was obtained (306 different neighborhoods).
- ▶ Bar chart was a proper selection to visualize and analyze these neighborhoods
- ▶ From the bar chart shown in the next slide: Borough Queens has the highest number of neighborhoods (around 80) and Manhattan has the lowest (just below 40)

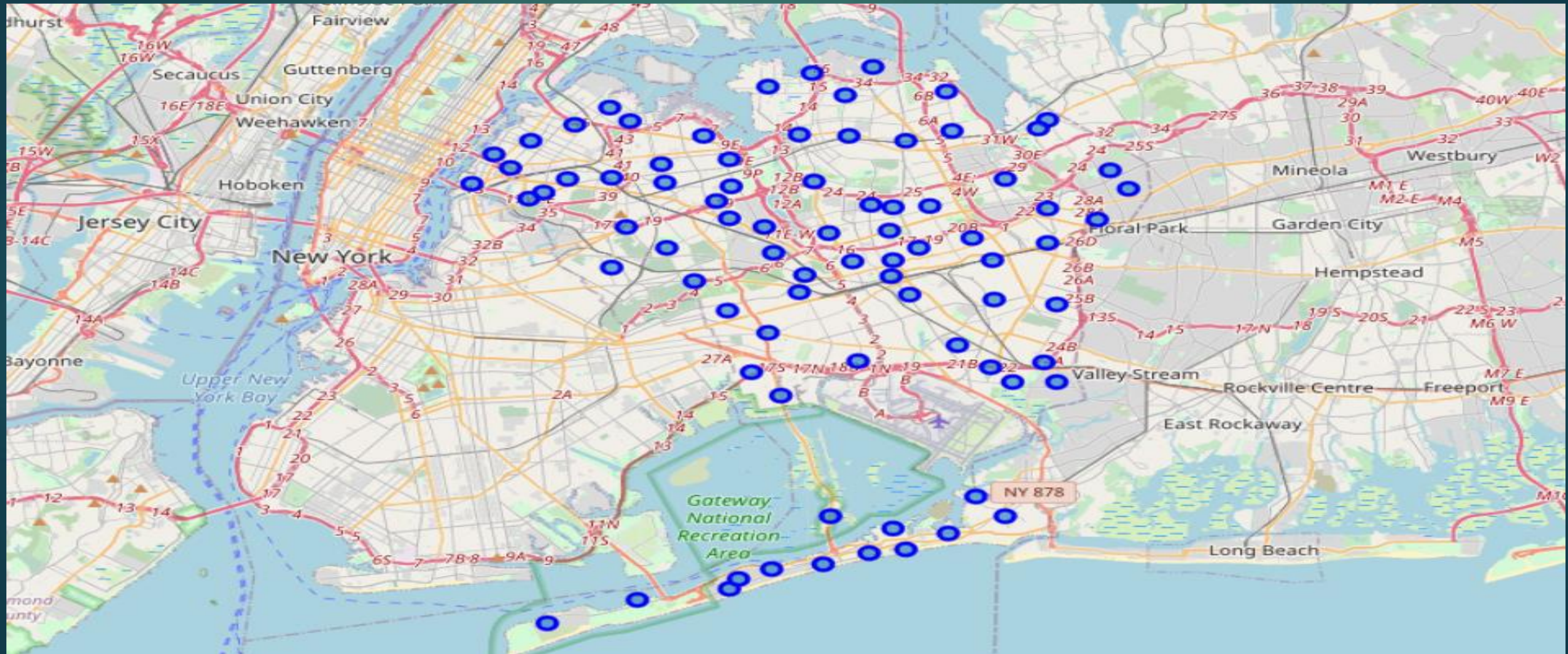
Bar Chart



The map of NYC with different neighborhoods



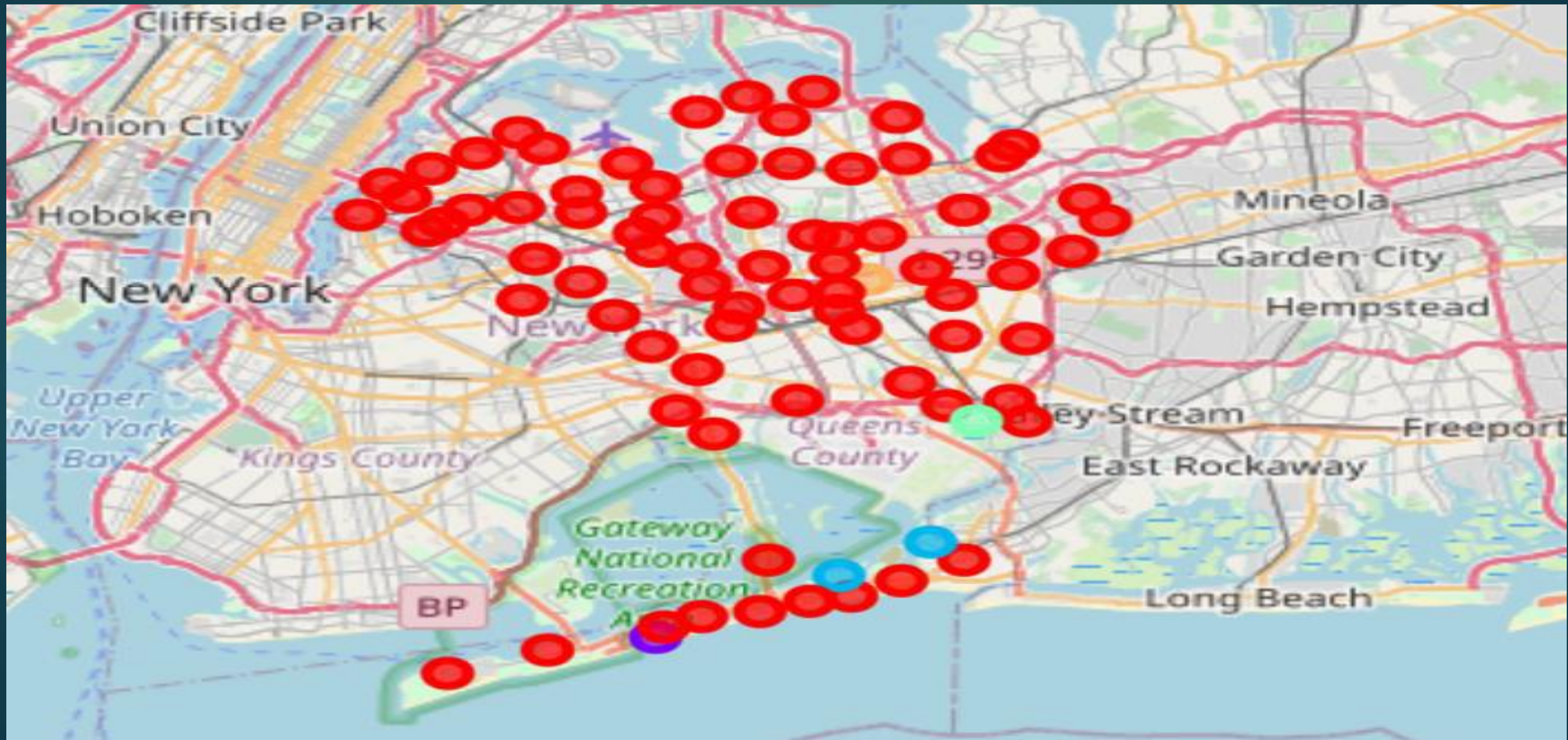
The map of the neighborhoods in the Queens



Results & Discussion

- ▶ There was no Arabian Restaurant in Queens at all.
 - This could be another attractive reason to start up a restaurant which offers Arabian Foods
- ▶ From the mean values, it was obvious that American Restaurants were the most common and popular in different neighborhoods.
- ▶ Checking for the best five venues in each neighborhood could provide a comprehensive approach
- ▶ Neighborhoods were clustered into five
- ▶ Based on the defining categories, we could then assign a best location for the restaurant to each cluster.

map of the five clusters



Conclusion

- ▶ Queens has been chosen since it is the Borough with the highest number of neighborhoods
- ▶ Undoubtedly, cluster one (in the previous slide) with the red color is the most condense and logically opening a new restaurant in the middle of it will be very appropriate
- ▶ There should be other factors taken in consideration before proceeding with such establishment
- ▶ It seems the location in the middle of the Queens Borough is the best as it looks very dense with dots and venues where people will be attending regularly and order meals