



The Battle of Neighborhoods

Etobicoke - Pharmacy

City of Toronto



Scarborough

North York

Etobicoke

York

north

midtown

west

"Old Toronto"

downtown

east

East York

**The Boroughs
of Toronto**

Problem Statement

Recommend a location to
start a pharmacy in the
Etobicoke borough in
Toronto

Data

Collect	Collect Toronto neighborhood data along with boroughs
Get	Collect geo spatial data on the locations for Etobicoke and its neighborhoods
Use	Use FourSquare API to collect nearby medical venues along with pharmacies
Clean	Clean the data to process for machine learning

Tools

Pandas - Dataframe capability

NumPy - Data for arrays and vectors

BeautifulSoup - Parse HTML and get data

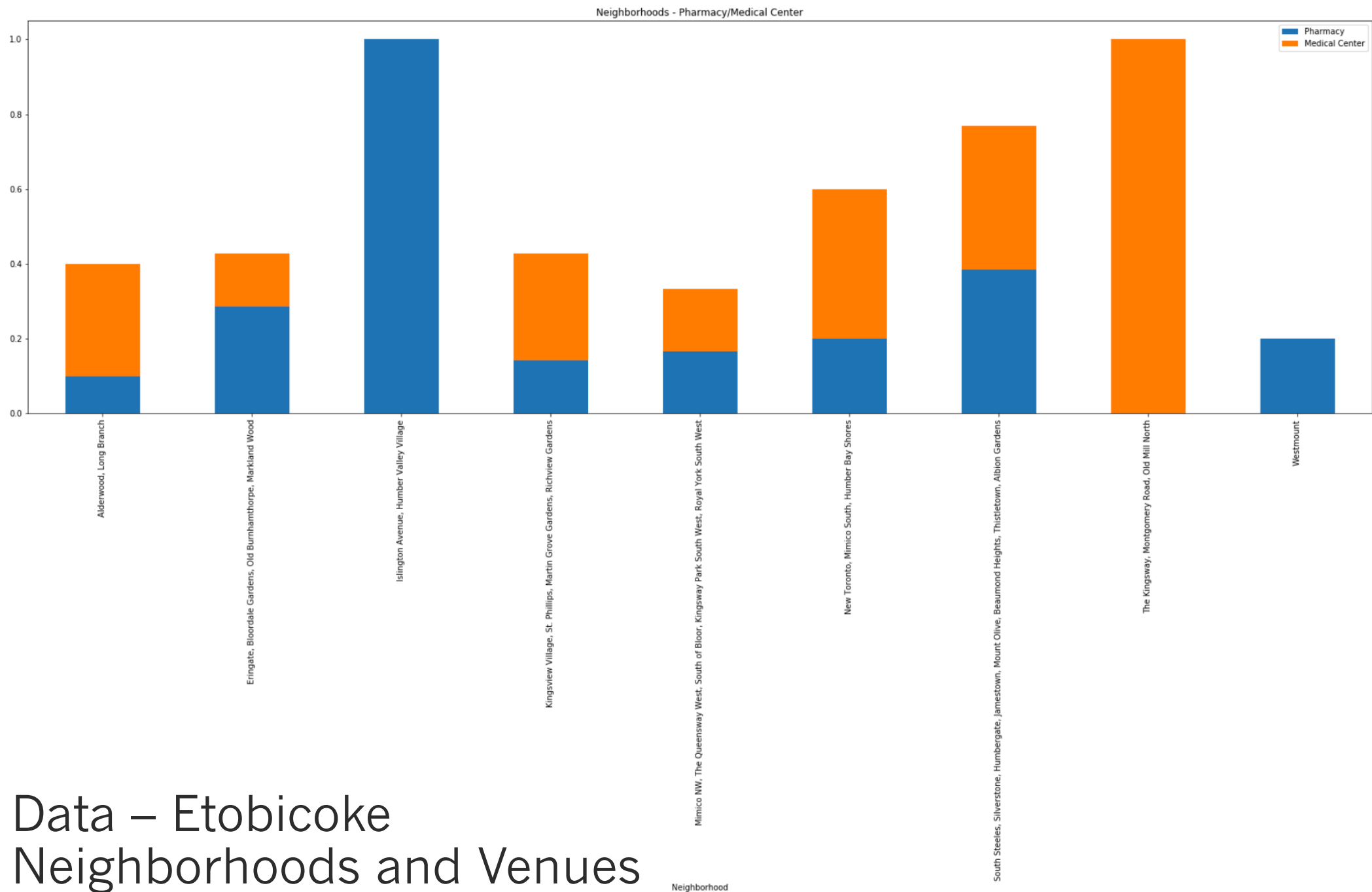
FourSquare API - To get venues nearby a location along with latitude and longitude

Requests - Allow HTTP requests to be done

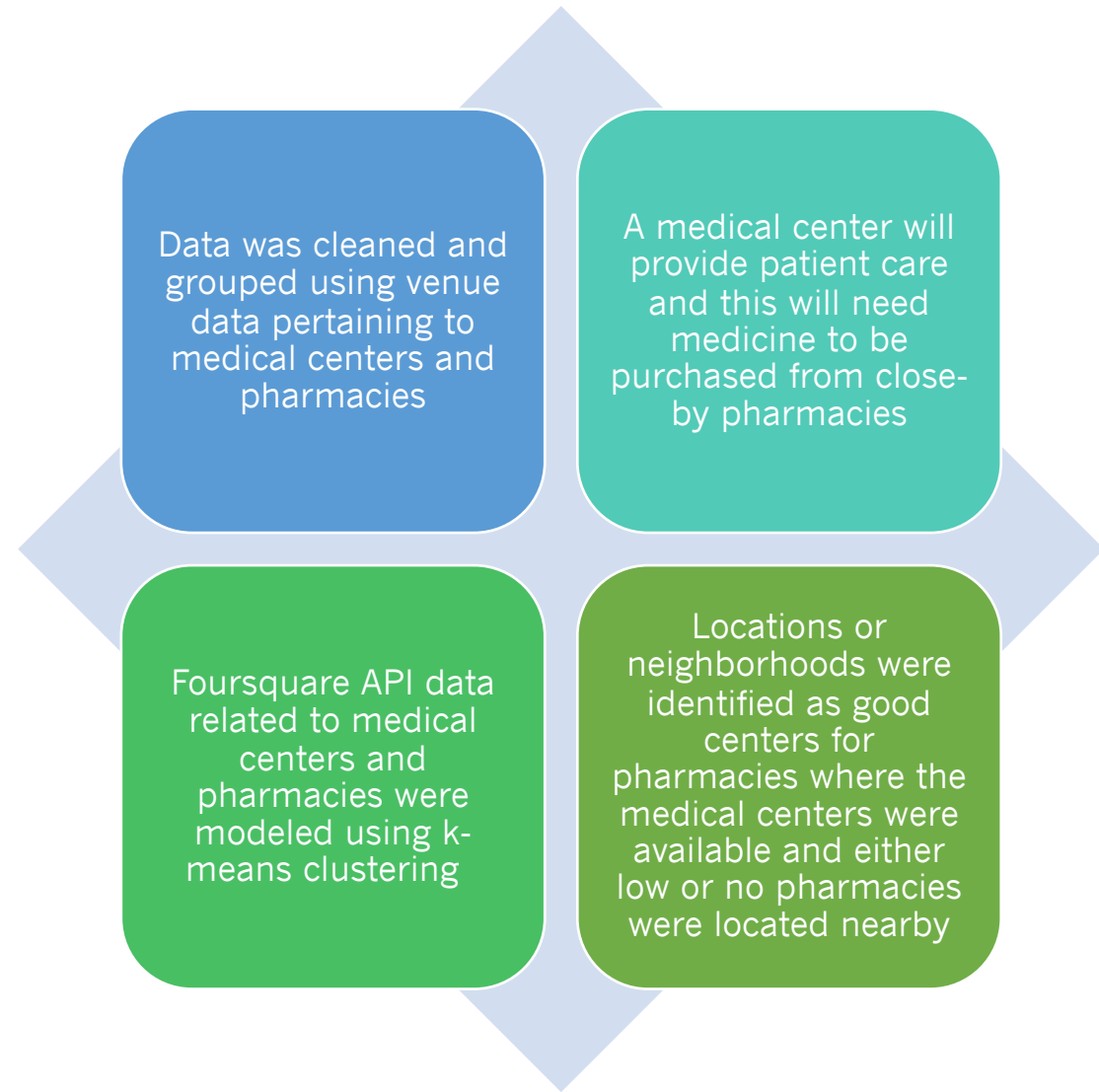
Folium - Map library

Matplotlib - Python plotting for bar graphs

Geopy - Suggested but not used to retrieve location data

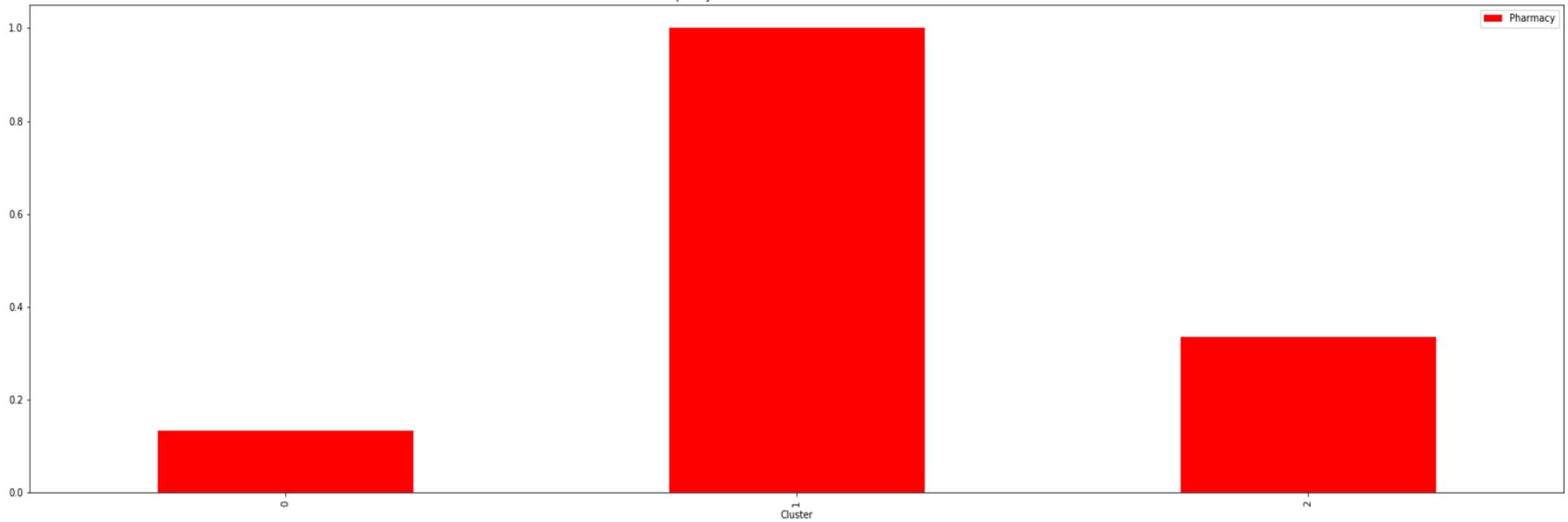


Approach (Modeling)



Cluster Analysis

Frequency of Occurrence of Pharmacies Per Cluster



Results

- Toronto has 11 boroughs and 103 neighborhoods. The borough Etobicoke has at 47 neighborhoods.
- Data from cluster analysis on frequency of pharmacy occurrence in Etobicoke showed cluster 0 to be an ideal choice. Specifically, the analysis shows that the Kingsway is ideal.
- Montgomery and Old Mill North could also be ideal for opening a pharmacy since there is a medical center nearby.