Battle of Neighborhoods

Seattle, Washington

**Data Sets and APIs:**

Foursquare API:

This project would use Four-square API as its prime data gathering source as it has a database of more than 105 million places, especially their places API which provides the ability to perform location search, location sharing and details about a business. Photos, tips and reviews jolted by Foursquare users can also be used in many productive ways to add value to the results.

Work Flow:

HTTP requests would be made to this Foursquare API server using zip codes of the Seattle city neighborhoods to pull the location information (Latitude and Longitude).

Foursquare API search feature would be enabled to collect the nearby places of the neighborhoods. Due to http request limitations the number of places per neighborhood parameter would reasonably be set to 100 and the radius parameter would be set to 500.

Folium- Python visualization library would be used to visualize the neighborhoods cluster distribution of Seattle city over an interactive leaflet map.

Extensive comparative analysis of two randomly picked neighborhoods world be carried out to derive the desirable insights from the outcomes using python’s scientific libraries Pandas, NumPy and Scikit-learn.

Unsupervised machine learning algorithm K-mean clustering would be applied to form the clusters of different categories of places residing in and around the neighborhoods.

These clusters from each of those two chosen neighborhoods would be analyzed individually collectively and comparatively to derive the conclusions.

Python packages and Dependencies:

* Pandas - Library for Data Analysis
* NumPy – Library to handle data in a vectorized manner
* JSON – Library to handle JSON files
* Geopy – To retrieve Location Data
* Requests – Library to handle http requests
* Matplotlib – Python Plotting Module
* Sklearn – Python machine learning Library
* Folium – Map rendering Library

-------------------------------------THANK YOU------------------------------------------