Battle of Neighborhood

Clustering rental place based on venuses.

Motivation

Suppose if a person is looking to move to a new place and looking for all the available rental places online. Let say that person looking for a place in ‘San Francisco’.

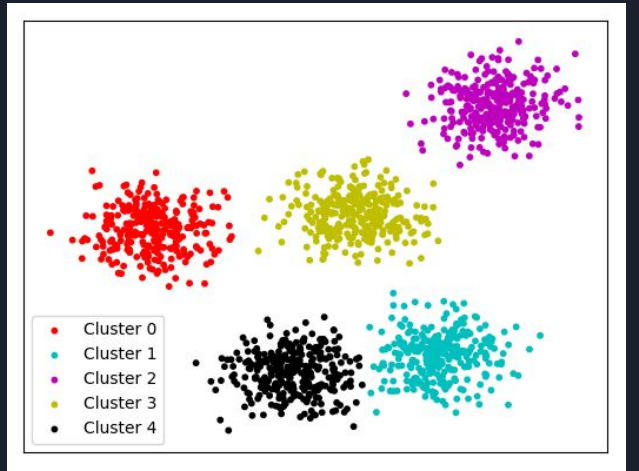
Is it possible to develop a system which can show similarity between rental places?

Objective

Develop a system which shows similarity between rental places based on the nearby venues of each rental place in order to help the user in making a better final decision of selecting a rental place.

Approach

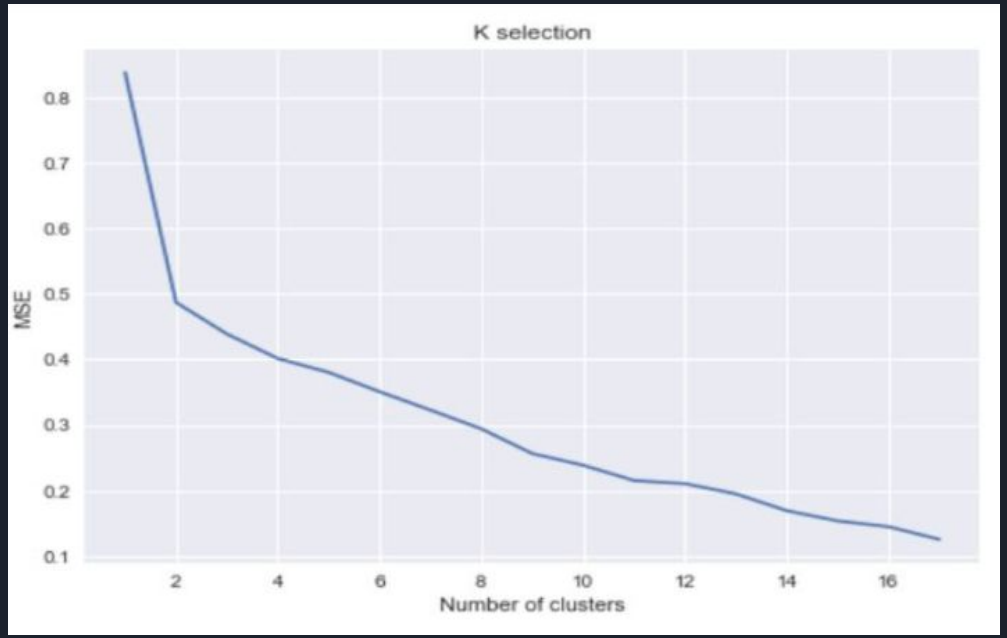
- Rental place details are obtained using ‘Craigslist Housing’ package.
- Venues for each rental place is requested using Foursquare API.
- The Category of venues are encoded using One Hot encoding.
- K-means algorithm is used to find the similarity.
- Elbow method is used to select the K-cluster.



FOURSQUARE

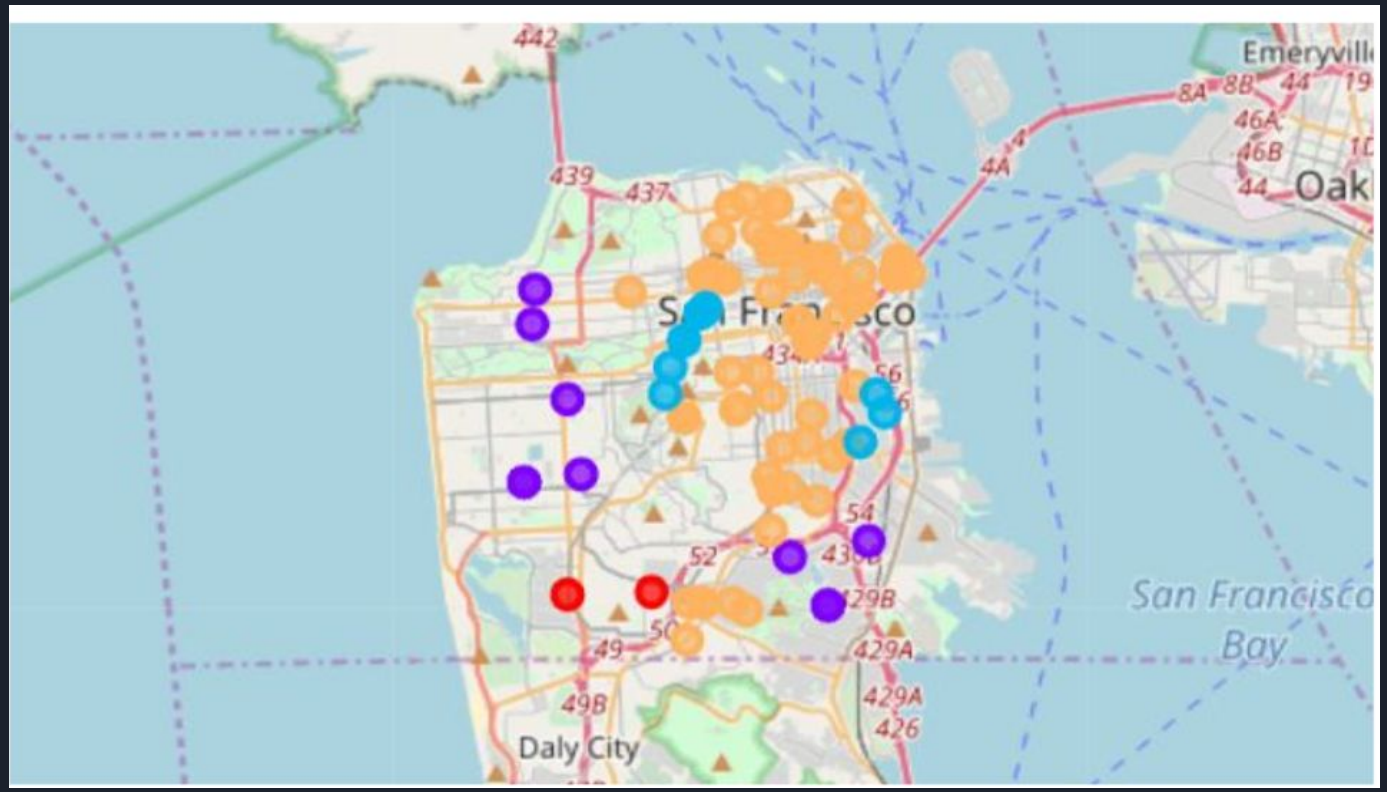
Results

Selecting the number for Clusters

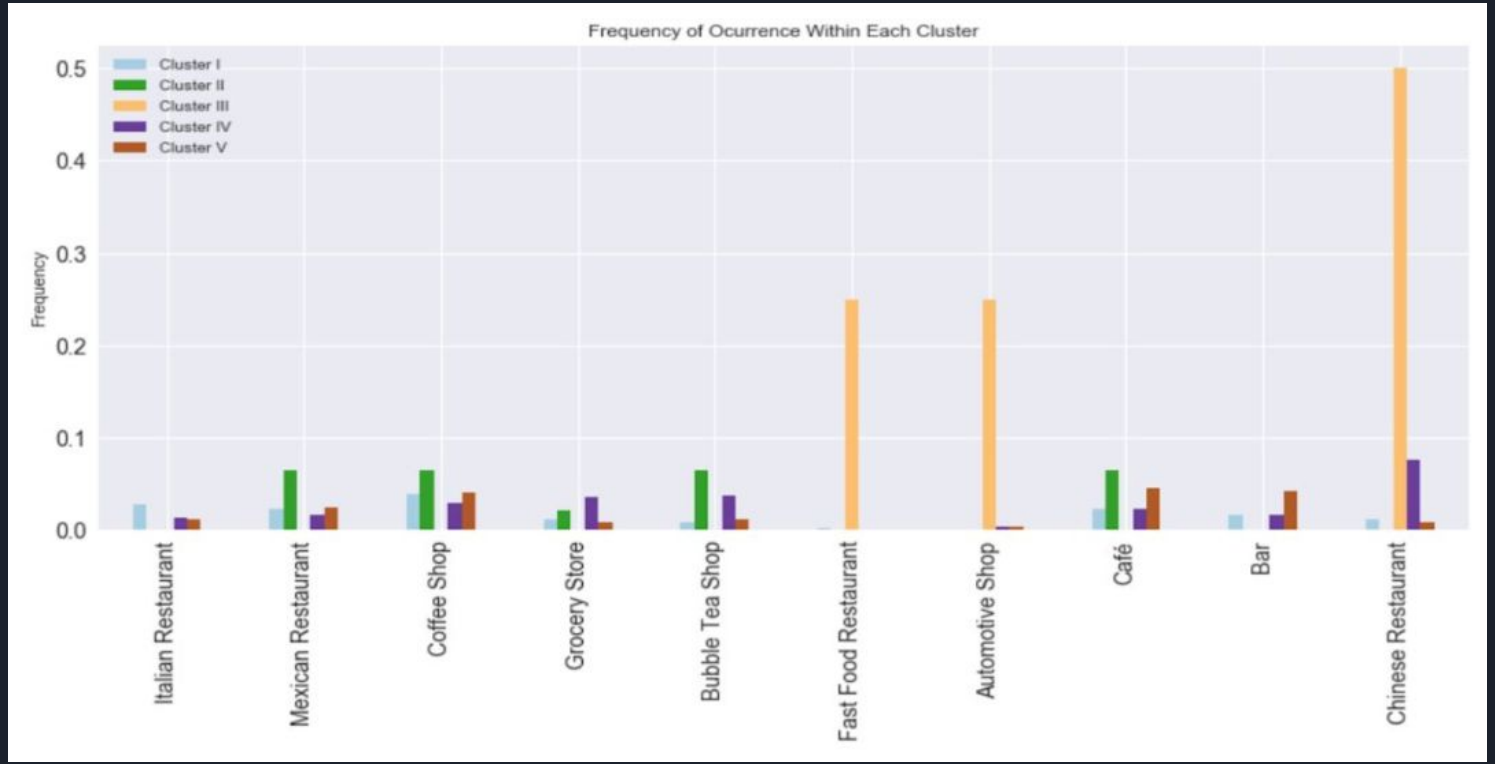


The best number for cluster is 5 that is where the elbow is located. The change is MSE decreases without big drop in value.

Folium Map after Clustering!!



Bar Chart


Frequency of Ocurrence Within Each Cluster
Cluster I
Cluster II
Cluster III
Cluster IV
Cluster V
Frequency
0.5
0.4
0.3
0.2
0.1
0.0
Italian Restaurant
Mexican Restaurant
Coffee Shop
Grocery Store
Bubble Tea Shop
Fast Food Restaurant
Automotive Shop
Café
Bar
Chinese Restaurant

Conclusion

- **Cluster I** - Rental place with venues like coffee shop, italian restaurant, mexican restaurant, bar, grocery store and chinese restaurant.
- **Cluster II** - Rental place with venues like mexican restaurant, coffee shop, bubble tea shop, cafe and grocery store.
- **Cluster III**- Rental place with venues like chinese restaurant, fast food restaurant and automotive shop.
- **Cluster IV** - Rental place with venues like chinese restaurant, bubble tea shop, grocery store, coffee shop, bar, italian restaurant and mexican restaurant.
- **Cluster V** - Rental place with venues like coffee shop, cafe, bar, italian restaurant, mexican restaurant and chinese restaurant.