

FINAL REPORT: COURSERA CAPSTONE PROJECT

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INTRODUCTION:

Project is

- To help people in exploring better facilities around their neighborhood.
- To help people making smart and efficient decision on selecting great neighborhood.
- To help people in search for good housing prices and reputed schools for their children.
- It will help people to get awareness of the area and neighborhood before moving to a new city,
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DATA :

- Data from https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M
- Scarborough dataset which we scrapped from wikipedia
- Dataset consisting of latitude and longitude, zip codes.
- Data about different venues in different neighborhoods of that specific borough.
- Data uses "Foursquare" locational information.
- Foursquare is a location data provider with information
- Foursquare API to gather information about venues inside each and every neighborhood.
- For each neighborhood, we have chosen the radius to be 100 meter.

DATA :

The information obtained per venue as follows:

1. Neighborhood
2. Neighborhood Latitude
3. Neighborhood Longitude
4. Venue
5. Name of the venue e.g. the name of a store or restaurant
6. Venue Latitude
7. Venue Longitude
8. Venue Category

METHODOLOGY :

Project uses:

- Clustering Approach
- K-Means Clustering Approach
- Credentials of Foursquare API features of near-by places
- Limitations for the number of places per neighborhood
- Parameter set to 100 and the radius to 500.

RESULT :

Map of Scarborough

Map of Scarborough

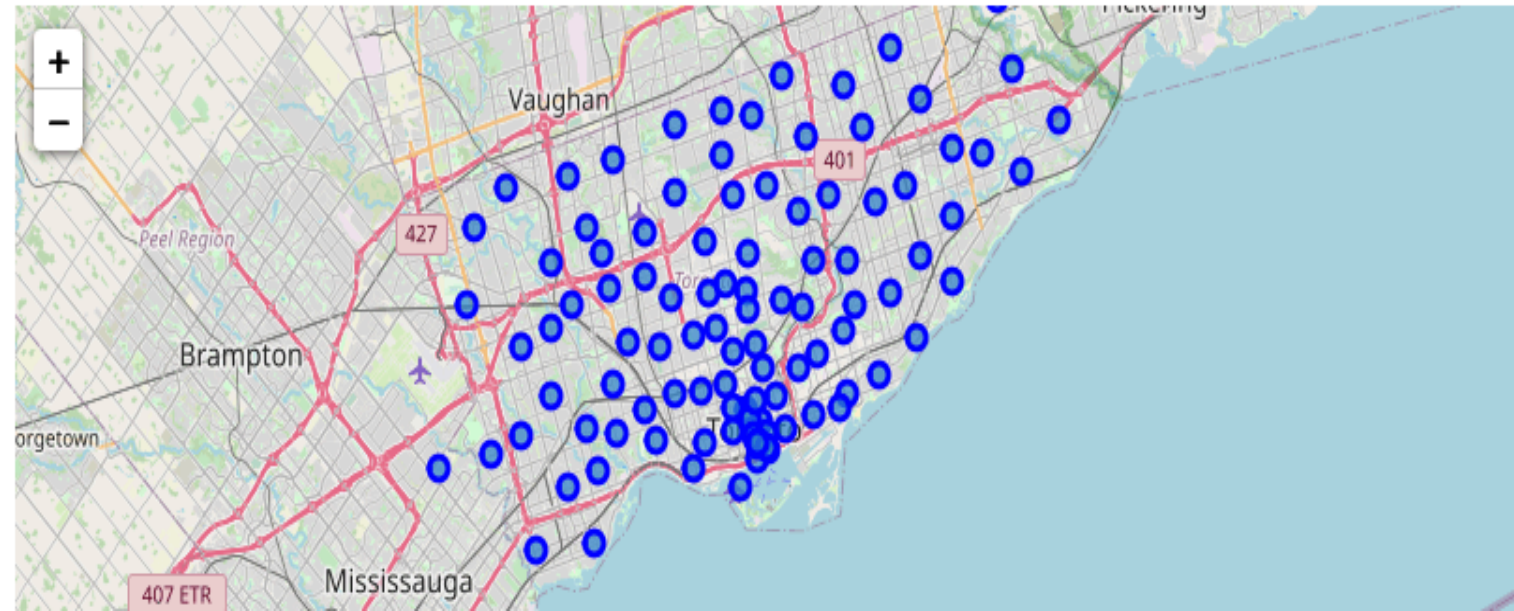
```
In [28]: map_Scarborough = folium.Map(location=[latitude_x, longitude_y], zoom_start=10)

for lat, lng, nei in zip(df3['Latitude'], df3['Longitude'], df3['Neighbourhood']):

    label = '{}'.format(nei)
    label = folium.Popup(label, parse_html=True)
    folium.CircleMarker(
        [lat, lng],
        radius=5,
        popup=label,
        color='blue',
        fill=True,
        fill_color='#3186cc',
        fill_opacity=0.7,
        parse_html=False).add_to(map_Scarborough)
```

map_Scarborough

Out[28]:

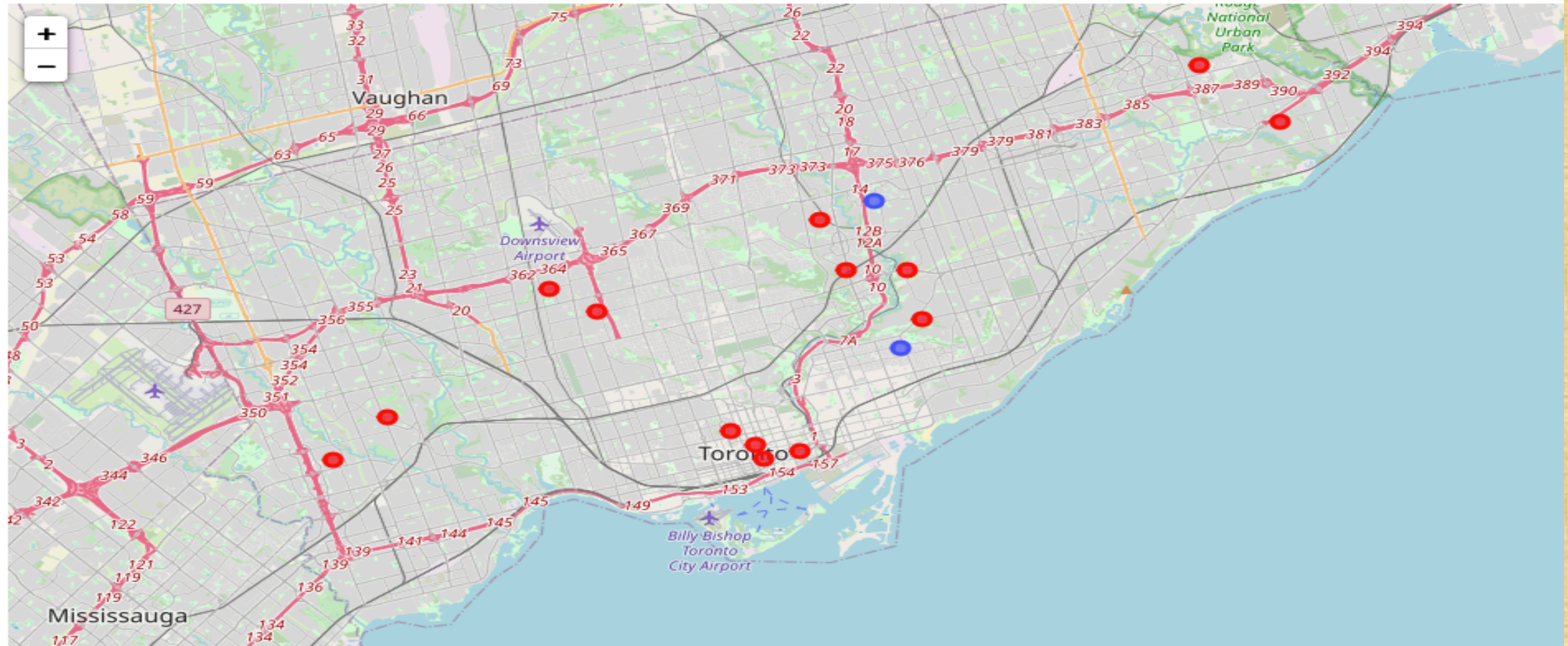


RESULT : CLUSTER MAP OF SCARBOROUGH

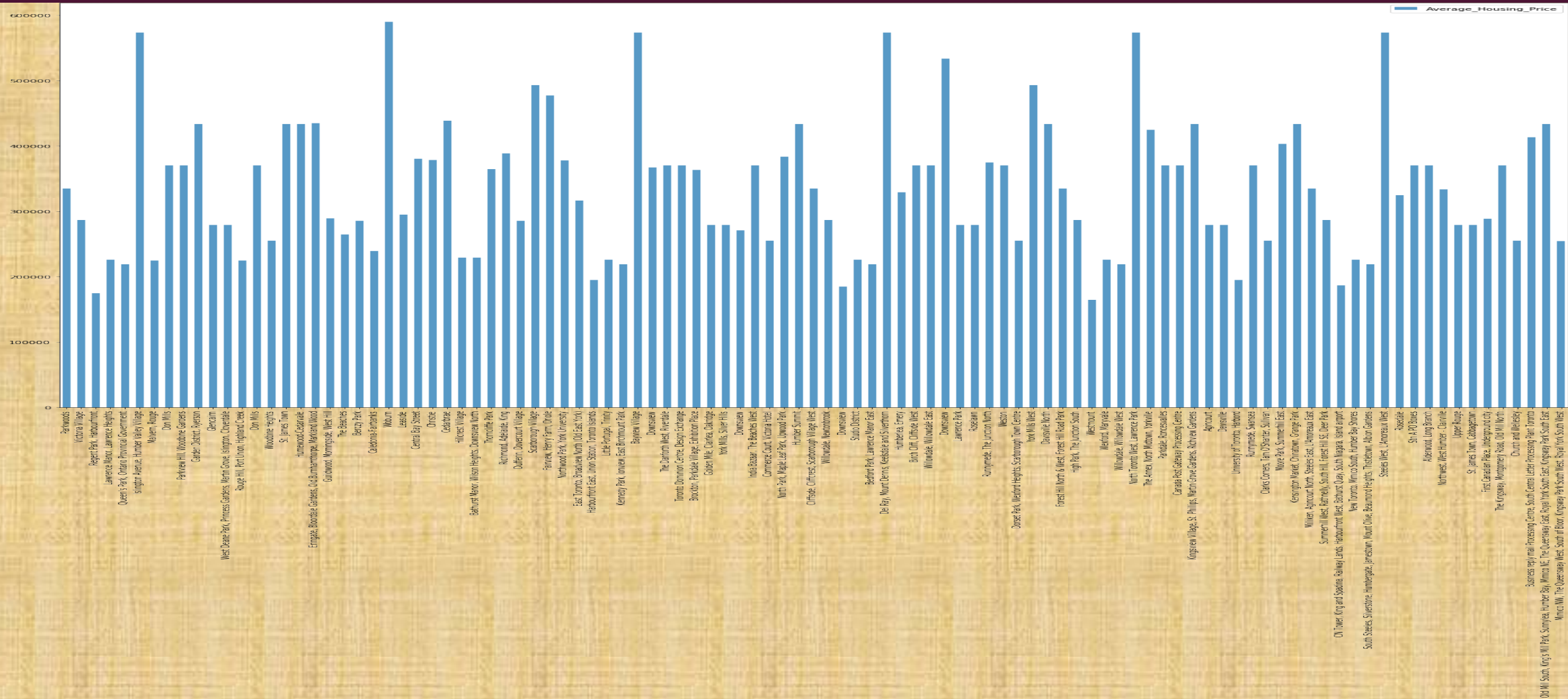
map_clusters

```
['#8000ff', '#4856fb', '#10a2f0', '#2adddd', '#62fbc4', '#9cfba4', '#d4dd80', '#ffa256', '#ff562c', '#ff0000']
```

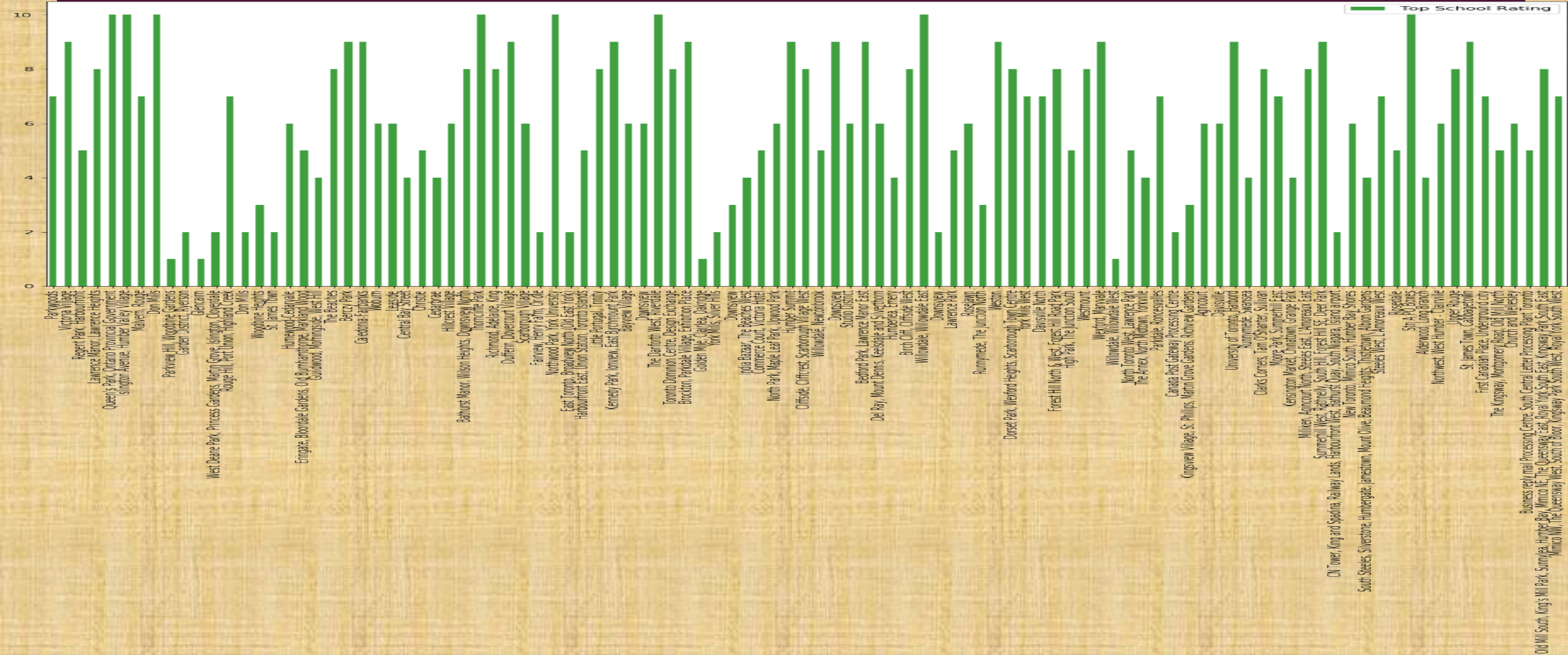
]:



RESULT: AVERAGE HOUSE PRICE BY CLUSTERS



RESULT: SCHOOL RATINGS BY CLUSTERS



DISCUSSION:

- Social presence in society in terms of like-minded people.
- Connectivity to the airport, bus stand, city center, markets and other daily needs things nearby.
- Sorted list of house in terms of housing prices in a ascending or descending order.
- Sorted list of schools in terms of location, fees, rating and reviews.

CONCLUSION:

- Exciting, interesting and helpful results
- Very good experience with data science tools.
- Awesome k-means cluster algorithm
- Powerful mapping technique with Folium is a very

THANK YOU