BATTLE OF THE NEIGHBOURHOODS

SEAN LARGE

SHOPPING IN TORONTO

- CEO of a retial clothing business

- Wants to open a store in Toronto

- Needs high footfall and parking

- Needs to be a popular shopping area

THE DATA

- A list of Toronto's neighbourhoods, with latitude and longitude coordinates, calculated by geopy's Nominatim

	Postal Code	Borough	Neighbourhood	Latitude	Longitude	Population
0	M1B	Scarborough	Malvern, Rouge	43.806686	-79.194353	66108
1	M1C	Scarborough	Rouge Hill, Port Union, Highland Creek	43.784535	-79.160497	35626
2	M1E	Scarborough	Guildwood, Morningside, West Hill	43.763573	-79.188711	46943
3	M1G	Scarborough	Woburn	43.770992	-79.216917	29690
4	M1H	Scarborough	Cedarbrae	43.773136	-79.239476	24383

- A list of the most popular venues for each postal code region retrieved via the Foursquare API

	Neighbourhood	Neighbourhood Latitude	Neighbourhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Scarborough Village	43.744734	-79.239476	Diamond Pizza	43.743699	-79.245922	Pizza Place
1	Scarborough Village	43.744734	-79.239476	Tim Hortons	43.738992	-79.238961	Coffee Shop
2	Scarborough Village	43.744734	-79.239476	Dairy Queen	43.739506	-79.236894	Ice Cream Shop
3	Scarborough Village	43.744734	-79.239476	Dairy Queen	43.739580	-79.236991	Ice Cream Shop
4	Scarborough Village	43.744734	-79.239476	Subway	43.738284	-79.236792	Sandwich Place

THE DATA

- A list of suitable car parks for each postal code region retrieved via the Foursquare API

	Neighbourhood	Neighbourhood Latitude	Neighbourhood Longitude	Car Park	Car Park Latitude	Car Park Longitude	Car Park Category
0	Rouge Hill, Port Union, Highland Creek	43.784535	-79.160497	Re/Max West Realty Inc., Brokerage	43.783623	-79.169489	Office
1	Scarborough Village	43.744734	-79.239476	Eglinton Go Station Parking Lot	43.739985	-79.231362	Parking
2	Kennedy Park, Ionview, East Birchmount Park	43.727929	-79.262029	Kennedy Station - South Parking Lot	43.731911	-79.262755	Parking
3	Kennedy Park, Ionview, East Birchmount Park	43.727929	-79.262029	Kennedy Station - North Lot	43.733200	-79.263298	Parking
4	Kennedy Park, Ionview, East Birchmount Park	43.727929	-79.262029	Kennedy Station - East Parking Lot	43.733258	-79.263618	Parking

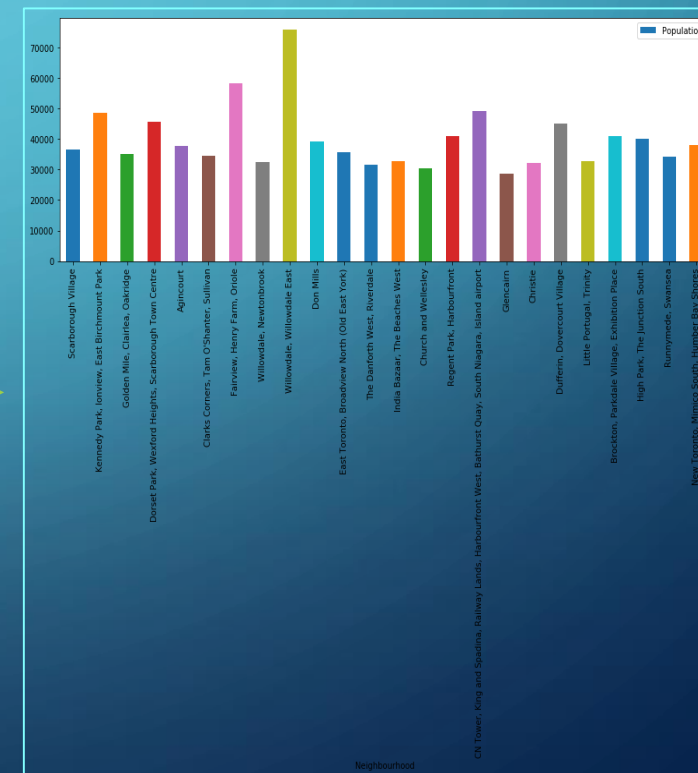**Drop any results that aren't in the Parking venue category**

```
toronto_parking.drop(toronto_parking[toronto_parking['Car Park Category'] != 'Parking'].index,axis=0, inplace=True)
```

```
print('There are {} unique parking lots in Toronto.'.format(len(toronto_parking['Car Park'].unique())))
print('There are {} neighbourhoods with access to at least one parking lot.'.format(len(toronto_parking['Neighbourhood'].unique()))
```

```
There are 44 unique parking lots in Toronto.
There are 24 neighbourhoods with access to at least one parking lot.
```
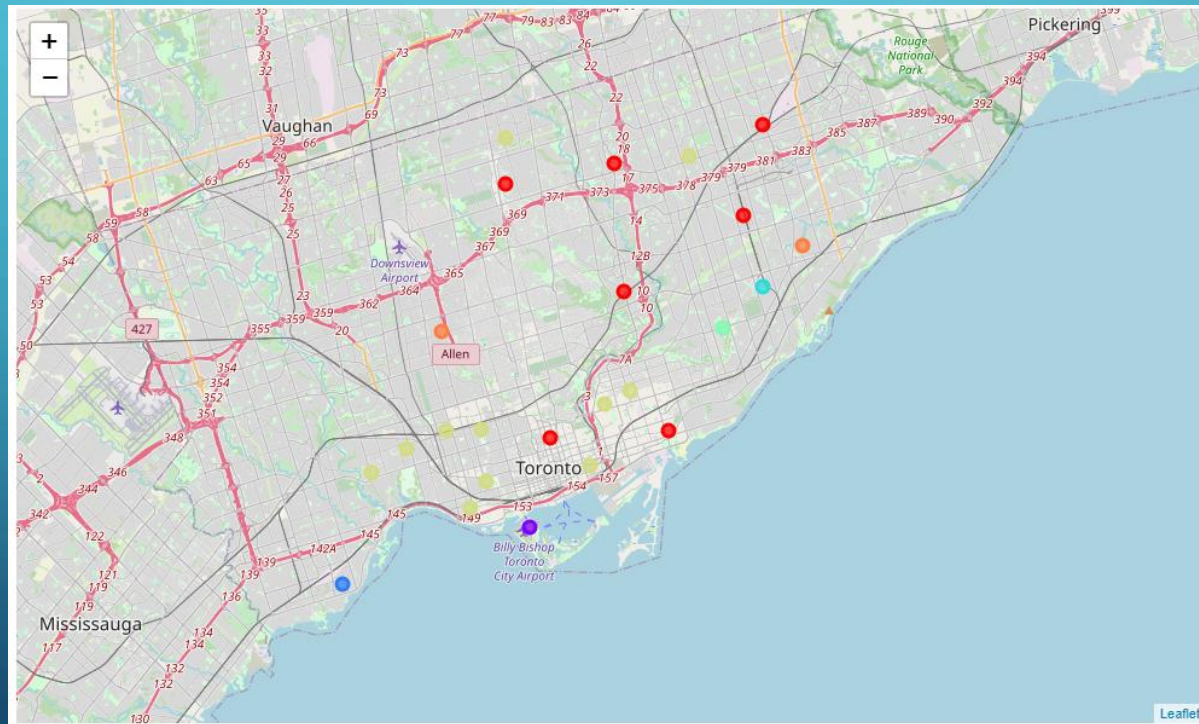
- A list of total populations for each postal code region retrieved via Statistics Canada

	Postal Code	Borough	Neighbourhood	Latitude	Longitude	Population
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THE METHOD

- Narrow regions down based on population and parking availability:

THE METHOD

- One-hot encoding and k-means clustering!

RESULTS

- Boroughs of Scarborough and North York most popular with retail venues

- The region encapsulating the neighbourhoods Fairview, Henry Farm, Oriole is popular with clothing outlets

- The same region has the second highest population in Toronto

CONCLUSION

- I would recommend Fairview, Henry Farm, Oriole as sensible neighbourhoods for a new clothing outlet