The Battle of neighborhoods - Toronto

1. Description of the problem

Cynthia would like to open a new clothing store in the city of Toronto. More specifically, she is interested in the area of downtown Toronto, so she wants to explore where are located the already existing stores so as to decide accordingly.

2. Description of the Data

The data that will be used are:

- Toronto neighborhood data
- Venues in Toronto

Toronto neighborhood data: The following Wikipedia page (https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M) will be used to pull information such as postal codes, boroughs and neighborhoods of Canada.

Venues in Toronto: Foursquare API will help us to get venues by category, location and the relevant business names.
Venues and location JSON data can be found on Foursquare API call.
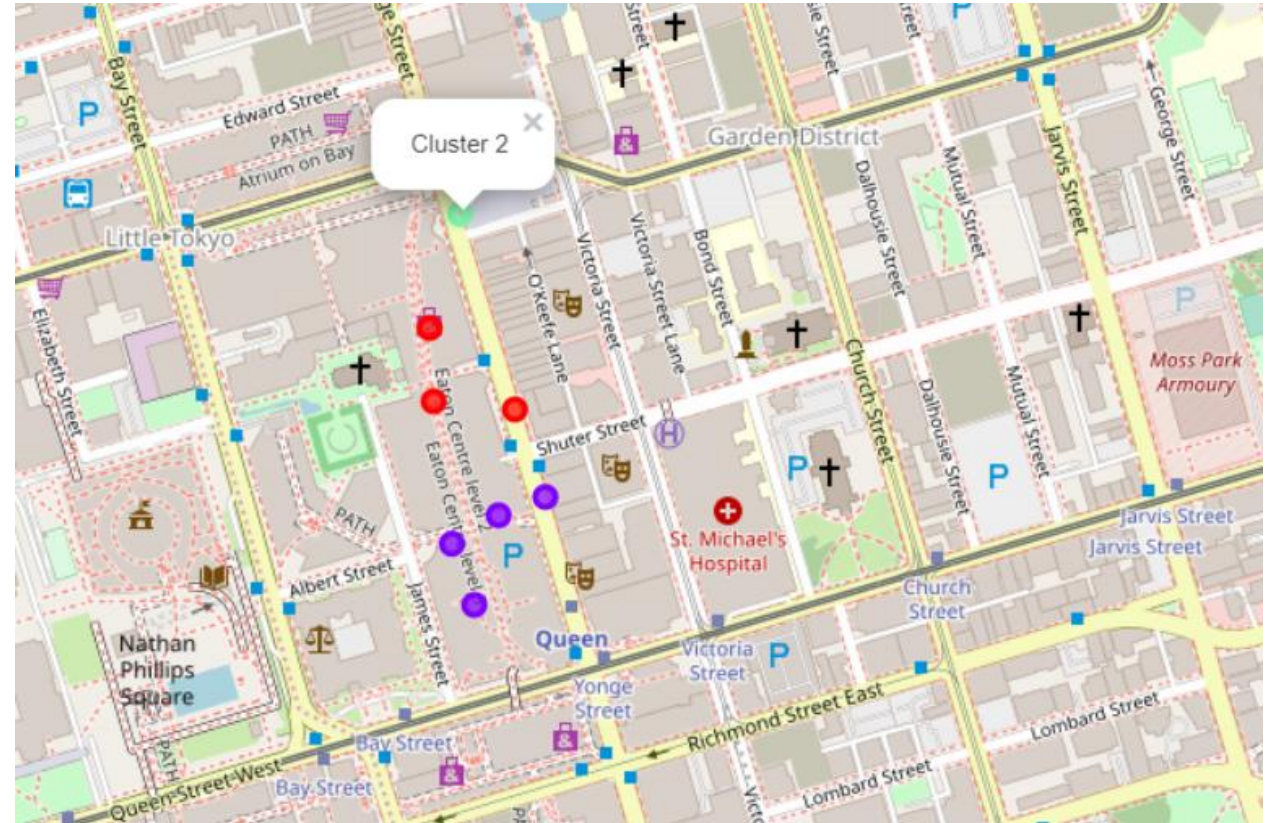https://foursquare.com

```
{'meta': {'code': 200, 'requestId': '5e62584840a7ea001b97ed28'},
 'response': {'suggestedFilters': {'header': 'Tap to show:',
   'filters': [{'name': 'Open now', 'key': 'openNow'}]},
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  'headerFullLocation': 'Bay Street Corridor, Toronto',
  'headerLocationGranularity': 'neighborhood',
  'totalResults': 128,
  'suggestedBounds': {'ne': {'lat': 43.6586737045, 'lng': -79.37460365419369},
   'sw': {'lat': 43.6496736955, 'lng': -79.38701963607448}},
  'groups': [{'type': 'Recommended Places',
   'name': 'recommended',
   'items': [{'reasons': {'count': 0,
      'items': [{'summary': 'This spot is popular',
        'type': 'general',
        'reasonName': 'globalInteractionReason'}]},
     'venue': {'id': '57eda381498ebe0e6ef40972',
      'name': 'UNIQLO ユニクロ',
      'location': {'address': '220 Yonge St',
       'crossStreet': 'at Dundas St W',
```

3. Methodology

- Data cleaning and analysis of the data pulled by Wikipedia and Foursquare
- Convert into data frames so as to handle them
- K-Means clustering method to identify location groups of existing clothing stores
- Create folium map to visualize the groups of stores

4. Results

- Downtown Toronto clothing stores are located in a specific area close to each other

- Can be separated into 3 groups

- Only 1 store is more far from the others; this is UNIQLO ユニクロ that belongs to cluster 2

5. Conclusions

Cynthia should consider to open a new clothing store in the area of cluster 2 as only 1 store exists there

As a result the competition will be limited so her new business have the potential to grow.

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