IBM DATA SCIENCE PROFESSIONAL CERTIFICATE

CAPSTONE PROJECT

CHOOSING THE BEST LOCATION TO OPEN A GYM IN TORONTO, CANADA

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INTRODUCTION

- More attention on personal wellbeing, both physically and mentally
- Gyms are becoming more and more popular in cities, especially among young people
- Opening a gym is also a good idea for people who want to start their own business
- The location of gym needs to be carefully examined and it could be very crucial to success of the business

BUSINESS PROBLEM

- Analyse various neighbourhoods of Toronto
- Select a location to open a new gym
- How and why that one particular location should be chosen?
- Provide reasons based on data analysis

DATA

- Data required:
  - List of neighbourhoods in Toronto
  - Location information about these neighbourhoods (Latitude and Longitude)
  - Other sources of data related to gyms
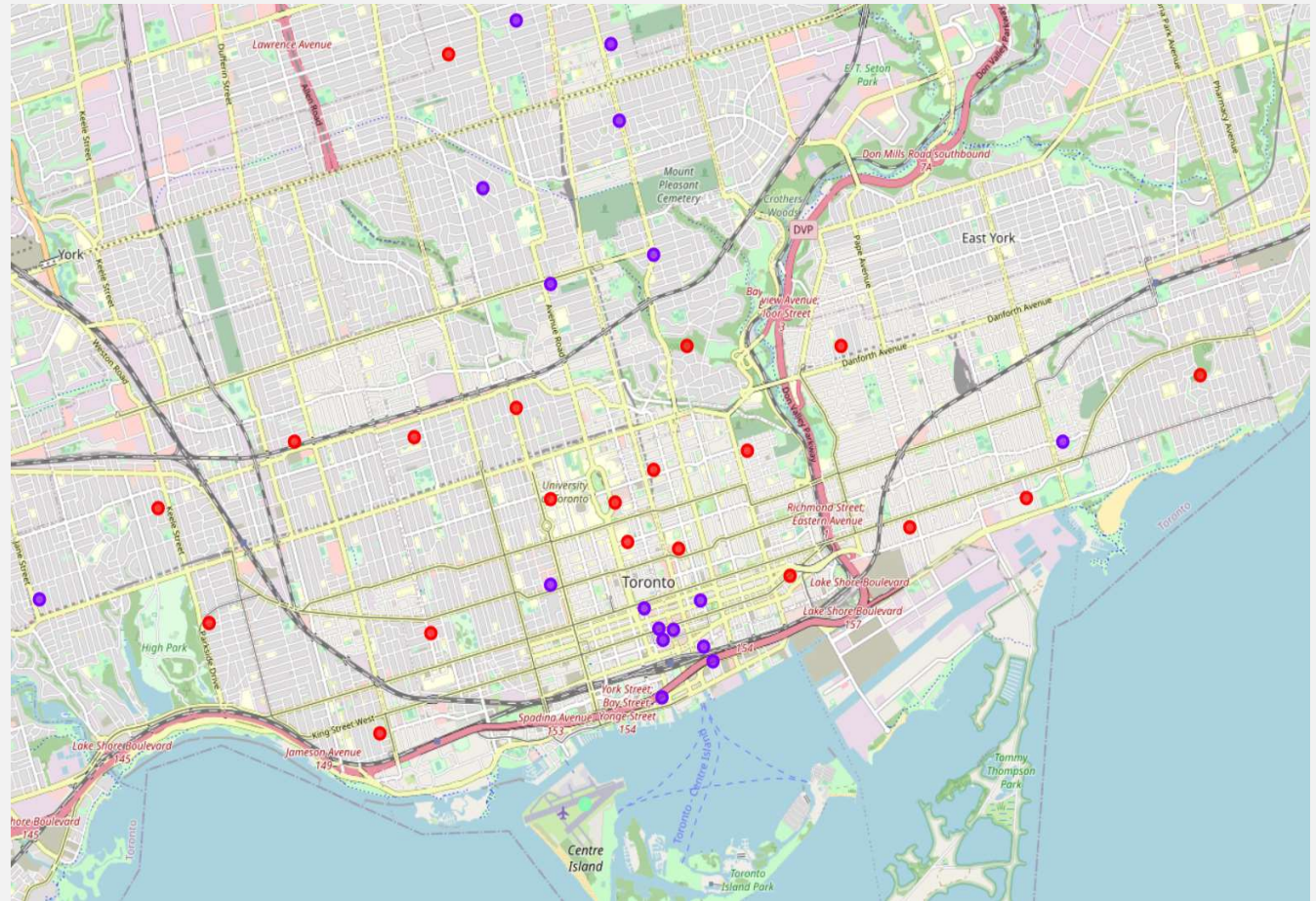
How to Obtain the data?

- Wikipedia page for neighbourhoods of Toronto

https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M

- Geospatial data: http://cocl.us/Geospatial_data
- Foursquare API for venue data

METHODOLOGY

- Read data from Wikipedia page for Toronto neighbourhoods
- Read Geospatial data from csv provided
- Use Foursquare API to get venue data
- Perform clustering analysis on data using k-means clustering
- Visualisation on map

RESULTS

➢ Cluster 0: Neighbourhoods

with low or no gyms (Red dots)

➢ Cluster 1: Neighbourhoods

with moderate number of gyms

(Purple dots)

➢ Cluster 2: Neighbourhoods

with relatively a large number

of gyms (Green dots)

DISCUSSION

- Quite a number of gyms in downtown Toronto

- In neighbourhoods at distance away from downtown, there are not so many gyms

- Cluster 2 has quite a lot of gyms, high level of competition is expected.

- Most likely to choose from cluster 0 to open a gym

RECOMMENDATION

- New gyms could be opened in Cluster 0 neighbourhoods to avoid competition and dominate the local market.

- New gyms could also be opened in Cluster 1 if the business has unique content to provide to customers.

- It is not wise to open a gym in cluster 2.

CONCLUSION

- Answer the business question:

    New gyms could be opened at cluster 0 neighbourhoods.

- More sophisticated analysis method should be used to take more factors into consideration such as income and population