Moving to Melbourne

Introduction

Australia has become a popular place for young professionals in Canada to visit and work in recent years. It is a developed, English speaking country that is similar but at the same time, different enough to Canadians. A client of mine, originally from Vancouver, has always been a fan of the accent down under. She has always wanted to move there to find her Chris Hemsworth and she finally found the courage to.

My client, Margot, has a friend in the state of Victoria, Melbourne. While she wants to have a friend nearby in the foreign country, she also wants to live in a neighbourhood that fits her lifestyle. She had hired me to help her explore neighbourhoods in Melbourne so that she can make a well-informed decision. Margot's criteria for her new ideal neighbourhood are: a variety of yoga studio, gyms, cafes and bars.

Data

To identify all neighbourhoods in Melbourne, I used the location data of Victoria, Melbourne in the below link.

https://www.geonames.org/postalcode-search.html?q=&country=AU&adminCode1=VIC

The website, GeoNames is a geographical database that provides data for all countries. It contains detailed information such as lists of cities, suburbs, their respective coordinates and country statistics such as area, population etc. For the purpose of this report, I will be utilizing the suburb list in Victoria and extract the coordinates from table. From there, I will then pass the information to Foursquare to explore popular venues in chose suburbs and see which one fits Margot's criteria.
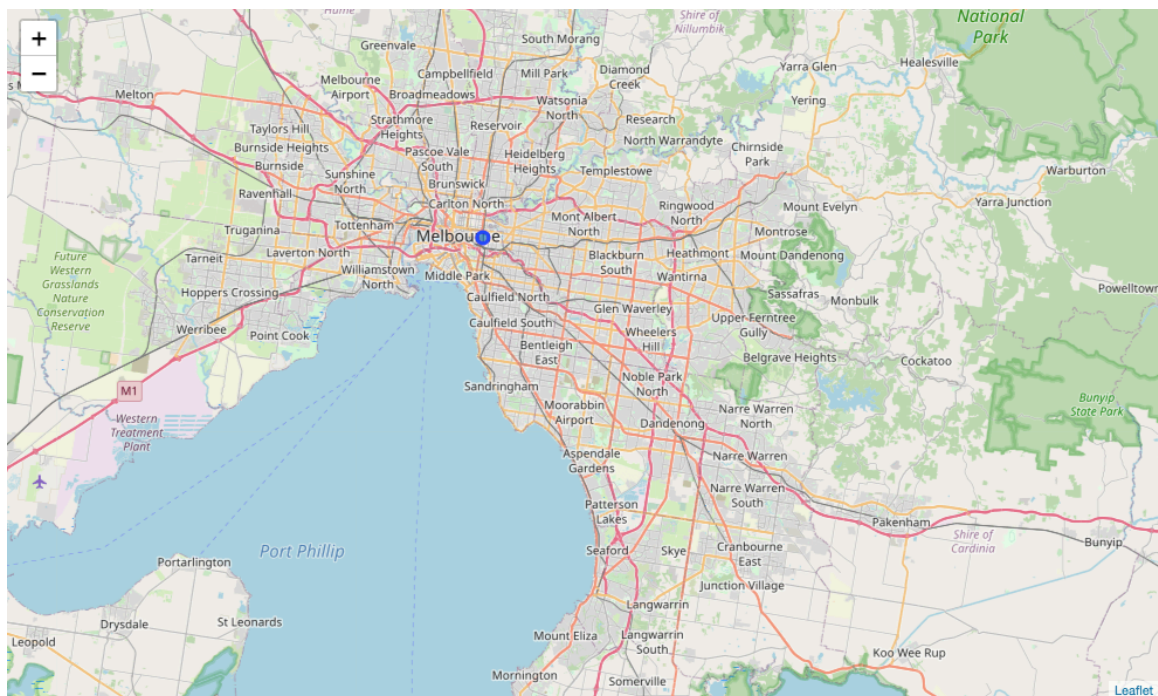
Foursquare is a location data provider that allows developers to extract different location data as they suit their needs. The particular solution I will be using is

foursquare API where I can gather data on popular venues within a certain radius of any chosen location.

Methodology

From GeoNames, I extracted the table with the geographic information of all suburbs in Melbourne using BeautifulSoup. The table originally had 200 suburbs. Since I am using Foursquare to search for venues within 500m of each neighbourhood, it is not necessary to run searches for all suburbs in the tables as neighbourhoods in the same city will likely return similar results. As such, one suburb is chosen at random to be included in the study.

Here is map of Melbourne where the major cities are indicated:

With Python's "unique" function, I found that there were 13 cities in the table.

```
In [14]: unique_cities=city_coord['City'].unique()
         unique_cities
Out[14]: array(['MELBOURNE CITY', 'FOOTSCRAY', '', 'MELB NORTH WEST', 'PRESTON',
                'HAWTHORN', 'RINGWOOD', 'MOORABBIN', 'FERNTREE GULLY', 'MULGRAVE',
                'DANDENONG', 'FRANKSTON', 'VIC COUNTRY', 'VIC FAR COUNTRY'],
               dtype=object)
```

One suburb was randomly selected from each of the 13 cities: Melbourne City, Footscray, Melbourne North West, Preston, Hawthorn, Ringwood, Moorabbin, Ferntree Gully, Mulgrave, Dandenong, Frankston, Vic Country and Vic Far Country.

From here, I passed the coordinates for each of these suburbs to request location data from Foursquare API to look for the most popular venues within 500m of each neighbourhood. After cleaning up on the data retrieved, we have a dataframe ranking ten of the most popular venue types for each neighbourhood.
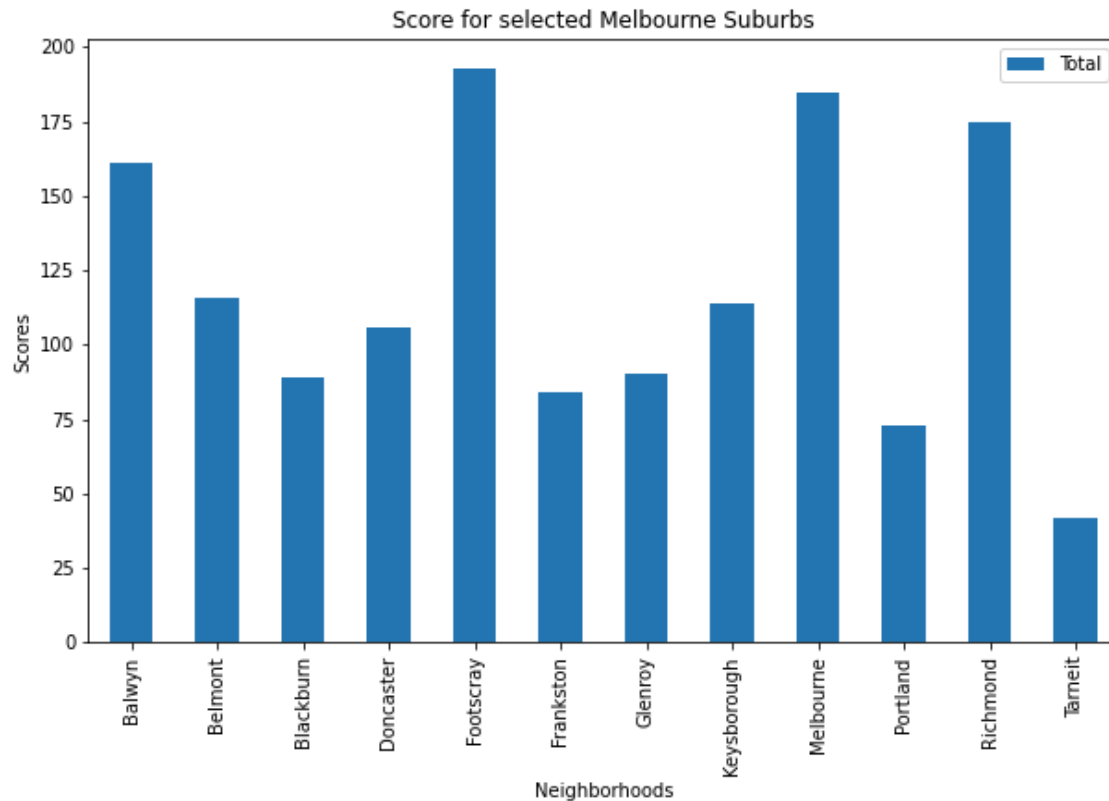
To see which neighbourhood suits Margot's criteria best, a list of venues were provided to Margot to score by importance. The scores are then weighted based on its ranking. For example, if café is the most common venue in a neighbourhood, it would have a final score of 50 (Margot gave café 5/5 for importance * 10 as the weight as it is ranked 1st out of 10 most common venues).

Venue	Scores
Café	5
Bars/Pubs	5
Gyms	5
Restaurants	3
Grocery Stores	2
Others	0

Results

After tallying up the score, I found that the scores range from 42 to 193, with Footscray having the highest score and Tarneit having the lowest.

To help visualize this information, a bar chart was created:

Discussion

From the above bar chart, we can see that although Footscray has the highest score out of the 13 suburbs. Melbourne, Richmond and Balwyn are following closely behind. With the help of data analysis, we are able to narrow down the options for Margot. However, certain characteristics can only be captured in person. Choosing a neighbourhood to settle down in in a new country is not something to be taken lightly. I recommend Margot taking two weeks to experience these neighbourhoods for few days each before making a decision.

Conclusion

Exploring Melbourne with data showed us that it is in a lot of ways similar to Canada - culturally diverse restaurants, cafes around every corner and not a lack of gyms for active

individuals. With four high scoring neighbourhoods to choose from, I am certain Margot will find one that she can settle in and begin her search for her Chris Hemsworth.