Predicting the Best Place for Indonesian Restaurant in Toronto

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1. Introduction

1.1 Background

Indonesian cuisine is a great food for people in Toronto, especially during winter season, because it contained various spices. In reality, there is no restaurant that served Indonesian cuisine there. So, it is a good idea to open an Indonesian restaurant in Toronto. It is quite challenging to find a place or area to open the Indonesian restaurant. This project will help the enterpreneur to find the most suitable location.

1.2 Problem

The main problem is to find the most suitable location based on the density of restautant in the area.

1.3 Interest

Enterpreneur(s) who wants to open Indonesian restaurant in Toronto, Canada.

2. Data

2.1 Data needed

Data needed for this project are shown below :

- List of neighborhood in Toronto, Canada

	Postal Code	Borough	Neighbourhood
0	M1B	Scarborough	Malvern, Rouge
1	M1C	Scarborough	Rouge Hill, Port Union, Highland Creek
2	M1E	Scarborough	Guildwood, Morningside, West Hill
3	M1G	Scarborough	Woburn
4	M1H	Scarborough	Cedarbrae

- Latitude and Longitude data for every neighborhood in Toronto, Canada

	Postal Code	Latitude	Longitude
0	M1B	43.806686	-79.194353
1	M1C	43.784535	-79.160497
2	M1E	43.763573	-79.188711
3	M1G	43.770992	-79.216917
4	M1H	43.773136	-79.239476

- Venue data related to restaurant in neighborhoods of Toronto, Canada

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	The Beaches	43.676357	-79.293031	Glen Manor Ravine	43.676821	-79.293942	Trail
1	The Beaches	43.676357	-79.293031	The Big Carrot Natural Food Market	43.678879	-79.297734	Health Food Store
2	The Beaches	43.676357	-79.293031	Grover Pub and Grub	43.679181	-79.297215	Pub
3	The Beaches	43.676357	-79.293031	Upper Beaches	43.680563	-79.292869	Neighborhood
4	The Beaches	43.676357	-79.293031	Seaspray Restaurant	43.678888	-79.298167	Asian Restaurant

2.2 Data Extraction

The extraction of data needed are shown below:

- Scrapping data of Toronto neighborhoods via Wikipedia and stored into dataframe

```
[ ]  url  = "https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M"
     page = requests.get(url)
```

```
[ ]  df_html = pd.read_html(url, header=0, na_values = ['Not assigned'])[0]
     df_html.head()
```

- Getting location coordinates via Geospacial Data given by Coursera

```
[ ]  url_csv = 'http://cocl.us/Geospatial_data'
     df_coordinates = pd.read_csv(url_csv)
```

- Getting the venue data via API call to FourSquare API

```
[ ]  def getNearbyVenues(names, latitudes, longitudes, radius=500):

         venues_list=[]
         for name, lat, lng in zip(names, latitudes, longitudes):
             print(name)

             # create the API request URL
             url = 'https://api.foursquare.com/v2/venues/explore?&client_id={}&client_secret={}&v={}&ll={},{}&radius={}&limit={}'.format(
                 CLIENT_ID,
                 CLIENT_SECRET,
                 VERSION,
                 lat,
                 lng,
                 radius,
                 LIMIT)

             # make the GET request
             results = requests.get(url).json()["response"]['groups'][0]['items']
```