

Identifying neighborhoods to establish a Mexican restaurant in Toronto

- INTRODUCTION

A Mexican family have just arrived to Toronto. They had a Mexican restaurant in Mexico City and then they want to stablish a Mexican restaurant in Toronto as they are familiarized with the business. Since they have just arrived to Toronto, they do not know the city so they have asked for our services in order to identify the best neighborhoods to establish the restaurant.

- DATA

We will identify Toronto's neighborhoods using public data (on Wikipedia). Then, we are going to use Foursquares data on Toronto's restaurants in order to identify which neighborhoods don't have Mexican restaurants in order to be innovative in the area. Ee will also include neighborhoods that have restaurants in order to be sure that there is a demand for restaurants in the area.

- METHODOLOGY

We scrapped the web in order to construct a data frame with information on Toronto's neighborhoods.

Importing data and creating dataframe ¶

```
In [2]: url = "https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M"
raw_df=pd.read_html(url, header=0)[0]
raw_df.head()
```

Out[2]:

	Postal Code	Borough	Neighbourhood
0	M1A	Not assigned	Not assigned
1	M2A	Not assigned	Not assigned
2	M3A	North York	Parkwoods
3	M4A	North York	Victoria Village
4	M5A	Downtown Toronto	Regent Park, Harbourfront

We grouped the locations according to common postal codes.

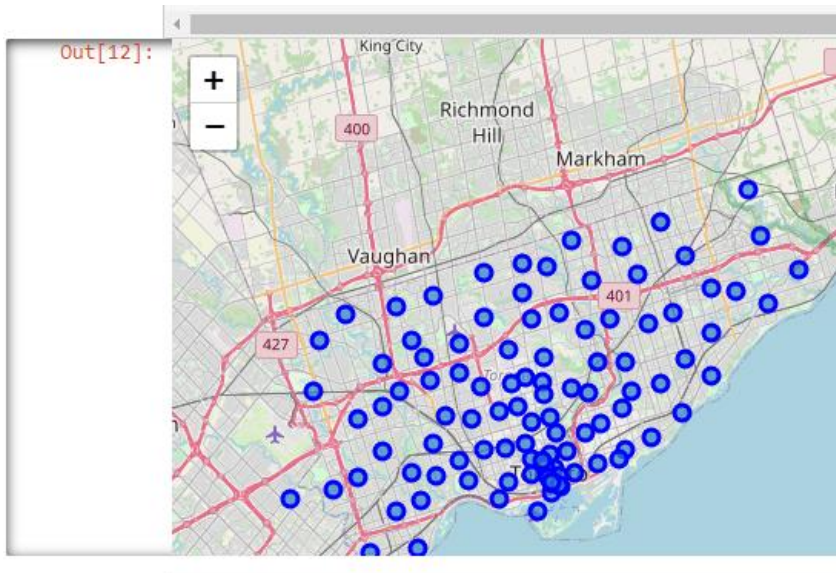
Grouping

```
In [4]: df_grouped = df.groupby(['Postal Code', 'Borough'], as_index=False).agg(lambda x: ','.join(x))
df_grouped.head()
```

Out[4]:

	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

We generated the map of Toronto's neighborhoods.



We retrieved the data from Foursquare

```
In [17]: radius = 5000
LIMIT = 100
url_fs = 'https://api.foursquare.com/v2/venues/explore?&client_id={}&client_secret={}&v={}&ll={}&radius={}&limit={}'.format(
    CLIENT_ID,
    CLIENT_SECRET,
    VERSION,
    neighbourhood_latitude,
    neighbourhood_longitude,
    radius,
    LIMIT)
# get the result to a json file
results = requests.get(url_fs).json()
results
```

We generated a list of neighborhoods where there are restaurants present but none of them are Mexican.

List of grouped neighborhoods where Restaurants are present, except Mexican restaurants

```
In [52]: mex = toronto_grouped[(toronto_grouped["Mexican Restaurant"] == 0.0) & (toronto_grouped["Restaurant"] != 0.0)]
mex["Neighbourhood"]
```

```
Out[52]: 2    Bathurst Manor, Wilson Heights, Downsview North
4    Bedford Park, Lawrence Manor East
5    Berczy Park
7    Brockton, Parkdale Village, Exhibition Place
8    Business reply mail Processing Centre, South C...
13   Central Bay Street
14   Christie
18   Commerce Court, Victoria Hotel
19   Davisville
21   Del Ray, Mount Dennis, Keelsdale and Silverthorn
22   Don Mills
28   Fairview, Henry Farm, Oriole
29   First Canadian Place, Underground city
41   India Bazaar, The Beaches West
48   Little Portugal, Trinity
59   Parkdale, Roncesvalles
64   Richmond, Adelaide, King
68   Runnymede, Swansea
72   St. James Town
73   St. James Town, Cabbagetown
75   Stn A PO Boxes
77   Summerhill West, Rathnelly, South Hill, Forest...
80   The Danforth West, Riverdale
82   Thorncliffe Park
```

• RESULTS

Of the 93 group of neighborhoods in Toronto, we identified 27 that had restaurants but no Mexican restaurants. These places have the potential to establish a Mexican Restaurants since there is demand for restaurants, but no one offers Mexican food, being a unique proposal in the area.

- **DISCUSSION AND CONCLUSION**

This work represents an easy way to identify places where there are no offering of a specific kind, in this case, a Mexican restaurant. Although Foursquare's API is somewhat limited right now, there is are lot of interesting things that can be done with it.