

Week3Toronto02

March 27, 2019

0.0.1 This notebook is to use the Geospatial_Coordinates CSV and create the new data frame

0.0.2 Prior to start import the necessary libraries

```
In [1]: import pandas as pd
import numpy as np
import urllib
import urllib.request
import os
import requests
from bs4 import BeautifulSoup
```

0.0.3 Use the Geospatial coordinates excel to determine the latitudes and longitudes

0.0.4 Read the geospatial coordinates csv into a dataframe

```
In [27]: geospace_df = pd.read_csv('Geospatial_Coordinates.csv')
```

```
In [28]: geospace_df.head()
```

```
Out[28]:
```

	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

0.0.5 Merge the two dataframes in order to get the latitude and longitude for each Postal code.

0.0.6 The Postcdgrouped data frame was created as part of Question 1

```
In [29]: Postcodes_Coordinates = pd.merge(left=Postcdgrouped, right=geospace_df, left_on='Postal Code', right_on='Postal Code')
```

```
In [30]: Postcodes_Coordinates.head()
```

```
Out[30]:
```

	Postcode	Borough	Neighbourhood	Postal Code	\
0	M3A	North York	Parkwoods	M3A	
1	M4A	North York	Victoria Village	M4A	
2	M5A	Downtown Toronto	Harbourfront, Regent Park	M5A	
3	M6A	North York	Lawrence Heights, Lawrence Manor	M6A	

```

4      M7A      Queen's Park      Queen's Park      M7A

      Latitude Longitude
0  43.753259 -79.329656
1  43.725882 -79.315572
2  43.654260 -79.360636
3  43.718518 -79.464763
4  43.662301 -79.389494

```

0.0.7 Remove the extra column

```
In [31]: del Postcodes_Coordinates['Postal Code']
```

```
In [32]: Postcodes_Coordinates.head()
```

```

Out[32]:   Postcode      Borough      Neighbourhood  Latitude \
0      M3A      North York      Parkwoods      43.753259
1      M4A      North York      Victoria Village  43.725882
2      M5A  Downtown Toronto      Harbourfront,Regent Park  43.654260
3      M6A      North York  Lawrence Heights,Lawrence Manor  43.718518
4      M7A      Queen's Park      Queen's Park      43.662301

      Longitude
0  -79.329656
1  -79.315572
2  -79.360636
3  -79.464763
4  -79.389494

```

0.0.8 Rename the first column as "Postal Code"

```
In [33]: Postcodes_Coordinates.rename({'Postcode':'PostalCode'},axis=1)
```

```

Out[33]:   PostalCode      Borough \
0      M3A      North York
1      M4A      North York
2      M5A  Downtown Toronto
3      M6A      North York
4      M7A      Queen's Park
5      M9A      Etobicoke
6      M1B      Scarborough
7      M3B      North York
8      M4B      East York
9      M5B  Downtown Toronto
10     M6B      North York
11     M9B      Etobicoke
12     M1C      Scarborough
13     M3C      North York
14     M4C      East York

```

15	M5C	Downtown Toronto
16	M6C	York
17	M9C	Etobicoke
18	M1E	Scarborough
19	M4E	East Toronto
20	M5E	Downtown Toronto
21	M6E	York
22	M1G	Scarborough
23	M4G	East York
24	M5G	Downtown Toronto
25	M6G	Downtown Toronto
26	M1H	Scarborough
27	M2H	North York
28	M3H	North York
29	M4H	East York
..
73	M4R	Central Toronto
74	M5R	Central Toronto
75	M6R	West Toronto
76	M7R	Mississauga
77	M9R	Etobicoke
78	M1S	Scarborough
79	M4S	Central Toronto
80	M5S	Downtown Toronto
81	M6S	West Toronto
82	M1T	Scarborough
83	M4T	Central Toronto
84	M5T	Downtown Toronto
85	M1V	Scarborough
86	M4V	Central Toronto
87	M5V	Downtown Toronto
88	M8V	Etobicoke
89	M9V	Etobicoke
90	M1W	Scarborough
91	M4W	Downtown Toronto
92	M5W	Downtown Toronto
93	M8W	Etobicoke
94	M9W	Etobicoke
95	M1X	Scarborough
96	M4X	Downtown Toronto
97	M5X	Downtown Toronto
98	M8X	Etobicoke
99	M4Y	Downtown Toronto
100	M7Y	East Toronto
101	M8Y	Etobicoke
102	M8Z	Etobicoke

Neighbourhood Latitude Longitude

0	Parkwoods	43.753259	-79.329656
1	Victoria Village	43.725882	-79.315572
2	Harbourfront, Regent Park	43.654260	-79.360636
3	Lawrence Heights, Lawrence Manor	43.718518	-79.464763
4	Queen's Park	43.662301	-79.389494
5	Islington Avenue	43.667856	-79.532242
6	Rouge, Malvern	43.806686	-79.194353
7	Don Mills North	43.745906	-79.352188
8	Woodbine Gardens, Parkview Hill	43.706397	-79.309937
9	Ryerson, Garden District	43.657162	-79.378937
10	Glencairn	43.709577	-79.445073
11	Cloverdale, Islington, Martin Grove, Princess Gar...	43.650943	-79.554724
12	Highland Creek, Rouge Hill, Port Union	43.784535	-79.160497
13	Flemingdon Park, Don Mills South	43.725900	-79.340923
14	Woodbine Heights	43.695344	-79.318389
15	St. James Town	43.651494	-79.375418
16	Humewood-Cedarvale	43.693781	-79.428191
17	Bloordale Gardens, Eringate, Markland Wood, Old B...	43.643515	-79.577201
18	Guildwood, Morningside, West Hill	43.763573	-79.188711
19	The Beaches	43.676357	-79.293031
20	Berczy Park	43.644771	-79.373306
21	Caledonia-Fairbanks	43.689026	-79.453512
22	Woburn	43.770992	-79.216917
23	Leaside	43.709060	-79.363452
24	Central Bay Street	43.657952	-79.387383
25	Christie	43.669542	-79.422564
26	Cedarbrae	43.773136	-79.239476
27	Hillcrest Village	43.803762	-79.363452
28	Bathurst Manor, Downsview North, Wilson Heights	43.754328	-79.442259
29	Thorncliffe Park	43.705369	-79.349372
..
73	North Toronto West	43.715383	-79.405678
74	The Annex, North Midtown, Yorkville	43.672710	-79.405678
75	Parkdale, Roncesvalles	43.648960	-79.456325
76	Canada Post Gateway Processing Centre	43.636966	-79.615819
77	Kingsview Village, Martin Grove Gardens, Richvie...	43.688905	-79.554724
78	Agincourt	43.794200	-79.262029
79	Davisville	43.704324	-79.388790
80	Harbord, University of Toronto	43.662696	-79.400049
81	Runnymede, Swansea	43.651571	-79.484450
82	Clarks Corners, Sullivan, Tam O'Shanter	43.781638	-79.304302
83	Moore Park, Summerhill East	43.689574	-79.383160
84	Chinatown, Grange Park, Kensington Market	43.653206	-79.400049
85	Agincourt North, L'Amoreaux East, Milliken, Steel...	43.815252	-79.284577
86	Deer Park, Forest Hill SE, Rathnelly, South Hill, ...	43.686412	-79.400049
87	CN Tower, Bathurst Quay, Island airport, Harbourf...	43.628947	-79.394420
88	Humber Bay Shores, Mimico South, New Toronto	43.605647	-79.501321
89	Albion Gardens, Beaumont Heights, Humbergate, Jam...	43.739416	-79.588437

90	L'Amoreaux West, Steeles West	43.799525	-79.318389
91	Rosedale	43.679563	-79.377529
92	Stn A PO Boxes 25 The Esplanade	43.646435	-79.374846
93	Alderwood, Long Branch	43.602414	-79.543484
94	Northwest	43.706748	-79.594054
95	Upper Rouge	43.836125	-79.205636
96	Cabbagetown, St. James Town	43.667967	-79.367675
97	First Canadian Place, Underground city	43.648429	-79.382280
98	The Kingsway, Montgomery Road, Old Mill North	43.653654	-79.506944
99	Church and Wellesley	43.665860	-79.383160
100	Business Reply Mail Processing Centre 969 Eastern	43.662744	-79.321558
101	Humber Bay, King's Mill Park, Kingsway Park Sout...	43.636258	-79.498509
102	Kingsway Park South West, Mimico NW, The Queensw...	43.628841	-79.520999

[103 rows x 5 columns]

In []:

In []: