NeighbourhoodProfile_DataDescription

April 5, 2021

```python
[1]: import pandas as pd
     import requests
     import numpy as np



     NPdf = pd.read_csv('neighbourhood-profiles-2016-csv.csv', index_col= "_id")

     #Creating Neighbourhoood Profile dataframe
     #Importing and reading CSV file
```

NPdf.head()

```python
[2]: NPdf.reset_index(drop=True, inplace=True)
     NPdf.set_index("Category", inplace=True)
     NPdf.head()

     #Data cleaning
     #Resetting index to narrow down unwanted columns + rows
```

```
[2]:                                                   Topic  \
     Category
     Neighbourhood Information   Neighbourhood Information
     Neighbourhood Information   Neighbourhood Information
     Population                    Population and dwellings
     Population                    Population and dwellings
     Population                    Population and dwellings

                                                  Data Source  \
     Category
     Neighbourhood Information                  City of Toronto
     Neighbourhood Information                  City of Toronto
     Population                 Census Profile 98-316-X2016001
     Population                 Census Profile 98-316-X2016001
     Population                 Census Profile 98-316-X2016001

                                             Characteristic City of Toronto  \
     Category
     Neighbourhood Information        Neighbourhood Number              NaN
```

```
Neighbourhood Information      TSNS2020 Designation           NaN
Population                       Population, 2016       2,731,571
Population                       Population, 2011       2,615,060
Population              Population Change 2011-2016          4.50%


                          Agincourt North Agincourt South-Malvern West  \
Category
Neighbourhood Information             129                            128
Neighbourhood Information  No Designation                 No Designation
Population                         29,113                         23,757
Population                         30,279                         21,988
Population                         -3.90%                          8.00%


                             Alderwood           Annex Banbury-Don Mills  \
Category
Neighbourhood Information            20              95                42
Neighbourhood Information  No Designation  No Designation    No Designation
Population                       12,054          30,526            27,695
Population                       11,904          29,177            26,918
Population                         1.30%           4.60%             2.90%


                          Bathurst Manor  … Willowdale West  \
Category                                  …
Neighbourhood Information             34  …             37
Neighbourhood Information  No Designation  …  No Designation
Population                        15,873  …         16,936
Population                        15,434  …         15,004
Population                         2.80%  …         12.90%


                          Willowridge-Martingrove-Richview  Woburn  \
Category
Neighbourhood Information                                7     137
Neighbourhood Information                   No Designation     NIA
Population                                          22,156  53,485
Population                                          21,343  53,350
Population                                            3.80%   0.30%


                          Woodbine Corridor Woodbine-Lumsden        Wychwood  \
Category
Neighbourhood Information                64              60              94
Neighbourhood Information    No Designation  No Designation  No Designation
Population                           12,541           7,865          14,349
Population                           11,703           7,826          13,986
Population                            7.20%           0.50%           2.60%


                          Yonge-Eglinton  Yonge-St.Clair  \
Category
```

```
Neighbourhood Information                    100                97
Neighbourhood Information  No Designation  No Designation
Population                            11,817           12,528
Population                            10,578           11,652
Population                            11.70%            7.50%


                              York University Heights        Yorkdale-Glen Park
Category
Neighbourhood Information                       27                         31
Neighbourhood Information                      NIA   Emerging Neighbourhood
Population                                  27,593                     14,804
Population                                  27,713                     14,687
Population                                  -0.40%                      0.80%


[5 rows x 144 columns]
```

```python
[3]: NPdf = NPdf.drop(['Aboriginal peoples'])
     NPdf = NPdf.drop(['Education'])
     NPdf = NPdf.drop(['Families, households and marital status'])
     NPdf = NPdf.drop(['Housing'])
     NPdf = NPdf.drop(['Immigration and citizenship'])
     NPdf = NPdf.drop(['Journey to work'])
     NPdf = NPdf.drop(['Labour'])
     NPdf = NPdf.drop(['Language'])
     NPdf = NPdf.drop(['Language of work'])
     NPdf = NPdf.drop(['Mobility'])
     NPdf = NPdf.drop(['Neighbourhood Information'])
     NPdf = NPdf.drop(['Population'])
     NPdf = NPdf.drop(['Visible minority'])

     #Dropping all the unwanted columns
```

```python
[4]: NPdf.reset_index(drop=True, inplace=True)
     NPdf.set_index("Topic", inplace=True)
     NPdf.head()

     #Resetting the index as "Topic" to further clean dataset
```

```
[4]:                                            Data Source  \
     Topic
     Income of households in 2015     Census Profile 98-316-X2016001
     Income of individuals in 2015    Census Profile 98-316-X2016001
     Income of individuals in 2015    Census Profile 98-316-X2016001
     Income of individuals in 2015    Census Profile 98-316-X2016001
     Income of individuals in 2015    Census Profile 98-316-X2016001


                                      Characteristic City of Toronto  \
```

```
Topic
Income of households in 2015         $150,000 to $199,999              77,810
Income of individuals in 2015         $60,000 to $69,999              114,460
Income of individuals in 2015         $70,000 to $79,999               89,645
Income of individuals in 2015         $80,000 to $89,999               69,990
Income of individuals in 2015         $90,000 to $99,999               58,210


                                Agincourt North Agincourt South-Malvern West  \
Topic
Income of households in 2015                595                            475
Income of individuals in 2015               865                            825
Income of individuals in 2015               655                            570
Income of individuals in 2015               435                            435
Income of individuals in 2015               365                            315


                                Alderwood  Annex Banbury-Don Mills  \
Topic
Income of households in 2015          560  1,130              935
Income of individuals in 2015         690  1,460            1,425
Income of individuals in 2015         530  1,290            1,220
Income of individuals in 2015         395  1,000              960
Income of individuals in 2015         370    830              820


                                Bathurst Manor Bay Street Corridor  …  \
Topic                                                              …
Income of households in 2015               505               750  …
Income of individuals in 2015              685             1,250  …
Income of individuals in 2015              535             1,090  …
Income of individuals in 2015              405               925  …
Income of individuals in 2015              360               700  …


                                Willowdale West  \
Topic
Income of households in 2015                565
Income of individuals in 2015               735
Income of individuals in 2015               605
Income of individuals in 2015               515
Income of individuals in 2015               475


                                Willowridge-Martingrove-Richview Woburn  \
Topic
Income of households in 2015                                 760    855
Income of individuals in 2015                              1,055  1,665
Income of individuals in 2015                                790  1,230
Income of individuals in 2015                                585    800
Income of individuals in 2015                                565    580
```

```
                          Woodbine Corridor Woodbine-Lumsden Wychwood  \
Topic
Income of households in 2015                 625              365       460
Income of individuals in 2015                600              420       620
Income of individuals in 2015                540              400       505
Income of individuals in 2015                465              315       345
Income of individuals in 2015                465              265       335

                          Yonge-Eglinton Yonge-St.Clair  \
Topic
Income of households in 2015          430             465
Income of individuals in 2015         595             720
Income of individuals in 2015         520             585
Income of individuals in 2015         415             495
Income of individuals in 2015         360             425

                          York University Heights Yorkdale-Glen Park
Topic
Income of households in 2015                      445                380
Income of individuals in 2015                     895                530
Income of individuals in 2015                     585                380
Income of individuals in 2015                     405                320
Income of individuals in 2015                     250                245

[5 rows x 143 columns]
```

```python
[5]: NPdf = NPdf.drop(['Income of individuals in 2015', 'Income of economic families
     in 2015', 'Income sources', 'Income taxes', 'Low income in 2015'])
     #Dropping more columns
```

```python
[6]: NPdf.reset_index(drop=True, inplace=True)
     NPdf = NPdf.drop(["Data Source"], axis=1)
     NPdf = NPdf.drop_duplicates(subset = "Characteristic", keep = "first")

     #Resetting the index
     #Removing duplicate values under "Characteristic" column
```

```python
[7]: NPdf.set_index("Characteristic", inplace=True)
     NPdf.info()

     #Setting index column as "Characteristic"
```

```
<class 'pandas.core.frame.DataFrame'>
Index: 319 entries,    $150,000 to $199,999 to  Pacific Islands origins; n.i.e.
Columns: 141 entries, City of Toronto to Yorkdale-Glen Park
dtypes: object(141)
memory usage: 353.9+ KB
```

```
[8]: NPdf = NPdf.dropna()

     #Dropping all null values
```

```
[9]: NPdf = NPdf.drop(['Total - Income statistics in 2015 for private households by␣
     ↪household size - 100% data', '    Total - Income statistics in 2015 for␣
     ↪one-person private households - 100% data'])

     #Dropping further columns to filter out specific income related data values
```

```
[10]: NPdf = NPdf.drop(['    Total - Income statistics in 2015 for two-or-more-person␣
      ↪private households - 100% data', 'Total - Income statistics in 2015for␣
      ↪private households by household size - 25% sampledata'])

      #Dropping further columns to filter out specific income related data values
```

```
[11]: NPdf = NPdf.drop(['  Average after-tax income of households in 2015 ($)','      ␣
      ↪Total - Income statistics in 2015 for one-person private households - 25%␣
      ↪sample data'])

      #Dropping further columns to filter out specific income related data values
```

```
[12]: NPdf= NPdf.drop(['Total - Household total income groups in 2015 for private␣
      ↪households - 100% data','Total - Household after-tax income groups in 2015␣
      ↪for private households - 100% data', '   Total - Income statistics in 2015␣
      ↪for two-or-more-person private households - 25% sample data'])

      #Dropping further columns to filter out specific income related data values
```

```
[13]: NPdf.head()
```

```
[13]:                         City of Toronto Agincourt North  \
      Characteristic
          $150,000 to $199,999           77,810            595
           $15,000 to $19,999           54,025            450
          $100,000 to $124,999         100,810            955
          $125,000 to $149,999          68,300            640
            Under $5,000               33,195            155


                        Agincourt South-Malvern West Alderwood  Annex  \
      Characteristic
          $150,000 to $199,999                          475        560  1,130
           $15,000 to $19,999                           265         90    740
          $100,000 to $124,999                          790        520  1,220
          $125,000 to $149,999                          475        480    905
            Under $5,000                                315         55    850
```

	Banbury-Don Mills	Bathurst Manor	Bay Street Corridor \
Characteristic			
$150,000 to $199,999	935	505	750
$15,000 to $19,999	400	415	690
$100,000 to $124,999	1,135	590	1,025
$125,000 to $149,999	780	410	730
Under $5,000	265	130	2,510

	Bayview Village	Bayview Woods-Steeles	… \
Characteristic			…
$150,000 to $199,999	665	415	…
$15,000 to $19,999	330	130	…
$100,000 to $124,999	855	475	…
$125,000 to $149,999	630	355	…
Under $5,000	585	90	…

	Willowdale West	Willowridge-Martingrove-Richview \
Characteristic		
$150,000 to $199,999	565	760
$15,000 to $19,999	605	295
$100,000 to $124,999	635	880
$125,000 to $149,999	485	620
Under $5,000	560	90

	Woburn	Woodbine Corridor	Woodbine-Lumsden	Wychwood \
Characteristic				
$150,000 to $199,999	855	625	365	460
$15,000 to $19,999	1,170	315	195	395
$100,000 to $124,999	1,660	520	380	455
$125,000 to $149,999	1,030	435	300	370
Under $5,000	435	65	55	120

	Yonge-Eglinton	Yonge-St.Clair \
Characteristic		
$150,000 to $199,999	430	465
$15,000 to $19,999	175	220
$100,000 to $124,999	460	580
$125,000 to $149,999	350	435
Under $5,000	205	215

	York University Heights	Yorkdale-Glen Park
Characteristic		
$150,000 to $199,999	445	380
$15,000 to $19,999	520	220
$100,000 to $124,999	825	515
$125,000 to $149,999	490	345
Under $5,000	345	100

```
[5 rows x 141 columns]
```

```
[14]: NPdf = NPdf.drop_duplicates(keep = "first")

      #Dropping any duplicates, leaving the first value to stay within dataframe
```

```
[15]: NPdf
```

```
[15]:                                    City of Toronto Agincourt North  \
      Characteristic
          $150,000 to $199,999                   77,810            595
          $15,000 to $19,999                     54,025            450
          $100,000 to $124,999                  100,810            955
          $125,000 to $149,999                   68,300            640
        Under $5,000                             33,195            155
      ...                                           ...            ...
       Pacific Islands origins                    1,025              0
       Fijian                                       465              0
       Polynesian; n.o.s.                           65              0
       Samoan                                        75              0
       Pacific Islands origins; n.i.e.             220              0

                                       Agincourt South-Malvern West Alderwood  \
      Characteristic
          $150,000 to $199,999                                 475        560
          $15,000 to $19,999                                   265         90
          $100,000 to $124,999                                 790        520
          $125,000 to $149,999                                 475        480
        Under $5,000                                           315         55
      ...                                                      ...        ...
       Pacific Islands origins                                   0          0
       Fijian                                                    0          0
       Polynesian; n.o.s.                                        0          0
       Samoan                                                    0          0
       Pacific Islands origins; n.i.e.                           0          0

                                       Annex Banbury-Don Mills Bathurst Manor  \
      Characteristic
          $150,000 to $199,999         1,130             935            505
          $15,000 to $19,999             740             400            415
          $100,000 to $124,999         1,220           1,135            590
          $125,000 to $149,999           905             780            410
        Under $5,000                     850             265            130
      ...                                ...             ...            ...
       Pacific Islands origins           10               0              0
       Fijian                             0               0              0
```

Characteristic			
Polynesian; n.o.s.	0	0	0
Samoan	0	0	0
Pacific Islands origins; n.i.e.	10	0	0

	Bay Street Corridor	Bayview Village
Characteristic		
$150,000 to $199,999	750	665
$15,000 to $19,999	690	330
$100,000 to $124,999	1,025	855
$125,000 to $149,999	730	630
Under $5,000	2,510	585
…	…	…
Pacific Islands origins	10	20
Fijian	0	10
Polynesian; n.o.s.	0	0
Samoan	0	0
Pacific Islands origins; n.i.e.	0	10

	Bayview Woods-Steeles	…	Willowdale West
Characteristic		…	
$150,000 to $199,999	415	…	565
$15,000 to $19,999	130	…	605
$100,000 to $124,999	475	…	635
$125,000 to $149,999	355	…	485
Under $5,000	90	…	560
…	…	…	…
Pacific Islands origins	0	…	0
Fijian	0	…	0
Polynesian; n.o.s.	0	…	0
Samoan	0	…	0
Pacific Islands origins; n.i.e.	0	…	0

	Willowridge-Martingrove-Richview	Woburn
Characteristic		
$150,000 to $199,999	760	855
$15,000 to $19,999	295	1,170
$100,000 to $124,999	880	1,660
$125,000 to $149,999	620	1,030
Under $5,000	90	435
…	…	…
Pacific Islands origins	10	80
Fijian	0	65
Polynesian; n.o.s.	0	0
Samoan	10	10
Pacific Islands origins; n.i.e.	0	0

	Woodbine Corridor	Woodbine-Lumsden	Wychwood

```
Characteristic
    $150,000 to $199,999                        625           365      460
     $15,000 to $19,999                         315           195      395
    $100,000 to $124,999                        520           380      455
    $125,000 to $149,999                        435           300      370
  Under $5,000                                   65            55      120

...                                             ...           ...      ...
 Pacific Islands origins                         10             0        0
 Fijian                                           0             0        0
 Polynesian; n.o.s.                               0             0        0
 Samoan                                           0             0        0
 Pacific Islands origins; n.i.e.                 10             0        0


                                   Yonge-Eglinton Yonge-St.Clair  \
Characteristic
    $150,000 to $199,999                        430           465
     $15,000 to $19,999                         175           220
    $100,000 to $124,999                        460           580
    $125,000 to $149,999                        350           435
  Under $5,000                                  205           215

...                                             ...           ...
 Pacific Islands origins                         20            10
 Fijian                                           0             0
 Polynesian; n.o.s.                               0            10
 Samoan                                           0             0
 Pacific Islands origins; n.i.e.                 10             0


                                   York University Heights Yorkdale-Glen Park
Characteristic
    $150,000 to $199,999                               445                 380
     $15,000 to $19,999                                520                 220
    $100,000 to $124,999                               825                 515
    $125,000 to $149,999                               490                 345
  Under $5,000                                         345                 100

...                                                    ...                 ...
 Pacific Islands origins                                 0                   0
 Fijian                                                 10                   0
 Polynesian; n.o.s.                                      0                   0
 Samoan                                                  0                   0
 Pacific Islands origins; n.i.e.                         0                   0

[299 rows x 141 columns]
```

[16]: `NPdf= NPdf.T`

#Transposing datafram to be able to get the characterisitcs as columns, with↳
↪neighbourhoods as rows

```
[17]: NPdf = NPdf.drop(['    $150,000 to $199,999', '    $100,000 to $124,999', '    ␣
      →$125,000 to $149,999', '    $200,000 and over'], axis = 1)

      #Dropping further columns to filter out specific income related data values
```

```
[18]: NPdf.head()
```

```
[18]: Characteristic            $15,000 to $19,999   Under $5,000  \
      City of Toronto                       54,025         33,195
      Agincourt North                          450            155
      Agincourt South-Malvern West             265            315
      Alderwood                                 90             55
      Annex                                    740            850

      Characteristic            $5,000 to $9,999  $10,000 to $14,999  \
      City of Toronto                     23,455              36,550
      Agincourt North                        105                 160
      Agincourt South-Malvern West           140                 195
      Alderwood                               45                  80
      Annex                                  485                 655

      Characteristic            $20,000 to $24,999  $25,000 to $29,999  \
      City of Toronto                       47,315              47,500
      Agincourt North                          320                 540
      Agincourt South-Malvern West             315                 400
      Alderwood                                145                 150
      Annex                                    620                 530

      Characteristic            $30,000 to $34,999  $35,000 to $39,999  \
      City of Toronto                       46,945              47,115
      Agincourt North                          420                 455
      Agincourt South-Malvern West             370                 385
      Alderwood                                155                 170
      Annex                                    525                 555

      Characteristic            $40,000 to $44,999  $45,000 to $49,999  …  \
      City of Toronto                       46,285              44,650  …
      Agincourt North                          420                 435  …
      Agincourt South-Malvern West             370                 415  …
      Alderwood                                160                 165  …
      Annex                                    540                 505  …

      Characteristic            Other Asian origins  \
      City of Toronto                         4,605
      Agincourt North                           150
      Agincourt South-Malvern West               50
      Alderwood                                   0
```

```
Annex                                        30

Characteristic              Other Asian origins; n.i.e.  Oceania origins  \
City of Toronto                                   4,605            5,790
Agincourt North                                     135               10
Agincourt South-Malvern West                         55                0
Alderwood                                             0                0
Annex                                                25              140

Characteristic              Australian  New Zealander  \
City of Toronto                  3,705          1,230
Agincourt North                      0              0
Agincourt South-Malvern West         0              0
Alderwood                           10              0
Annex                              110             15

Characteristic              Pacific Islands origins  Fijian  \
City of Toronto                               1,025     465
Agincourt North                                   0       0
Agincourt South-Malvern West                      0       0
Alderwood                                         0       0
Annex                                            10       0

Characteristic              Polynesian; n.o.s.  Samoan  \
City of Toronto                             65      75
Agincourt North                              0       0
Agincourt South-Malvern West                 0       0
Alderwood                                    0       0
Annex                                        0       0

Characteristic              Pacific Islands origins; n.i.e.
City of Toronto                                         220
Agincourt North                                           0
Agincourt South-Malvern West                              0
Alderwood                                                 0
Annex                                                    10

[5 rows x 295 columns]
```

[19]: `print(NPdf.columns)`

```
Index([' $15,000 to $19,999', '  Under $5,000', '  $5,000 to $9,999',
       ' $10,000 to $14,999', ' $20,000 to $24,999', ' $25,000 to $29,999',
       ' $30,000 to $34,999', ' $35,000 to $39,999', ' $40,000 to $44,999',
       ' $45,000 to $49,999',
       …
       ' Other Asian origins', ' Other Asian origins; n.i.e.',
```

```
                 ' Oceania origins', ' Australian', ' New Zealander',
                 ' Pacific Islands origins', ' Fijian', ' Polynesian; n.o.s.', ' Samoan',
                 ' Pacific Islands origins; n.i.e.'],
               dtype='object', name='Characteristic', length=295)
```

```
[20]: for col in NPdf.columns:
          print(col)

      #Seeing all the income related and ethnicity related columns within dataframe
```

```
  $15,000 to $19,999
  Under $5,000
  $5,000 to $9,999
  $10,000 to $14,999
  $20,000 to $24,999
  $25,000 to $29,999
  $30,000 to $34,999
  $35,000 to $39,999
  $40,000 to $44,999
  $45,000 to $49,999
  $50,000 to $59,999
  $60,000 to $69,999
  $70,000 to $79,999
  $80,000 to $89,999
  $90,000 to $99,999
  $100,000 and over
 Guadeloupean
 Scottish
Total - Ethnic origin for the population in private households - 25% sample data
 North American Aboriginal origins
 First Nations (North American Indian)
 Inuit
 Mtis
 Other North American origins
 Acadian
 American
 Canadian
 New Brunswicker
 Newfoundlander
 Nova Scotian
 Ontarian
 Qubcois
 Portuguese
 Other North American origins; n.i.e.
 European origins
 British Isles origins
 Channel Islander
 Cornish
```

English
Irish
Manx
Welsh
British Isles origins; n.i.e.
French origins
Alsatian
Breton
Corsican
French
Western European origins (except French origins)
Austrian
Bavarian
Belgian
Dutch
Flemish
Frisian
German
Luxembourger
Swiss
Western European origins; n.i.e.
Northern European origins (except British Isles origins)
Danish
Finnish
Icelandic
Norwegian
Swedish
Northern European origins; n.i.e.
Eastern European origins
Bulgarian
Caribbean origins
Byelorussian
Czech
Czechoslovakian; n.o.s.
Estonian
Hungarian
Latvian
Lithuanian
Moldovan
Polish
Romanian
Russian
Slovak
Ukrainian
Eastern European origins; n.i.e.
Southern European origins
Albanian
Bosnian

Catalan
Croatian
Cypriot
Greek
Italian
Kosovar
Macedonian
Maltese
Montenegrin
Serbian
Sicilian
Slovenian
Spanish
Yugoslavian; n.o.s.
Southern European origins; n.i.e.
Antiguan
Other European origins
Basque
Jewish
Roma (Gypsy)
Slavic; n.o.s.
Other European origins; n.i.e.
Bahamian
Barbadian
Bermudan
Carib
Cuban
Dominican
Grenadian
Haitian
Jamaican
Kittitian/Nevisian
Martinican
Montserratan
Puerto Rican
St. Lucian
Arawak
Trinidadian/Tobagonian
Vincentian/Grenadinian
West Indian; n.o.s.
Caribbean origins; n.i.e.
Latin; Central and South American origins
Aboriginal from Central/South America (except Arawak and Maya)
Argentinian
Belizean
Bolivian
Brazilian
Chilean

Colombian
Costa Rican
Ecuadorian
Guatemalan
Guyanese
Hispanic
Honduran
Maya
Beninese
Mexican
Nicaraguan
Panamanian
Paraguayan
Peruvian
Salvadorean
Uruguayan
Venezuelan
Latin; Central and South American origins; n.i.e.
African origins
Central and West African origins
Akan
Angolan
Ashanti
Burkinabe
Cameroonian
Chadian
Congolese
Edo
Ewe
Gabonese
Gambian
Ghanaian
Guinean
Ibo
Ivorian
Liberian
Malian
Malink
Nigerian
Peulh
Senegalese
Sierra Leonean
Togolese
Wolof
Yoruba
Central and West African origins; n.i.e.
Maure
North African origins

Algerian
Berber
Coptic
Dinka
Egyptian
Libyan
Moroccan
Sudanese
Tunisian
North African origins; n.i.e.
Southern and East African origins
Afrikaner
Amhara
Bantu; n.o.s.
Burundian
Djiboutian
Eritrean
Ethiopian
Harari
Kenyan
Malagasy
Mauritian
Oromo
Rwandan
Seychellois
Somali
South African
Tanzanian
Tigrian
Ugandan
Zambian
Zimbabwean
Zulu
Southern and East African origins; n.i.e.
Other African origins
Black; n.o.s.
Other African origins; n.i.e.
Asian origins
West Central Asian and Middle Eastern origins
Afghan
Arab; n.o.s.
Armenian
Assyrian
Azerbaijani
Georgian
Hazara
Iranian
Hmong

Iraqi
Israeli
Jordanian
Kazakh
Kurd
Kuwaiti
Kyrgyz
Maori
Lebanese
Palestinian
Pashtun
Saudi Arabian
Syrian
Tajik
Tatar
Turk
Turkmen
Uighur
Uzbek
Yemeni
West Central Asian and Middle Eastern origins; n.i.e.
South Asian origins
Bangladeshi
Bengali
Bhutanese
East Indian
Goan
Gujarati
Kashmiri
Nepali
Pakistani
Punjabi
Sinhalese
Sri Lankan
Indonesian
Tamil
South Asian origins; n.i.e.
East and Southeast Asian origins
Burmese
Cambodian (Khmer)
Chinese
Filipino
Japanese
Karen
Korean
Laotian
Malaysian
Mongolian

Singaporean
Taiwanese
Thai
Tibetan
Vietnamese
East and Southeast Asian origins; n.i.e.
Hawaiian
Other Asian origins
Other Asian origins; n.i.e.
Oceania origins
Australian
New Zealander
Pacific Islands origins
Fijian
Polynesian; n.o.s.
Samoan
Pacific Islands origins; n.i.e.

```
[21]: data = ['  Under $5,000', '   $5,000 to $9,999', '   $10,000 to $14,999', ' ␣
      →$15,000 to $19,999', '   $20,000 to $24,999',
                                '   $25,000 to $29,999', '   $30,000 to␣
      →$34,999', '   $35,000 to $39,999','   $40,000 to $44,999','   $45,000 to␣
      →$49,999',
                                '   $50,000 to $59,999', '   $60,000 to␣
      →$69,999', '   $70,000 to $79,999', '   $80,000 to $89,999', '   $90,000 to␣
      →$99,999',
                                '   $100,000 and over']
      IncomeProfile = NPdf.loc[:,data]

      #Creating new dataframe specifically for Income Profile from Neighbourhood␣
      →Profile dataframe
```

```
[22]: IncomeProfile
```

```
[22]: Characteristic              Under $5,000   $5,000 to $9,999  \
      City of Toronto                   33,195             23,455
      Agincourt North                      155                105
      Agincourt South-Malvern West         315                140
      Alderwood                             55                 45
      Annex                                850                485
      ...                                   ...                ...
      Wychwood                             120                120
      Yonge-Eglinton                       205                105
      Yonge-St.Clair                       215                120
      York University Heights              345                230
      Yorkdale-Glen Park                   100                 65
```

Characteristic	$10,000 to $14,999	$15,000 to $19,999 \
City of Toronto	36,550	54,025
Agincourt North	160	450
Agincourt South-Malvern West	195	265
Alderwood	80	90
Annex	655	740
…	…	…
Wychwood	185	395
Yonge-Eglinton	145	175
Yonge-St.Clair	185	220
York University Heights	340	520
Yorkdale-Glen Park	120	220

Characteristic	$20,000 to $24,999	$25,000 to $29,999 \
City of Toronto	47,315	47,500
Agincourt North	320	540
Agincourt South-Malvern West	315	400
Alderwood	145	150
Annex	620	530
…	…	…
Wychwood	325	270
Yonge-Eglinton	175	170
Yonge-St.Clair	225	220
York University Heights	525	525
Yorkdale-Glen Park	245	240

Characteristic	$30,000 to $34,999	$35,000 to $39,999 \
City of Toronto	46,945	47,115
Agincourt North	420	455
Agincourt South-Malvern West	370	385
Alderwood	155	170
Annex	525	555
…	…	…
Wychwood	225	225
Yonge-Eglinton	190	210
Yonge-St.Clair	215	235
York University Heights	590	570
Yorkdale-Glen Park	290	275

Characteristic	$40,000 to $44,999	$45,000 to $49,999 \
City of Toronto	46,285	44,650
Agincourt North	420	435
Agincourt South-Malvern West	370	415
Alderwood	160	165
Annex	540	505
…	…	…
Wychwood	225	225

```
Yonge-Eglinton                            195                  180
Yonge-St.Clair                            260                  260
York University Heights                   530                  530
Yorkdale-Glen Park                        280                  230

Characteristic           $50,000 to $59,999   $60,000 to $69,999  \
City of Toronto                        84,180               76,120
Agincourt North                           800                  700
Agincourt South-Malvern West              770                  645
Alderwood                                 335                  300
Annex                                   1,000                  900
...                                       ...                  ...
Wychwood                                  400                  390
Yonge-Eglinton                            370                  375
Yonge-St.Clair                            505                  445
York University Heights                   950                  845
Yorkdale-Glen Park                        470                  370

Characteristic           $70,000 to $79,999   $80,000 to $89,999  \
City of Toronto                        68,190               60,400
Agincourt North                           635                  525
Agincourt South-Malvern West              595                  510
Alderwood                                 320                  275
Annex                                     795                  715
...                                       ...                  ...
Wychwood                                  315                  300
Yonge-Eglinton                            325                  275
Yonge-St.Clair                            415                  340
York University Heights                   615                  605
Yorkdale-Glen Park                        360                  295

Characteristic           $90,000 to $99,999   $100,000 and over
City of Toronto                        53,485              343,520
Agincourt North                           515                2,505
Agincourt South-Malvern West              405                2,030
Alderwood                                 250                1,915
Annex                                     605                5,895
...                                       ...                  ...
Wychwood                                  275                1,895
Yonge-Eglinton                            245                2,340
Yonge-St.Clair                            325                2,865
York University Heights                   515                1,955
Yorkdale-Glen Park                        235                1,550

[141 rows x 16 columns]
```

[23]: `IncomeProfile.columns`

```
[23]: Index([' Under $5,000', ' $5,000 to $9,999', ' $10,000 to $14,999',
       ' $15,000 to $19,999', ' $20,000 to $24,999', ' $25,000 to $29,999',
       ' $30,000 to $34,999', ' $35,000 to $39,999', ' $40,000 to $44,999',
       ' $45,000 to $49,999', ' $50,000 to $59,999', ' $60,000 to $69,999',
       ' $70,000 to $79,999', ' $80,000 to $89,999', ' $90,000 to $99,999',
       ' $100,000 and over'],
      dtype='object', name='Characteristic')
```

```
[24]: IncomeProfile.dtypes
```

```
[24]: Characteristic
       Under $5,000         object
       $5,000 to $9,999     object
       $10,000 to $14,999   object
       $15,000 to $19,999   object
       $20,000 to $24,999   object
       $25,000 to $29,999   object
       $30,000 to $34,999   object
       $35,000 to $39,999   object
       $40,000 to $44,999   object
       $45,000 to $49,999   object
       $50,000 to $59,999   object
       $60,000 to $69,999   object
       $70,000 to $79,999   object
       $80,000 to $89,999   object
       $90,000 to $99,999   object
       $100,000 and over    object
       dtype: object
```

```
[25]: IncomeProfile = IncomeProfile.replace(',', '', regex=True)

       #Fixing cell values of IncomeProfile
       #Removing the ',' in cell values
```

```
[26]: c = IncomeProfile.select_dtypes(object).columns
       IncomeProfile[c] = IncomeProfile[c].apply(pd.to_numeric,errors='coerce')

       #Converting cell values from object into integer
```

```
[27]: IncomeProfile.dtypes
```

```
[27]: Characteristic
       Under $5,000         int64
       $5,000 to $9,999     int64
       $10,000 to $14,999   int64
       $15,000 to $19,999   int64
       $20,000 to $24,999   int64
```

```
        $25,000 to $29,999    int64
        $30,000 to $34,999    int64
        $35,000 to $39,999    int64
        $40,000 to $44,999    int64
        $45,000 to $49,999    int64
        $50,000 to $59,999    int64
        $60,000 to $69,999    int64
        $70,000 to $79,999    int64
        $80,000 to $89,999    int64
        $90,000 to $99,999    int64
        $100,000 and over     int64
    dtype: object
```

[28]: `IncomeProfile.index`

[28]:
```
Index(['City of Toronto', 'Agincourt North', 'Agincourt South-Malvern West',
       'Alderwood', 'Annex', 'Banbury-Don Mills', 'Bathurst Manor',
       'Bay Street Corridor', 'Bayview Village', 'Bayview Woods-Steeles',
       ...
       'Willowdale West', 'Willowridge-Martingrove-Richview', 'Woburn',
       'Woodbine Corridor', 'Woodbine-Lumsden', 'Wychwood', 'Yonge-Eglinton',
       'Yonge-St.Clair', 'York University Heights', 'Yorkdale-Glen Park'],
      dtype='object', length=141)
```

[29]:
```python
medians = IncomeProfile.median(axis=1)
print ("Median income of each Toronto neighbourhood:")
print(medians)

#Calculating median income for each neighbourhood
```

```
Median income of each Toronto neighbourhood:
City of Toronto                  47407.5
Agincourt North                    452.5
Agincourt South-Malvern West       392.5
Alderwood                          162.5
Annex                              637.5
                                    ...
Wychwood                           272.5
Yonge-Eglinton                     200.0
Yonge-St.Clair                     247.5
York University Heights            530.0
Yorkdale-Glen Park                 260.0
Length: 141, dtype: float64
```

[30]: `IncomeProfile = IncomeProfile.T`

[31]: `IncomeProfile`

```
[31]:                       City of Toronto  Agincourt North  \
      Characteristic
        Under $5,000                 33195              155
        $5,000 to $9,999             23455              105
        $10,000 to $14,999           36550              160
        $15,000 to $19,999           54025              450
        $20,000 to $24,999           47315              320
        $25,000 to $29,999           47500              540
        $30,000 to $34,999           46945              420
        $35,000 to $39,999           47115              455
        $40,000 to $44,999           46285              420
        $45,000 to $49,999           44650              435
        $50,000 to $59,999           84180              800
        $60,000 to $69,999           76120              700
        $70,000 to $79,999           68190              635
        $80,000 to $89,999           60400              525
        $90,000 to $99,999           53485              515
        $100,000 and over           343520             2505

                       Agincourt South-Malvern West  Alderwood  Annex  \
      Characteristic
        Under $5,000                            315         55    850
        $5,000 to $9,999                        140         45    485
        $10,000 to $14,999                      195         80    655
        $15,000 to $19,999                      265         90    740
        $20,000 to $24,999                      315        145    620
        $25,000 to $29,999                      400        150    530
        $30,000 to $34,999                      370        155    525
        $35,000 to $39,999                      385        170    555
        $40,000 to $44,999                      370        160    540
        $45,000 to $49,999                      415        165    505
        $50,000 to $59,999                      770        335   1000
        $60,000 to $69,999                      645        300    900
        $70,000 to $79,999                      595        320    795
        $80,000 to $89,999                      510        275    715
        $90,000 to $99,999                      405        250    605
        $100,000 and over                      2030       1915   5895

                       Banbury-Don Mills  Bathurst Manor  Bay Street Corridor  \
      Characteristic
        Under $5,000                 265             130                 2510
        $5,000 to $9,999             155              85                  735
        $10,000 to $14,999           235             155                  740
        $15,000 to $19,999           400             415                  690
        $20,000 to $24,999           395             245                  580
        $25,000 to $29,999           445             230                  560
        $30,000 to $34,999           405             220                  490
```

Characteristic			
$35,000 to $39,999	470	255	515
$40,000 to $44,999	460	240	440
$45,000 to $49,999	400	245	410
$50,000 to $59,999	930	400	850
$60,000 to $69,999	885	430	840
$70,000 to $79,999	780	390	815
$80,000 to $89,999	655	310	705
$90,000 to $99,999	605	300	570
$100,000 and over	4615	2025	3600

	Bayview Village	Bayview Woods-Steeles	… \
Characteristic			…
Under $5,000	585	90	…
$5,000 to $9,999	260	70	…
$10,000 to $14,999	290	80	…
$15,000 to $19,999	330	130	…
$20,000 to $24,999	365	200	…
$25,000 to $29,999	370	170	…
$30,000 to $34,999	360	205	…
$35,000 to $39,999	330	180	…
$40,000 to $44,999	350	200	…
$45,000 to $49,999	335	165	…
$50,000 to $59,999	650	330	…
$60,000 to $69,999	655	290	…
$70,000 to $79,999	615	265	…
$80,000 to $89,999	520	255	…
$90,000 to $99,999	495	250	…
$100,000 and over	3010	1830	…

	Willowdale West	Willowridge-Martingrove-Richview \
Characteristic		
Under $5,000	560	90
$5,000 to $9,999	225	85
$10,000 to $14,999	250	155
$15,000 to $19,999	605	295
$20,000 to $24,999	325	365
$25,000 to $29,999	315	395
$30,000 to $34,999	285	375
$35,000 to $39,999	245	375
$40,000 to $44,999	265	380
$45,000 to $49,999	240	370
$50,000 to $59,999	440	630
$60,000 to $69,999	390	610
$70,000 to $79,999	375	555
$80,000 to $89,999	375	510
$90,000 to $99,999	335	435
$100,000 and over	2320	2895

Characteristic	Woburn	Woodbine Corridor	Woodbine-Lumsden	Wychwood
Under $5,000	435	65	55	120
$5,000 to $9,999	455	125	65	120
$10,000 to $14,999	685	265	105	185
$15,000 to $19,999	1170	315	195	395
$20,000 to $24,999	825	275	150	325
$25,000 to $29,999	960	190	135	270
$30,000 to $34,999	910	225	110	225
$35,000 to $39,999	950	160	130	225
$40,000 to $44,999	955	190	115	225
$45,000 to $49,999	815	180	115	225
$50,000 to $59,999	1725	295	245	400
$60,000 to $69,999	1405	290	205	390
$70,000 to $79,999	1240	235	200	315
$80,000 to $89,999	1070	235	185	300
$90,000 to $99,999	865	220	195	275
$100,000 and over	3980	2190	1245	1895

Characteristic	Yonge-Eglinton	Yonge-St.Clair	York University Heights
Under $5,000	205	215	345
$5,000 to $9,999	105	120	230
$10,000 to $14,999	145	185	340
$15,000 to $19,999	175	220	520
$20,000 to $24,999	175	225	525
$25,000 to $29,999	170	220	525
$30,000 to $34,999	190	215	590
$35,000 to $39,999	210	235	570
$40,000 to $44,999	195	260	530
$45,000 to $49,999	180	260	530
$50,000 to $59,999	370	505	950
$60,000 to $69,999	375	445	845
$70,000 to $79,999	325	415	615
$80,000 to $89,999	275	340	605
$90,000 to $99,999	245	325	515
$100,000 and over	2340	2865	1955

Characteristic	Yorkdale-Glen Park
Under $5,000	100
$5,000 to $9,999	65
$10,000 to $14,999	120
$15,000 to $19,999	220
$20,000 to $24,999	245
$25,000 to $29,999	240

```
        $30,000 to $34,999            290
        $35,000 to $39,999            275
        $40,000 to $44,999            280
        $45,000 to $49,999            230
        $50,000 to $59,999            470
        $60,000 to $69,999            370
        $70,000 to $79,999            360
        $80,000 to $89,999            295
        $90,000 to $99,999            235
        $100,000 and over            1550

[16 rows x 141 columns]
```

[32]: `AvgIncomeProfile = IncomeProfile`

[33]: `AvgIncomeProfile.index`

[33]:
```
Index(['   Under $5,000', '   $5,000 to $9,999', '   $10,000 to $14,999',
       '   $15,000 to $19,999', '   $20,000 to $24,999', '   $25,000 to $29,999',
       '   $30,000 to $34,999', '   $35,000 to $39,999', '   $40,000 to $44,999',
       '   $45,000 to $49,999', '   $50,000 to $59,999', '   $60,000 to $69,999',
       '   $70,000 to $79,999', '   $80,000 to $89,999', '   $90,000 to $99,999',
       '   $100,000 and over'],
      dtype='object', name='Characteristic')
```

[34]: `AvgIncomeProfile['Average'] = 0`

[44]:
```
AvgIncomeProfile.loc['   Under $5,000']['Average'] = 2500
AvgIncomeProfile.loc['   $5,000 to $9,999']['Average'] = 7500
AvgIncomeProfile.loc['   $10,000 to $14,999']['Average'] = 12500
AvgIncomeProfile.loc['   $15,000 to $19,999']['Average'] = 17500
AvgIncomeProfile.loc['   $20,000 to $24,999']['Average'] = 22500
AvgIncomeProfile.loc['   $25,000 to $29,999']['Average'] = 27500
AvgIncomeProfile.loc['   $30,000 to $34,999']['Average'] = 32500
AvgIncomeProfile.loc['   $35,000 to $39,999']['Average'] = 37500
AvgIncomeProfile.loc['   $40,000 to $44,999']['Average'] = 42500
AvgIncomeProfile.loc['   $45,000 to $49,999']['Average'] = 47500
AvgIncomeProfile.loc['   $50,000 to $59,999']['Average'] = 55000
AvgIncomeProfile.loc['   $60,000 to $69,999']['Average'] = 65000
AvgIncomeProfile.loc['   $70,000 to $79,999']['Average'] = 75000
AvgIncomeProfile.loc['   $80,000 to $89,999']['Average'] = 85000
AvgIncomeProfile.loc['   $90,000 to $99,999']['Average'] = 95000
AvgIncomeProfile.loc['   $100,000 and over']['Average'] = 100000
```

[45]: `AvgIncomeProfile`

```
[45]:                             City of Toronto   Agincourt North  \
       Characteristic
         Under $5,000                     33195                155
         $5,000 to $9,999                 23455                105
         $10,000 to $14,999               36550                160
         $15,000 to $19,999               54025                450
         $20,000 to $24,999               47315                320
         $25,000 to $29,999               47500                540
         $30,000 to $34,999               46945                420
         $35,000 to $39,999               47115                455
         $40,000 to $44,999               46285                420
         $45,000 to $49,999               44650                435
         $50,000 to $59,999               84180                800
         $60,000 to $69,999               76120                700
         $70,000 to $79,999               68190                635
         $80,000 to $89,999               60400                525
         $90,000 to $99,999               53485                515
         $100,000 and over               343520               2505

                             Agincourt South-Malvern West  Alderwood  Annex  \
       Characteristic
         Under $5,000                                 315         55    850
         $5,000 to $9,999                             140         45    485
         $10,000 to $14,999                           195         80    655
         $15,000 to $19,999                           265         90    740
         $20,000 to $24,999                           315        145    620
         $25,000 to $29,999                           400        150    530
         $30,000 to $34,999                           370        155    525
         $35,000 to $39,999                           385        170    555
         $40,000 to $44,999                           370        160    540
         $45,000 to $49,999                           415        165    505
         $50,000 to $59,999                           770        335   1000
         $60,000 to $69,999                           645        300    900
         $70,000 to $79,999                           595        320    795
         $80,000 to $89,999                           510        275    715
         $90,000 to $99,999                           405        250    605
         $100,000 and over                           2030       1915   5895

                             Banbury-Don Mills  Bathurst Manor  Bay Street Corridor  \
       Characteristic
         Under $5,000                      265             130                 2510
         $5,000 to $9,999                  155              85                  735
         $10,000 to $14,999                235             155                  740
         $15,000 to $19,999                400             415                  690
         $20,000 to $24,999                395             245                  580
         $25,000 to $29,999                445             230                  560
         $30,000 to $34,999                405             220                  490
```

Characteristic			
$35,000 to $39,999	470	255	515
$40,000 to $44,999	460	240	440
$45,000 to $49,999	400	245	410
$50,000 to $59,999	930	400	850
$60,000 to $69,999	885	430	840
$70,000 to $79,999	780	390	815
$80,000 to $89,999	655	310	705
$90,000 to $99,999	605	300	570
$100,000 and over	4615	2025	3600

	Bayview Village	Bayview Woods-Steeles	… \
Characteristic			…
Under $5,000	585	90	…
$5,000 to $9,999	260	70	…
$10,000 to $14,999	290	80	…
$15,000 to $19,999	330	130	…
$20,000 to $24,999	365	200	…
$25,000 to $29,999	370	170	…
$30,000 to $34,999	360	205	…
$35,000 to $39,999	330	180	…
$40,000 to $44,999	350	200	…
$45,000 to $49,999	335	165	…
$50,000 to $59,999	650	330	…
$60,000 to $69,999	655	290	…
$70,000 to $79,999	615	265	…
$80,000 to $89,999	520	255	…
$90,000 to $99,999	495	250	…
$100,000 and over	3010	1830	…

	Willowridge-Martingrove-Richview	Woburn \
Characteristic		
Under $5,000	90	435
$5,000 to $9,999	85	455
$10,000 to $14,999	155	685
$15,000 to $19,999	295	1170
$20,000 to $24,999	365	825
$25,000 to $29,999	395	960
$30,000 to $34,999	375	910
$35,000 to $39,999	375	950
$40,000 to $44,999	380	955
$45,000 to $49,999	370	815
$50,000 to $59,999	630	1725
$60,000 to $69,999	610	1405
$70,000 to $79,999	555	1240
$80,000 to $89,999	510	1070
$90,000 to $99,999	435	865
$100,000 and over	2895	3980

Characteristic	Woodbine Corridor	Woodbine-Lumsden	Wychwood
Under $5,000	65	55	120
$5,000 to $9,999	125	65	120
$10,000 to $14,999	265	105	185
$15,000 to $19,999	315	195	395
$20,000 to $24,999	275	150	325
$25,000 to $29,999	190	135	270
$30,000 to $34,999	225	110	225
$35,000 to $39,999	160	130	225
$40,000 to $44,999	190	115	225
$45,000 to $49,999	180	115	225
$50,000 to $59,999	295	245	400
$60,000 to $69,999	290	205	390
$70,000 to $79,999	235	200	315
$80,000 to $89,999	235	185	300
$90,000 to $99,999	220	195	275
$100,000 and over	2190	1245	1895

Characteristic	Yonge-Eglinton	Yonge-St.Clair	York University Heights
Under $5,000	205	215	345
$5,000 to $9,999	105	120	230
$10,000 to $14,999	145	185	340
$15,000 to $19,999	175	220	520
$20,000 to $24,999	175	225	525
$25,000 to $29,999	170	220	525
$30,000 to $34,999	190	215	590
$35,000 to $39,999	210	235	570
$40,000 to $44,999	195	260	530
$45,000 to $49,999	180	260	530
$50,000 to $59,999	370	505	950
$60,000 to $69,999	375	445	845
$70,000 to $79,999	325	415	615
$80,000 to $89,999	275	340	605
$90,000 to $99,999	245	325	515
$100,000 and over	2340	2865	1955

Characteristic	Yorkdale-Glen Park	Average
Under $5,000	100	2500
$5,000 to $9,999	65	7500
$10,000 to $14,999	120	12500
$15,000 to $19,999	220	17500
$20,000 to $24,999	245	22500
$25,000 to $29,999	240	27500

```
$30,000 to $34,999                       290     32500
$35,000 to $39,999                       275     37500
$40,000 to $44,999                       280     42500
$45,000 to $49,999                       230     47500
$50,000 to $59,999                       470     55000
$60,000 to $69,999                       370     65000
$70,000 to $79,999                       360     75000
$80,000 to $89,999                       295     85000
$90,000 to $99,999                       235     95000
$100,000 and over                       1550    100000

[16 rows x 142 columns]
```

[47]: `AvgIncomeProfile = AvgIncomeProfile.drop(['City of Toronto'], axis=1)`

[48]: `AvgIncomeProfile`

[48]:

```
                        Agincourt North  Agincourt South-Malvern West  \
Characteristic
  Under $5,000                       155                           315
  $5,000 to $9,999                   105                           140
  $10,000 to $14,999                 160                           195
  $15,000 to $19,999                 450                           265
  $20,000 to $24,999                 320                           315
  $25,000 to $29,999                 540                           400
  $30,000 to $34,999                 420                           370
  $35,000 to $39,999                 455                           385
  $40,000 to $44,999                 420                           370
  $45,000 to $49,999                 435                           415
  $50,000 to $59,999                 800                           770
  $60,000 to $69,999                 700                           645
  $70,000 to $79,999                 635                           595
  $80,000 to $89,999                 525                           510
  $90,000 to $99,999                 515                           405
  $100,000 and over                 2505                          2030

                        Alderwood  Annex  Banbury-Don Mills  Bathurst Manor  \
Characteristic
  Under $5,000                 55    850                265             130
  $5,000 to $9,999             45    485                155              85
  $10,000 to $14,999           80    655                235             155
  $15,000 to $19,999           90    740                400             415
  $20,000 to $24,999          145    620                395             245
  $25,000 to $29,999          150    530                445             230
  $30,000 to $34,999          155    525                405             220
  $35,000 to $39,999          170    555                470             255
  $40,000 to $44,999          160    540                460             240
```

Characteristic				
$45,000 to $49,999	165	505	400	245
$50,000 to $59,999	335	1000	930	400
$60,000 to $69,999	300	900	885	430
$70,000 to $79,999	320	795	780	390
$80,000 to $89,999	275	715	655	310
$90,000 to $99,999	250	605	605	300
$100,000 and over	1915	5895	4615	2025

	Bay Street Corridor	Bayview Village \
Characteristic		
Under $5,000	2510	585
$5,000 to $9,999	735	260
$10,000 to $14,999	740	290
$15,000 to $19,999	690	330
$20,000 to $24,999	580	365
$25,000 to $29,999	560	370
$30,000 to $34,999	490	360
$35,000 to $39,999	515	330
$40,000 to $44,999	440	350
$45,000 to $49,999	410	335
$50,000 to $59,999	850	650
$60,000 to $69,999	840	655
$70,000 to $79,999	815	615
$80,000 to $89,999	705	520
$90,000 to $99,999	570	495
$100,000 and over	3600	3010

	Bayview Woods-Steeles	Bedford Park-Nortown	… \
Characteristic			…
Under $5,000	90	140	…
$5,000 to $9,999	70	85	…
$10,000 to $14,999	80	150	…
$15,000 to $19,999	130	265	…
$20,000 to $24,999	200	230	…
$25,000 to $29,999	170	215	…
$30,000 to $34,999	205	230	…
$35,000 to $39,999	180	215	…
$40,000 to $44,999	200	225	…
$45,000 to $49,999	165	240	…
$50,000 to $59,999	330	440	…
$60,000 to $69,999	290	395	…
$70,000 to $79,999	265	390	…
$80,000 to $89,999	255	360	…
$90,000 to $99,999	250	275	…
$100,000 and over	1830	4745	…

Willowridge-Martingrove-Richview Woburn \

Characteristic		
Under $5,000	90	435
$5,000 to $9,999	85	455
$10,000 to $14,999	155	685
$15,000 to $19,999	295	1170
$20,000 to $24,999	365	825
$25,000 to $29,999	395	960
$30,000 to $34,999	375	910
$35,000 to $39,999	375	950
$40,000 to $44,999	380	955
$45,000 to $49,999	370	815
$50,000 to $59,999	630	1725
$60,000 to $69,999	610	1405
$70,000 to $79,999	555	1240
$80,000 to $89,999	510	1070
$90,000 to $99,999	435	865
$100,000 and over	2895	3980

	Woodbine Corridor	Woodbine-Lumsden	Wychwood \
Characteristic			
Under $5,000	65	55	120
$5,000 to $9,999	125	65	120
$10,000 to $14,999	265	105	185
$15,000 to $19,999	315	195	395
$20,000 to $24,999	275	150	325
$25,000 to $29,999	190	135	270
$30,000 to $34,999	225	110	225
$35,000 to $39,999	160	130	225
$40,000 to $44,999	190	115	225
$45,000 to $49,999	180	115	225
$50,000 to $59,999	295	245	400
$60,000 to $69,999	290	205	390
$70,000 to $79,999	235	200	315
$80,000 to $89,999	235	185	300
$90,000 to $99,999	220	195	275
$100,000 and over	2190	1245	1895

	Yonge-Eglinton	Yonge-St.Clair	York University Heights \
Characteristic			
Under $5,000	205	215	345
$5,000 to $9,999	105	120	230
$10,000 to $14,999	145	185	340
$15,000 to $19,999	175	220	520
$20,000 to $24,999	175	225	525
$25,000 to $29,999	170	220	525
$30,000 to $34,999	190	215	590
$35,000 to $39,999	210	235	570

```
        $40,000 to $44,999              195              260              530
        $45,000 to $49,999              180              260              530
        $50,000 to $59,999              370              505              950
        $60,000 to $69,999              375              445              845
        $70,000 to $79,999              325              415              615
        $80,000 to $89,999              275              340              605
        $90,000 to $99,999              245              325              515
        $100,000 and over              2340             2865             1955

                              Yorkdale-Glen Park  Average
Characteristic
        Under $5,000                             100     2500
        $5,000 to $9,999                          65     7500
        $10,000 to $14,999                       120    12500
        $15,000 to $19,999                       220    17500
        $20,000 to $24,999                       245    22500
        $25,000 to $29,999                       240    27500
        $30,000 to $34,999                       290    32500
        $35,000 to $39,999                       275    37500
        $40,000 to $44,999                       280    42500
        $45,000 to $49,999                       230    47500
        $50,000 to $59,999                       470    55000
        $60,000 to $69,999                       370    65000
        $70,000 to $79,999                       360    75000
        $80,000 to $89,999                       295    85000
        $90,000 to $99,999                       235    95000
        $100,000 and over                       1550   100000

[16 rows x 141 columns]
```

[49]: `AvgIncomeProfile.columns`

[49]:
```
Index(['Agincourt North', 'Agincourt South-Malvern West', 'Alderwood', 'Annex',
       'Banbury-Don Mills', 'Bathurst Manor', 'Bay Street Corridor',
       'Bayview Village', 'Bayview Woods-Steeles', 'Bedford Park-Nortown',
       ...
       'Willowridge-Martingrove-Richview', 'Woburn', 'Woodbine Corridor',
       'Woodbine-Lumsden', 'Wychwood', 'Yonge-Eglinton', 'Yonge-St.Clair',
       'York University Heights', 'Yorkdale-Glen Park', 'Average'],
      dtype='object', length=141)
```

[50]:
```python
for col in AvgIncomeProfile.columns:
    if col != 'Average':
        AvgIncomeProfile[col] *= AvgIncomeProfile['Average']
```

[51]: `AvgIncomeProfile`

```
[51]:                            Agincourt North  Agincourt South-Malvern West  \
      Characteristic
        Under $5,000                      387500                        787500
        $5,000 to $9,999                  787500                       1050000
        $10,000 to $14,999               2000000                       2437500
        $15,000 to $19,999               7875000                       4637500
        $20,000 to $24,999               7200000                       7087500
        $25,000 to $29,999              14850000                      11000000
        $30,000 to $34,999              13650000                      12025000
        $35,000 to $39,999              17062500                      14437500
        $40,000 to $44,999              17850000                      15725000
        $45,000 to $49,999              20662500                      19712500
        $50,000 to $59,999              44000000                      42350000
        $60,000 to $69,999              45500000                      41925000
        $70,000 to $79,999              47625000                      44625000
        $80,000 to $89,999              44625000                      43350000
        $90,000 to $99,999              48925000                      38475000
        $100,000 and over              250500000                     203000000

                            Alderwood      Annex  Banbury-Don Mills  Bathurst Manor  \
      Characteristic
        Under $5,000           137500    2125000             662500          325000
        $5,000 to $9,999        337500    3637500            1162500          637500
        $10,000 to $14,999     1000000    8187500            2937500         1937500
        $15,000 to $19,999     1575000   12950000            7000000         7262500
        $20,000 to $24,999     3262500   13950000            8887500         5512500
        $25,000 to $29,999     4125000   14575000           12237500         6325000
        $30,000 to $34,999     5037500   17062500           13162500         7150000
        $35,000 to $39,999     6375000   20812500           17625000         9562500
        $40,000 to $44,999     6800000   22950000           19550000        10200000
        $45,000 to $49,999     7837500   23987500           19000000        11637500
        $50,000 to $59,999    18425000   55000000           51150000        22000000
        $60,000 to $69,999    19500000   58500000           57525000        27950000
        $70,000 to $79,999    24000000   59625000           58500000        29250000
        $80,000 to $89,999    23375000   60775000           55675000        26350000
        $90,000 to $99,999    23750000   57475000           57475000        28500000
        $100,000 and over    191500000  589500000          461500000       202500000

                            Bay Street Corridor  Bayview Village  \
      Characteristic
        Under $5,000                    6275000          1462500
        $5,000 to $9,999                5512500          1950000
        $10,000 to $14,999              9250000          3625000
        $15,000 to $19,999             12075000          5775000
        $20,000 to $24,999             13050000          8212500
        $25,000 to $29,999             15400000         10175000
        $30,000 to $34,999             15925000         11700000
```

$35,000 to $39,999	19312500	12375000	
$40,000 to $44,999	18700000	14875000	
$45,000 to $49,999	19475000	15912500	
$50,000 to $59,999	46750000	35750000	
$60,000 to $69,999	54600000	42575000	
$70,000 to $79,999	61125000	46125000	
$80,000 to $89,999	59925000	44200000	
$90,000 to $99,999	54150000	47025000	
$100,000 and over	360000000	301000000	

	Bayview Woods-Steeles	Bedford Park-Nortown	… \
Characteristic			…
Under $5,000	225000	350000	…
$5,000 to $9,999	525000	637500	…
$10,000 to $14,999	1000000	1875000	…
$15,000 to $19,999	2275000	4637500	…
$20,000 to $24,999	4500000	5175000	…
$25,000 to $29,999	4675000	5912500	…
$30,000 to $34,999	6662500	7475000	…
$35,000 to $39,999	6750000	8062500	…
$40,000 to $44,999	8500000	9562500	…
$45,000 to $49,999	7837500	11400000	…
$50,000 to $59,999	18150000	24200000	…
$60,000 to $69,999	18850000	25675000	…
$70,000 to $79,999	19875000	29250000	…
$80,000 to $89,999	21675000	30600000	…
$90,000 to $99,999	23750000	26125000	…
$100,000 and over	183000000	474500000	…

	Willowridge-Martingrove-Richview	Woburn \
Characteristic		
Under $5,000	225000	1087500
$5,000 to $9,999	637500	3412500
$10,000 to $14,999	1937500	8562500
$15,000 to $19,999	5162500	20475000
$20,000 to $24,999	8212500	18562500
$25,000 to $29,999	10862500	26400000
$30,000 to $34,999	12187500	29575000
$35,000 to $39,999	14062500	35625000
$40,000 to $44,999	16150000	40587500
$45,000 to $49,999	17575000	38712500
$50,000 to $59,999	34650000	94875000
$60,000 to $69,999	39650000	91325000
$70,000 to $79,999	41625000	93000000
$80,000 to $89,999	43350000	90950000
$90,000 to $99,999	41325000	82175000
$100,000 and over	289500000	398000000

	Woodbine Corridor	Woodbine-Lumsden	Wychwood
Characteristic			
Under $5,000	162500	137500	300000
$5,000 to $9,999	937500	487500	900000
$10,000 to $14,999	3312500	1312500	2312500
$15,000 to $19,999	5512500	3412500	6912500
$20,000 to $24,999	6187500	3375000	7312500
$25,000 to $29,999	5225000	3712500	7425000
$30,000 to $34,999	7312500	3575000	7312500
$35,000 to $39,999	6000000	4875000	8437500
$40,000 to $44,999	8075000	4887500	9562500
$45,000 to $49,999	8550000	5462500	10687500
$50,000 to $59,999	16225000	13475000	22000000
$60,000 to $69,999	18850000	13325000	25350000
$70,000 to $79,999	17625000	15000000	23625000
$80,000 to $89,999	19975000	15725000	25500000
$90,000 to $99,999	20900000	18525000	26125000
$100,000 and over	219000000	124500000	189500000

	Yonge-Eglinton	Yonge-St.Clair	York University Heights
Characteristic			
Under $5,000	512500	537500	862500
$5,000 to $9,999	787500	900000	1725000
$10,000 to $14,999	1812500	2312500	4250000
$15,000 to $19,999	3062500	3850000	9100000
$20,000 to $24,999	3937500	5062500	11812500
$25,000 to $29,999	4675000	6050000	14437500
$30,000 to $34,999	6175000	6987500	19175000
$35,000 to $39,999	7875000	8812500	21375000
$40,000 to $44,999	8287500	11050000	22525000
$45,000 to $49,999	8550000	12350000	25175000
$50,000 to $59,999	20350000	27775000	52250000
$60,000 to $69,999	24375000	28925000	54925000
$70,000 to $79,999	24375000	31125000	46125000
$80,000 to $89,999	23375000	28900000	51425000
$90,000 to $99,999	23275000	30875000	48925000
$100,000 and over	234000000	286500000	195500000

	Yorkdale-Glen Park	Average
Characteristic		
Under $5,000	250000	2500
$5,000 to $9,999	487500	7500
$10,000 to $14,999	1500000	12500
$15,000 to $19,999	3850000	17500
$20,000 to $24,999	5512500	22500
$25,000 to $29,999	6600000	27500

```
$30,000 to $34,999                      9425000      32500
$35,000 to $39,999                     10312500      37500
$40,000 to $44,999                     11900000      42500
$45,000 to $49,999                     10925000      47500
$50,000 to $59,999                     25850000      55000
$60,000 to $69,999                     24050000      65000
$70,000 to $79,999                     27000000      75000
$80,000 to $89,999                     25075000      85000
$90,000 to $99,999                     22325000      95000
$100,000 and over                     155000000     100000

[16 rows x 141 columns]
```

[59]:
```python
FinalIncomeProfile = pd.DataFrame(index = ['Sum'], columns = IncomeProfile.
↪columns)
FinalIncomeProfile = FinalIncomeProfile.drop(['City of Toronto'], axis = 1)
```

[60]:
```python
FinalIncomeProfile
```

[60]:
```
     Agincourt North Agincourt South-Malvern West Alderwood Annex  \
Sum             NaN                            NaN        NaN   NaN

     Banbury-Don Mills Bathurst Manor Bay Street Corridor Bayview Village  \
Sum              NaN            NaN                   NaN             NaN

     Bayview Woods-Steeles Bedford Park-Nortown  …  \
Sum                    NaN                  NaN  …

     Willowridge-Martingrove-Richview Woburn Woodbine Corridor  \
Sum                               NaN    NaN              NaN

     Woodbine-Lumsden Wychwood Yonge-Eglinton Yonge-St.Clair  \
Sum              NaN      NaN            NaN            NaN

     York University Heights Yorkdale-Glen Park Average
Sum                      NaN                NaN     NaN

[1 rows x 141 columns]
```

[61]:
```python
for col in FinalIncomeProfile.columns:
    FinalIncomeProfile[col] = AvgIncomeProfile[col].sum()/IncomeProfile[col].
↪sum()
```

[62]:
```python
FinalIncomeProfile
```

[62]:
```
     Agincourt North  Agincourt South-Malvern West     Alderwood  \
Sum     63840.262582                    61861.538462  73110.086768
```

```
            Annex  Banbury-Don Mills  Bathurst Manor  Bay Street Corridor  \
Sum  64160.383286       69756.198347    65366.255144         51264.119601

      Bayview Village  Bayview Woods-Steeles  Bedford Park-Nortown  … \
Sum      63312.762605           69692.144374          77376.453488  …

      Willowridge-Martingrove-Richview        Woburn  Woodbine Corridor  \
Sum                         67736.20892  58190.566549       66700.274977

      Woodbine-Lumsden      Wychwood  Yonge-Eglinton  Yonge-St.Clair  \
Sum      67184.782609  63372.241087    69617.077465    69789.007092

      York University Heights  Yorkdale-Glen Park  Average
Sum              56878.066732        63622.544434      1.0

[1 rows x 141 columns]
```

[65]: `FinalIncomeProfile = FinalIncomeProfile.drop(['Average'], axis = 1)`

[66]: `FinalIncomeProfile`

[66]:
```
      Agincourt North  Agincourt South-Malvern West      Alderwood  \
Sum      63840.262582                  61861.538462  73110.086768

            Annex  Banbury-Don Mills  Bathurst Manor  Bay Street Corridor  \
Sum  64160.383286       69756.198347    65366.255144         51264.119601

      Bayview Village  Bayview Woods-Steeles  Bedford Park-Nortown  … \
Sum      63312.762605           69692.144374          77376.453488  …

      Willowdale West  Willowridge-Martingrove-Richview        Woburn  \
Sum      59240.066225                       67736.20892  58190.566549

      Woodbine Corridor  Woodbine-Lumsden      Wychwood  Yonge-Eglinton  \
Sum       66700.274977      67184.782609  63372.241087    69617.077465

      Yonge-St.Clair  York University Heights  Yorkdale-Glen Park
Sum    69789.007092            56878.066732        63622.544434

[1 rows x 140 columns]
```

[67]: `FinalIncomeProfile.columns`

[67]:
```
Index(['Agincourt North', 'Agincourt South-Malvern West', 'Alderwood', 'Annex',
       'Banbury-Don Mills', 'Bathurst Manor', 'Bay Street Corridor',
       'Bayview Village', 'Bayview Woods-Steeles', 'Bedford Park-Nortown',
```

… 'Willowdale West', 'Willowridge-Martingrove-Richview', 'Woburn',
'Woodbine Corridor', 'Woodbine-Lumsden', 'Wychwood', 'Yonge-Eglinton',
'Yonge-St.Clair', 'York University Heights', 'Yorkdale-Glen Park'],
dtype='object', length=140)

[69]: ```
Neighbourhoodlist = FinalIncomeProfile.columns
```

[70]: ```
len(Neighbourhoodlist)
```

[70]: 140

[ ]: