merge code

November 18, 2024

```python
import pandas as pd
```

```python
df1 = pd.read_csv('Children_in_each_neighborhood.csv')
df2 = pd.read_csv('Single_parents_in_each_neighborhood.csv')
df3 = pd.read_csv('income.csv')
df4 = pd.read_csv('bachelors.csv')
df1
```

```
[7]:    postal_code                                        data  \
    0           M1B  2021A0011M1B - Children - Counts - Total
    1           M9V  2021A0011M9V - Children - Counts - Total
    2           M2J  2021A0011M2J - Children - Counts - Total
    3           M2N  2021A0011M2N - Children - Counts - Total
    4           M1E  2021A0011M1E - Children - Counts - Total
    ..          ...                                       ...
    91          M5J  2021A0011M5J - Children - Counts - Total
    92          M5G  2021A0011M5G - Children - Counts - Total
    93          M5E  2021A0011M5E - Children - Counts - Total
    94          M5C  2021A0011M5C - Children - Counts - Total
    95          M5H  2021A0011M5H - Children - Counts - Total

        Children in each neighbor  Children Points
    0                       24745               96
    1                       20320               95
    2                       17845               94
    3                       17785               93
    4                       16850               92
    ..                        ...              ...
    91                       1775                5
    92                       1315                4
    93                       1145                3
    94                        355                2
    95                        280                1

    [96 rows x 4 columns]
```

```python
df2
```

```
[8]:    postal_code                                                data  \
    0          M1B  2021A0011M1B - Total one-parent families - Cou…
    1          M3N  2021A0011M3N - Total one-parent families - Cou…
    2          M9V  2021A0011M9V - Total one-parent families - Cou…
    3          M6M  2021A0011M6M - Total one-parent families - Cou…
    4          M1E  2021A0011M1E - Total one-parent families - Cou…
    ..         …                                                  …
    91         M5G  2021A0011M5G - Total one-parent families - Cou…
    92         M4T  2021A0011M4T - Total one-parent families - Cou…
    93         M5E  2021A0011M5E - Total one-parent families - Cou…
    94         M5C  2021A0011M5C - Total one-parent families - Cou…
    95         M5H  2021A0011M5H - Total one-parent families - Cou…

        Single parents  Single parents Points
    0             4590                     96
    1             4520                     95
    2             3925                     94
    3             3840                     93
    4             3520                     92
    ..             …                       …
    91             325                      5
    92             315                      4
    93             230                      3
    94              95                      2
    95              45                      1

    [96 rows x 4 columns]

[9]: df3

[9]:    Unnamed: 0 postal_code                                            data  \
    0          56         M5E  2021A0011M5E - Median after-tax income in 2020…
    1          83         M8X  2021A0011M8X - Median after-tax income in 2020…
    2          48         M4T  2021A0011M4T - Median after-tax income in 2020…
    3          44         M4N  2021A0011M4N - Median after-tax income in 2020…
    4          38         M4G  2021A0011M4G - Median after-tax income in 2020…
    ..          …          …                                                …
    91         94         M9V  2021A0011M9V - Median after-tax income in 2020…
    92          3         M1G  2021A0011M1G - Median after-tax income in 2020…
    93         33         M3N  2021A0011M3N - Median after-tax income in 2020…
    94         14         M1V  2021A0011M1V - Median after-tax income in 2020…
    95         39         M4H  2021A0011M4H - Median after-tax income in 2020…

        After-tax Income  After-tax Income Rank Score
    0             56800                           96
    1             56800                           96
    2             56400                           94
```

```
3                54400                      93
4                54000                      92
..                  …                       …
91               29400                       6
92               29200                       4
93               28400                       3
94               27400                       2
95               27000                       1

[96 rows x 5 columns]
```

[10]: `df4`

```
[10]:     Unnamed: 0 postal_code                                              data  \
      0            22         M2N  2021A0011M2N - Bachelor's degree or higher - C…
      1            66         M5V  2021A0011M5V - Bachelor's degree or higher - C…
      2            18         M2J  2021A0011M2J - Bachelor's degree or higher - C…
      3            53         M5A  2021A0011M5A - Bachelor's degree or higher - C…
      4            52         M4Y  2021A0011M4Y - Bachelor's degree or higher - C…
      ..          …           …                                                …
      91           31         M3L  2021A0011M3L - Bachelor's degree or higher - C…
      92           58         M5H  2021A0011M5H - Bachelor's degree or higher - C…
      93           30         M3K  2021A0011M3K - Bachelor's degree or higher - C…
      94           89         M9L  2021A0011M9L - Bachelor's degree or higher - C…
      95           55         M5C  2021A0011M5C - Bachelor's degree or higher - C…

          Number of bachlors degreess  Education Score
      0                         39350               96
      1                         39245               95
      2                         24985               94
      3                         21690               93
      4                         20815               92
      ..                           …                …
      91                         2380                5
      92                         2270                4
      93                         1965                3
      94                         1960                2
      95                         1770                1

[96 rows x 5 columns]
```

[12]:
```
result = pd.merge(df1, df2, on='postal_code', how='outer', suffixes=('_df1',
    '_df2'))
result = pd.merge(result, df3, on='postal_code', how='outer', suffixes=('',
    '_df3'))
result = pd.merge(result, df4, on='postal_code', how='outer', suffixes=('',
    '_df4'))
```

```
[17]: result
      df= result
      df

[17]:    postal_code                                    data_df1  \
      0          M1B  2021A0011M1B - Children - Counts - Total
      1          M9V  2021A0011M9V - Children - Counts - Total
      2          M2J  2021A0011M2J - Children - Counts - Total
      3          M2N  2021A0011M2N - Children - Counts - Total
      4          M1E  2021A0011M1E - Children - Counts - Total
      ..         ...                                      ...
      91         M5J  2021A0011M5J - Children - Counts - Total
      92         M5G  2021A0011M5G - Children - Counts - Total
      93         M5E  2021A0011M5E - Children - Counts - Total
      94         M5C  2021A0011M5C - Children - Counts - Total
      95         M5H  2021A0011M5H - Children - Counts - Total


          Children in each neighbor  Children Points  \
      0                       24745               96
      1                       20320               95
      2                       17845               94
      3                       17785               93
      4                       16850               92
      ..                        ...              ...
      91                       1775                5
      92                       1315                4
      93                       1145                3
      94                        355                2
      95                        280                1


                                            data_df2  Single parents  \
      0    2021A0011M1B - Total one-parent families - Cou…            4590
      1    2021A0011M9V - Total one-parent families - Cou…            3925
      2    2021A0011M2J - Total one-parent families - Cou…            3295
      3    2021A0011M2N - Total one-parent families - Cou…            3355
      4    2021A0011M1E - Total one-parent families - Cou…            3520
      ..                                             ...             ...
      91   2021A0011M5J - Total one-parent families - Cou…             365
      92   2021A0011M5G - Total one-parent families - Cou…             325
      93   2021A0011M5E - Total one-parent families - Cou…             230
      94   2021A0011M5C - Total one-parent families - Cou…              95
      95   2021A0011M5H - Total one-parent families - Cou…              45


          Single parents Points  Unnamed: 0  \
      0                      96           0
      1                      94          94
      2                      89          18
```

3	90	22
4	92	2
..	…	…
91	8	59
92	5	57
93	3	56
94	2	55
95	1	58

	data	After-tax Income \
0	2021A0011M1B - Median after-tax income in 2020…	31600
1	2021A0011M9V - Median after-tax income in 2020…	29400
2	2021A0011M2J - Median after-tax income in 2020…	33200
3	2021A0011M2N - Median after-tax income in 2020…	36400
4	2021A0011M1E - Median after-tax income in 2020…	32800
..	…	…
91	2021A0011M5J - Median after-tax income in 2020…	54000
92	2021A0011M5G - Median after-tax income in 2020…	40000
93	2021A0011M5E - Median after-tax income in 2020…	56800
94	2021A0011M5C - Median after-tax income in 2020…	51600
95	2021A0011M5H - Median after-tax income in 2020…	52000

	After-tax Income Rank Score	Unnamed: 0_df4 \
0	19	0
1	6	94
2	35	18
3	47	22
4	33	2
..	…	…
91	92	59
92	60	57
93	96	56
94	85	55
95	87	58

	data_df4 \
0	2021A0011M1B - Bachelor's degree or higher - C…
1	2021A0011M9V - Bachelor's degree or higher - C…
2	2021A0011M2J - Bachelor's degree or higher - C…
3	2021A0011M2N - Bachelor's degree or higher - C…
4	2021A0011M1E - Bachelor's degree or higher - C…
..	…
91	2021A0011M5J - Bachelor's degree or higher - C…
92	2021A0011M5G - Bachelor's degree or higher - C…
93	2021A0011M5E - Bachelor's degree or higher - C…
94	2021A0011M5C - Bachelor's degree or higher - C…
95	2021A0011M5H - Bachelor's degree or higher - C…

```
      Number of bachlors degreess   Education Score
0                          14160                82
1                           9715                52
2                          24985                94
3                          39350                96
4                          11120                62
..                           ...               ...
91                         11410                65
92                          6220                22
93                          8005                39
94                          1770                 1
95                          2270                 4

[96 rows x 15 columns]
```

```
[19]: df['final score'] = df['Children Points']*0.15+df['Single parents Points']*0.
      ↪05+df['After-tax Income Rank Score']*0.4+df['Education Score']*0.4
```

```
[22]: df
      dfSort = df.sort_values(by ='final score', ascending = False)
      dfSort
```

```
[22]:     postal_code                                   data_df1  \
      67          M5V  2021A0011M5V - Children - Counts - Total
      32          M6S  2021A0011M6S - Children - Counts - Total
      35          M6P  2021A0011M6P - Children - Counts - Total
      3           M2N  2021A0011M2N - Children - Counts - Total
      34          M5M  2021A0011M5M - Children - Counts - Total
      ..          ...                                        ...
      74          M4A  2021A0011M4A - Children - Counts - Total
      61          M1X  2021A0011M1X - Children - Counts - Total
      50          M3L  2021A0011M3L - Children - Counts - Total
      46          M4H  2021A0011M4H - Children - Counts - Total
      76          M9L  2021A0011M9L - Children - Counts - Total

          Children in each neighbor  Children Points  \
      67                       5705               29
      32                      10095               64
      35                       9180               61
      3                       17785               93
      34                       9265               62
      ..                        ...              ...
      74                       4535               22
      61                       5985               35
      50                       7175               46
      46                       7705               50
```

76   4235   20

```
                                              data_df2  Single parents  \
67  2021A0011M5V - Total one-parent families - Cou…            1340
32  2021A0011M6S - Total one-parent families - Cou…            1500
35  2021A0011M6P - Total one-parent families - Cou…            1660
3   2021A0011M2N - Total one-parent families - Cou…            3355
34  2021A0011M5M - Total one-parent families - Cou…             855
..                                               …               …
74  2021A0011M4A - Total one-parent families - Cou…            1040
61  2021A0011M1X - Total one-parent families - Cou…             650
50  2021A0011M3L - Total one-parent families - Cou…            1760
46  2021A0011M4H - Total one-parent families - Cou…             740
76  2021A0011M9L - Total one-parent families - Cou…             780

    Single parents Points  Unnamed: 0  \
67                     45          66
32                     50          80
35                     56          78
3                      90          22
34                     29          60
..                      …           …
74                     33          34
61                     19          16
50                     60          31
46                     24          39
76                     26          89

                                              data  After-tax Income  \
67  2021A0011M5V - Median after-tax income in 2020…             54000
32  2021A0011M6S - Median after-tax income in 2020…             49200
35  2021A0011M6P - Median after-tax income in 2020…             42800
3   2021A0011M2N - Median after-tax income in 2020…             36400
34  2021A0011M5M - Median after-tax income in 2020…             52400
..                                               …                 …
74  2021A0011M4A - Median after-tax income in 2020…             32400
61  2021A0011M1X - Median after-tax income in 2020…             32000
50  2021A0011M3L - Median after-tax income in 2020…             30600
46  2021A0011M4H - Median after-tax income in 2020…             27000
76  2021A0011M9L - Median after-tax income in 2020…             29600

    After-tax Income Rank Score  Unnamed: 0_df4  \
67                           92              66
32                           83              80
35                           71              78
3                            47              22
34                           88              60
```

```
..                                              …                          …
74                                              31                         34
61                                              28                         16
50                                              12                         31
46                                               1                         39
76                                               8                         89

                                                       data_df4  \
67   2021A0011M5V - Bachelor's degree or higher - C…
32   2021A0011M6S - Bachelor's degree or higher - C…
35   2021A0011M6P - Bachelor's degree or higher - C…
3    2021A0011M2N - Bachelor's degree or higher - C…
34   2021A0011M5M - Bachelor's degree or higher - C…
..                                                 …
74   2021A0011M4A - Bachelor's degree or higher - C…
61   2021A0011M1X - Bachelor's degree or higher - C…
50   2021A0011M3L - Bachelor's degree or higher - C…
46   2021A0011M4H - Bachelor's degree or higher - C…
76   2021A0011M9L - Bachelor's degree or higher - C…

     Number of bachlors degreess  Education Score  final score
67                         39245               95        81.40
32                         15230               85        79.30
35                         18145               91        76.75
3                          39350               96        75.65
34                         12470               72        74.75
..                           …                …            …
74                          3545                8        20.55
61                          3145                7        20.20
50                          2380                5        16.70
46                          4280               14        14.70
76                          1960                2         8.30

[96 rows x 16 columns]
```

```
[23]: dfSort.to_csv('sort.csv')
```

```
[ ]:
```

```
[ ]:
```