LaTeX

February 6, 2022

```
[1]: import pandas as pd
```

```
[2]: df = pd.read_csv('data/train.csv')
```

```
[3]: df
```

```
[3]:        Year_Factor  State_Factor  building_class  floor_area  year_built  \
    0              1.0           2.0             1.0     61242.0      1942.0
    1              1.0           2.0             1.0    274000.0      1955.0
    2              1.0           2.0             1.0    280025.0      1951.0
    3              1.0           2.0             1.0     55325.0      1980.0
    4              1.0           2.0             1.0     66000.0      1985.0
    ...            ...           ...             ...         ...         ...
    75752          6.0           1.0             1.0     20410.0      1995.0
    75753          6.0           1.0             0.0     40489.0      1910.0
    75754          6.0           1.0             1.0     28072.0      1917.0
    75755          6.0           1.0             1.0     53575.0      2012.0
    75756          6.0           1.0             0.0     23888.0      1974.0

           energy_star_rating  ELEVATION  january_min_temp  january_avg_temp  \
    0               11.000000        2.4              36.0         50.500000
    1               45.000000        1.8              36.0         50.500000
    2               97.000000        1.8              36.0         50.500000
    3               46.000000        1.8              36.0         50.500000
    4              100.000000        2.4              36.0         50.500000
    ...                   ...        ...               ...               ...
    75752            8.000000       36.6              28.0         43.451613
    75753           98.000000       36.6              28.0         43.451613
    75754           61.048605       36.6              26.0         36.612903
    75755           61.048605       36.6              26.0         36.612903
    75756           51.000000       36.6              27.0         36.935484

           january_max_temp  ...  days_below_20F  days_below_10F  days_below_0F  \
    0                  68.0  ...             0.0             0.0            0.0
    1                  68.0  ...             0.0             0.0            0.0
    2                  68.0  ...             0.0             0.0            0.0
    3                  68.0  ...             0.0             0.0            0.0
```

```
4                    68.0  ...           0.0           0.0           0.0
...                   ...  ...           ...           ...           ...
75752                56.0  ...           0.0           0.0           0.0
75753                56.0  ...           0.0           0.0           0.0
75754                48.0  ...           2.0           0.0           0.0
75755                48.0  ...           2.0           0.0           0.0
75756                51.0  ...           1.0           0.0           0.0

       days_above_80F  days_above_90F  days_above_100F  days_above_110F  \
0                14.0             0.0              0.0              0.0
1                14.0             0.0              0.0              0.0
2                14.0             0.0              0.0              0.0
3                14.0             0.0              0.0              0.0
4                14.0             0.0              0.0              0.0
...               ...             ...              ...              ...
75752            25.0             3.0              0.0              0.0
75753            25.0             3.0              0.0              0.0
75754             6.0             0.0              0.0              0.0
75755             6.0             0.0              0.0              0.0
75756            16.0             0.0              0.0              0.0

       days_with_fog     site_eui       id
0              104.0   248.682615      0.0
1               12.0    26.500150      1.0
2               12.0    24.693619      2.0
3               12.0    48.406926      3.0
4              104.0     3.899395      4.0
...              ...          ...      ...
75752          104.0   132.918411  75752.0
75753          104.0    39.483672  75753.0
75754          104.0    48.404398  75754.0
75755          104.0   592.022750  75755.0
75756          104.0    29.154684  75756.0

[75757 rows x 60 columns]
```

```
[51]: df[['year_built', 'floor_area','site_eui']].describe()
```

```
[51]:         year_built    floor_area      site_eui
      count  75757.000000  7.575700e+04  75757.000000
      mean    1952.275077  1.659839e+05     82.584693
      std       36.602159  2.468758e+05     58.255403
      min        0.000000  9.430000e+02      1.001169
      25%     1927.000000  6.237900e+04     54.528601
      50%     1951.000000  9.136700e+04     75.293716
      75%     1976.000000  1.660000e+05     97.277534
      max     2015.000000  6.385382e+06    997.866120
```

```
[52]: exportar = df[['year_built', 'floor_area','site_eui']]
```

```
[53]: exportar
```

```
[53]:       year_built  floor_area    site_eui
      0          1942.0     61242.0  248.682615
      1          1955.0    274000.0   26.500150
      2          1951.0    280025.0   24.693619
      3          1980.0     55325.0   48.406926
      4          1985.0     66000.0    3.899395
      ...           ...         ...         ...
      75752      1995.0     20410.0  132.918411
      75753      1910.0     40489.0   39.483672
      75754      1917.0     28072.0   48.404398
      75755      2012.0     53575.0  592.022750
      75756      1974.0     23888.0   29.154684

      [75757 rows x 3 columns]
```

```
[54]: exportar['year_built'] == '2013'
```

```
[54]: 0          False
      1          False
      2          False
      3          False
      4          False
                 ...
      75752      False
      75753      False
      75754      False
      75755      False
      75756      False
      Name: year_built, Length: 75757, dtype: bool
```

```
[55]: exportar[exportar['year_built'] == 2015]
```

```
[55]:       year_built  floor_area   site_eui
      9121       2015.0     58513.0  30.982068
      9126       2015.0    154000.0  65.622253
      9682       2015.0     95000.0  94.583044
      9779       2015.0    439378.0  38.241565
      10375      2015.0    265050.0  39.260268
      ...           ...         ...        ...
      75318      2015.0     41403.0  28.201056
      75439      2015.0     47711.0  25.411516
      75443      2015.0    162213.0  40.346048
      75619      2015.0     20128.0  30.697424
```

```
75743      2015.0      36353.0  31.613979
```

```
[111 rows x 3 columns]
```

[56]:
```
exportar['floor_area'] > 166000
```

[56]:
```
0        False
1         True
2         True
3        False
4        False
         ...
75752    False
75753    False
75754    False
75755    False
75756    False
Name: floor_area, Length: 75757, dtype: bool
```

[57]:
```
exportar[exportar['floor_area'] > 166000]
```

[57]:
```
       year_built  floor_area    site_eui
1          1955.0    274000.0   26.500150
2          1951.0    280025.0   24.693619
13         1955.0    616793.0  608.839519
20         1900.0    217710.0   76.868797
23         1989.0    196000.0  152.290390
...           ...         ...         ...
75690      1966.0    401194.0  245.996049
75702      2009.0    244500.0   44.948019
75711      1988.0    166858.0   24.718742
75738      2010.0    238441.0   35.279627
75741      2013.0    198202.0   32.269119
```

```
[18935 rows x 3 columns]
```

[59]:
```
export = exportar[(exportar['year_built'] == 2015) & (exportar['floor_area'] >␣
 ↪166000)]
```

[63]:
```
export.columns
```

[63]:
```
Index(['year_built', 'floor_area', 'site_eui'], dtype='object')
```

[78]:
```
export.columns = ['Año','Área','Consumo energía']
```

[79]:
```
export
```

```
[79]:            Año       Área  Consumo energía
       9779    2015.0   439378.0        38.241565
       10375   2015.0   265050.0        39.260268
       10378   2015.0   320700.0        66.426821
       12500   2015.0   284391.0       505.366921
       12959   2015.0   175500.0        47.238855
       13131   2015.0   326000.0        98.515876
       13307   2015.0   329500.0        76.840179
       13330   2015.0   195769.0        71.549145
       13742   2015.0   858191.0        57.302347
       13761   2015.0   184000.0       108.882025
       13940   2015.0   449500.0        45.165167
       13964   2015.0   270163.0        82.844027
       13965   2015.0   232582.0        49.742970
       14273   2015.0   239957.0       146.162790
       55520   2015.0   180000.0         9.573770
       55533   2015.0   375327.0        69.808743
       55579   2015.0   784553.0        57.342896
       56873   2015.0   430887.0       174.721312
       57392   2015.0   250000.0        56.146175
       58944   2015.0   408210.0        31.713115
       59355   2015.0   190055.0        21.640710
       60404   2015.0   233607.0        55.049180
       61373   2015.0   249636.0        59.337432
       63075   2015.0   174657.0         6.482240
       68658   2015.0   521869.0        26.642841
       72781   2015.0   283479.0        23.999318
       72979   2015.0   196788.0        38.932826
       74127   2015.0   277566.0        55.347005
       74408   2015.0   345992.0        54.076969
       74410   2015.0   317189.0        44.014354
       74413   2015.0   169548.0        31.341014
       74414   2015.0   260262.0       150.838490
       74807   2015.0   325000.0        50.531852
       75059   2015.0   187477.0        23.582152
```

```
[81]: export.to_latex('output/consumo_energia.tex', index = False)
```

```
[ ]:
```