Python pandas and numpy

July 21, 2023

[92]:
```
!pip install pandas
!pip install numpy
```

```
Requirement already satisfied: pandas in
c:\users\shreyas\appdata\local\programs\python\python311\lib\site-packages
(2.0.3)
Requirement already satisfied: python-dateutil>=2.8.2 in
c:\users\shreyas\appdata\local\programs\python\python311\lib\site-packages (from
pandas) (2.8.2)
Requirement already satisfied: pytz>=2020.1 in
c:\users\shreyas\appdata\local\programs\python\python311\lib\site-packages (from
pandas) (2023.3)
Requirement already satisfied: tzdata>=2022.1 in
c:\users\shreyas\appdata\local\programs\python\python311\lib\site-packages (from
pandas) (2023.3)
Requirement already satisfied: numpy>=1.21.0 in
c:\users\shreyas\appdata\local\programs\python\python311\lib\site-packages (from
pandas) (1.25.1)
Requirement already satisfied: six>=1.5 in
c:\users\shreyas\appdata\local\programs\python\python311\lib\site-packages (from
python-dateutil>=2.8.2->pandas) (1.16.0)
Requirement already satisfied: numpy in
c:\users\shreyas\appdata\local\programs\python\python311\lib\site-packages
(1.25.1)
```

[93]:
```
import pandas as pd
import numpy as np
```

1. Create any Series and print the output

[94]:
```
series = pd.Series([1,2,3,4,5,6,7,8,9,10])
series
```

[94]:
```
0      1
1      2
2      3
3      4
4      5
5      6
```

```
6     7
7     8
8     9
9    10
dtype: int64
```

2. Create any dataframe of 10x5 with few nan values and print the output

[95]:
```
dataframe = pd.DataFrame({
    "A":[1,2,3,4,5,6,7,8,9,10],
    "B":["A","B","C","D","E","F","G","H","I","J"],
    "C":[20,20,20,np.nan,29,np.nan,np.nan,np.nan,27,18]
})
dataframe
```

[95]:
```
    A  B     C
0   1  A  20.0
1   2  B  20.0
2   3  C  20.0
3   4  D   NaN
4   5  E  29.0
5   6  F   NaN
6   7  G   NaN
7   8  H   NaN
8   9  I  27.0
9  10  J  18.0
```

3.Display top 7 and last 6 rows and print the output

[96]:
```
dataframe.head(7)
```

[96]:
```
   A  B     C
0  1  A  20.0
1  2  B  20.0
2  3  C  20.0
3  4  D   NaN
4  5  E  29.0
5  6  F   NaN
6  7  G   NaN
```

[97]:
```
dataframe.tail(6)
```

[97]:
```
    A  B     C
4   5  E  29.0
5   6  F   NaN
6   7  G   NaN
7   8  H   NaN
8   9  I  27.0
```

```
9   10  J  18.0
```

4. Fill with a constant value and print the output

```
[98]: d1 = dataframe.fillna(value=25)
      d1
```

```
[98]:     A  B     C
      0   1  A  20.0
      1   2  B  20.0
      2   3  C  20.0
      3   4  D  25.0
      4   5  E  29.0
      5   6  F  25.0
      6   7  G  25.0
      7   8  H  25.0
      8   9  I  27.0
      9  10  J  18.0
```

5. Drop the column with missing values and print the output

```
[99]: d2 = dataframe.dropna(axis=1)
      d2
```

```
[99]:     A  B
      0   1  A
      1   2  B
      2   3  C
      3   4  D
      4   5  E
      5   6  F
      6   7  G
      7   8  H
      8   9  I
      9  10  J
```

6. Drop the row with missing values and print the output

```
[100]: d3 = dataframe.dropna()
       d3
```

```
[100]:     A  B     C
       0   1  A  20.0
       1   2  B  20.0
       2   3  C  20.0
       4   5  E  29.0
       8   9  I  27.0
       9  10  J  18.0
```

7. To check the presence of missing values in your dataframe

[101]:
```
dataframe.isnull()
```

[101]:
```
       A      B      C
0  False  False  False
1  False  False  False
2  False  False  False
3  False  False   True
4  False  False  False
5  False  False   True
6  False  False   True
7  False  False   True
8  False  False  False
9  False  False  False
```

8. Use operators and check the condition and print the output

[102]:
```
d4 = dataframe.loc[dataframe["C"]>18]
d4
```

[102]:
```
   A  B     C
0  1  A  20.0
1  2  B  20.0
2  3  C  20.0
4  5  E  29.0
8  9  I  27.0
```

9. Display your output using loc and iloc, row and column heading

[103]:
```
d5 = dataframe.loc[0:5]
d5
```

[103]:
```
   A  B     C
0  1  A  20.0
1  2  B  20.0
2  3  C  20.0
3  4  D   NaN
4  5  E  29.0
5  6  F   NaN
```

[104]:
```
d6 = dataframe.iloc[0:2]
d6
```

[104]:
```
   A  B     C
0  1  A  20.0
1  2  B  20.0
```

10. Display the statistical summary of data

[105]:
```
dataframe.shape
```

```
[105]: (10, 3)
```

```
[106]: dataframe.describe()
```

```
[106]:                A          C
       count  10.00000   6.000000
       mean    5.50000  22.333333
       std     3.02765   4.501851
       min     1.00000  18.000000
       25%     3.25000  20.000000
       50%     5.50000  20.000000
       75%     7.75000  25.250000
       max    10.00000  29.000000
```

1 MINI-PROJECT:

```
[107]: import pandas as pd
       import numpy as np
```

```
[108]: data = pd.read_csv(r"C:\Users\SHREYAS\Downloads\dataset.csv")
       data
```

```
[108]:          Country                           Region  Happiness Rank  \
       0    Switzerland                   Western Europe               1
       1        Iceland                   Western Europe               2
       2        Denmark                   Western Europe               3
       3         Norway                   Western Europe               4
       4         Canada                    North America               5
       ..           …                              …               …
       153       Rwanda               Sub-Saharan Africa             154
       154        Benin               Sub-Saharan Africa             155
       155        Syria  Middle East and Northern Africa             156
       156      Burundi               Sub-Saharan Africa             157
       157         Togo               Sub-Saharan Africa             158

            Happiness Score  Standard Error  Economy (GDP per Capita)   Family  \
       0              7.587         0.03411                   1.39651  1.34951
       1              7.561         0.04884                   1.30232  1.40223
       2              7.527         0.03328                   1.32548  1.36058
       3              7.522         0.03880                   1.45900  1.33095
       4              7.427         0.03553                   1.32629  1.32261
       ..               …              …                         …       …
       153            3.465         0.03464                   0.22208  0.77370
       154            3.340         0.03656                   0.28665  0.35386
       155            3.006         0.05015                   0.66320  0.47489
       156            2.905         0.08658                   0.01530  0.41587
       157            2.839         0.06727                   0.20868  0.13995
```

```
     Health (Life Expectancy)  Freedom  Trust (Government Corruption)  \
0                     0.94143  0.66557                        0.41978   
1                     0.94784  0.62877                        0.14145   
2                     0.87464  0.64938                        0.48357   
3                     0.88521  0.66973                        0.36503   
4                     0.90563  0.63297                        0.32957   
..                        …        …                            …   
153                   0.42864  0.59201                        0.55191   
154                   0.31910  0.48450                        0.08010   
155                   0.72193  0.15684                        0.18906   
156                   0.22396  0.11850                        0.10062   
157                   0.28443  0.36453                        0.10731   

     Generosity  Dystopia Residual  
0       0.29678            2.51738  
1       0.43630            2.70201  
2       0.34139            2.49204  
3       0.34699            2.46531  
4       0.45811            2.45176  
..          …                 …  
153     0.22628            0.67042  
154     0.18260            1.63328  
155     0.47179            0.32858  
156     0.19727            1.83302  
157     0.16681            1.56726  

[158 rows x 12 columns]
```

[109]:
```
data.head()
```

[109]:
```
       Country          Region  Happiness Rank  Happiness Score  \
0  Switzerland  Western Europe               1            7.587   
1      Iceland  Western Europe               2            7.561   
2      Denmark  Western Europe               3            7.527   
3       Norway  Western Europe               4            7.522   
4       Canada   North America               5            7.427   

   Standard Error  Economy (GDP per Capita)   Family  \
0         0.03411                   1.39651  1.34951   
1         0.04884                   1.30232  1.40223   
2         0.03328                   1.32548  1.36058   
3         0.03880                   1.45900  1.33095   
4         0.03553                   1.32629  1.32261   

   Health (Life Expectancy)  Freedom  Trust (Government Corruption)  \
0                   0.94143  0.66557                        0.41978   
```

```
1                   0.94784  0.62877                               0.14145
2                   0.87464  0.64938                               0.48357
3                   0.88521  0.66973                               0.36503
4                   0.90563  0.63297                               0.32957

   Generosity  Dystopia Residual
0     0.29678            2.51738
1     0.43630            2.70201
2     0.34139            2.49204
3     0.34699            2.46531
4     0.45811            2.45176
```

[110]:
```
data.tail()
```

[110]:
```
     Country                           Region  Happiness Rank  \
153   Rwanda               Sub-Saharan Africa             154
154    Benin               Sub-Saharan Africa             155
155    Syria  Middle East and Northern Africa             156
156  Burundi               Sub-Saharan Africa             157
157     Togo               Sub-Saharan Africa             158

     Happiness Score  Standard Error  Economy (GDP per Capita)   Family  \
153            3.465         0.03464                   0.22208  0.77370
154            3.340         0.03656                   0.28665  0.35386
155            3.006         0.05015                   0.66320  0.47489
156            2.905         0.08658                   0.01530  0.41587
157            2.839         0.06727                   0.20868  0.13995

     Health (Life Expectancy)  Freedom  Trust (Government Corruption)  \
153                   0.42864  0.59201                        0.55191
154                   0.31910  0.48450                        0.08010
155                   0.72193  0.15684                        0.18906
156                   0.22396  0.11850                        0.10062
157                   0.28443  0.36453                        0.10731

     Generosity  Dystopia Residual
153     0.22628            0.67042
154     0.18260            1.63328
155     0.47179            0.32858
156     0.19727            1.83302
157     0.16681            1.56726
```

[111]:
```
data.describe()
```

[111]:
```
       Happiness Rank  Happiness Score  Standard Error  \
count      158.000000       158.000000      158.000000
mean        79.493671         5.375734        0.047885
```

```
std          45.754363         1.145010        0.017146
min           1.000000         2.839000        0.018480
25%          40.250000         4.526000        0.037268
50%          79.500000         5.232500        0.043940
75%         118.750000         6.243750        0.052300
max         158.000000         7.587000        0.136930

       Economy (GDP per Capita)      Family  Health (Life Expectancy)  \
count                158.000000  158.000000                158.000000
mean                   0.846137    0.991046                  0.630259
std                    0.403121    0.272369                  0.247078
min                    0.000000    0.000000                  0.000000
25%                    0.545808    0.856823                  0.439185
50%                    0.910245    1.029510                  0.696705
75%                    1.158448    1.214405                  0.811013
max                    1.690420    1.402230                  1.025250

          Freedom  Trust (Government Corruption)  Generosity  \
count  158.000000                     158.000000  158.000000
mean     0.428615                       0.143422    0.237296
std      0.150693                       0.120034    0.126685
min      0.000000                       0.000000    0.000000
25%      0.328330                       0.061675    0.150553
50%      0.435515                       0.107220    0.216130
75%      0.549092                       0.180255    0.309883
max      0.669730                       0.551910    0.795880

       Dystopia Residual
count         158.000000
mean            2.098977
std             0.553550
min             0.328580
25%             1.759410
50%             2.095415
75%             2.462415
max             3.602140
```

[112]:
```
data.shape
```

[112]:
```
(158, 12)
```

[113]:
```
data.size
```

[113]:
```
1896
```

[114]:
```
data.isnull()
```

[114]:
```
     Country  Region  Happiness Rank  Happiness Score  Standard Error  \
0      False   False           False            False           False
1      False   False           False            False           False
2      False   False           False            False           False
3      False   False           False            False           False
4      False   False           False            False           False
..       …       …              …                …               …
153    False   False           False            False           False
154    False   False           False            False           False
155    False   False           False            False           False
156    False   False           False            False           False
157    False   False           False            False           False

     Economy (GDP per Capita)  Family  Health (Life Expectancy)  Freedom  \
0                       False   False                     False    False
1                       False   False                     False    False
2                       False   False                     False    False
3                       False   False                     False    False
4                       False   False                     False    False
..                        …       …                        …        …
153                     False   False                     False    False
154                     False   False                     False    False
155                     False   False                     False    False
156                     False   False                     False    False
157                     False   False                     False    False

     Trust (Government Corruption)  Generosity  Dystopia Residual
0                            False       False              False
1                            False       False              False
2                            False       False              False
3                            False       False              False
4                            False       False              False
..                             …           …                  …
153                          False       False              False
154                          False       False              False
155                          False       False              False
156                          False       False              False
157                          False       False              False

[158 rows x 12 columns]
```

[115]:
```
data.fillna(value=0)
```

[115]:
```
         Country                          Region  Happiness Rank  \
0    Switzerland                  Western Europe               1
1        Iceland                  Western Europe               2
2        Denmark                  Western Europe               3
```

```
3        Norway                   Western Europe             4
4        Canada                    North America             5
..          …                              …           …
153      Rwanda               Sub-Saharan Africa           154
154       Benin               Sub-Saharan Africa           155
155       Syria  Middle East and Northern Africa           156
156     Burundi               Sub-Saharan Africa           157
157        Togo               Sub-Saharan Africa           158

     Happiness Score  Standard Error  Economy (GDP per Capita)   Family  \
0              7.587         0.03411                   1.39651  1.34951
1              7.561         0.04884                   1.30232  1.40223
2              7.527         0.03328                   1.32548  1.36058
3              7.522         0.03880                   1.45900  1.33095
4              7.427         0.03553                   1.32629  1.32261
..               …             …                         …        …
153            3.465         0.03464                   0.22208  0.77370
154            3.340         0.03656                   0.28665  0.35386
155            3.006         0.05015                   0.66320  0.47489
156            2.905         0.08658                   0.01530  0.41587
157            2.839         0.06727                   0.20868  0.13995

     Health (Life Expectancy)  Freedom  Trust (Government Corruption)  \
0                     0.94143  0.66557                        0.41978
1                     0.94784  0.62877                        0.14145
2                     0.87464  0.64938                        0.48357
3                     0.88521  0.66973                        0.36503
4                     0.90563  0.63297                        0.32957
..                        …       …                              …
153                   0.42864  0.59201                        0.55191
154                   0.31910  0.48450                        0.08010
155                   0.72193  0.15684                        0.18906
156                   0.22396  0.11850                        0.10062
157                   0.28443  0.36453                        0.10731

     Generosity  Dystopia Residual
0       0.29678            2.51738
1       0.43630            2.70201
2       0.34139            2.49204
3       0.34699            2.46531
4       0.45811            2.45176
..         …                 …
153     0.22628            0.67042
154     0.18260            1.63328
155     0.47179            0.32858
156     0.19727            1.83302
157     0.16681            1.56726
```

```
[158 rows x 12 columns]
```

[116]:
```
data.dropna()
```

[116]:
```
         Country                           Region  Happiness Rank  \
0    Switzerland                   Western Europe               1
1        Iceland                   Western Europe               2
2        Denmark                   Western Europe               3
3         Norway                   Western Europe               4
4         Canada                    North America               5
..           …                              …             …
153       Rwanda               Sub-Saharan Africa             154
154        Benin               Sub-Saharan Africa             155
155        Syria  Middle East and Northern Africa             156
156      Burundi               Sub-Saharan Africa             157
157         Togo               Sub-Saharan Africa             158

     Happiness Score  Standard Error  Economy (GDP per Capita)   Family  \
0              7.587         0.03411                   1.39651  1.34951
1              7.561         0.04884                   1.30232  1.40223
2              7.527         0.03328                   1.32548  1.36058
3              7.522         0.03880                   1.45900  1.33095
4              7.427         0.03553                   1.32629  1.32261
..               …             …                       …       …
153            3.465         0.03464                   0.22208  0.77370
154            3.340         0.03656                   0.28665  0.35386
155            3.006         0.05015                   0.66320  0.47489
156            2.905         0.08658                   0.01530  0.41587
157            2.839         0.06727                   0.20868  0.13995

     Health (Life Expectancy)  Freedom  Trust (Government Corruption)  \
0                     0.94143  0.66557                        0.41978
1                     0.94784  0.62877                        0.14145
2                     0.87464  0.64938                        0.48357
3                     0.88521  0.66973                        0.36503
4                     0.90563  0.63297                        0.32957
..                        …      …                            …
153                   0.42864  0.59201                        0.55191
154                   0.31910  0.48450                        0.08010
155                   0.72193  0.15684                        0.18906
156                   0.22396  0.11850                        0.10062
157                   0.28443  0.36453                        0.10731

     Generosity  Dystopia Residual
0       0.29678            2.51738
1       0.43630            2.70201
```

```
2       0.34139          2.49204
3       0.34699          2.46531
4       0.45811          2.45176
..         …                …
153     0.22628          0.67042
154     0.18260          1.63328
155     0.47179          0.32858
156     0.19727          1.83302
157     0.16681          1.56726

[158 rows x 12 columns]
```

2 dataset 2

[117]:
```
data2 = pd.read_csv(r"C:\Users\SHREYAS\Downloads\dataset2.csv")
data2
```

[117]:
```
          ID   model  engine_power  age_in_days        km  previous_owners  \
0      1.0  lounge          51.0        882.0   25000.0              1.0
1      2.0     pop          51.0       1186.0   32500.0              1.0
2      3.0   sport          74.0       4658.0  142228.0              1.0
3      4.0  lounge          51.0       2739.0  160000.0              1.0
4      5.0     pop          73.0       3074.0  106880.0              1.0
…     …       …             …           …        …              …
1554   NaN     NaN           NaN          NaN       NaN              NaN
1555   NaN     NaN           NaN          NaN       NaN              NaN
1556   NaN     NaN           NaN          NaN       NaN              NaN
1557   NaN     NaN           NaN          NaN       NaN              NaN
1558   NaN     NaN           NaN          NaN       NaN              NaN

            lat          lon       price  Unnamed: 9  Unnamed: 10 Unnamed: 11  \
0     44.907242  8.611559868        8900         NaN          NaN         NaN
1     45.666359  12.24188995        8800         NaN          NaN         NaN
2     45.503300     11.41784        4200         NaN          NaN         NaN
3     40.633171  17.63460922        6000         NaN          NaN         NaN
4     41.903221  12.49565029        5700         NaN          NaN         NaN
…         …          …          …        …           …           …
1554        NaN    averageif       44028         NaN          NaN         NaN
1555        NaN       counta        1538         NaN          NaN         NaN
1556        NaN         left         lou         NaN          NaN         NaN
1557        NaN        right         ort         NaN          NaN         NaN
1558        NaN         date  26-11-2002         NaN          NaN         NaN

     Unnamed: 12
0            NaN
1            NaN
```

```
2              NaN
3              NaN
4              NaN
…           …
1554           NaN
1555           NaN
1556           NaN
1557           NaN
1558           NaN

[1559 rows x 13 columns]
```

[118]:
```
data2.head()
```

[118]:
```
    ID   model  engine_power  age_in_days        km  previous_owners  \
0  1.0  lounge          51.0        882.0   25000.0              1.0
1  2.0     pop          51.0       1186.0   32500.0              1.0
2  3.0   sport          74.0       4658.0  142228.0              1.0
3  4.0  lounge          51.0       2739.0  160000.0              1.0
4  5.0     pop          73.0       3074.0  106880.0              1.0

         lat          lon price  Unnamed: 9  Unnamed: 10 Unnamed: 11  \
0  44.907242  8.611559868  8900         NaN          NaN         NaN
1  45.666359  12.24188995  8800         NaN          NaN         NaN
2  45.503300     11.41784  4200         NaN          NaN         NaN
3  40.633171  17.63460922  6000         NaN          NaN         NaN
4  41.903221  12.49565029  5700         NaN          NaN         NaN

  Unnamed: 12
0         NaN
1         NaN
2         NaN
3         NaN
4         NaN
```

[119]:
```
data2.tail()
```

[119]:
```
      ID model  engine_power  age_in_days  km  previous_owners  lat  \
1554 NaN   NaN           NaN          NaN NaN              NaN  NaN
1555 NaN   NaN           NaN          NaN NaN              NaN  NaN
1556 NaN   NaN           NaN          NaN NaN              NaN  NaN
1557 NaN   NaN           NaN          NaN NaN              NaN  NaN
1558 NaN   NaN           NaN          NaN NaN              NaN  NaN

            lon       price  Unnamed: 9  Unnamed: 10 Unnamed: 11 Unnamed: 12
1554  averageif       44028         NaN          NaN         NaN         NaN
1555     counta        1538         NaN          NaN         NaN         NaN
```

```
1556       left        lou        NaN         NaN        NaN        NaN
1557      right        ort        NaN         NaN        NaN        NaN
1558       date  26-11-2002       NaN         NaN        NaN        NaN
```

[120]:
```
data2.describe()
```

[120]:
```
                ID  engine_power  age_in_days             km  previous_owners  \
count  1538.000000   1538.000000  1538.000000    1538.000000      1538.000000
mean    769.500000     51.904421  1650.980494   53396.011704         1.123537
std     444.126671      3.988023  1289.522278   40046.830723         0.416423
min       1.000000     51.000000   366.000000    1232.000000         1.000000
25%     385.250000     51.000000   670.000000   20006.250000         1.000000
50%     769.500000     51.000000  1035.000000   39031.000000         1.000000
75%    1153.750000     51.000000  2616.000000   79667.750000         1.000000
max    1538.000000     77.000000  4658.000000  235000.000000         4.000000

               lat  Unnamed: 9  Unnamed: 10
count  1538.000000         0.0          0.0
mean     43.541361         NaN          NaN
std       2.133518         NaN          NaN
min      36.855839         NaN          NaN
25%      41.802990         NaN          NaN
50%      44.394096         NaN          NaN
75%      45.467960         NaN          NaN
max      46.795612         NaN          NaN
```

[121]:
```
data2.shape
```

[121]:
```
(1559, 13)
```

[122]:
```
data2.size
```

[122]:
```
20267
```

[123]:
```
data2.isnull()
```

[123]:
```
         ID  model  engine_power  age_in_days     km  previous_owners    lat  \
0     False  False         False        False  False            False  False
1     False  False         False        False  False            False  False
2     False  False         False        False  False            False  False
3     False  False         False        False  False            False  False
4     False  False         False        False  False            False  False
…       …     …            …          …      …              …      …
1554   True   True          True         True   True             True   True
1555   True   True          True         True   True             True   True
1556   True   True          True         True   True             True   True
1557   True   True          True         True   True             True   True
1558   True   True          True         True   True             True   True
```

```
        lon  price  Unnamed: 9  Unnamed: 10  Unnamed: 11  Unnamed: 12
0     False  False        True         True         True         True
1     False  False        True         True         True         True
2     False  False        True         True         True         True
3     False  False        True         True         True         True
4     False  False        True         True         True         True
…       …     …          …           …           …           …
1554  False  False        True         True         True         True
1555  False  False        True         True         True         True
1556  False  False        True         True         True         True
1557  False  False        True         True         True         True
1558  False  False        True         True         True         True

[1559 rows x 13 columns]
```

[124]:
```
fill = data2.fillna(value = 1)
fill
```

[124]:
```
        ID   model  engine_power  age_in_days        km  previous_owners  \
0     1.0  lounge          51.0        882.0   25000.0              1.0
1     2.0     pop          51.0       1186.0   32500.0              1.0
2     3.0   sport          74.0       4658.0  142228.0              1.0
3     4.0  lounge          51.0       2739.0  160000.0              1.0
4     5.0     pop          73.0       3074.0  106880.0              1.0
…    …     …             …           …        …             …
1554  1.0       1           1.0          1.0       1.0              1.0
1555  1.0       1           1.0          1.0       1.0              1.0
1556  1.0       1           1.0          1.0       1.0              1.0
1557  1.0       1           1.0          1.0       1.0              1.0
1558  1.0       1           1.0          1.0       1.0              1.0

            lat          lon       price  Unnamed: 9  Unnamed: 10 Unnamed: 11  \
0     44.907242  8.611559868        8900         1.0          1.0           1
1     45.666359  12.24188995        8800         1.0          1.0           1
2     45.503300     11.41784        4200         1.0          1.0           1
3     40.633171  17.63460922        6000         1.0          1.0           1
4     41.903221  12.49565029        5700         1.0          1.0           1
…          …          …         …         …          …          …
1554   1.000000    averageif       44028         1.0          1.0           1
1555   1.000000       counta        1538         1.0          1.0           1
1556   1.000000         left         lou         1.0          1.0           1
1557   1.000000        right         ort         1.0          1.0           1
1558   1.000000         date  26-11-2002         1.0          1.0           1

     Unnamed: 12
0              1
```

```
1               1
2               1
3               1
4               1
…          …
1554            1
1555            1
1556            1
1557            1
1558            1

[1559 rows x 13 columns]
```

[125]:
```
drop = data2.dropna(axis=1)
drop
```

[125]:
```
                lon       price
0     8.611559868        8900
1     12.24188995        8800
2        11.41784        4200
3     17.63460922        6000
4     12.49565029        5700
…             …         …
1554    averageif       44028
1555       counta        1538
1556         left         lou
1557        right         ort
1558         date  26-11-2002

[1559 rows x 2 columns]
```