In [1]:
```
#Import necessary packages

import pandas as pd
import numpy as np
```

In [2]:
```
#Read Excel file into Pandas DataFrame

boston_housing = pd.read_excel('BostonHousing.xls',sheet_name='Data')
```

In [3]:
```
boston_housing.head()     #Top 5 rows
```

Out[3]:

	CRIM	ZN	INDUS	CHAS	NOX	RM	AGE	DIS	RAD	TAX	PTRATIO
0	0.00632	18.0	2.31	0	0.538	6.575	65.2	4.09	1	296	15.3
1	0.02731	0.0	7.07	0	0.469	6.421	78.9	4.9671	2	242	17.8
2	0.02729	0.0	7.07	0	0.469	7.185	61.1	4.9671	2	242	17.8
3	0.03237	0.0	2.18	0	0.458	6.998	45.8	6.0622	3	222	18.7
4	0.06905	0.0	7.07	0	0.458	7.147	54.2		3	222	18.7

In [4]:
```
boston_housing.shape   #Dimensions of the Dataframe
```

Out[4]:
```
(167, 11)
```

In [5]:
```
boston_housing.dtypes    #Datatypes of the dataframe
```

Out[5]:
```
CRIM       float64
ZN         float64
INDUS       object
CHAS         int64
NOX         object
RM         float64
AGE        float64
DIS         object
RAD          int64
TAX          int64
PTRATIO     object
dtype: object
```

Color Cell

References

https://queirozf.com/entries/pandas-dataframe-examples-styling-cells-and-conditional-formatting (https://queirozf.com/entries/pandas-dataframe-examples-styling-cells-and-conditional-formatting)

Part B.1

Highlighting Cell that do not have numbers in the cells (Except: PTRATIO)

In [6]:
```
#Function to highlight cells yellow with non-float or non-int values
def float_check_background(cell_value):

    highlight = 'background-color: yellow;'
    default = ''

    if type(cell_value) in [float,int]:
        return default
    else:
        return highlight


#Function to highlight cells yellow with null values
def check_nan_background(cell_value):

    highlight = 'background-color: yellow;'
    default = ''

    if pd.isnull(cell_value) is True:
        return highlight
    else:
        return default
```

In [7]:
```
#Applying the above functions to all columns except PTRATIO

(boston_housing.iloc[:,0:10].style
 .applymap(check_nan_background)
 .applymap(float_check_background))
```

Out[7]:

	CRIM	ZN	INDUS	CHAS	NOX	RM	AGE	DIS	RAD	TAX
0	0.006320	18.000000	2.310000	0	0.538000	6.575000	65.200000	4.090000	1	296
1	0.027310	0.000000	7.070000	0	0.469000	6.421000	78.900000	4.967100	2	242
2	0.027290	0.000000	7.070000	0	0.469000	7.185000	61.100000	4.967100	2	242
3	0.032370	0.000000	2.180000	0	0.458000	6.998000	45.800000	6.062200	3	222
4	0.069050	0.000000	7.070000	0	0.458000	7.147000	54.200000		3	222
5	0.029850	0.000000	****	0	0.458000	6.430000	58.700000	6.062200	3	222
6	0.088290	12.500000	7.070000	0	0.524000	6.012000	66.600000	5.560500	5	311
7	0.144550	12.500000	****	0	0.524000	6.172000	96.100000	5.950500	5	311
8	0.211240	12.500000	7.870000	0	0.524000	5.631000	100.000000	6.082100	5	311
9	0.170040	12.500000	****	0	0.524000	6.004000	85.900000	6.592100	5	311
10	0.224890	12.500000	7.870000	0	0.524000	6.377000	94.300000	6.346700	5	311
11	0.117470	12.500000	nan	0	0.524000	6.009000	82.900000	6.226700	5	311
12	0.093780	12.500000	7.870000	0	0.524000	5.889000	39.000000	5.450900	5	311
13	0.629760	0.000000	8.140000	0	nan	5.949000	61.800000	4.707500	4	307
14	0.637960	0.000000	8.140000	0	0.538000	6.096000	84.500000	4.461900	4	307
15	0.627390	0.000000	8.140000	0	0.538000	5.834000	56.500000	4.498600	4	307
16	0.053930	0.000000	8.140000	0	0.538000	5.935000	29.300000	4.498600	4	307
17	0.784200	0.000000	8.140000	0	0.538000	5.990000	81.700000	4.257900	4	307
18	0.802710	0.000000	8.140000	0	0.538000	5.456000	36.600000	3.796500	4	307
19	0.725800	0.000000	8.140000	0	0.538000	5.727000	69.500000	3.796500	4	307
20	1.251790	0.000000	8.140000	0	0.538000	5.570000	98.100000	3.797900	4	307
21	0.852040	0.000000	8.140000	0	0.538000	5.965000	89.200000	4.012300	4	307
22	0.232470	0.000000	8.140000	0	0.538000	6.142000	91.700000	3.976900	4	307
23	0.988430	0.000000	8.140000	0	0.538000	5.813000	100.000000	4.095200	4	307
24	0.750260	0.000000	nan	0	0.538000	5.924000	94.100000	4.399600	4	307
25	0.840540	0.000000	8.140000	0	0.538000	5.599000	85.700000	4.454600	4	307
26	0.671910	0.000000	8.140000	0	0.538000	5.813000	90.300000	4.682000	4	307
27	0.955770	0.000000	8.140000	0	0.538000	6.047000	88.800000	4.453400	4	307
28	0.772990	0.000000	8.140000	0	0.538000	6.495000	94.400000	4.454700	4	307
29	0.102450	0.000000	Sara	0	0.538000	6.674000	87.300000	4.239000	4	307
30	0.130810	0.000000	8.140000	0	0.538000	5.713000	94.100000	4.233000	4	307

	CRIM	ZN	INDUS	CHAS	NOX	RM	AGE	DIS	RAD	TAX
31	1.354720	0.000000	8.140000	0	0.538000	6.072000	100.000000	4.175000	4	307
32	0.138799	0.000000	8.140000	0	0.538000	5.950000	82.000000	3.990000	4	307
33	0.151720	0.000000	8.140000	0	0.538000	5.701000	95.000000	3.787200	4	307
34	1.612820	0.000000	8.140000	0	0.538000	6.096000	96.900000	3.759800	4	307
35	0.064170	0.000000	5.960000	0	0.499000	5.933000	68.200000	3.360300	5	279
36	0.097440	0.000000	5.960000	0	0.499000	5.841000	61.400000	3.377900	5	279
37	0.080140	0.000000	nan	0	0.499000	5.850000	41.500000	3.934200	5	279
38	0.175050	0.000000	nan	0	0.499000	5.966000	30.200000	3.847300	5	279
39	0.027630	75.000000	2.950000	0	0.428000	6.595000	21.800000	5.401100	3	252
40	0.033590	75.000000	nan	0	0.428000	7.024000	15.800000	5.401100	3	252
41	0.127440	0.000000	2.950000	0	0.448000	6.770000	2.900000	5.720900	3	233
42	0.141500	0.000000	6.910000	0	0.448000	6.169000	6.600000	5.720900	3	233
43	0.159360	0.000000	6.910000	0	0.448000	6.211000	6.500000	5.720900	3	233
44	0.122690	0.000000	6.910000	0	0.448000	6.069000	40.000000	5.720900	3	233
45	0.171420	0.000000	6.910000	0	0.448000	5.682000	33.800000	5.100400	3	233
46	0.188360	0.000000	6.910000	0	0.448000	5.786000	33.300000	5.100400	3	233
47	0.229270	0.000000	6.910000	0	0.448000	6.030000	85.500000	5.689400	3	233
48	0.253870	0.000000	6.910000	0	0.448000	5.399000	95.300000	5.870000	3	233
49	0.219770	0.000000	6.910000	0	0.448000	5.602000	62.000000	6.087700	3	233
50	0.088730	21.000000	nan	0	0.439000	5.963000	45.700000	6.814700	4	243
51	0.043370	21.000000	5.640000	0	0.439000	6.115000	63.000000	6.814700	4	243
52	0.053600	21.000000	5.640000	0	0.439000	6.511000	21.100000	6.814700	4	243
53	0.049810	21.000000	5.640000	0	0.439000	5.998000	21.400000	7.319700	4	243
54	0.013600	75.000000	4	0	0.410000	5.888000	47.600000	7.319700	3	469
55	0.013110	90.000000	1.220000	0	0.403000	7.249000	21.900000	8.696600	5	226
56	0.020550	85.000000	0.740000	0	0.410000	6.383000	35.700000	9.187600	2	313
57	0.014320	100.000000	1.320000	0	0.411000	6.816000	40.500000	8.324800	5	256
58	0.154450	25.000000	5.130000	0	0.453000	6.145000	29.200000	7.814800	8	284
59	0.103280	25.000000	nan	0	0.453000	5.927000	47.200000	6.932000	8	284
60	0.149320	25.000000	****	0	0.453000	5.741000	66.200000	7.225400	8	284
61	0.171710	25.000000	nan	0	0.453000	5.966000	93.400000	6.818500	8	284
62	0.110270	25.000000	5.130000	0	0.453000	6.456000	67.800000	7.225500	8	284
63	0.126500	25.000000	5.130000	0	0.453000	6.762000	43.400000	7.980900	8	284
64	0.019510	17.500000	1.380000	0	0.416100	7.104000	59.500000	9.222900	3	216
65	0.035840	80.000000	3.370000	0	0.398000	6.290000	17.800000	6.611500	4	337
66	0.043790	80.000000	3.370000	0	0.398000	5.787000	31.100000	6.611500	4	337

	CRIM	ZN	INDUS	CHAS	NOX	RM	AGE	DIS	RAD	TAX
67	0.057890	12.500000	3.400000	0	0.409000	5.878000	21.400000	6.498000	4	345
68	0.135540	12.500000	****	0	0.409000	5.594000	36.800000	6.498000	4	345
69	0.128160	12.500000	****	0	0.409000	5.885000	33.000000	6.498000	4	345
70	0.088260	0.000000	10.810000	0	0.413000	6.417000	6.600000	5.287300	4	305
71	0.158760	0.000000	10.810000	0	0.413000	5.961000	17.500000	5.287300	4	305
72	0.091640	0.000000	10.810000	0	0.413000	6.065000	7.800000	5.287300	4	305
73	0.195390	0.000000	10.810000	0	0.413000	6.245000	6.200000	5.287300	4	305
74	0.078960	0.000000	12.830000	0	0.437000	6.273000	6.000000	4.251500	5	398
75	0.095120	0.000000	12.830000	0	0.437000	6.286000	45.000000	4.502600	5	398
76	0.101530	0.000000	nan	0	0.437000	6.279000	74.500000	4.052200	5	398
77	0.087070	0.000000	nan	0	0.437000	6.140000	45.800000	4.090500	5	398
78	0.056460	0.000000	12.830000	0	0.437000	6.232000	53.700000	5.014100	5	398
79	0.083870	0.000000	12.830000	0	0.437000	5.874000	36.600000	4.502600	5	398
80	0.041130	25.000000	4.860000	0	0.426000	6.727000	33.500000	5.400700	4	281
81	0.044620	25.000000	4.860000	0	0.426000	6.619000	70.400000	5.400700	4	281
82	0.036590	25.000000	4.860000	0	0.426000	6.302000	32.200000	5.400700	4	281
83	0.035510	25.000000	nan	0	0.426000	6.167000	46.700000	5.400700	4	281
84	0.050590	0.000000	nan	0	*****	6.389000	48.000000	4.779400	3	247
85	0.057350	0.000000	4.490000	0	0.449000	6.630000	56.100000	4.437700	3	247
86	0.051880	0.000000	4.490000	0	0.449000	6.015000	45.100000	4.427200	3	247
87	0.071510	0.000000	4.490000	0	0.449000	6.121000	56.800000	3.747600	3	247
88	0.056600	0.000000	3.410000	0	0.489000	7.007000	86.300000	nan	2	270
89	0.053020	0.000000	3.410000	0	0.489000	7.079000	63.100000	3.414500	2	270
90	0.046840	0.000000	3.410000	0	0.489000	6.417000	66.100000	3.092300	2	270
91	0.039320	0.000000	3.410000	0	0.489000	6.405000	73.900000	3.092100	2	270
92	0.042030	28.000000	15.040000	0	0.464000	6.442000	53.600000	3.665900	4	270
93	0.028750	28.000000	15.040000	0	0.464000	6.211000	28.900000	3.665900	4	270
94	0.042940	28.000000	15.040000	0	0.464000	6.249000	77.300000	3.615000	4	270
95	0.122040	0.000000	2.890000	0	0.445000	6.625000	57.800000	3.495200	2	276
96	0.115040	0.000000	2.890000	0	*****	6.163000	69.600000	3.495200	2	276
97	0.120830	0.000000	2.890000	0	0.445000	8.069000	76.000000	3.495200	2	276
98	0.081870	0.000000	2.890000	0	0.445000	7.820000	36.900000	3.495200	2	276
99	0.068600	0.000000	2.890000	0	0.445000	7.416000	62.500000	3.495200	2	276
100	0.148660	0.000000	8.560000	0	0.520000	6.727000	79.900000	2.777800	5	384
101	0.114320	0.000000	8.560000	0	0.520000	6.781000	71.300000	2.856100	5	384
102	0.228760	0.000000	nan	0	0.520000	6.405000	85.400000	2.714700	5	384

	CRIM	ZN	INDUS	CHAS	NOX	RM	AGE	DIS	RAD	TAX
103	0.211610	0.000000	8.560000	0	0.520000	6.137000	87.400000	2.714700	5	384
104	0.139600	0.000000	8.560000	0	0.520000	6.167000	90.000000	2.421000	5	384
105	0.132620	0.000000	8.560000	0	0.520000	5.851000	96.700000	2.106900	5	384
106	0.171200	0.000000	8.560000	0	0.520000	5.836000	91.900000	2.211000	5	384
107	0.131170	0.000000	8.560000	0	0.520000	6.127000	85.200000	2.122400	5	384
108	0.128020	0.000000	8.560000	0	0.520000	6.474000	97.100000	2.432900	5	384
109	0.263630	0.000000	8.560000	0	0.520000	6.229000	91.200000	2.545100	5	384
110	0.107930	0.000000	nan	0	0.520000	6.195000	54.400000	2.777800	5	384
111	0.100840	0.000000	10.010000	0	*****	6.715000	81.600000	2.677500	6	432
112	0.123290	0.000000	10.010000	0	0.547000	5.913000	92.900000	2.353400	6	432
113	0.222120	0.000000	10.010000	0	0.547000	6.092000	95.400000	2.548000	6	432
114	0.142310	0.000000	10.010000	0	0.547000	6.254000	84.200000	2.256500	6	432
115	0.171340	0.000000	10.010000	0	0.547000	5.928000	88.200000	2.463100	6	432
116	0.131580	0.000000	10.010000	0	0.547000	6.176000	72.500000	2.730100	6	432
117	0.150980	0.000000	10.010000	0	0.547000	6.021000	82.600000	2.747400	6	432
118	0.130580	0.000000	*****	0	0.547000	5.872000	73.100000	2.477500	6	432
119	0.144760	0.000000	10.010000	0	0.547000	5.731000	65.200000	2.759200	6	432
120	0.068990	0.000000	25.650000	0	0.581000	5.870000	69.700000	2.257700	2	188
121	0.071650	0.000000	25.650000	0	0.581000	6.004000	84.100000	2.197400	2	188
122	0.092990	0.000000	25.650000	0	0.581000	5.961000	92.900000	2.086900	2	188
123	0.150380	0.000000	25.650000	0	0.581000	5.856000	97.000000	1.944400	2	188
124	0.098490	0.000000	nan	0	0.581000	5.879000	95.800000	2.006300	2	188
125	0.169020	0.000000	nan	0	0.581000	5.986000	88.400000	1.992900	2	188
126	0.387350	0.000000	25.650000	0	0.581000	5.613000	95.600000	1.757200	2	188
127	0.259150	0.000000	21.890000	0	0.624000	5.693000	96.000000	1.788300	4	437
128	0.325430	0.000000	21.890000	0	0.624000	6.431000	98.800000	1.812500	4	437
129	0.881250	0.000000	nan	0	0.624000	5.637000	94.700000	1.979900	4	437
130	0.340060	0.000000	21.890000	0	0.624000	6.458000	98.900000	nan	4	437
131	1.192940	0.000000	21.890000	0	0.624000	6.326000	97.700000	2.271000	4	437
132	0.590050	0.000000	21.890000	0	0.624000	6.372000	97.900000	2.327400	4	437
133	0.329820	0.000000	21.890000	0	0.624000	5.822000	95.400000	2.469900	4	437
134	0.976170	0.000000	21.890000	0	0.624000	5.757000	98.400000	2.346000	4	437
135	0.557780	0.000000	21.890000	0	0.624000	6.335000	98.200000	2.110700	4	437
136	0.322640	0.000000	21.890000	0	0.624000	5.942000	93.500000	1.966900	4	437
137	0.352330	0.000000	21.890000	0	0.624000	6.454000	98.400000	1.849800	4	437
138	0.249800	0.000000	21.890000	0	0.624000	5.857000	98.200000	1.668600	4	437

	CRIM	ZN	INDUS	CHAS	NOX	RM	AGE	DIS	RAD	TAX
139	0.544520	0.000000	21.890000	0	0.624000	6.151000	97.900000	1.668700	4	437
140	0.290900	0.000000	21.890000	0	0.624000	6.174000	93.600000	1.611900	4	437
141	1.628640	0.000000	21.890000	0	0.624000	5.019000	100.000000	1.439400	4	437
142	3.321050	0.000000	19.580000	1	&&&	5.403000	100.000000	1.321600	5	403
143	4.097400	0.000000	19.580000	0	0.871000	5.468000	100.000000	1.411800	5	403
144	2.779740	0.000000	19.580000	0	0.871000	4.903000	97.800000	1.345900	5	403
145	2.379340	0.000000	19.580000	0	0.871000	6.130000	100.000000	1.419100	5	403
146	0.139140	0.000000	4.050000	0	0.510000	5.572000	88.500000	2.596100	5	296
147	0.091780	0.000000	nan	0	0.510000	6.416000	84.100000	2.646300	5	296
148	0.084470	0.000000	4.050000	0	0.510000	5.859000	68.700000	2.701900	5	296
149	0.066640	0.000000	4.050000	0	0.510000	6.546000	33.100000	3.132300	5	296
150	0.070220	0.000000	4.050000	0	0.510000	6.020000	47.200000	3.554900	5	296
151	0.054250	0.000000	4.050000	0	0.510000	6.315000	73.400000	3.317500	5	296
152	0.066420	0.000000	4.050000	0	0.510000	6.860000	74.400000	2.915300	5	296
153	0.057800	0.000000	2.460000	0	0.488000	6.980000	58.400000	2.829000	3	193
154	0.065880	0.000000	2.460000	0	0.488000	7.765000	83.300000	2.741000	3	193
155	0.068880	0.000000	nan	0	0.488000	6.144000	62.200000	2.597900	3	193
156	0.091030	0.000000	2.460000	0	0.488000	7.155000	92.200000	2.700600	3	193
157	0.100080	0.000000	2.460000	0	0.488000	6.563000	95.600000	2.847000	3	193
158	0.083080	0.000000	2.460000	0	0.488000	5.604000	89.800000	2.987900	3	193
159	0.060470	0.000000	2.460000	0	0.488000	6.153000	68.800000	3.279700	3	193
160	0.056020	0.000000	2.460000	0	nan	7.831000	53.600000	nan	3	193
161	0.078750	45.000000	3.440000	0	0.437000	6.782000	41.100000	3.788600	5	398
162	0.125790	45.000000	3.440000	0	0.437000	6.556000	29.100000	4.566700	5	398
163	0.083700	45.000000	3.440000	0	0.437000	7.185000	38.900000	4.566700	5	398
164	0.090680	45.000000	nan	0	0.437000	6.951000	21.500000	6.479800	5	398
165	0.069110	45.000000	3.440000	0	0.437000	6.739000	30.800000	6.479800	5	398
166	0.086640	45.000000	3.440000	0	0.437000	7.178000	26.300000	6.479800	5	398

Part B.2

Highlighting outlier cells in PTRATIO column

In [8]:
```
#Function to highlight cells yellow with non-numeric and any outlier values

def outliers_background(cell_value):

    highlight = 'background-color: yellow;'
    default = ''

    if type(cell_value) in [float,int]:
        if cell_value >= 25 or cell_value <=10:
            return highlight
        else:
            return default
    else:
        return highlight
```

In [9]:
```
#Applying the above functions to PTRATIO

(boston_housing.iloc[:,10:11].style
 .applymap(check_nan_background)
 .applymap(float_check_background)
 .applymap(outliers_background))
```

Out[9]:

	PTRATIO
0	15.300000
1	17.800000
2	17.800000
3	18.700000
4	18.700000
5	137
6	15.200000
7	15.200000
8	15.200000
9	15.200000
10	15.200000

Work on Cells highlighted in yellow

and index 5, 13, 20, 31, 34, 74, 144, 145,

also correct index 54

PART C

Omitting the unwanted cells from PTRatio & creating a new dataframe

In [10]:
```
#Omitting the below index rows from the dataframe & creating a new dataframe

df_boston = boston_housing.drop([5,13,20,31,34,74,144,145])
```

https://www.codegrepper.com/code-examples/python/show+all+rows+in+jupyter+notebook (https://www.codegrepper.com/code-examples/python/show+all+rows+in+jupyter+notebook)

In [11]:
```
#Setting display to all rows
pd.set_option('display.max_rows', None)
```

https://www.machinelearningplus.com/pandas/pandas-reset-index/ (https://www.machinelearningplus.com/pandas/pandas-reset-index/)

In [12]:
```
#Resetting the index numbers after dropping the above rows
df_boston.reset_index(drop=True,inplace=True)
df_boston
```

Out[12]:

	CRIM	ZN	INDUS	CHAS	NOX	RM	AGE	DIS	RAD	TAX	PTRATIO
0	0.006320	18.0	2.31	0	0.538	6.575	65.2	4.09	1	296	15.3
1	0.027310	0.0	7.07	0	0.469	6.421	78.9	4.9671	2	242	17.8
2	0.027290	0.0	7.07	0	0.469	7.185	61.1	4.9671	2	242	17.8
3	0.032370	0.0	2.18	0	0.458	6.998	45.8	6.0622	3	222	18.7
4	0.069050	0.0	7.07	0	0.458	7.147	54.2		3	222	18.7
5	0.088290	12.5	7.07	0	0.524	6.012	66.6	5.5605	5	311	15.2
6	0.144550	12.5	****	0	0.524	6.172	96.1	5.9505	5	311	15.2
7	0.211240	12.5	7.87	0	0.524	5.631	100.0	6.0821	5	311	15.2
8	0.170040	12.5	****	0	0.524	6.004	85.9	6.5921	5	311	15.2
9	0.224890	12.5	7.87	0	0.524	6.377	94.3	6.3467	5	311	15.2
10	0.117470	12.5	NaN	0	0.524	6.009	82.9	6.2267	5	311	15.2

Correcting a decimal error in PTRATIO column

In [13]:
```
#The below index location cell has a typing error
df_boston.iloc[49,10]
```

Out[13]: 2.11

In [14]:
```
#Replacing the cell value to 21.1

df_boston.iloc[49,10] = 21.1
df_boston.iloc[49,10]
```

Out[14]: 21.1

Replacing outliers with NaN

In [15]:
```
#Replacing wrong values with NaN in the dataframe

df_boston.replace(['****','*****','Sara',' ','Alina','##','Adam','&&&'],np.nan,ir
df_boston
```

Out[15]:

	CRIM	ZN	INDUS	CHAS	NOX	RM	AGE	DIS	RAD	TAX	PTRATIO
0	0.006320	18.0	2.31	0	0.5380	6.575	65.2	4.0900	1	296	15.3
1	0.027310	0.0	7.07	0	0.4690	6.421	78.9	4.9671	2	242	17.8
2	0.027290	0.0	7.07	0	0.4690	7.185	61.1	4.9671	2	242	17.8
3	0.032370	0.0	2.18	0	0.4580	6.998	45.8	6.0622	3	222	18.7
4	0.069050	0.0	7.07	0	0.4580	7.147	54.2	NaN	3	222	18.7
5	0.088290	12.5	7.07	0	0.5240	6.012	66.6	5.5605	5	311	15.2
6	0.144550	12.5	NaN	0	0.5240	6.172	96.1	5.9505	5	311	15.2
7	0.211240	12.5	7.87	0	0.5240	5.631	100.0	6.0821	5	311	15.2
8	0.170040	12.5	NaN	0	0.5240	6.004	85.9	6.5921	5	311	15.2
9	0.224890	12.5	7.87	0	0.5240	6.377	94.3	6.3467	5	311	15.2
10	0.117470	12.5	NaN	0	0.5240	6.009	82.9	6.2267	5	311	15.2

Filing NaN values with Median

In [16]:
```
#Checking a random median value
median_ptratio = df_boston['PTRATIO'].median()
median_ptratio
```

Out[16]: 18.55

In [17]:
```
#Replacing all the NaN values with median
df_boston.fillna(df_boston.median(),inplace= True)
```

Final DataFrame after basic cleaning

In [18]:
```
#Final DataFrame after cleaning
df_boston
```

Out[18]:

	CRIM	ZN	INDUS	CHAS	NOX	RM	AGE	DIS	RAD	TAX	PTRATIO
0	0.006320	18.0	2.31	0	0.5380	6.575	65.2	4.0900	1	296	15.30
1	0.027310	0.0	7.07	0	0.4690	6.421	78.9	4.9671	2	242	17.80
2	0.027290	0.0	7.07	0	0.4690	7.185	61.1	4.9671	2	242	17.80
3	0.032370	0.0	2.18	0	0.4580	6.998	45.8	6.0622	3	222	18.70
4	0.069050	0.0	7.07	0	0.4580	7.147	54.2	3.9769	3	222	18.70
5	0.088290	12.5	7.07	0	0.5240	6.012	66.6	5.5605	5	311	15.20
6	0.144550	12.5	7.87	0	0.5240	6.172	96.1	5.9505	5	311	15.20
7	0.211240	12.5	7.87	0	0.5240	5.631	100.0	6.0821	5	311	15.20
8	0.170040	12.5	7.87	0	0.5240	6.004	85.9	6.5921	5	311	15.20
9	0.224890	12.5	7.87	0	0.5240	6.377	94.3	6.3467	5	311	15.20
10	0.117470	12.5	7.87	0	0.5240	6.009	82.9	6.2267	5	311	15.20