```
Python 3.7.6 (default, Jan  8 2020, 19:59:22)
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IPython 7.12.0 -- An enhanced Interactive Python.

In [1]:         '/home/ds-lab/4VP23CS070_ML/Exp1.py'      ='/home/ds-lab/
4VP23CS070_ML'
First few rows of the dataset:
   longitude  latitude  ...  median_house_value  ocean_proximity
0    -122.23     37.88  ...              452600         NEAR BAY
1    -122.22     37.86  ...              358500         NEAR BAY
2    -122.24     37.85  ...              352100         NEAR BAY
3    -122.25     37.85  ...              341300         NEAR BAY
4    -122.25     37.85  ...              342200         NEAR BAY

[5 rows x 10 columns]
(20640, 10)

---Plotting Histograms---


--------------------------------------------------------------------------------
Figures now render in the Plots pane by default. To make them also appear inline
in the Console, uncheck "Mute Inline Plotting" under the Plots pane options menu.
--------------------------------------------------------------------------------


---Plotting Boxplot---

---Analyzing outliers---
Feature: longitude
Number of outliers:0
Outliers values:
 []

Feature: latitude
Number of outliers:0
Outliers values:
 []

Feature: housing_median_age
Number of outliers:0
Outliers values:
 []

Feature: total_rooms
Number of outliers:1287
Outliers values:
 [ 7099  5806  5871 ... 12139  6809 10035]

Feature: total_bedrooms
Number of outliers:1271
Outliers values:
 [2477. 1331. 1270. ... 1857. 2640. 1856.]

Feature: population
Number of outliers:1196
Outliers values:
 [3469 4367 4985 ... 6837 3265 6912]
```

```
Feature: households
Number of outliers:1220
Outliers values:
 [1138 2323 1180 ... 1832 2358 1818]

Feature: median_income
Number of outliers:681
Outliers values:
 [ 8.3252  8.3014 11.6017  8.2049  8.401   8.317   8.1564  8.8793  8.8342
 10.0825  9.3959 11.8603 13.499  12.2138  8.1872 12.3804  8.1194  8.7477
  8.3996  8.4045  9.7194  8.3337 10.9506 10.3203  9.1531  9.5862  8.155
  8.3188  9.7037 10.3345 12.5915 15.0001  9.8708  8.2673  8.4352 10.7372
 13.4883  9.5271 12.2478  8.0839  9.0776  8.039  10.4549 10.3224  8.3678
  8.0448 10.3713 11.7064 11.3421  8.1586  8.9571  8.7589 10.9405 10.3416
  9.0064  8.1489 10.5815 13.2949 13.1499  8.3209  8.3956  8.1163  9.0243
  8.7059 10.5144  8.9669  8.7716  8.3608  8.2737 10.0263 10.5941  8.5325
  9.2873  8.1248  8.8467  8.1125 10.8805  8.2159  8.176  10.9052  8.203
  8.1356  9.6047  8.565   8.1714  8.7471  8.8612  8.6454  8.3841 11.2093
  8.4438  9.6465  8.3912 10.9201  8.4196 10.5511  8.7172 13.4196 10.3587
 10.6796 11.2979 12.8879  9.2189 10.2292 10.4399 10.0549  8.2269 10.3599
  8.8115  8.153  10.9237  8.2954  9.042   8.0499  8.5677 10.5575 12.7823
 12.8763 12.9591  8.4389  8.2335 10.3661 11.615   8.5136  8.5842 15.0001
  9.3092  8.944  10.2264  8.8062 15.0001 15.0001 15.0001 11.2185 15.0001
  8.3617 10.586  15.0001  8.2816 15.0001 12.3767 12.7296  9.7449 15.0001
 15.0001 11.8442 11.1978 13.2935 10.7937  8.5153 12.8665 15.0001 13.5728
 13.947  15.      8.1888 11.2866  8.565   8.8619  8.2934 11.4233 10.8082
 13.6842  9.1078 15.0001 10.1882  9.4664  9.5221 15.0001 15.0001 10.3467
  8.9565 14.2867  9.2225 10.8045  9.272  12.8483  8.1484  8.0239 10.9805
 11.1768  8.5938 10.4519  8.1631 10.     12.0088  8.7819  8.1132  8.1657
 12.1579  8.1325  9.5823  8.0683  8.2827  8.105  11.1077 10.1248  9.7066
  9.4667  9.8098  8.2004 15.0001  8.9728  8.4889 15.0001 10.2289  9.532
  8.7835  9.8413  8.3695  8.72    8.4802  9.2463 15.0001 15.0001 15.0001
  9.0702  9.4987  8.4546  8.2435 11.7894 10.7397 11.706  10.6767 11.5609
 15.0001 10.2317  9.1373  8.1124 12.4237  9.7912 11.6471 15.0001  8.058
  8.3474 10.4835  9.1541 10.8034  8.6677 10.2233  8.468   9.0812  8.1596
  8.2037  8.1513  9.3399  8.5491 10.5045  8.1782  8.3609  8.2064 10.1241
  8.0838 11.9993 10.898  12.9758 11.6648 10.06   10.5536  8.0957 10.1447
  9.821   8.5421  8.2831 15.0001 10.0973  9.8091  9.8214  9.267  11.6677
 10.1357 15.0001 15.0001 15.0001 15.0001 15.0001 15.0001 15.0001 15.0001
 15.0001  8.2961  9.337  13.8556 13.3036  8.0257 15.0001  8.3839 11.7045
  8.9616  8.6718  9.1232  9.7646 10.076   9.1228  8.0137  8.0144  8.4476
  8.8666  8.4331  8.7364 10.0285  8.1344  8.3646  8.5759 12.0933  9.1834
 10.6272  9.5551 10.129   8.3935 14.5833  8.8386 11.5706 10.0791  8.4888
  8.634   8.9248 12.2547  8.0922 10.1854 14.4113  9.5561  9.3125  9.0055
 13.1107  9.9071  9.7956  9.2327  8.0287  8.1117  8.9088 10.1299 10.5981
  8.3931  9.8074  8.7124 10.1316  8.2375  9.1808  8.847   8.4112  8.4471
 10.1531  8.798   8.1611  9.6986  8.0409 10.0765 11.0567 10.9704 10.49
 13.0502 10.3983  9.8321  8.8636 14.9009 10.3953  8.163  13.1477 10.1122
  8.3275 10.4415  8.583   8.7591  8.3634  8.6088  8.111  10.4498  8.7603
  8.2953  8.1926  8.735   8.284   8.7974  8.1111  8.7385 10.9601 10.0757
  8.6001 10.1275  9.0519 10.1989 10.3893 15.0001  8.4614 10.6349  8.1093
  8.8693 11.1121  9.8589 11.0138 12.3411  8.8742 11.075  10.3682 10.3048
 11.216   8.5574 13.1738 10.2849 10.8289 15.0001  9.802  10.1454  9.2175
  8.1001  8.1839  9.6062  8.0784 11.0546 13.466   9.3845  8.5403 11.4537
 10.1714  8.2653 11.0124  8.7496 10.157   8.3818 12.2092 11.1228  8.3637
  8.9257 10.8111  9.9055  8.289  10.1154 11.5199  9.5268  8.7397  8.8281
  9.8177  9.8346 15.0001 10.5424  8.4952  8.7015  8.5407  8.6123  8.5621
  9.0683 10.2252  8.4882 10.9891  8.2405  8.5326 12.5381  9.4356 10.2948
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  8.338   8.4016  8.4699  8.6572  8.05    8.0379 10.2264  8.4411  8.5282
  8.6573  8.8204  8.4839 10.8634  8.603   8.1548 11.3074  8.1844 10.7751
  8.2374 10.9529  8.051   9.5245 10.7721  8.496   8.0639 12.4429 10.0707
  8.4355 10.3354  9.2858  8.7604  9.6023  8.7991  8.093  10.6186  8.4721
  8.4284 11.0911 13.6623 10.156  11.1118 10.1768 15.0001  8.2531  8.6803
  8.5957  8.0755 10.8783  8.0755 15.0001 10.0914 10.7097 14.2959 10.7569
  9.3603 10.959   8.1189 10.7309 10.6605  9.1881 10.7058 15.0001 10.2264
 10.0088 12.5     8.4704 12.4291 10.7339 15.0001 11.6833 12.6417 13.3913
 10.1675 14.4219  8.2598 10.4286 10.0743  9.3694  8.1221  9.1415  8.9083
  8.1039  8.4693  8.5184  9.8892 15.0001 15.0001 10.8758 15.0001 15.0001
  9.9025 13.367  15.0001  9.459   8.2436  9.3198  8.9955  8.6963  8.4375
  9.7796 11.9666  8.2782 10.0481 11.3176 13.2986  8.2883  8.7382 15.0001
 10.2811 15.0001 10.6514 10.6868  8.2364  8.7394  8.5608  9.4522  9.0267
 11.7794  9.7821  9.6885  8.1871 12.3292  8.6675 10.3798 10.9722 15.0001
  9.3834  8.492  10.0187  9.0704  8.2069 15.     10.7582 11.2463  8.5425
  8.8178 10.2666  8.0331 10.2311 11.1557 10.6834 10.3653  8.7939 10.3979
  9.1569  8.3605  9.8937  9.3464 10.675  10.5793 12.2145 10.7958  8.248
  8.0727  9.2298 10.7326  8.0158  8.0837  8.1078  8.0599  8.6155 10.0346
  9.281   8.2266  8.758   9.8144  8.5888 10.1007 10.5142 12.367  10.3591
  8.3924  8.1064 10.3329  8.9021  8.9172  8.4709 10.3894  9.1508 10.3942
 10.9508  8.7051  8.2664 12.5902 11.0492 10.476  10.7237 12.0372 10.7355
 13.1867 11.806  10.4277  9.3586  8.5294 10.0259 12.1387 12.9792 13.8093
  8.6196 11.3283  8.4262  8.3837  8.0595  9.1974  9.08    8.3792  8.1988
  8.19    8.3065 15.0001 15.0001  9.5908 10.0968 10.2264  8.7783  9.0376
 12.632   8.9063  8.0428  8.4443 10.2614  8.7657 10.1597  8.1064 10.0595
  8.1397 10.0472  8.6499  8.7288 12.542   8.2787]

Feature: median_house_value
Number of outliers:1071
Outliers values:
 [500001 483300 500001 ... 500001 500001 500001]
```

In [2]: