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Lab Assignment-7

Objective:

To write a tensor flow program for linear regression.

Technologies Used:

Pycharm, Tensor flow, Python

Dataset:

Here, I took Boston housing dataset for my problem. It contains 14 attributes and 506 instances. I find the relation between Number of rooms for dwelling(X-axis) and price of house(Y axis).

4 Screenshots:

Dataset:

```
0.00632  18.00   2.310  0  0.5380  6.5750   65.20  4.0900   1  296.0  15.30 396.90   4.98  24.00
0.02731   0.00   7.070  0  0.4690  6.4210   78.90  4.9671   2  242.0  17.80 396.90   9.14  21.60
0.02729   0.00   7.070  0  0.4690  7.1850   61.10  4.9671   2  242.0  17.80 392.83   4.03  34.70
0.03237   0.00   2.180  0  0.4580  6.9980   45.80  6.0622   3  222.0  18.70 394.63   2.94  33.40
0.06905   0.00   2.180  0  0.4580  7.1470   54.20  6.0622   3  222.0  18.70 396.90   5.33  36.20
0.02985   0.00   2.180  0  0.4580  6.4300   58.70  6.0622   3  222.0  18.70 394.12   5.21  28.70
0.08829  12.50   7.870  0  0.5240  6.0120   66.60  5.5605   5  311.0  15.20 395.60  12.43  22.90
0.14455  12.50   7.870  0  0.5240  6.1720   96.10  5.9505   5  311.0  15.20 396.90  19.15  27.10
0.21124  12.50   7.870  0  0.5240  5.6310 100.00  6.0821   5  311.0  15.20 386.63  29.93  16.50
0.17004  12.50   7.870  0  0.5240  6.0040   85.90  6.5921   5  311.0  15.20 386.71  17.10  18.90
0.22489  12.50   7.870  0  0.5240  6.3770   94.30  6.3467   5  311.0  15.20 392.52  20.45  15.00
0.11747  12.50   7.870  0  0.5240  6.0090   82.90  6.2267   5  311.0  15.20 396.90  13.27  18.90
0.09378  12.50   7.870  0  0.5240  5.8890   39.00  5.4509   5  311.0  15.20 390.50  15.71  21.70
0.62976   0.00   8.140  0  0.5380  5.9490   61.80  4.7075   4  307.0  21.00 396.90   8.26  20.40
0.63796   0.00   8.140  0  0.5380  6.0960   84.50  4.4619   4  307.0  21.00 380.02  10.26  18.20
0.62739   0.00   8.140  0  0.5380  5.8340   56.50  4.4986   4  307.0  21.00 395.62   8.47  19.90
1.05393   0.00   8.140  0  0.5380  5.9350   29.30  4.4986   4  307.0  21.00 386.85   6.58  23.10
0.78420   0.00   8.140  0  0.5380  5.9900   81.70  4.2579   4  307.0  21.00 386.75  14.67  17.50
0.80271   0.00   8.140  0  0.5380  5.4560   36.60  3.7965   4  307.0  21.00 288.99  11.69  20.20
0.72580   0.00   8.140  0  0.5380  5.7270   69.50  3.7965   4  307.0  21.00 390.95  11.28  18.20
1.25179   0.00   8.140  0  0.5380  5.5700   98.10  3.7979   4  307.0  21.00 376.57  21.02  13.60
```
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Fig 1

Outputs:

```
------------------------------------------------
Testing... (Mean square loss Comparison)
Testing cost= 1.42109e-14
Absolute mean square loss difference: 37.3686
```
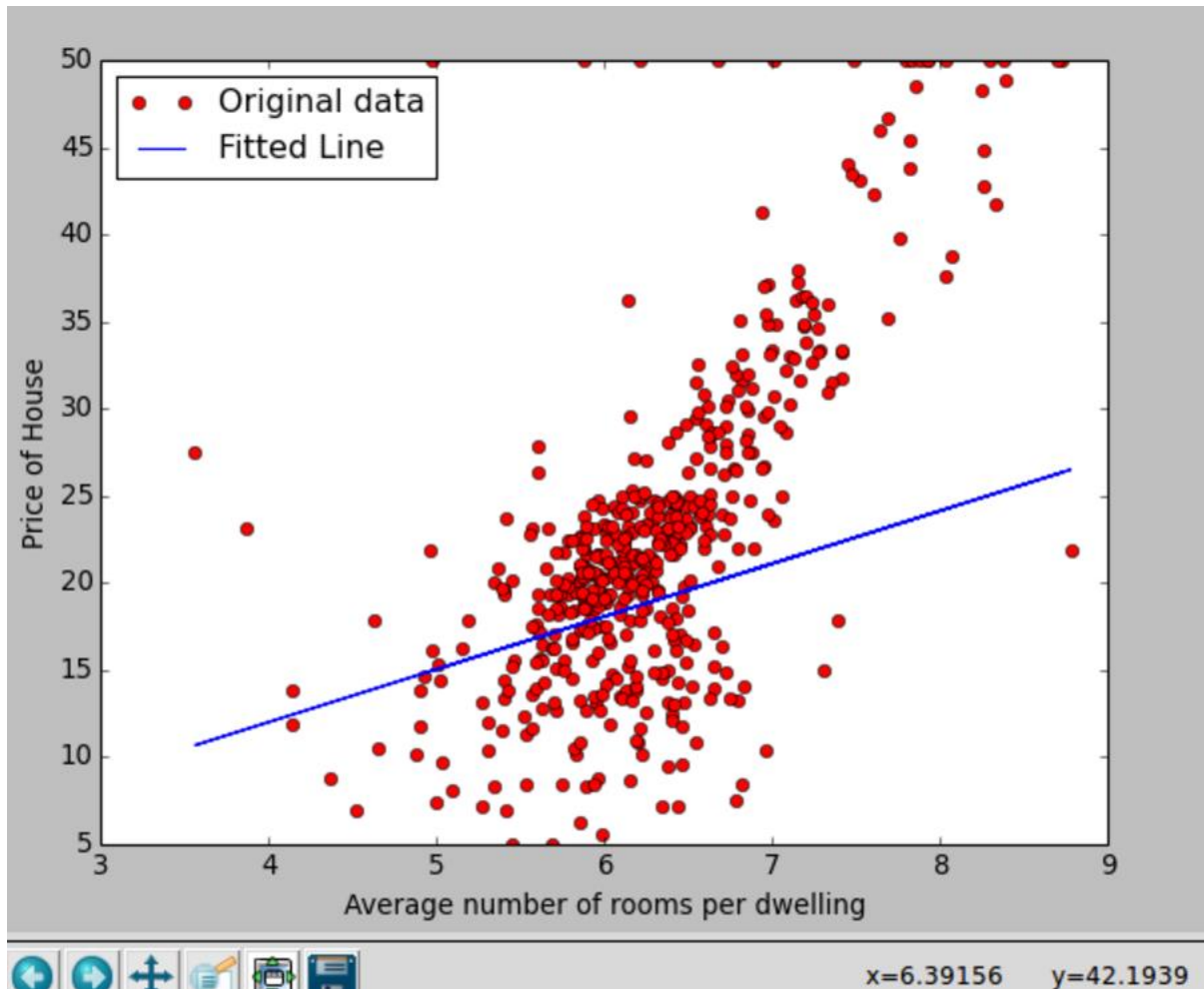
Fig 2

Fig 3

5. References:

Tutorial 7 source code

https://archive.ics.uci.edu/ml/datasets/Housing