```
Python 3.7.6 (default, Jan  8 2020, 20:23:39) [MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or "license" for more information.

IPython 7.13.0 -- An enhanced Interactive Python.

Restarting kernel...
```

```
 runfile('C:/Users/Jigar/Desktop/Machine Learning Internship files/MAchine Learning/
Project-1/Proj1.py', wdir='C:/Users/Jigar/Desktop/Machine Learning Internship files/
MAchine Learning/Project-1')
6.9748214882298925
[0.05546477]
9.748021000000001

In [1]:

In [2]:         0  'C:/Users/Jigar/Desktop/Machine Learning Internship files/MAchine
Learning/Project-1/Proj1.py'
6.9748214882298925
[0.05546477]
9.748021000000001

In [3]:         0  'C:/Users/Jigar/Desktop/Machine Learning Internship files/MAchine
Learning/Project-1/Proj1.py'
6.9748214882298925
[0.05546477]
9.748021000000001

In [4]:         0  'C:/Users/Jigar/Desktop/Machine Learning Internship files/MAchine
Learning/Project-1/Proj1.py'
6.9748214882298925
[0.05546477]
9.748021000000001

In [5]:         0  'C:/Users/Jigar/Desktop/Machine Learning Internship files/MAchine
Learning/Project-1/Proj1.py'
6.9748214882298925
[0.05546477]
9.748021000000001

In [6]:         0  'C:/Users/Jigar/Desktop/Machine Learning Internship files/MAchine
Learning/Project-1/Proj1.py'
6.9748214882298925
[0.05546477]
9.748021000000001

In [7]: print
9.748021000000001

In [8]:
   ...:       =6.974821 + 0.055464*50
   ...: print
9.748021000000001
```

```
In [9]:      .
Traceback (most recent call last):

  File "<ipython-input-9-069a9294ec1f>", line 1, in <module>
    x_new.head()

NameError: name 'x_new' is not defined


In [10]:       =   .           'TV'      .  .          .  .
  File "<ipython-input-10-edb469b64acd>", line 1
    x_new = pd.DataFrame({'TV':[data.TV.min{},data.TV.max{}]})

SyntaxError: invalid syntax


In [11]:       =   .           'TV'      .  .          .  .

In [12]:      .
Out[12]:
      TV
0    0.7
1  296.4

In [13]:     =  .

In [14]: print
[ 7.01364683 23.41457946]

In [15]:     .         ='scatter'  ='TV'  ='Sales'
Out[15]: <matplotlib.axes._subplots.AxesSubplot at 0x294d2c1ab88>

In [16]:    .                     ='red'          =3
Out[16]: [<matplotlib.lines.Line2D at 0x294d77f3888>]

In [17]:     .         ='scatter'  ='TV'  ='Sales'
    ...:    .                     ='red'          =3
Out[17]: [<matplotlib.lines.Line2D at 0x294d8b61788>]

In [18]: import                          as

In [19]:   =   .           ='Sales ~ TV'     =    .
Traceback (most recent call last):

  File "<ipython-input-19-8d76076743c1>", line 1, in <module>
    lr=smf.ols(formaul='Sales ~ TV',data=data.fit())

  File "C:\Users\Jigar\anaconda3\lib\site-packages\pandas\core\generic.py", line 5274, in
__getattr__
    return object.__getattribute__(self, name)

AttributeError: 'DataFrame' object has no attribute 'fit'


In [20]:   =   .           ='Sales ~ TV'     =     .
```

```
Traceback (most recent call last):

  File "<ipython-input-20-3e3a7432a781>", line 1, in <module>
    lr=smf.ols(formaul='Sales ~ TV',data=data).fit()

TypeError: from_formula() missing 1 required positional argument: 'formula'


In [21]:   =   .          ='Sales ~ TV'     =     .

In [22]:   .
Out[22]:
                  0         1
Intercept  6.338740  7.610903
TV         0.051727  0.059203

In [23]:   .
Traceback (most recent call last):

  File "<ipython-input-23-6abaf78a8a72>", line 1, in <module>
    lr.pvalue

  File "C:\Users\Jigar\anaconda3\lib\site-packages\statsmodels\base\wrapper.py", line 36,
in __getattribute__
    obj = getattr(results, attr)

AttributeError: 'OLSResults' object has no attribute 'pvalue'


In [24]:   .
Out[24]:
Intercept    5.027719e-54
TV           7.927912e-74
dtype: float64

In [25]:   .
Out[25]: 0.8121757029987414

In [26]:             = 'TV' 'Radio' 'Newspaper'

In [27]:  =

In [28]:  =    .

In [29]:   =

In [30]:   .
Out[30]: LinearRegression(copy_X=True, fit_intercept=True, n_jobs=None, normalize=False)

In [31]: print   .
4.625124078808655

In [32]: print   .
[0.05444578 0.10700123 0.00033566]
```

```
In [33]:   =   .          ='Sales~TV+Radio+Newspaper'     =     .

In [34]:   .
Out[34]:
                  0         1
Intercept  4.018688  5.231560
TV         0.051734  0.057158
Radio      0.090259  0.123744
Newspaper -0.011079  0.011751

In [35]:   .
Out[35]:
<class 'statsmodels.iolib.summary.Summary'>
"""
                            OLS Regression Results
==============================================================================
Dep. Variable:                  Sales   R-squared:                       0.903
Model:                            OLS   Adj. R-squared:                  0.901
Method:                 Least Squares   F-statistic:                     605.4
Date:                Tue, 14 Jul 2020   Prob (F-statistic):           8.13e-99
Time:                        21:54:03   Log-Likelihood:                -383.34
No. Observations:                 200   AIC:                             774.7
Df Residuals:                     196   BIC:                             787.9
Df Model:                           3
Covariance Type:            nonrobust
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
------------------------------------------------------------------------------
Intercept      4.6251      0.308     15.041      0.000       4.019       5.232
TV             0.0544      0.001     39.592      0.000       0.052       0.057
Radio          0.1070      0.008     12.604      0.000       0.090       0.124
Newspaper      0.0003      0.006      0.058      0.954      -0.011       0.012
==============================================================================
Omnibus:                       16.081   Durbin-Watson:                   2.251
Prob(Omnibus):                  0.000   Jarque-Bera (JB):               27.655
Skew:                          -0.431   Prob(JB):                     9.88e-07
Kurtosis:                       4.605   Cond. No.                         454.
==============================================================================

Warnings:
[1] Standard Errors assume that the covariance matrix of the errors is correctly
specified.
"""

In [36]:
```