

## the output of MLR model Build, predict and validation and poorly related feature elimination

#Prediction with Trained MLR model and MLR coefficient

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In [21]: runcell(0, '/Users/myyntiimac/Desktop/untitled10.py')

In [22]: runcell(0, '/Users/myyntiimac/Desktop/untitled10.py')

In [23]: MLR.predict(X_test)
Out[23]:
array([[ 384572.18855837, 1528989.81346944,  543604.51367137, ...,
        756381.82386976,  235138.06893852,  590659.33808707]])

In [24]: runcell(0, '/Users/myyntiimac/Desktop/untitled10.py')

In [25]: MLR.coef_
Out[25]:
array([ -3.28134561e+04,  3.42534867e+04,  1.10993677e+02,  1.86700097e-01,
         1.15805090e+04,  6.12181593e+05,  5.05786747e+04,  2.72135161e+04,
         9.42386044e+04,  6.69979575e+01,  4.39957189e+01, -2.56234116e+03,
         2.17428983e+01, -5.48653975e+02,  6.04734298e+05, -2.10508922e+05,
         2.84199402e+01, -4.34516844e-01])

In [25]:
```

# MLR intercept , Bias and Variance score

```
In [27]: MLR.intercept_
Out[27]: 3684410.887345095

In [28]: runcell(0, '/Users/myyntiimac/Desktop/untitled10.py')
Traceback (most recent call last):

  File "/Users/myyntiimac/Desktop/untitled10.py", line 44, in <module>
    bias_score=regressor.score(X_train, y_train)

NameError: name 'regressor' is not defined

In [29]: runcell(0, '/Users/myyntiimac/Desktop/untitled10.py')

In [30]: bias_score=MLR.score(X_train, y_train)
...: bias_score
Out[30]: 0.7025634191135648

In [31]: runcell(0, '/Users/myyntiimac/Desktop/untitled10.py')

In [32]: variance_score=MLR.score(X_test, y_test)
...: variance_score
Out[32]: 0.6900932169858107
```

#Feature relevancy check

```

Date: Mon, 12 Jun 2023 Prob (F-statistic): 0.00
Time: 00:56:46 Log-Likelihood: -2.9460e+05
No. Observations: 21613 AIC: 5.892e+05
Df Residuals: 21595 BIC: 5.894e+05
Df Model: 17
Covariance Type: nonrobust

```

	coef	std err	t	P> t	[0.025	0.975]
const	1.8158	0.796	2.282	0.022	0.256	3.375
x1	-3.577e+04	1891.843	-18.906	0.000	-3.95e+04	-3.21e+04
x2	4.114e+04	3253.678	12.645	0.000	3.48e+04	4.75e+04
x3	110.4429	2.270	48.661	0.000	105.994	114.891
x4	0.1286	0.048	2.683	0.007	0.035	0.223
x5	6689.5501	3595.859	1.860	0.063	-358.599	1.37e+04
x6	5.83e+05	1.74e+04	33.580	0.000	5.49e+05	6.17e+05
x7	5.287e+04	2140.055	24.705	0.000	4.87e+04	5.71e+04
x8	2.639e+04	2351.461	11.221	0.000	2.18e+04	3.1e+04
x9	9.589e+04	2152.789	44.542	0.000	9.17e+04	1e+05
x10	70.7852	2.253	31.412	0.000	66.368	75.202
x11	39.6576	2.646	14.985	0.000	34.470	44.845
x12	-2620.2232	72.659	-36.062	0.000	-2762.640	-2477.806
x13	19.8126	3.656	5.420	0.000	12.647	26.978
x14	-582.4199	32.986	-17.657	0.000	-647.074	-517.765

#### #Feature elimination

	coef	std err	t	P> t	[0.025	0.975]
const	1.5583	0.784	1.989	0.047	0.022	3.094
x1	-3.586e+04	1891.248	-18.962	0.000	-3.96e+04	-3.22e+04
x2	4.272e+04	3141.958	13.596	0.000	3.66e+04	4.89e+04
x3	109.9753	2.256	48.753	0.000	105.554	114.397
x4	0.1266	0.048	2.643	0.008	0.033	0.221
x5	5.831e+05	1.74e+04	33.585	0.000	5.49e+05	6.17e+05
x6	5.297e+04	2139.565	24.756	0.000	4.88e+04	5.72e+04
x7	2.614e+04	2347.831	11.133	0.000	2.15e+04	3.07e+04
x8	9.624e+04	2144.551	44.878	0.000	9.2e+04	1e+05
x9	72.3462	2.092	34.590	0.000	68.247	76.446
x10	37.6290	2.412	15.604	0.000	32.902	42.356
x11	-2590.7927	70.920	-36.531	0.000	-2729.801	-2451.784
x12	20.1729	3.651	5.526	0.000	13.017	27.328
x13	-576.6895	32.844	-17.559	0.000	-641.065	-512.314
x14	6.044e+05	1.07e+04	56.494	0.000	5.83e+05	6.25e+05
x15	-2.168e+05	1.31e+04	-16.568	0.000	-2.42e+05	-1.91e+05
x16	20.9673	3.426	6.119	0.000	14.251	27.683
x17	-0.3874	0.073	-5.291	0.000	-0.531	-0.244
Omnibus:	18333.238		Durbin-Watson:		1.990	
Prob(Omnibus):	0.000		Jarque-Bera (JB):		1848729.005	
Skew:	3.552		Prob(JB):		0.00	
Kurtosis:	47.749		Cond. No.		1.79e+19	