

To find following the machine learning regression method using in r2 value

1. MULTIPLE LINEAR REGRESSION( $r\_score$ )=0.9358

2. SUPPORT VECTOR MACHINE:

S.NO	HYPER PARAMETER	LINEAR (r value)	RBF(NON LINEAR) (r value)	POLY (r value)	SIGMOID (r value)
1.	C=10	-0.0365	-0.0568	-0.0536	-0.0547
2.	C=100	0.1064	-0.0507	-0.0198	-0.0304
3.	C=500	0.5928	-0.0243	0.1146	0.0705
4.	C=1000	0.7802	-0.0572	0.2661	0.1850
5.	C=2000	0.8767	0.0675	0.4809	0.3970
6.	C=3000	0.8956	0.1232	0.6370	0.5913

The SVM  $\text{KERNEL} = \text{LINEAR}(C=3000, r\_score)=0.8956$

3. DECISION TREE

S.NO	CRITERION	SPLITTER	r_value
1.	Squared error	best	0.9089
2.	Squared error	random	0.9237
3.	Friedman_mse	best	0.9353
4.	Friedman_mse	random	0.8905
5.	Absoulute_error	best	0.9366
6.	Absoulute_error	random	0.8614
7.	Poisson	best	0.9143
8.	Poisson	random	0.7403

The decision tree  $\text{CRITERION}=\text{absoulute\_error}, \text{splitter}=\text{best}(r\_score)=0.9366$

4.RANDOM FOREST

S.NO	n_estimators	criterion	Random_state	r_value
1.	50	Squared_error	0	0.9411
2.	50	absoulute_error	0	0.9401
3.	50	Friedman_mse	0	0.9411
4.	50	Poisson	0	0.9463
5.	100	Squared_error	0	0.9450
6.	100	absoulute_error	0	0.9459
7.	100	Friedman_mse	0	0.9450
8.	100	Poisson	0	0.9402

The random forest

$\text{CRITERION}=\text{absoulute\_error}, n\_estimators=100, \text{random\_state}=0, (r\_score)=0.9459$

