Final Val Method

1. Simple Linear Regression

SLR of r2 value = **0.974**

2. Multiple Linear Regression

MLR of r2 value = **0.9358**

3. Support Vector Machine

SNO	Hyper Parameter	Linear(rvalue)	Rbf(Non linear value)	Poly(r value)	Sigmoid(r value)
1.	C10	-0.039	-0.056	-0.05	-0.054
2.	C100	0.0106	-0.056	-0.019	-0.030
3.	C500	0.592	-0.024	0.114	0.070
4.	C1000	0.7802	0.006	0.266	0.185
5.	C2000	0.876	0.067	0.481	0.397
6.	C3000	0.895	0.123	0.637	0.591

The SVM Regression use r2 value, Linear value and Hyper Parameter(c=3000)=**0.895**

4. Decision Tree

criterion*{"squared_error", "friedman_mse", "absolute_error", "poisson"}, default="squared_error"*
splitter*{"best", "random"}, default="best"*
max_features*int, float or {"sqrt", "log2"}, default=None*

S.No	CRITERION	MAXFEATURES	SPLITTER	RVALUE r2
1.	Squared_error	sqrt	best	-0.41
2.	Squared_error	log2	Best	0.337
3.	Squared_error	sqrt	random	-0.02
4.	Squared_error	log2	random	-0.245
5.	Friedman_mse	sqrt	best	0.672
6.	Friedman_mse	log2	Best	0.406
7.	Friedman_mse	sqrt	random	0.641
8.	Friedman_mse	log2	random	0.809
9.	absolute_error	sqrt	best	0.88
10.	absolute_error	log2	Best	-0.752
11.	absolute_error	sqrt	random	0.507
12.	absolute_error	log2	random	0.40
13.	poisson	sqrt	best	-0.36
14.	poisson	log2	Best	0.08

15.	poisson	sqrt	random	0.44
16.	poisson	log2	random	0.53

The Decision Tree use r2 value, criterion=absolute error ,Maxfeatures = sqrt, splitter = best = **0.88**

5.Random Forest

criterion*{"squared_error", "absolute_error", "friedman_mse", "poisson"}, default="squared_error"*
max_features*{"sqrt", "log2", None}, int or float, default=1.0*

s.no	n_estimators	random state	criterion	max_features	r2
1.	100	0	squared_error	sqrt	**0.759**
2.	100	0	squared_error	log2	**0.759**
3.	100	0	absolute_error	sqrt	**0.785**
4.	100	0	absolute_error	log2	**0.785**
5.	100	0	friedman_mse	sqrt	**0.760**
6.	100	0	friedman_mse	log2	**0.760**
7.	100	0	poisson	sqrt	**0.770**
8.	100	0	poisson	log2	**0.770**
9.	100	0			**0.946**

The Random Forest use r2 value,n_estimators=100,randomstate=0 = **0.946**