REGRESSION ASSIGNMENT

1. Mulitple Linear Regression

from sklearn.linear_model import LinearRegression

Sl.No	copy_X	fit_intercept	R2 Score
1	TRUE	TRUE	**0.7895**
2	FALSE	FALSE	0.7895

R2 Score value using Multiple Linear Regression is ***0.7895***

2. Support Vector Machine (SVM)

Epsilon Support Vector Regression - SVR

from sklearn.svm import SVR

Sl.No	C (Regularisation parameter)	R2 Score			
		kernel is ' rbf '	kernel is ' linear '	kernel is ' poly '	kernel is ' sigmoid '
1	1	-0.08188	0.06034	-0.06230	-0.07204
2	10	-0.01811	0.56651	0.15939	0.07305
3	100	0.39060	0.63595	0.75081	0.52756
4	1000	0.82835	0.74409	0.86058	0.14377
5	10000	**0.87747**	0.74142	0.85821	-82.19023

Note *- kernel value given as ' precomputed ' & ' callable ' parameters not supporting*

R2 Score value using Support Vector Machine (SVM) is ***0.87747***

REGRESSION ASSIGNMENT

3. Decision Tree

DecisionTreeRegressor

from sklearn.tree import DecisionTreeRegressor

Sl.No	criterion	splitter	max_features	R2 Score
1	squared_error *also known as mse - mean squared error*	best		0.6971
2		random		0.6715
3		best	sqrt	0.7090
4		random	sqrt	0.6589
5		best	log2	0.7120
6		random	log2	**0.7588**
7	friedman_mse *also known as mean squared error with Friedman's*	best		0.6983
8		random		0.7207
9		best	sqrt	0.6487
10		random	sqrt	0.6707
11		best	log2	0.6890
12		random	log2	0.7136
13	absolute_error *also known as mae - mean absolute error*	best		0.6711
14		random		0.7376
15		best	sqrt	0.6966
16		random	sqrt	0.6884
17		best	log2	0.7352
18		random	log2	0.6788

R2 Score value using Decision Tree is ***0.7588***

REGRESSION ASSIGNMENT

4. Random Forest

DecisionTreeRegressor

from sklearn.tree import DecisionTreeRegressor

Sl.No	criterion	max_features	max_depth	n_estimators	random_state	R2 Score
1	squared_error *also known as mse - mean squared error*	1.0	None	50	0	0.8496
2		sqrt	None	50	0	0.8704
3		log2	None	50	0	0.8704
4			None	50	0	0.8496
7	friedman_mse *also known as mean squared error with Friedman's*		None	50	0	0.8501
8		1.0	None	50	0	0.8501
9		sqrt	None	50	0	0.8703
10		log2	None	50	0	0.8703
13	absolute_error *also known as mae - mean absolute error*		None	50	0	0.8522
14		1.0	None	50	0	0.8522
15		sqrt	None	50	0	0.8706
16		log2	None	50	0	0.8706

R2 Score value using Random Forest is ***0.8706***