Assignments on Support Vector Machine and Decision Tree using r2 value

1)Multiple Linear Regression R2 Value = 0.935868

2) Support Vector Machine:

No	Hyper Parameter	Linear (r value)	Poly (r value)	RBF (Non-Linear) (r value)	Sigmoid (r value)
1.	C=10	-0.039651	-0.053673	-0.568140	-0.054726
2.	C=100	0.106458	-0.019808	0.050732	-0.030465
3.	C=1000	0.780290	0.266159	0.006761	0.185073
4.	C=2000	0.876778	0.480994	0.675088	0.397064
5.	C=3000	0.895681	0.637000	0.123220	0.591364
6	C=5000	0.900380	0.793653	0.212423	0.730642

The best r2 Value for Support Vector Machine is Linear and hyper tuning parameter (C=5000) = 0.0900380

3) Decision Tree Regression

No	CRITERION	SPLITTER	R2 VALUE
1.	Squared_Error	Best	0.92846
2.	Squared Error	Random	0.84644
3.	Friedman_mse	Best	0.91194
4.	Friedman_mse	Random	0.72163
5.	Absolute_error	Best	0.93577
6.	Absolute_error	Random	0.85719
7.	Poisson	Best	0.90354
8.	Poisson	Random	0.92932
9.	min_samples_split=2	Random	0.74688
10.	min_samples_split=2	Best	0.91640
11.	min_samples_leaf=1	Best	0.89723
12.	min_samples_leaf=1	Random	0.69824
13.	*random_state=None*	Random	0.91704
14.	*random_state=None*	Best	0.90882
15.	*max_leaf_nodes=None*	Best	0.90373
16.	*max_leaf_nodes=None*	Random	0.88884

The best R2 Value for Decision Tree Regression is Citerion and Splitter hyper tuning Parameter = 0.93577

RANDOM FOREST

NO	PARAMETER n_estimators	Hyper Tuning Parameters	R2 Value
1.	50	Criterion	0.94403
2.	100	Criterion	0.94009
3.	50	Absolute_error	0.93552
4.	100	Absolute_error	0.94351
5.	50	Friedman_mse	0.94150
6.	100	Friedman_mse	0.94417
7.	50	Poisson	0.94407
8.	100	Poisson	0.93886
9.	50	Max_Features=sqrt	0.77075
10.	100	Max_Features=sqrt	0.83245
11.	50	Max_Features=Cog2	0.77285
12.	80	Max_Features=Cog2	0.75953
13	100	Max_Features=Cog2	0.80250
14.	50	Max_depth=None	0.93706
15.	100	Max_depth=None	0.94006
16.	50	Min_Samples_Split=2	0.93096
17.	100	Min_Samples_Split=2	0.93899
18.	50	Max_Features=1.0	0.94222
19.	100	Max_leaf_Nodes=None	0.93556

The best R2 Value in Random Forest was (Parameter) = n-estimators & (Hyper Tuning Parameter) was "Friedman_mse=0.94417)