BEST MODEL SELECTION USING HYPER TUNING PARAMETERS

1. **MULTIPLE LINEAR REGRESSION** r2score= 0.7894790349867009
2. **SUPPORT VECTOR MACHINE REGRESSION**

S.No	Criterion	C	r2score
1	linear	1	none
		100	
		1000	
		10000	
2	rbf	1	-0.08338238593619329
		100	0.3200317832050831
		1000	0.8102064851758545
		10000	0.8779952401449918
3	poly	1	-0.07569965570860893
		100	0.6179569624059795
		1000	0.8566487675946572
		10000	0.8591715079473907
4	sigmoid	1	-0.07542924281107188
		100	0.5276103546510407
		1000	0.28747069486976173
		10000	-34.151535978496256
5	precomputed	not supported	

3. DECISION TREE REGRESSOR

S.No	criterion	splitter	max_features	random_state	r2score
1	squarred_error	best	none	42	0.6797649713619234
			sqrt	42	0.7276917935563092
			log2	42	0.7276917935563092
		random	none	42	0.7255790910672342
			sqrt	42	0.6714505797881345

			log2	42	0.6714505797881345
2	friedman_mse	best	none	42	0.6789612031171122
			sqrt	42	0.728796567230508
			log2	42	0.728796567230508
		random	none	42	0.708144022245579
			sqrt	42	0.6702306326162691
			log2	42	0.6702306326162691
3	absolute_error	best	none	42	0.6500305750239906
			sqrt	42	0.7820171373621985
			log2	42	0.7820171373621985
		random	none	42	0.7236179156653392
			sqrt	42	0.7288975592054945
			log2	42	0.7288975592054945
4	poisson	best	none	42	0.730072901250727
			sqrt	42	0.707862326525722
			log2	42	0.707862326525722
		random	none	42	0.6489208670412456
			sqrt	42	0.6551739258062276
			log2	42	0.6551739258062276

4. RANDOM FOREST:

s.no	n_estimator	criterion	max_features	random_state	r2score
1	100	squared_error	1	0	0.853830791
			none	0	0.853830791
			sqrt	0	0.87102719
			log2	0	0.87102719
		absolute_error	1	0	0.852009362
			none	0	0.852009362
			sqrt	0	0.871068586
			log2	0	0.871068586
		fried_man	1	0	0.854051894
			none	0	0.854051894
			sqrt	0	0.871054402

			log2	0	0.871054402
		poisson	1	0	0.852633426
			none	0	0.852633426
			sqrt	0	0.868015698
			log2	0	0.868015698
1	50	squared_error	1	0	0.849832932
			none	0	0.849832932
			sqrt	0	0.869583679
			log2	0	0.869583679
		absolute_error	1	0	0.852665599
			none	0	0.852665599
			sqrt	0	0.870814425
			log2	0	0.870814425
		fried_man	1	0	0.850071614
			none	0	0.850071614
			sqrt	0	0.870241751
			log2	0	0.870241751
		poisson	1	0	0.849107596
			none	0	0.849107596
			sqrt	0	0.863239137
			log2	0	0.863239137

BEST MODEL:

Support Vector Machine Regression		
Criterion	**C**	**r2score**
rbf	10000	0.8779952401449918