Maching Learning Regression Methods using to find R2 Value

1. **Multiple Linear Regression: R value: 0.93**
2. **Support Vector Machine**

SL.NO	kernel	R Value
1.	linear	0.054
2.	rbf	**0.057**
3.	poly	**0.057**
4.	sigmoid	**0.057**
5.	precomputed	Not supported for this data

The **SUPPORT VECTOR MACHINE** uses R2 value(rbf, poly, sigmoid)=**0.57**

3. **Decision Tree**

SL.NO	CRITERION	SPLITTER	R_VALUE
1.	squared_error	best	0.91
2.	friedman_mse	best	0.89
3.	Absolute_error	best	0.93
4.	poisson	best	**0.94**
5.	poisson	random	0.79
6.	squared_error	random	0.78
7.	friedman_mse	random	0.91
8.	Absolute_error	random	0.90

The **DECISION TREE REGRESSION** uses R2 value(poisson, best)=**0.94**

4. **Random Forest**

SL.NO	CRITERION	Parameters	N_estimators	R_Value
1.	squared_error	sqrt	10	0.91
2.	squared_error	sqrt	100	0.93
3.	squared_error	sqrt	50	0.83
4.	friedman_mse	sqrt	10	0.73
5.	friedman_mse	sqrt	50	0.83
6.	friedman_mse	sqrt	100	0.80
7.	Absolute_error	sqrt	50	0.76
8.	Absolute_error	sqrt	10	0.77
9.	Absolute_error	sqrt	100	0.82
10.	poisson	sqrt	10	0.89
11.	poisson	sqrt	100	0.9314
12.	poisson	sqrt	50	0.9398
13.	Poisson	log2	100	0.82

14.	poisson	log2	10	0.86
15.	poisson	log2	50	0.77
16.	squared_error	log2	100	0.80
17.	squared_error	log2	50	0.83
18.	squared_error	log2	10	0.77
19.	friedman_mse	log2	100	0.79
20.	friedman_mse	log2	10	0.86
21.	friedman_mse	log2	50	0.81
22.	Absolute_error	log2	50	0.78
23.	Absolute_error	log2	10	0.64
24.	Absolute_error	log2	100	0.82
25.	Absolute_error	Min_samples_leaf	100	0.9430
26.	friedman_mse	Min_samples_leaf	100	0.9363
27.	squared_error	Min_samples_leaf	100	0.9455
28.	poisson	Min_samples_leaf	100	0.9248
29.	poisson	Min_sample_split	100	0.93
30.	Absolute_error	Min_sample_split	100	0.942
31.	squared_error	Min_sample_split	100	0.937
32.	friedman_mse	Min_sample_split	100	0.938
33.	friedman_mse	Max_depth	10	0.951
34.	poisson	Max_depth	10	0.936
35.	Absolute_error	Max_depth	10	**0.953**
36.	squared_error	Max_depth	50	0.942

The **RANDOM FOREST** uses R2 value(Absolute_error, Max_depth)=**0.95**