Problem Statement:

Machine learning, supervised, regression.

Total number and columns:

1338 Rows and 6 columns.

To find the machine learning regression method using in R2 value

1,Multiple linear regression (R^2 value) = 0.789

2,Support vector machine:

S.no	Hyper parameter	Linear R value	RBF(Nonlinear R value)	POLY (R value)	SIGMOID (value)
1	c10	**-0.001**	-0.08	-0.093	-0.0909
2	c100	0.54	-0.124	-0.099	-0.118
3	c200	-0.595	-0.126	-0.096	-0.161

The SVM Regression use R^2 value (Linear) and hyper parameter (C100) = **0.54**

3,Decision Tree regressor:

SI.No	CRITERION	Splitter	R2 value
1	squared_error	best	0.697
2	squared_error	random	0.752
3	friedman_mse	best	0.676
4	friedman_mse	random	0.759
5	absolute_error	best	0.717
6	absolute_error	random	0.698

| 7 | poisson | best | 0.659 |
| 8 | poisson | random | 0.708 |

The Decision Tree use R^2 value (friedman_mse) and Splitter (random) = 0.759

4,Random forest

SI.No	CRITERION	n_estimators	R2 value
1	squared_error	10	0.825
2	squared_error	100	0.852
3	friedman_mse	10	0.825
4	friedman_mse	100	0.852
5	absolute_error	10	0.841
6	absolute_error	100	0.856
7	poisson	10	0.828
8	poisson	100	0.850

The Random forest use R^2 value (absolute_error) and n_estimators (100) = 0.856

Random forest with absolute_error and n_estimators have given an efficiency with 0.856. Hence we can go with random forest.