Assignment-Regression Algoritm

Problem Statement or Requirement:-

1 Identify the problem statement :- A client's requirement is , he want to predict the Insurance charges, based on the serveral parameters

2 Tell Basic information about the dataset Dataset Name : insurance_pre
Total Rows : 1338, Columns - 6

3 Mention the pre-processing method if you are doing any
1. data statement is very clear (i.e input - 5 & output-1)
2.Supervised Learning
3.Output - Number so I select-Regression
4.In statement one column "str'' is there ,so I select the Nominal data (i.e Convert to Numbers)

4 Develop a good model with r2 score I used the following Machine Learning Algorithm for r2 score indentify and select the best r2 score for Best Model

1.Multi Linear Regressor Assignme r2 score = **0.78947**

2. SVM Regressor Assignment

S.No	per Parame	Linear'	rbf'	Poly'	Sigmoid'
1	C=10	-0.1166	-0.08196	-0.09311	-0.09078
2	C=100	0.54828	-0.1248	-0.09976	-0.1181452
3	C=1000	0.63403	-0.11749	-0.055505	-1.665908
4	C=2000	0.68932	-0.10778	-0.002702	-5.61643
5	**C=3000**	**0.75908**	-0.09621	0.048928	-12.01904

3.Decision Tree Regressor Assignment

S.No.	Criterion	Splitter	r2 score
1	Squared_er	best	0.69655
2	Squared_er	random	0.74608
3	friendman_	best	0.6857
4	friendman_	random	0.73772
5	absolute_e	best	0.67663
6	**absolute_e**	**random**	**0.77803**
7	poisson	best	0.72615
8	poisson	random	0.71824

4. Random Forest Regressor Assignment

S.No.	n_estimator	Criterion	r2 Score
1	100	Squared_e	0.85355
2	**100**	**friendman_**	**0.85375**
3	100	absolute_e	0.85266
4	100	poisson	0.85277

5 All the researched Values of r2

S.No	Name of Algorithm	Best r2 score
1	1.Multi Linear Regresso	0.78947
2	SVM Regressor Assignn	0.75908
3	Decision Tree Regresso	0.77803
4	**Random Forest Regres**	**0.85375**

6 **Mentioned the Final Best Model** **Random Forest Regressor Assignment**
r2 score = 0.85375