1) Problem Identification
Domain: Machine Learning
It comes under Supervised learning beause I/P & O/P are present
It is Regression as the O/P is continuous numerical value
Simple linear may not be not used since we have more than 2 inputs
We need to predict Insurance Charges

2) Basic info of dataset
Dataset has 1338 rows and 6 columns

3) Pre-Processing method
Dataset contains Colums "Sex" & "Smoker". This data is Nominal data.
It has been converted as numerical values (binary values (i.e) 1, 0)
I have used one hot encoding method to convert it as numerical data as this is Nominal data

4) Model development
Models developed using regression algorithms and uploaded the ipython files along with this document

5) R Square Values of Models

Multiple linear Regression	R Square Value
	0.78

Support Vector Machine					
(C) Penalty or Amount of regularization default C = 1.0	R Square (linear)	R Square (defalut = rbf)	R Square (poly)	R Square (sigmoid)	R Square (precomputed) N/A for this data set
0.01	-0.0798	-0.0897	-0.0893	-0.0897	My dataset is not a square matrix
0.001	-0.0879	-0.0897	-0.0897	-0.0897	
0.0001	-0.8895	-0.0897	-0.0897	-0.0897	
0.1	-0.1221	-0.0896	-0.0862	-0.0897	
1.00	-0.1115	-0.0884	-0.0645	-0.0899	
2.00	-0.1003	-0.0873	-0.0671	-0.09	
1000.00	0.6339	-0.1176	-0.0547	-1.7112	

Decision Tree		
criterion default = squared_error	Splitter default = best	R Square
squared_error	best	0.6999
friedman_mse	best	0.6833
absolute_error	best	0.7158
poisson	best	0.6675
squared_error	random	0.7188
friedman_mse	random	0.7514
absolute_error	random	0.7308
poisson	random	0.7577

Random Forest					
criterion default = squared_error	max_features (default=1.0)	n_estimators (default =100)	min_samples_split (default=2)	random_state (default=0)	R Square
squared_error	sqrt	100	2	0	0.8661
friedman_mse	sqrt	80	10	0	0.8789
absolute_error	sqrt	50	5	0	0.8773
poisson	sqrt	50	10	0	0.8723
squared_error	log2	100	2	0	0.8661
friedman_mse	log2	80	20	0	0.8763
absolute_error	log2	100	10	0	0.8835
poisson	log2	50	5	0	0.8741
squared_error	1	100	2	0	0.8537
friedman_mse	1	80	5	0	0.8574
absolute_error	1	100	5	0	0.8637
poisson	1	50	2	0	0.8384
squared_error	2	100	2	0	0.8661
friedman_mse	2	50	5	0	0.8756
absolute_error	2	50	10	0	0.8811
poisson	2	50	5	0	0.8741

6) Final Model

I have chosen the best finalized model as the model which was created by Random forest regression alogrithm
Because the R2_score value is 0.88 that is closer to 1