ASSIGNMENT-REGRESSION ALGORITHM

PROBLEM STATEMENT/REQUIREMENT:

1.Predict the insurance charges.

2.Input-5 [age, BMI, child, gender, smoke] and output-1[insurance charge]

Total=1338 rows × 6 columns.

3.good model is random forest regression algorithm.

R2 value is 0.85.

4.

- MULTIPLE LINEAR REGRESSION = r2 value is 0.78
- SUPPORT VECTOR MACHINE (SVM)

KERNEL	R2 VALUE
Linear	-0.010
Poly	-0.075
rbf	-0.083
Sigmoid	-0.075

- DECISION TREE

CRITERION	SPLITTER	R2 VALUE
Friedman_mse	random	0.66
Friedman_mse	best	0.69
Squared_error	random	0.70
Squared_error	best	0.72
Absolute_error	random	0.73
Absolute_error	best	0.68
poisson	random	0.68
poisson	best	0.72

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- RANDOM FOREST

n_Estimators	Random_state	R2 value
10	0	0.74
50	0	0.84
100	0	0.85

FINAL MODEL:

The Random Forest model is good .because it has an R-squared value of 0.85.