**Regression Assignment**

**Problem Statement:**

A client’s requirement is, he wants to predict the insurance charges based on the several parameters. The Client has provided the dataset of the same. As a data scientist, you must develop a model which will predict the insurance charges.

1. Problem statement :

Stage 1: Machine Learning

Stage 2: Supervised Learning

Stage 3: Regression

1. Total number of rows, columns:

Num of Rows – 1339

Num of columns – 6

1. Mention the pre-processing method:

Categorical data – Nominal data (Convert String to number)

By using One Hot Encoding Algorithm.

1. Develop a good model with r2\_score:

Good Model – Support vector Machine (RBF)

1. All the research values (r2\_score of the models)

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| S. No | Machine Learning - Regression Algorithms | R2\_ Value |
| 1. | Multiple Linear Algorithm | 0.78947 |
| 2. | Support Vector Machine | -0.01010 |
| 3. | SVM – Radial Bais Function (RBF) | 0.86633 |
| 4. | Decision Tree | 0.70173 |
| 5. | Random Forest | 0.84983 |

1. Mention your final model

Final Model:

SVM – Radial Bais Function (RBF) = 0.86633