Regression

Simple Linear Regression

Assignment 1

BP: Calories\_consumed-> predict weight gained using calories consumed  
  
Do the necessary transformations for input variables for getting better R^2 value for the model prepared.

Solutions:

1. After observing the plot between weight gained vs calories consumed, the plot is almost in a linear relationship.
2. Now r value is = 0.946 R2 = 0.8968
3. First well known procedure is doing RMSE ( root mean square error ) for predicting the values

Now finding the confidence interval   
using , confint(reg,level=0.95)  
  
at 95% -> 1796.259949 + X(2.589852)

At 2.5% -> 1358.141455 + x(1.678994)

and now we can get the predicted values in the interval using ,   
  
Predict ( reg , interval=”predict “)

we get ,

fit lwr upr

1 1807.718 1229.249 2386.187

2 2004.085 1432.376 2575.795

3 3498.181 2879.564 4116.799

4 2004.085 1432.376 2575.795

5 2217.528 1649.740 2785.316

6 1811.987 1233.697 2390.278

7 1850.407 1273.660 2427.154

8 1709.535 1126.585 2292.485

9 2857.854 2280.041 3435.668

10 3925.066 3264.781 4585.351

11 1790.643 1211.447 2369.839

12 1897.364 1322.350 2472.378

13 2324.249 1757.059 2891.439

14 3071.297 2483.085 3659.509

The R2 value is 0.89 which is on the stronger side .  
  
Therefore no need of transformations.