Linear Regression with multiple variables

Multiple variables = multiple features

Multiple Linear Regression uses a linear function to predict the value of a dependent variable y, containing the function n independent variables x = [x1, x2, x3..., xn].

The general formula for the multiple linear regression is:

Y= b0 + b1*x1 + b2*x2 + b3*x3 +…… bn*xn

Y = Dependent variable and **x1, x2, x3, …… xn** = multiple independent variables
b0 is **Y** intercept
b1 to **bn** are slopes with respect to feature **xi**

The values of the parameters b_i, is obtained using the same technique as in simple linear regression (least square error). After fitting the model, we can use the equation to predict the value of the target variable y.

Before applying a linear regression models, we have to make sure that a linear relationship exists between the dependent variable and independent variables.

Steps involved in any Multiple linear regression model:

Step #1: Data Pre-Processing

1. Importing The Libraries.
2. Importing the Data Set.
3. Encoding the Categorical Data.
4. Avoiding the Dummy Variable Trap.
5. Splitting the Data set into Training Set and Test Set.

Step #2: Fitting Multiple Linear Regression to the Training set
Step #3: Predicting the Test set results.