**Multiple Linear Regression**

**Aim: To determine multiple linear regression.**

**Problem Description:** We are given with a dataset that’s based on Area ,Bedrooms, Age and Price . So, we have to predict the new Price with new Area, Bedroom and Price given. Linear Regression is the process of finding a line that best fits the data points available on the plot, so that we can use it to predict output values for given inputs.

**Procedure:**

* First, we will be going to import pandas as pd.
* Then we would be creating the dataframe with the help of pandas.
* Now, we will be observing correlation between the features which can be taken out by corr() method in pandas and can be observed using seaborn library.
* After that we will be importing linear model from sklearn library and we will be finding best fit line to determine linear regression for the given data.

We can use scikit-learn’s fit method to train this model on our training data.

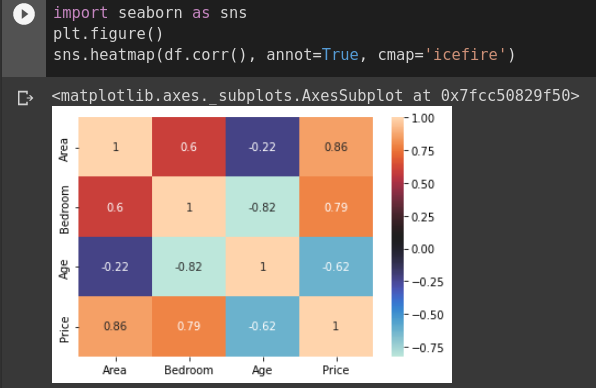
* Now its very easy to make predictions from this model.

Just simply call the predict method and pass an x parameter and it will generate a y parameter.

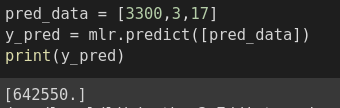
* Intercept and coefficient of the following model can also be found using coef\_ and intercept\_ methods respectively.

**Result:**

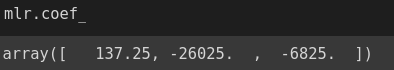
The following is the correlation matrix of features for the given data:



The predicted value for 3300 Area, 3 Bedrooms and 17 Age is 642250



The coefficient for the given dataset model is 137.25,-26025,-6825



The intercept for the given dataset model is 383724.99

