**28.How to implement multiple linear regression using sklearn library in python?**

**Objective:**

* To build multiple linear regression model using python.

**Process:**

* Import necessary libraries.
* Import LinearRegression() from sklearn.
* Plot scatter diagram to check linearity.
* Assign independent variables(X).
* Assign dependent variable(Y).
* Build the regression model.
* Fit X and Y.

**Input:**

* Data sample(csv file).

**Output:**

* Regression intercept.
* Regression co-efficients.

**Source code:**

#import libraries

from sklearn import linear\_model

import pandas as pd

import matplotlib.pyplot as plt

#read the data set

data=pd.read\_csv('/home/soft27/soft27/Sathish/

Pythonfiles/Employee.csv')

#creating data frame

df=pd.DataFrame(data)

print(df)

#plotting the scatter diagram for independent variable 1

plt.scatter(df['rating'], df['salary'], color='red')

plt.title('rating vs salary', fontsize=14)

plt.xlabel('rating', fontsize=14)

plt.ylabel('salary', fontsize=14)

plt.grid(True)

plt.show()

#plotting the scatter diagram for independent variable 2

plt.scatter(df['bonus'], df['salary'], color='green')

plt.title('bonus vs salary', fontsize=14)

plt.xlabel('bonus', fontsize=14)

plt.ylabel('salary', fontsize=14)

plt.grid(True)

plt.show()

#assigning the independent variable

X = df[['rating','bonus']]

#assigning the dependent variable

Y = df['salary']

#Build multiple linear regression

regr = linear\_model.LinearRegression()

#fit the variables in to the linear model

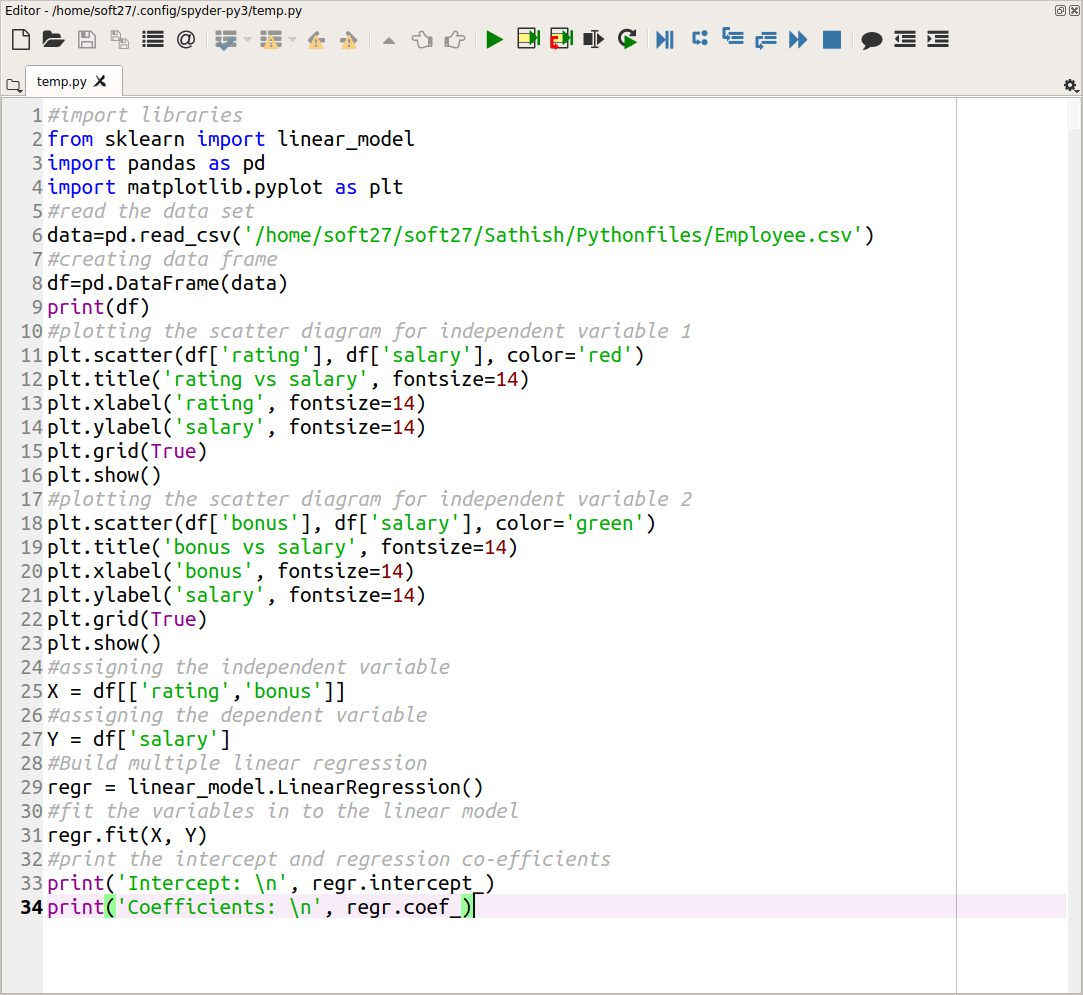
regr.fit(X, Y)

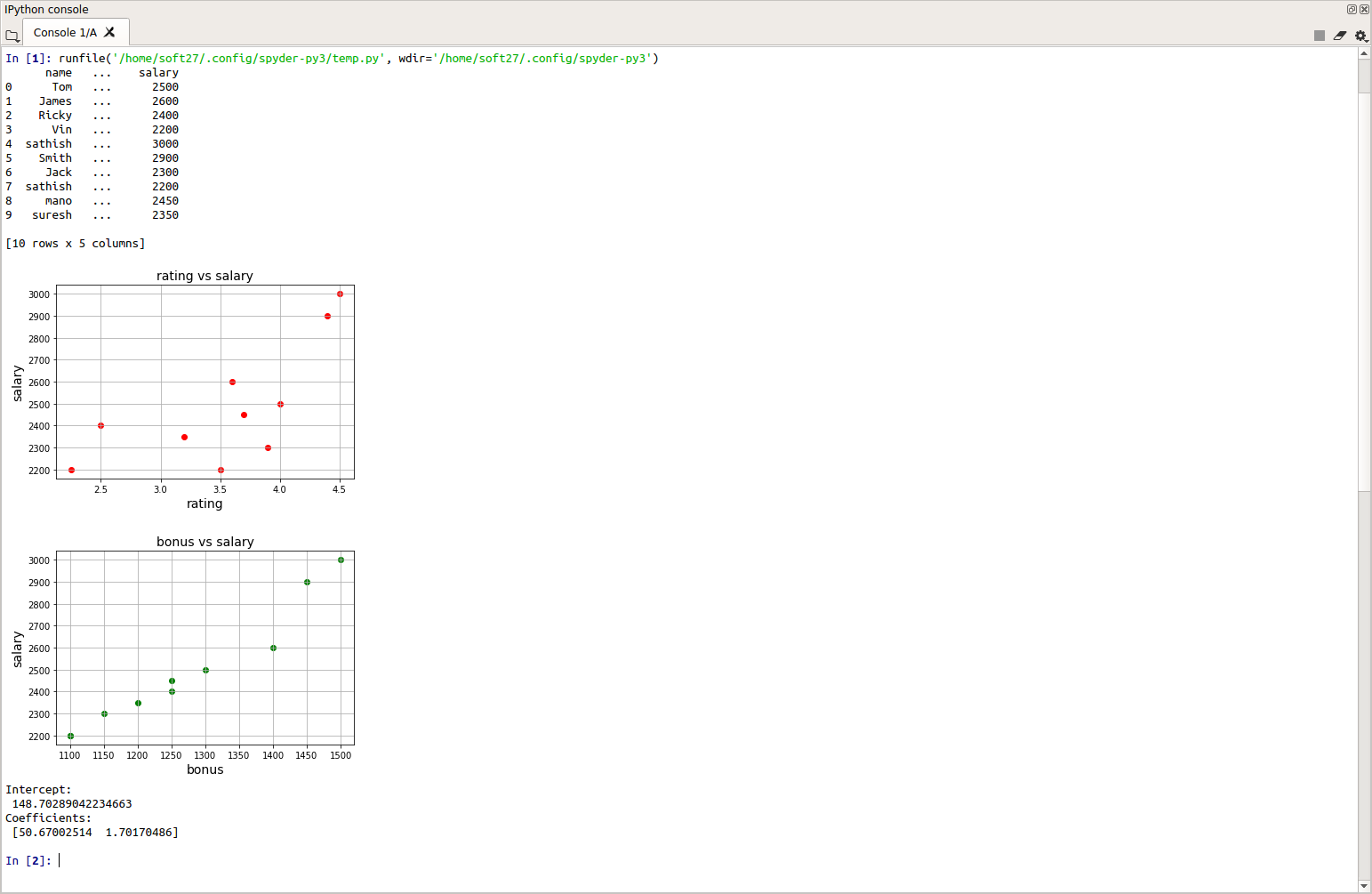
#print the intercept and regression co-efficients

print('Intercept: \n', regr.intercept\_)

print('Coefficients: \n', regr.coef\_)

**Screen shot:**

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