**Machine Learning using Python**

**Assignment 1**

**Name:** Kedar Kale **Date:** 24/09/18

**Roll No:** SCETTYMI54

**Block BML2**

**Python script to predict salary of an employee from his years of experience**

**Code:**

import numpy as np

import matplotlib.pyplot as plt

import pandas as pd

from sklearn.cross\_validation import train\_test\_split

from sklearn.linear\_model import LinearRegression

ds = pd.read\_csv("salary.csv")

X = ds.iloc[:,:-1].values

y = ds.iloc[:,1].values

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size = 1/3.0, random\_state = 0)

regressor = LinearRegression()

regressor.fit(X\_train, y\_train)

X\_test = input("Enter your years of experience: ")

y\_pred = regressor.predict(X\_test)

print "Your predicted salary is ",y\_pred[0]

**Output:**

#Output:

#

#Enter your years of experience: 10

#Your predicted salary is 120277.90805109226

#

#Enter your years of experience: 5

#Your predicted salary is 73548.29889445825

#

#Enter your years of experience: 20

#Your predicted salary is 213737.12636436033

**Python script to plot graphs of training and testing data**

**Code:**

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import matplotlib.pyplot as plt

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from sklearn.cross\_validation import train\_test\_split

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ds = pd.read\_csv("salary.csv")

X = ds.iloc[:,:-1].values

y = ds.iloc[:,1].values

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size = 1/3.0, random\_state = 0)

regressor = LinearRegression()

regressor.fit(X\_train, y\_train)

plt.scatter(X\_train,y\_train, color = 'red')

plt.plot(X\_train,regressor.predict(X\_train), color = 'Blue')

plt.title('Salary vs Experience (Training Set)')

plt.xlabel('Years of Experience')

plt.ylabel('Salary')

plt.show()

plt.scatter(X\_test,y\_test, color = 'red')

plt.plot(X\_test,regressor.predict(X\_test), color = 'Blue')

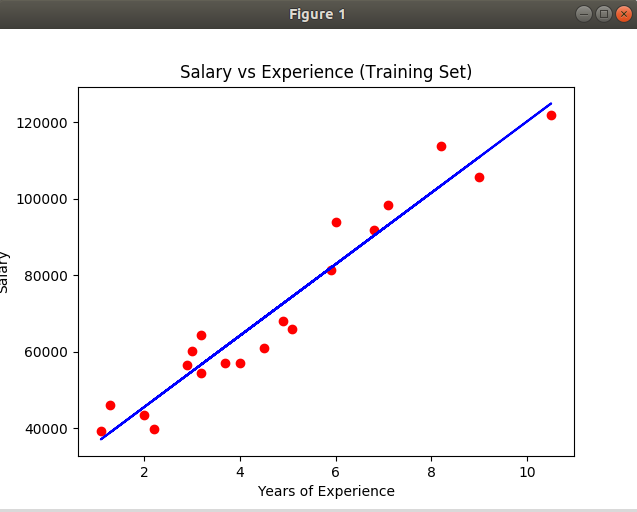
plt.title('Salary vs Experience (Testing Set)')

plt.xlabel('Years of Experience')

plt.ylabel('Salary')

plt.show()

**Output:**

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