**12. To Implement Linear Regression.**

import pandas as pd

import numpy as np

import matplotlib.pyplot as plt

import seaborn as sns

dataset = pd.read\_csv("/content/Salary\_Data.csv")

dataset

x = dataset.iloc[:,0:1].values

x

y = dataset.iloc[:,-1].values

y

from sklearn.model\_selection import train\_test\_split

x\_train, x\_test, y\_train, y\_test = train\_test\_split(x,y, test\_size=0.2,random\_state=10)

from sklearn.linear\_model import LinearRegression

regressor = LinearRegression()

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

regressor.coef\_

regressor.intercept\_

x\_new = pd.read\_csv('/content/Salary\_Data.csv')

x\_new = x\_new.iloc[:,:].values

x\_new

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

x\_new = pd.read\_csv('/content/Salary\_Data.csv')

# Select only the 'YearsExperience' column for prediction, similar to how x was defined during training.

x\_new = x\_new.iloc[:, 0:1].values

y\_pred\_new = regressor.predict(x\_new)

y\_pred\_test

y\_pred\_new

from sklearn.metrics import r2\_score

r2\_score(y\_test, y\_pred\_test)

y\_test

y\_pred\_new

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

plt.plot(x\_train, regressor.predict(x\_train), color='blue')

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

plt.plot(x\_test, regressor.predict(x\_test), color='blue')