import pandas as pd

import numpy as np

import matplotlib.pyplot as plt

import seaborn

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

from sklearn.linear\_model import LinearRegression

from sklearn import metrics

dataset= pd.read\_csv(r"C:\Users\Pc\Downloads\temperatures.csv")

print(dataset.shape)

print(dataset.describe())

dataset.plot(x='JAN', y='FEB' , style='o')

plt.title('JAN vs FEB')

plt.xlabel('mintemp')

plt.ylabel('maxtemp')

plt.show()

plt.figure(figsize=(15,10))

plt.tight\_layout()

seaborn.distplot(dataset['FEB'])

plt.show()

X= dataset['JAN'].values.reshape(-1,1)

y= dataset['FEB'].values.reshape(-1,1)

X\_train,X\_test,y\_train,y\_test = train\_test\_split(X,y,test\_size=0.2, random\_state=0)

model =LinearRegression()

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

print('Intercept is :',model.intercept\_)

print('Coefficient is :' ,model.coef\_)

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

df= pd.DataFrame({'Actual': y\_test.flatten(), 'Predicted': y\_pred.flatten()})

print(df)

df1= df.head(25)

df1.plot(kind='bar', figsize=(16,10))

plt.grid(which='major', linestyle='-',linewidth='0.5', color='green')

plt.grid(which='minor', linestyle=':',linewidth='0.5', color='black')

plt.show()

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

plt.plot(X\_test,y\_pred,color='red',linewidth=2)

plt.show()

print('Mean abolute error is:', metrics.mean\_absolute\_error(y\_test,y\_pred))

print('Mean squared error is:', metrics.mean\_squared\_error(y\_test,y\_pred))

print('Root mean squared error is:', np.sqrt(metrics.mean\_squared\_error(y\_test,y\_pred)))