# -\*- coding: utf-8 -\*-

"""

Created on Sun Jan 19 16:05:21 2020

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"""

#Importing Libraries

import numpy as np

import matplotlib.pyplot as plt

import pandas as pd

# Importing the dataset

dataset = pd.read\_csv('50\_Startups.csv')

p = dataset.loc[dataset['State']=='New York']

print(p)

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

q =np.arange(17)

X = q.reshape(-1, 1)

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

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size = 0.20,random\_state = 0)

from sklearn.linear\_model import LinearRegression

regressor = LinearRegression()

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

# Fitting Polynomial Regression to the dataset

from sklearn.preprocessing import PolynomialFeatures

poly\_reg = PolynomialFeatures(degree = 3)

X\_poly = poly\_reg.fit\_transform(X)

poly\_reg.fit(X\_poly, y)

lin\_reg\_2 = LinearRegression()

lin\_reg\_2.fit(X\_poly, y)

# Visualising the Polynomial Regression results

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

plt.plot(X, lin\_reg\_2.predict(poly\_reg.fit\_transform(X)), color = 'blue')

plt.title('Startups Profit In New York (Polynomial Regression)')

plt.xlabel('(City: New York)')

plt.ylabel('Profit')

plt.show()

print('Startups Profit In New York (10)')

print(regressor.predict([[10]]))

#now florida turn ######

q = dataset.loc[dataset['State']=='Florida']

print(q)

b = q.iloc[:, -1].values

r =np.arange(16)

a = r.reshape(-1, 1)

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

a\_train, a\_test, b\_train, b\_test = train\_test\_split(a, b, test\_size = 0.20,random\_state = 0)

from sklearn.linear\_model import LinearRegression

regressor = LinearRegression()

regressor.fit(a\_train, b\_train)

# Fitting Polynomial Regression to the dataset

from sklearn.preprocessing import PolynomialFeatures

poly\_reg = PolynomialFeatures(degree = 3)

a\_poly = poly\_reg.fit\_transform(a)

poly\_reg.fit(a\_poly, b)

lin\_reg\_2 = LinearRegression()

lin\_reg\_2.fit(a\_poly, b)

# Visualising the Polynomial Regression results

plt.scatter(a, b, color = 'red')

plt.plot(a, lin\_reg\_2.predict(poly\_reg.fit\_transform(a)), color = 'blue')

plt.title('Startups Profit In Florida (Polynomial Regression)')

plt.xlabel('(City: Florida)')

plt.ylabel('Profit')

plt.show()

print('Startups Profit In Florida (10)')

print(regressor.predict([[10]]))

print("starting profit of newyork is less than florida ")

print("thanks to Allah....done it")