import numpy as np

import pandas as pd

import matplotlib.pyplot as plt

from sklearn.cluster import KMeans

data = pd.read\_csv('./datasets/basic4.csv')

print(data)

print("\nUnique values: ", data['color'].unique())

X = tuple(zip(data['x'], data['y']))

X

plt.xlabel('X')

plt.ylabel('Y')

plt.title('Dataset')

plt.scatter(data['x'], data['y'],c = data['color'], cmap ='rainbow')

plt.show()

wcss = []

for i in range(1, 11):

kmeans = KMeans(n\_clusters=i, init='k-means++', random\_state= 42)

kmeans.fit(X)

wcss.append(kmeans.inertia\_)

plt.plot(range(1, 11), wcss)

plt.title('The Elbow Method Graph')

plt.xlabel('Number of clusters(k)')

plt.ylabel('wcss\_list')

plt.show()

kmeans = KMeans(n\_clusters=3)

plt.title('Clusters=3')

plt.xlabel('X')

plt.ylabel('Y')

plt.scatter(data['x'], data['y'],c = kmeans.fit\_predict(X), cmap ='rainbow')

plt.show()