**10. To Implement K-means clustering data mining algorithm.**

import matplotlib.pyplot as plt

x = [4, 5, 10, 4, 3, 11, 14 , 6, 10, 12]

y = [21, 19, 24, 17, 16, 25, 24, 22, 21, 21]

plt.scatter(x, y)

plt.show()

from sklearn.cluster import KMeans

data = list(zip(x, y))

inertias = []

for i in range(1,11):

kmeans = KMeans(n\_clusters = i)

kmeans.fit(data)

inertias.append(kmeans.inertia\_)

plt.plot(range(1,11), inertias, marker = 'o')

plt.title('Elbow method')

plt.xlabel('inertia')

plt.show

kmeans = KMeans(n\_clusters=2)

kmeans.fit(data)

plt.scatter(x, y, c=kmeans.labels\_)

plt.show()