

```

import numpy as np
import matplotlib.pyplot as plt
import pandas as pd

dataset=pd.read_csv("amazon.csv")
X=dataset.iloc[:,[3,4]]

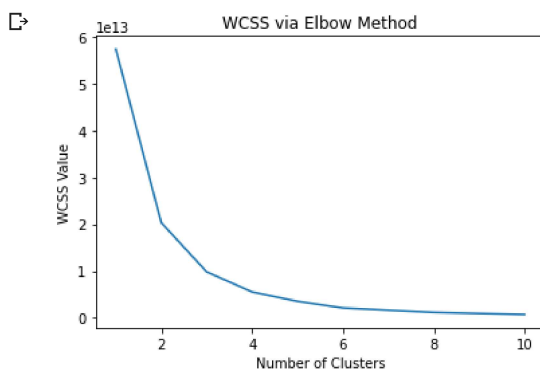
from sklearn.cluster import KMeans
wcss=[]

for i in range(1,11):
    kmeans=KMeans(n_clusters=i, init= 'k-means++', random_state=21)
    kmeans.fit(X)
    wcss.append(kmeans.inertia_)

plt.plot(range(1,11),wcss)
plt.title('WCSS via Elbow Method')
plt.xlabel('Number of Clusters')
plt.ylabel('WCSS Value')

plt.show()

```



```

kmeans=KMeans(n_clusters=4,init='k-means++',random_state=42)
y_means=kmeans.fit_predict(X)
X=np.array(X)

plt.scatter(X[y_means == 0,0],X[y_means==0,1],s=100,c='magenta',label='cluster1')
plt.scatter(X[y_means == 1,0],X[y_means==1,1],s=100,c='blue',label='cluster2')
plt.scatter(X[y_means == 2,0],X[y_means==2,1],s=100,c='red',label='cluster3')
plt.scatter(X[y_means == 3,0],X[y_means==3,1],s=100,c='cyan',label='cluster4')
clusters=kmeans.cluster_centers_
plt.scatter(kmeans.cluster_centers_[:, 0],kmeans.cluster_centers_[:, 1],s=300,c='black',label='Centroids')
plt.title('Cluster of Amazon Users')
plt.xlabel('Annual Income in INR')
plt.ylabel('Purchase Rating')
plt.legend()
plt.show()

```

