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

#importing dataset
dataset=pd.read_csv('Mall_Customers.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++', max_iter = 300, n_init = 10,
random_state = 0)
    kmeans.fit(X)
    wcss.append(kmeans.inertia_)

plt.plot(range(1,11), wcss)
plt.title('The Elbow Method')
plt.xlabel('Number of clusters')
plt.ylabel('WCSS')
plt.show()
#applying kmeans to mall dataset
kmeans = KMeans(n_clusters = 5, init = 'k-means++', max_iter = 300, n_init = 10,
random_state = 0)
y_kmeans = kmeans.fit_predict(X)

#visualising the clusters
plt.scatter(X[y_kmeans == 0, 0], X[y_kmeans == 0, 1], s = 100, c = 'red', label =
'Careful')
plt.scatter(X[y_kmeans == 1, 0], X[y_kmeans == 1, 1], s = 100, c = 'blue', label =
'Standard')
plt.scatter(X[y_kmeans == 2, 0], X[y_kmeans == 2, 1], s = 100, c = 'green', label =
'Target')
plt.scatter(X[y_kmeans == 3, 0], X[y_kmeans == 3, 1], s = 100, c = 'cyan', label =
'Careless')
plt.scatter(X[y_kmeans == 4, 0], X[y_kmeans == 4, 1], s = 100, c = 'magenta', label =
'Sensible')
plt.scatter(kmeans.cluster_centers_[:, 0], kmeans.cluster_centers_[:, 1], s = 300, c
= 'yellow', label = 'Centriods')
plt.title('Clusters of clients')
plt.xlabel('Annual Income (k$)')
plt.ylabel('Spending Score (1-100)')
plt.legend()
plt.show()
```