

```

1 import pandas as pd
2 import matplotlib.pyplot as plt
3 from sklearn.cluster import KMeans
4
5 df = pd.read_csv("sales_data_sample.csv", encoding='latin1')
6 df.info()
7
8 X = df.iloc[:, [1,4]].values
9
10 # Elbow Method
11 wcss_list= []
12 for i in range(1, 11):
13     kmeans = KMeans (n_clusters=i, init='k-means++', random_state= 42)
14     kmeans.fit(X)
15     wcss_list.append(kmeans.inertia_)
16
17 plt.plot(range(1, 11), wcss_list)
18 plt.title('Elbow Method Graph')
19 plt.xlabel('Number of Clusters (k)')
20 plt.ylabel('wcss_list')
21 plt.show()
22
23 # K-Means Clustering
24
25 kmeans = KMeans (n_clusters=3, init='k-means++', random_state= 42)
26 y_pred = kmeans.fit_predict(X)
27
28 plt.scatter(X[y_pred == 0, 0], X[y_pred == 0, 1], c = 'blue', label = 'Cluster 1')
29 plt.scatter(X[y_pred == 1, 0], X[y_pred == 1, 1], c = 'green', label = 'Cluster 2')
30 plt.scatter(X[y_pred == 2, 0], X[y_pred == 2, 1], c = 'red', label = 'Cluster 3')
31 plt.title('K-Means Clustering')
32 plt.xlabel('Quantity Ordered')
33 plt.ylabel('Sales')
34 plt.legend()
35 plt.show()

```

Output –

