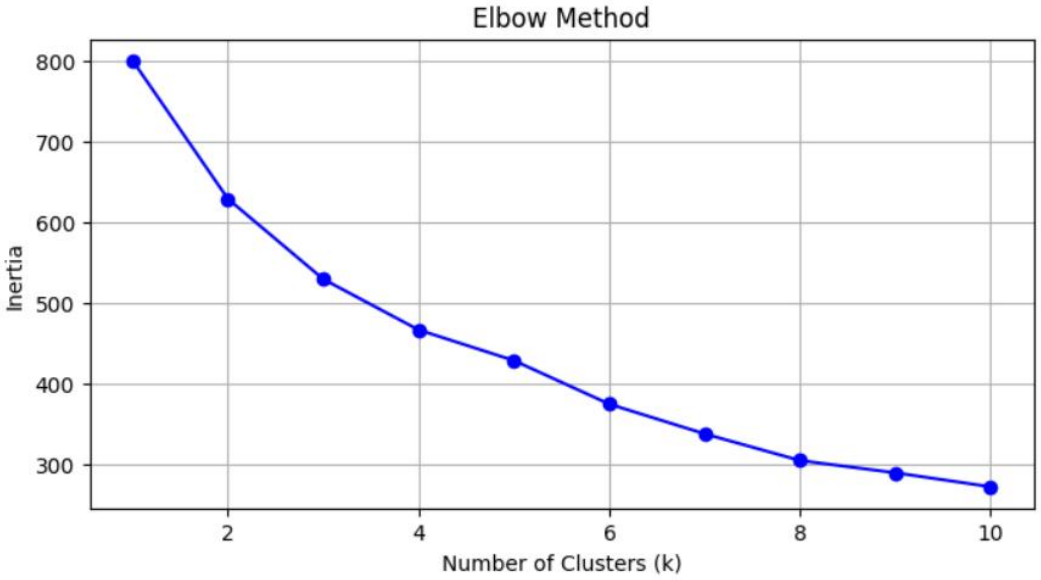
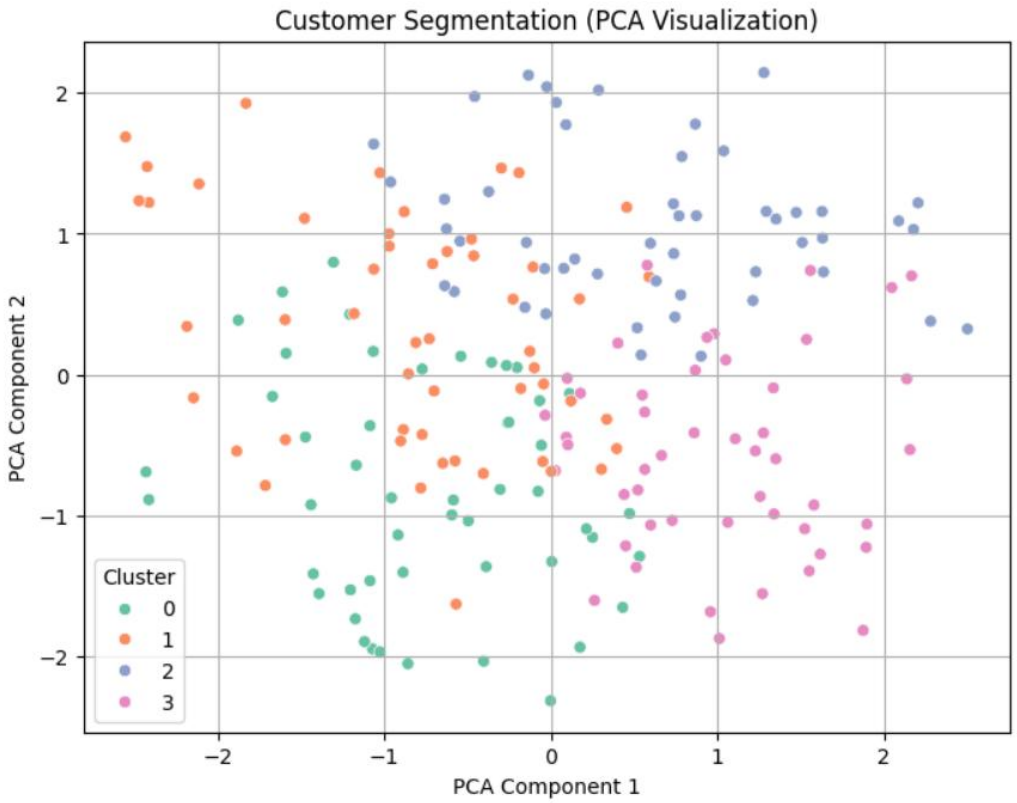
```python
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns

from sklearn.preprocessing import StandardScaler
from sklearn.cluster import KMeans
from sklearn.decomposition import PCA

np.random.seed(42)
data = {
    'Age': np.random.randint(18, 70, 200),
    'Annual_Income': np.random.randint(20000, 120000, 200),
    'Spending_Score': np.random.randint(1, 100, 200),
    'Browsing_Time_per_Week': np.random.normal(15, 5, 200).astype(int)
}
df = pd.DataFrame(data)

scaler = StandardScaler()
scaled_data = scaler.fit_transform(df)

inertia = []
K = range(1, 11)
for k in K:
    km = KMeans(n_clusters=k, random_state=42)
    km.fit(scaled_data)
    inertia.append(km.inertia_)
```

```python
plt.figure(figsize=(8, 4))
plt.plot(K, inertia, 'bo-')
plt.xlabel('Number of Clusters (k)')
plt.ylabel('Inertia')
plt.title('Elbow Method')
plt.grid(True)
plt.show()

kmeans = KMeans(n_clusters=4, random_state=42)
df['Cluster'] = kmeans.fit_predict(scaled_data)

pca = PCA(n_components=2)
pca_data = pca.fit_transform(scaled_data)

plt.figure(figsize=(8, 6))
sns.scatterplot(x=pca_data[:, 0], y=pca_data[:, 1], hue=df['Cluster'], palette='Set2')
plt.title('Customer Segmentation (PCA Visualization)')
plt.xlabel('PCA Component 1')
plt.ylabel('PCA Component 2')
plt.legend(title='Cluster')
plt.grid(True)
plt.show()

cluster_summary = df.groupby('Cluster').mean()
print("\nCluster Summary:")
print(cluster_summary)
```

OUTPUT





Cluster Summary:

Cluster	Age	Annual_Income	Spending_Score	Browsing_Time_per_Week
0	34.920000	94024.640000	31.140000	12.620000
1	44.615385	58189.865385	24.653846	19.173077
2	60.040000	69474.400000	70.180000	13.760000
3	33.687500	53783.875000	74.708333	11.895833