K-mean algorithm

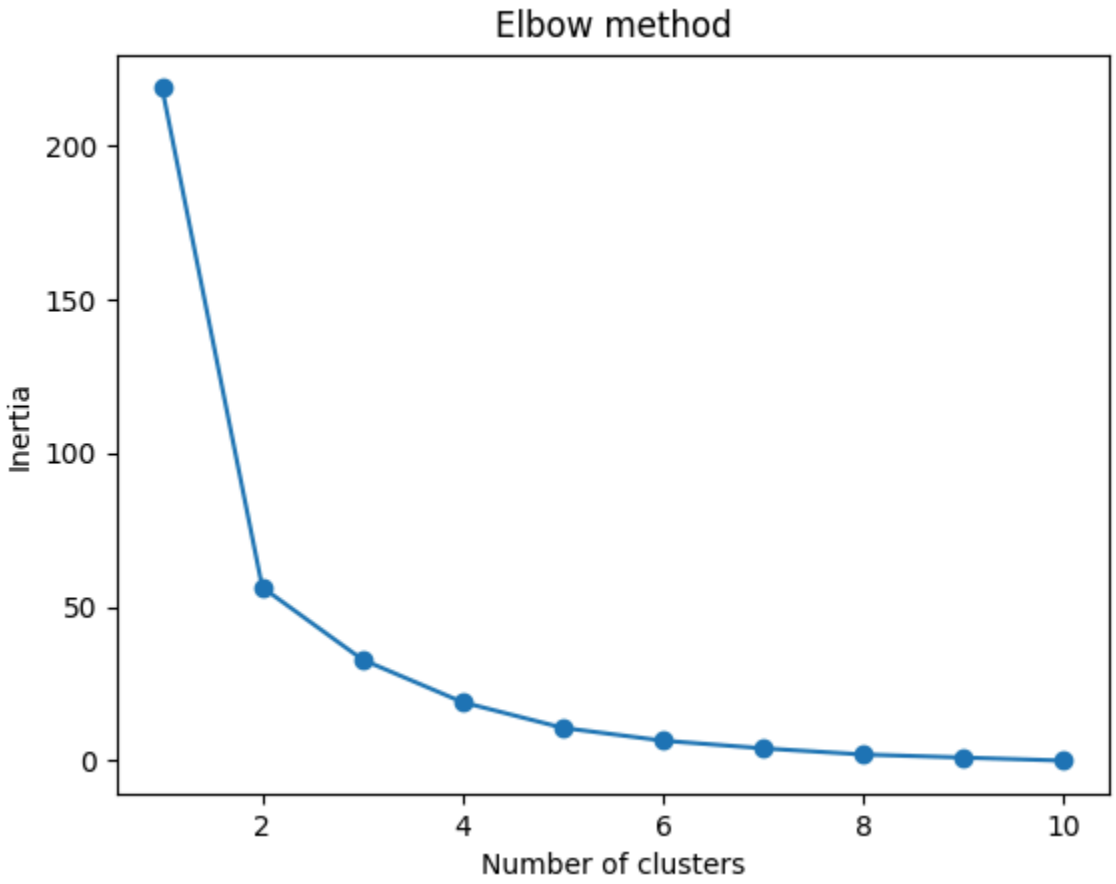
Aim:

To implement K-mean algorithm

Code:

```
import sys
import matplotlib
matplotlib.use('Agg')

import matplotlib.pyplot as plt
from sklearn.cluster import KMeans

x = [4, 5, 10, 4, 3, 11, 14 , 6, 10, 12]
y = [21, 19, 24, 17, 16, 25, 24, 22, 21, 21]

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('Number of clusters')
plt.ylabel('Inertia')
plt.show()

plt.savefig(sys.stdout.buffer)
sys.stdout.flush()
```

Output:



Result:

K-means algorithm implemented successfully.