

Experiment 3.1

Implementation of k-mean clustering values on any data set

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Subject Name: Machine Learning Lab

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Aim: Implementation of k-mean clustering values on any data set.

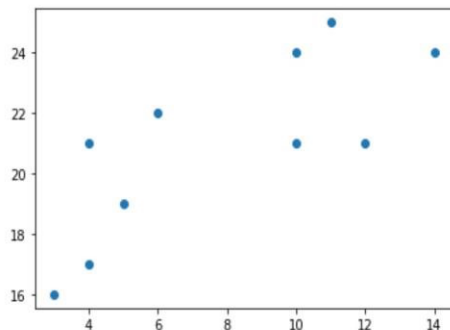
Objective: To prepare a model with k-mean clustering values on any data set.

Data Set Chosen: k-mean clustering.

Result and output:

Implementation of k-means clustering values on any dataset

```
In [1]: import matplotlib.pyplot as plt  
  
x = [4, 5, 10, 4, 3, 11, 14, 6, 10, 12]  
y = [21, 19, 24, 17, 16, 25, 24, 22, 21, 21]  
  
plt.scatter(x, y)  
plt.show()
```





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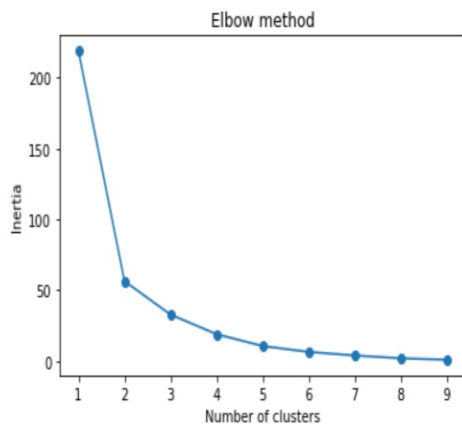
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```
In [2]: from sklearn.cluster import KMeans

data = list(zip(x, y))
inertias = []

for i in range(1,10):
    kmeans = KMeans(n_clusters=i)
    kmeans.fit(data)
    inertias.append(kmeans.inertia_)

plt.plot(range(1,10), inertias, marker='o')
plt.title('Elbow method')
plt.xlabel('Number of clusters')
plt.ylabel('Inertia')
plt.show()
```



```
In [3]: kmeans = KMeans(n_clusters=2)
kmeans.fit(data)

plt.scatter(x, y, c=kmeans.labels_)
plt.show()
```

