Assignment: Affinity Propagation Clustering

(Odd group number)

Objective:

The goal of this assignment is to understand and implement the Affinity Propagation Clustering algorithm in Python.

Instructions:

Download a dataset of your choice, or use one of the provided datasets from sklearn or seaborn.

1. Use the AffinityPropagation class from the sklearn.cluster library to cluster the data.
2. Plot the data using the matplotlib or seaborn library and color the points according to their cluster assignment.
3. Evaluate the performance of the clustering by comparing the true labels of the data (if provided) to the cluster assignments.
4. Experiment with different values of the damping parameter and observe how it affects the clustering results.

Grading:

- Each student from the group have to explain one of the given four parts in the assignment.
- Questions will be asked to check the knowledge related to the topic.

Assignment: K-Means Clustering

(Even group number)

Objective:

The goal of this assignment is to understand and implement the K-Means Clustering algorithm in Python.

Instructions:

Download a dataset of your choice, or use one of the provided datasets from sklearn or seaborn.

1. Use the KMeans class from the sklearn.cluster library to cluster the data.
2. Plot the data using the matplotlib or seaborn library and color the points according to their cluster assignment.
3. Evaluate the performance of the clustering by comparing the true labels of the data to the cluster assignments.
4. Try different values of k and observe how it affects the clustering results.

Grading:

- Each student from the group have to explain one of the given four parts in the assignment.
- Questions will be asked to check the knowledge related to the topic.