

Objective:

The objective of this assessment is to evaluate your understanding and ability to apply clustering techniques to a real-world dataset.

Dataset

Use the Iris dataset available in the sklearn library.

Key components to be fulfilled :**1. Loading and Preprocessing (1 marks)**

- Load the Iris dataset from sklearn.
- Drop the species column since this is a clustering problem.

2. Clustering Algorithm Implementation (8 marks)

- Implement the following two clustering algorithms:

A) KMeans Clustering (4 marks)

- Provide a brief description of how KMeans clustering works.
- Explain why KMeans clustering might be suitable for the Iris dataset.
- Apply KMeans clustering to the preprocessed Iris dataset and visualize the clusters.

B) Hierarchical Clustering (4 marks)

- Provide a brief description of how Hierarchical clustering works.
- Explain why Hierarchical clustering might be suitable for the Iris dataset.
- Apply Hierarchical clustering to the preprocessed Iris dataset and visualize the clusters.