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| **Formative Assessment: Unsupervised Learning** |
| **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. |





















