Lab Exercises 14 to 16

Date: 21st Oct 2025, 28th Oct 2025

# Implementation of K-Means Algorithm

from sklearn.cluster import K-Means

from sklearn.metrics import silhouette_score

from sklearn.metrics import davies_bouldin_score

14. Apply k-Means clustering on *Wisconsin* (Breast_Cancer) Dataset. Assume k=2 and plot a graph for the derived clusters. Also generate elbow graph for this problem and check whether our assumption for k as 2 is true. Evaluate the Silhouette Score and the Davies Bouldin Index of the clusters.

15. K-Means implementation on the dataset: <Housing_Price.csv>
(i)     Conduct exploratory data analysis on the given dataset and report the details.
(ii)    Visualize the analysis results using (i) scatter plot (ii) histogram & (iii) box plot.
(iii)   Implement the K-Means clustering algorithm using the dataset. Try with different k values and show the accuracy.
(iv)    Evaluate the Silhouette Score and the Davies Bouldin Index of the clusters.

16. K-Means implementation on the dataset: <Iris.csv>
(i)     Conduct exploratory data analysis on the given dataset and report the details.
(ii)    Visualize the analysis results using (i) scatter plot (ii) histogram & (iii) box plot.
(iii)   Implement the K-Means clustering algorithm using the dataset. Try with different K values and show the accuracy.
(iv)    Evaluate the Silhouette Score and the Davies Bouldin Index of the clusters.