

1. Do the following for the given dataset:
  - a. Visualize the dataset using a plot (*Library: Seaborn and Matplotlib*) and apply Decision Tree Algorithm
    - Calculate the following evaluation metrics → *Accuracy, Precision, Recall, F1 Score, Confusion Matrix* and discuss what you observe
  - b. Apply k-Nearest Neighbour algorithm on the given dataset (*Find the best value for “k” using the method explained in class*)
    - Calculate the following evaluation metrics → *Accuracy, Precision, Recall, F1 Score, Confusion Matrix* and discuss what you observe
  - c. Apply Min-Max Normalization on the given dataset and visualize it using a plot; Then, repeat Section “1. b” fully on the Normalized dataset
  - d. Plot ROC curves and calculate the corresponding AUC values for Sections “1. b” and “1. c” and discuss what you observe
2. Consider the in-built IRIS dataset and do the following:
  - a. Visualize the dataset using a plot and apply k-Nearest Neighbour algorithm on the dataset
    - Calculate the following evaluation metrics → *Accuracy, Precision, Recall, F1 Score, Confusion Matrix* and discuss what you observe
  - b. Apply Pearson and Spearman Correlation Coefficient, and try to find out whether you can drop any feature (*Drop a feature only when the correlation is above 90%*)
  - c. Apply Principal Component Analysis on the dataset created in Section “2. b” and try to reduce the number of features, if possible; Then, repeat Section “2.a” with the identified principal component axes