**Lab3: Preparing datasets**

In this lab, you should use dataset of your choice, or you can download IRIS dataset and try to perform the following tasks.

**Exercise 1:**

- Objective: Understanding data
- Task: Compute/find mean, median, min and max values in your data. Also draw boxplot, histogram and scatter plot for the dataset you are using.

**Exercise 2: Train_test_split**

- Objective: Learn how train_test_split method can be applied to prepare dataset for model training and testing.
- Task: Implement train_test_split using Logistic regression from the previous lab on your dataset.

**Exercise 3: Cross-Validation**

- Objective: Learn how k-fold cross-validation provides a more reliable estimate of model performance.
- Task: Implement k-fold cross-validation using Logistic regression as the model.

**Exercise 4: Stratified Splitting**

- Objective: Understand the importance of maintaining class distribution with stratified splitting, particularly for imbalanced datasets.
- Task: Use **`StratifiedKFold`** for splitting the dataset, ensuring that each fold has the same proportion of class labels. Compare model performance with and without stratified splitting.