Project 1: Comparing Classifiers

**Due date: Oct. 23, 2024, by 11:59 p.m.**

This is an individual project.

You will implement four classifiers: Decision Tree, RF, and Naïve Bayes classification systems using scikit-learn libraries.

You must use the given code and modify it: Project1\_template.ipynb

1. Use three classifiers to classify the iris dataset.
   1. Decision Tree, RF, and Naïve Bayes
2. Find the best classifier among them regarding accuracy (using training data).
3. Predict the test data using the best classifier you found in Step 2.
   1. Show the confusion matrix (using testing data).
   2. Show precision, recall, and f1-score for testing data.
4. Redo step 1 – 3 with the following requirements.
   1. Automate the selection of the best classifier and run testing data with the best classifier model to predict the test data.

Submit your code (in Python code)

References:

1. Install anaconda. (or you can use any other Python programming environment)
   1. https://www.anaconda.com/
2. Download the code for your reference:
   1. <https://github.com/ageron/handson-ml3>
3. This program uses the iris dataset.
   1. <https://scikit-learn.org/stable/auto_examples/datasets/plot_iris_dataset.html>
   2. <https://archive.ics.uci.edu/ml/datasets/iris>
   3. <https://gist.github.com/curran/a08a1080b88344b0c8a7#file-iris-csv-L2>
   4. <https://www.ritchieng.com/machine-learning-iris-dataset/>