Programming assignment 4.

Due date: Tuesday, October 19, 2021 at 11:59pm

Remember:
- ✓ You can look up all the functions in MATLAB by typing help/doc in the command window. (e.g. doc imread)
- ✓ "clear": removes all the variables from the workspace
- ✓ "who": gives the list of variables
- ✓ "whos": gives the list of variables, their sizes, and types

••

In this lab we work on implementing k-NN algorithm and choosing the best value for k using cross fold validation technique.

1. Read the tiny images located in tiny folder.
2. Create labels for the image using the labels.txt file.
3. Create 10 folds to do a cross validation.
4. Leave one-fold aside for testing and the remaining 9 folds for training and validation. Explain how you did that.
5. In your 9 folds calculate the average accuracy rate for each value of k (k = 1 to 15) in your k-NN.
6. Plot a bar plot of all average accuracy rates using different k values and save it as png.
7. Calculate the accuracy rate of your designed k-NN using the best selected k on the testing dataset from step four.
8. Upload your code (.m/.py files) and one pdf file that contains your code, your answers to questions, and the resulting images.

Images are taken from CIFAR-10
https://www.kaggle.com/fedesoriano/cifar10-python-in-csv