Experiment 2

*Start Date: Oct. 24, 2023
*Report Due Date: Nov. 11, 2023

Notes:

- Each experiment must be done individually. You can search material through Internet but remember to mark it.

- Write an experiment report to describe and analyze the experimental observations.

- You should pack your files including **source code, report, readme file, and other related files** in one .zip/.rar/.7z file.

- Please submit on the Web Learning platform. Do NOT Email or Wechat your report to the instructor or TAs.

- No late report is accepted. No exceptions.

- You can write the report using English or Chinese.

Task:

Use the sklearn classification models to finish the experiment.

Goal:

We hope you know better about the classification models and try to use the models better on the given dataset.

Data:

For **CS background** students, you should download MNIST dataset and load it by yourself.
For **Non CS background** students, you can use the scikit-learnrn package to load the MNIST dataset.

Divide the data into train set and test set.

Experiment Step:

- Use the SVM to classify the data. Try to change kernel and other related parameters to see the change of metric you use. Record the result and try to explain it.

- Use the Decision Tree to classify the data, use the API to visualize the tree. Try to change the related parameters to see the change of metric you use. Record the result and try to explain it.

- Use the KMeans to cluster the data and visualize it. (The PCA may not be covered in the lecture currently, just use it.)