# **Unit 2: Multi Layer Perceptrons - Other Components Assignment**

**April 2020**

## **Question**

1. Write a program to construct a single layer Perceptron for a dataset
   1. Generate a random dataset as a file. The dataset should have at least 100 records. Each record should have at least 4 floating point features and a binary label (0 - negative or 1 - positive)
   2. The program should contain functions to
      1. Read the dataset from file.
      2. Split the data into train and test. Ensure the data is split in the same way every time the program runs.
      3. Initialise the weights of the perceptron, learning rate and epochs
      4. Define the activation function
      5. Train the model i.e. Learn the weights of the perceptron on the training data.
      6. Print the learned weights and the hyperparameters (epoch and learning rate)
      7. Predict the outputs on train and test data
      8. Print the confusion matrix, accuracy, precision, recall on train and test data

## **Instructions**

1. Go to GitHub Link: <https://github.com/mydhiliknair/ISEB1-Even-Sem-2020> and follow the instructions given there.
2. The dataset can be in any form (json, csv, txt etc)
3. The lesser the inbuilt functions used in your code the better as it will help you learn.

## **Solution**

Have a look at the Java solution. <https://github.com/anisham197/DataMiningLab/blob/master/Java/ANN/Perceptron.java>

This is ONLY for reference, Expectation is Python Code.

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