EEL 6814

HMW # 3
Due October 5, 2023

1- The goal is to design a single hidden layer MLP to classify table wines using a set of features.

These data are the results of a chemical analysis of wines grown in the same region in Italy but derived from three different plant types (3 classes). The analysis determined the quantities of 13 constituents found in each of the three types of wines.

The attributes are :1) Alcohol; 2) Malic acid; 3) Ash; 4) Alcalinity; 5) Magnesium 6) Total phenols; 7) Flavanoids; 8) Nonflavanoid phenols; 9) Proanthocyanins; 10) Color intensity; 11)Hue; 12)OD280/OD315 of diluted wines; 13)Proline.

The data set and further information is available at.
https://archive.ics.uci.edu/ml/datasets/Wine

Summarize the results of the training and testing in a confusion table (i.e. a table where columns are the true attributes assigned by the human expert and the rows are your automatically determined assignments). Show the effect on performance of different number of layers and units per layer, step sizes, and different stopping criteria.

This data set is rather simple and you can achieve 100% classification. So, it is a good opportunity to study the effects of hyper parameters.

Please use the code you wrote for HMW #2. You can easily adapt the code to deal with the wine data base. Since you must be comfortable (?) with the code that you already wrote….. you can modify it for this data set.