HW8
Neural network design

You can use the code in our drive as a template.

1) Read the iris data set

NET1: Design a 2-layer neural network (two inputs-one hidden layer-one output layer), use 5 neurons in the hidden layer and 1 neuron at the output layer. The input layer has two inputs (features)

Do :

i. Train the network using sepal length and sepal width (input features) for Versicolor and Virginica (classes)
ii. Train the network using petal length and petal width (input features) for Setosa and Virginica (classes)

Train the network using the train data set. Test the network using the test data set.

A) For given two different feature sets (i&ii), compare the accuracy and costs of the network, NET1. Comment on why they are different even though the network is the same. How can you solve this issue?

B) NET2: Increase the number of neurons from 5 to 20 in the hidden layer of NET1. Train using i&ii. How does increasing the number of neurons affect the neural network performance, in general, and in this specific case, show the results? Compare the performance of NET1 and NET2.

C) NET3: Take NET1 and add one more hidden layer and train the network with cases in i& ii. How does this new design perform, accuracy, and costs? (again in general and in this specific case, show the results). Compare the performance of NET1 and NET3

D) NET4: Take NET1, instead of adding one more hidden layer, use four features in the input data sets. Does using four of the features provide a solution? Compare NET1 and NBET4

Upload your codes and your results as a report.