Home Assignment 1_Part 2

Kindly find below report for assignment question:

Question 1::

Ran the double moon algorithm provided by professor Yimin Yang with Least Mean Square algorithm logic.

And plotted the classification error rate graph and double moon figure for d=0.

Attached files:

I) Classification error rate graph (Learning curve)

II) Double moon figure

Question 2::

Designed a Newton's Optimization algorithm and ran it over 30 epochs to get the Mean squared error (MSE) over the duration and testing accuracy.

Attached files:

I) Dataset (Training and testing) - Skin samples classification(https://archive.ics.uci.edu/ml/datasets/Skin+Segmentation)

II) MATLAB code

III) Classification error rate graph (MSE over number of epochs) for testing and training data both (which is around $4 - 2 * 10^{-6}$)

IV) Graph for Accuracy (in %) over number of epochs for testing and training data both (which is around 72-74%)

Steps to run a Perceptron Algorithm MATLAB code:

1. Execute 'run' file in command window. This will plot a classification error rate graph.