Project 4 CSC242

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How to run our program:

Change the current directory to src. Then type

javac \*/\*/\*/\*.java

Then

To test for perceptron:

Java learn/lc/examples/PerceptronClassifierTest [file-name] [# of iterations] [learning rate]

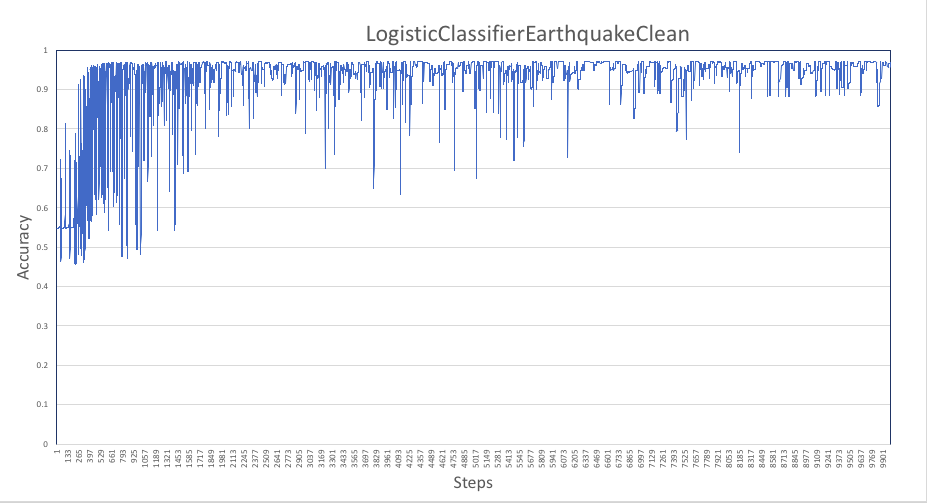
To test for logistic classifier:

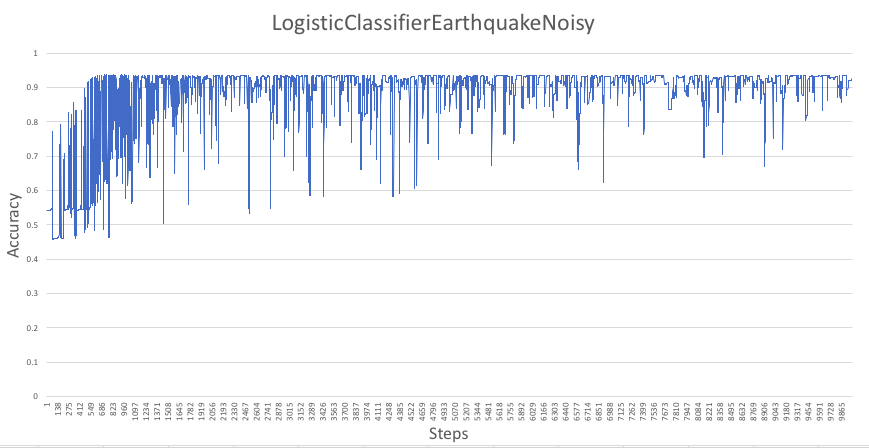
java learn/lc/examples/LogisticClassifierTest [file-name] [# of iterations] [learning rate]

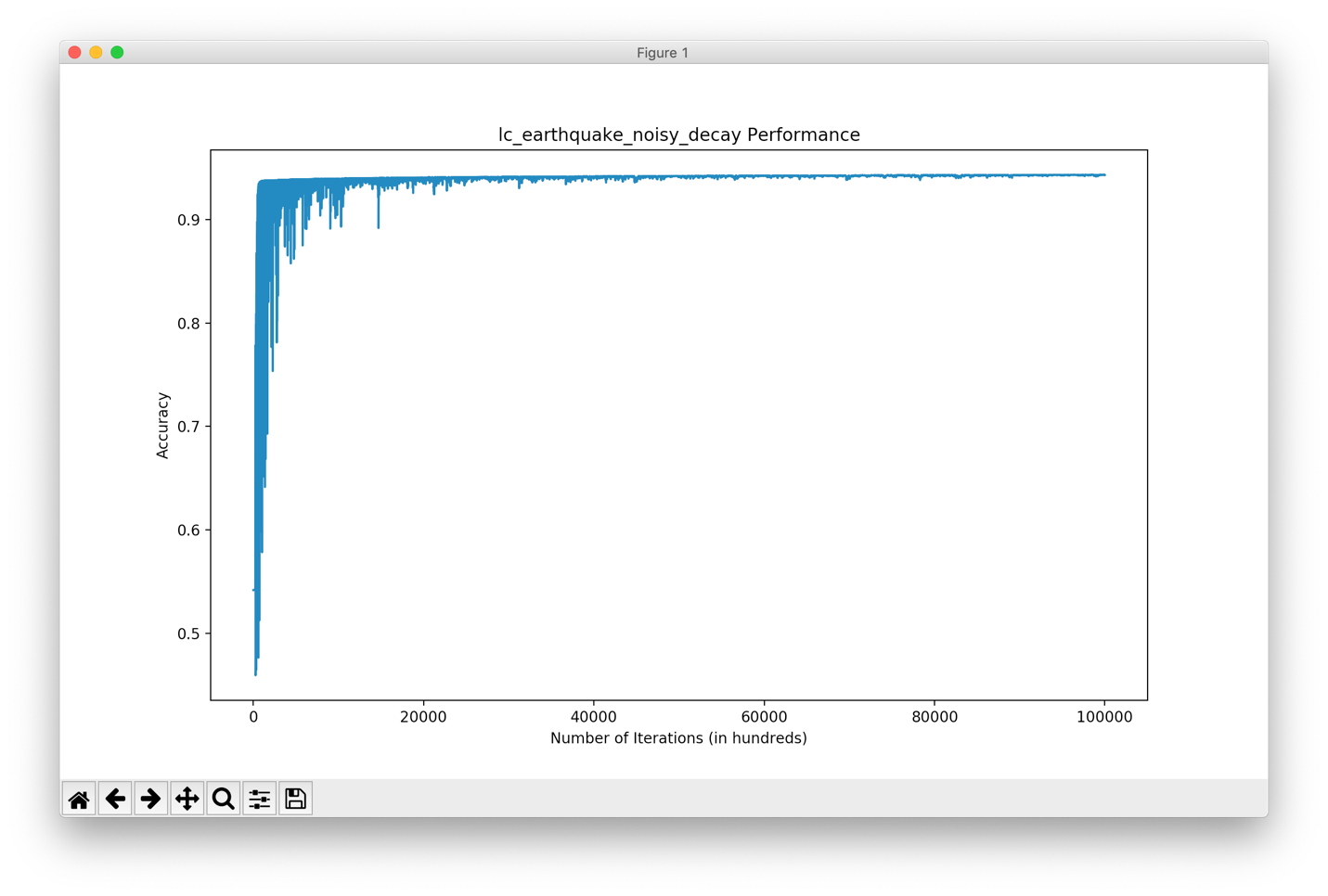
Sample for testing logistic classifier on the data “house-votes-84.data.num.txt” with 10000 iterations and learning rate 0.1:

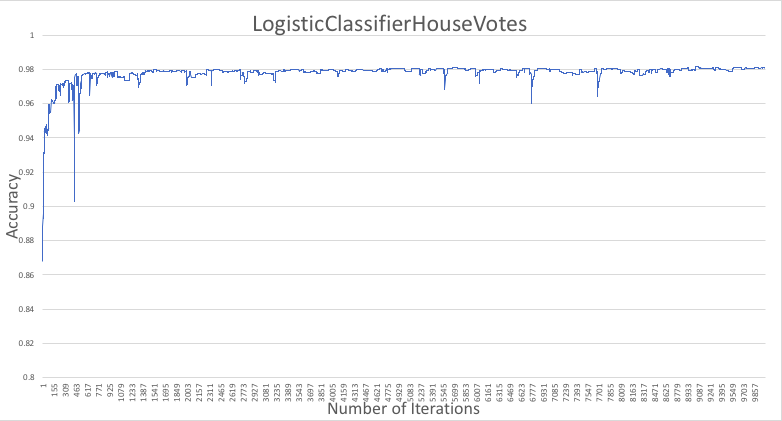
java learn/lc/examples/LogisticClassifierTest “learn/lc/examples/house-votes-84.data.num.txt” 10000 0.1

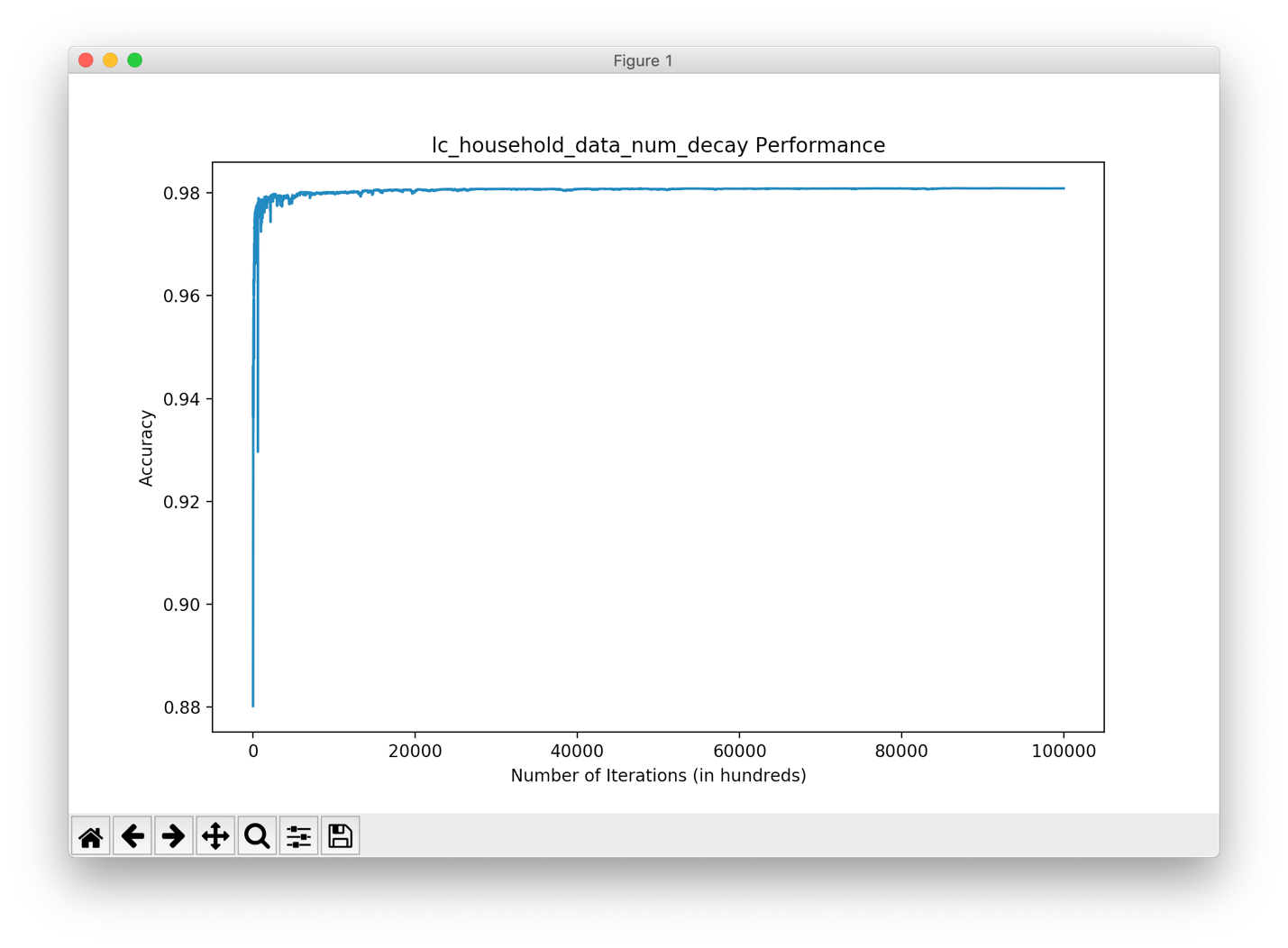
Logistic Classifier:



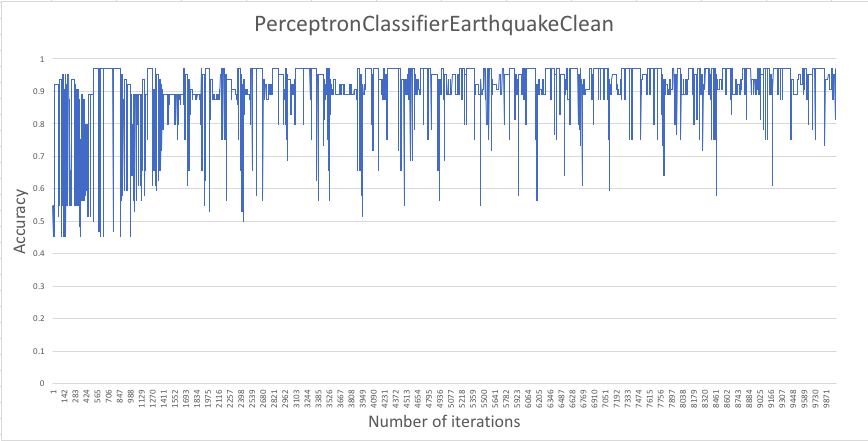


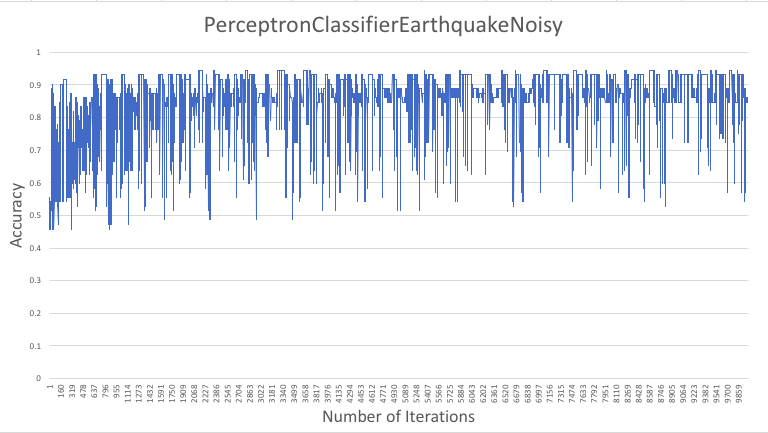


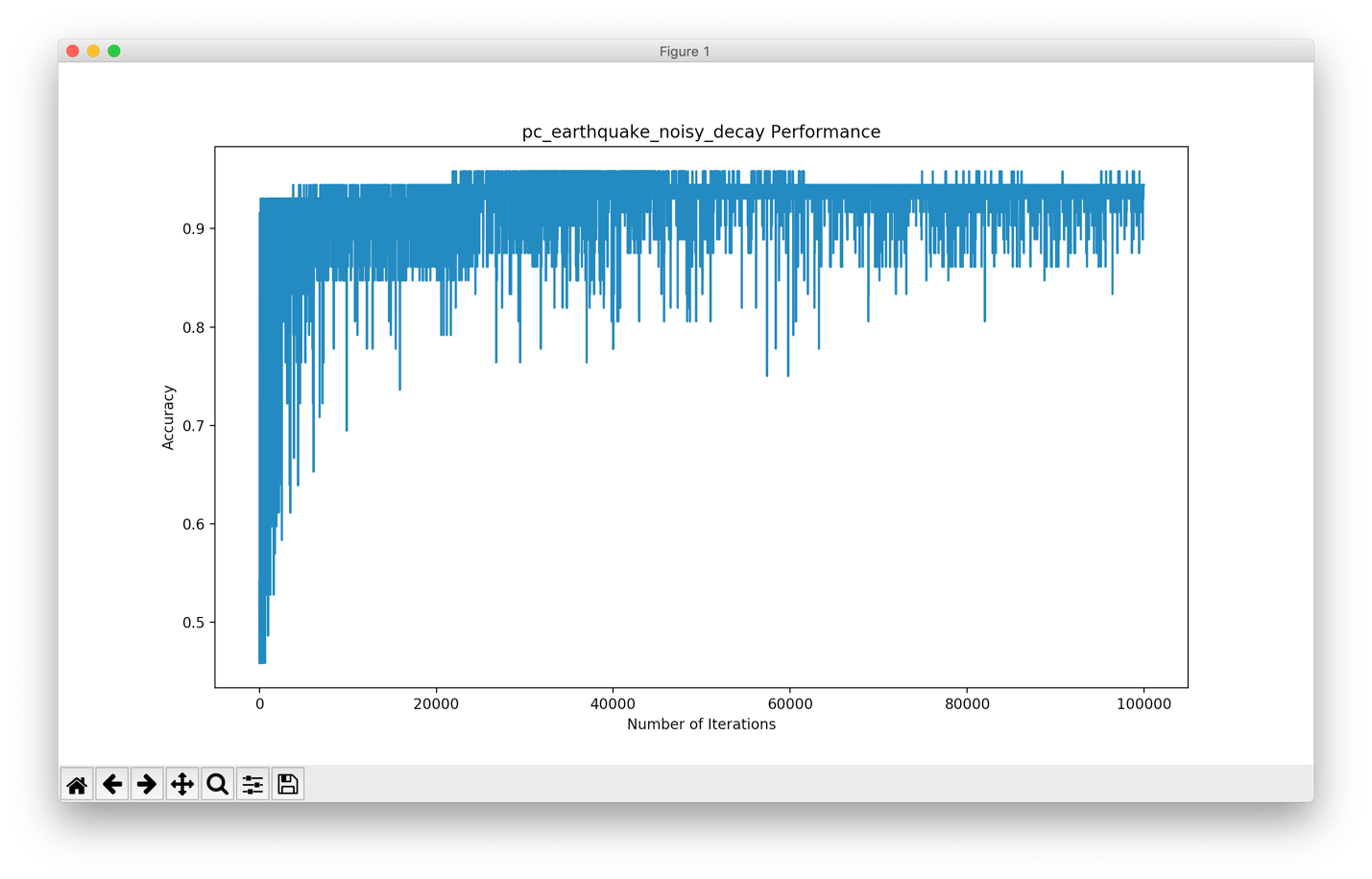


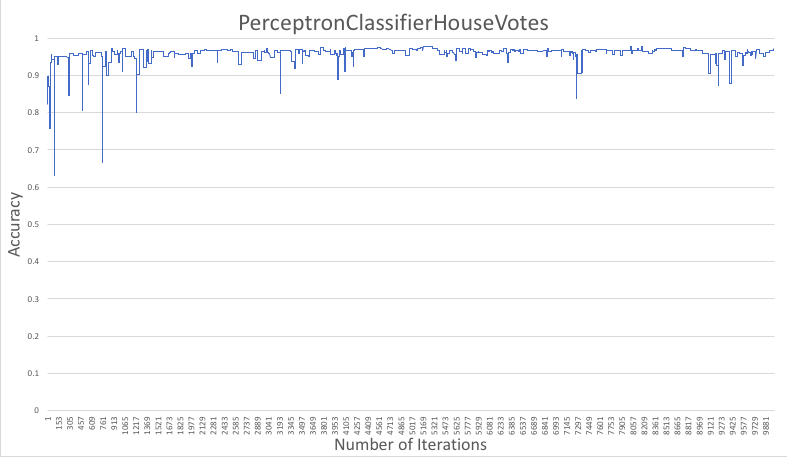


Perceptron Classifier:

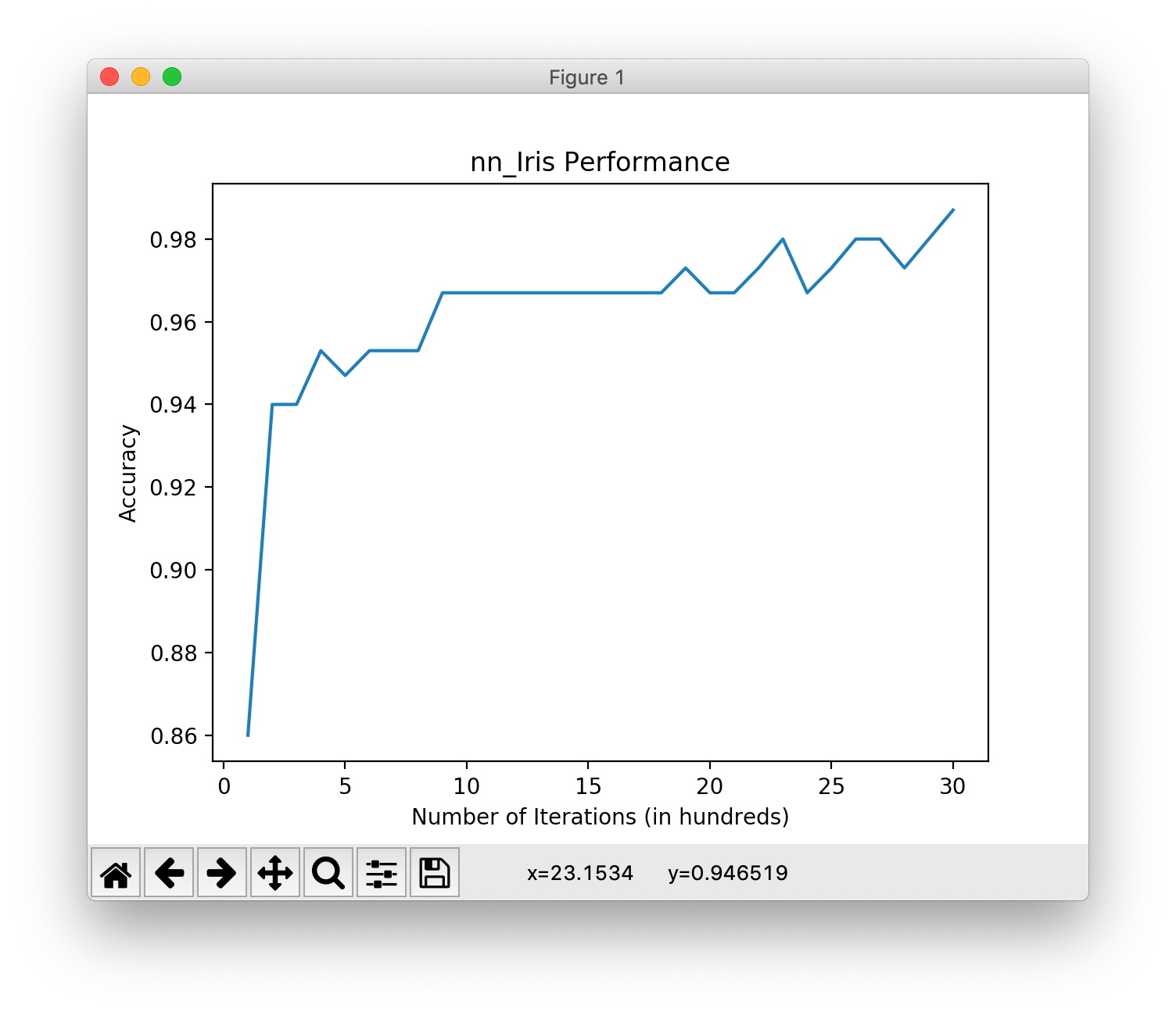


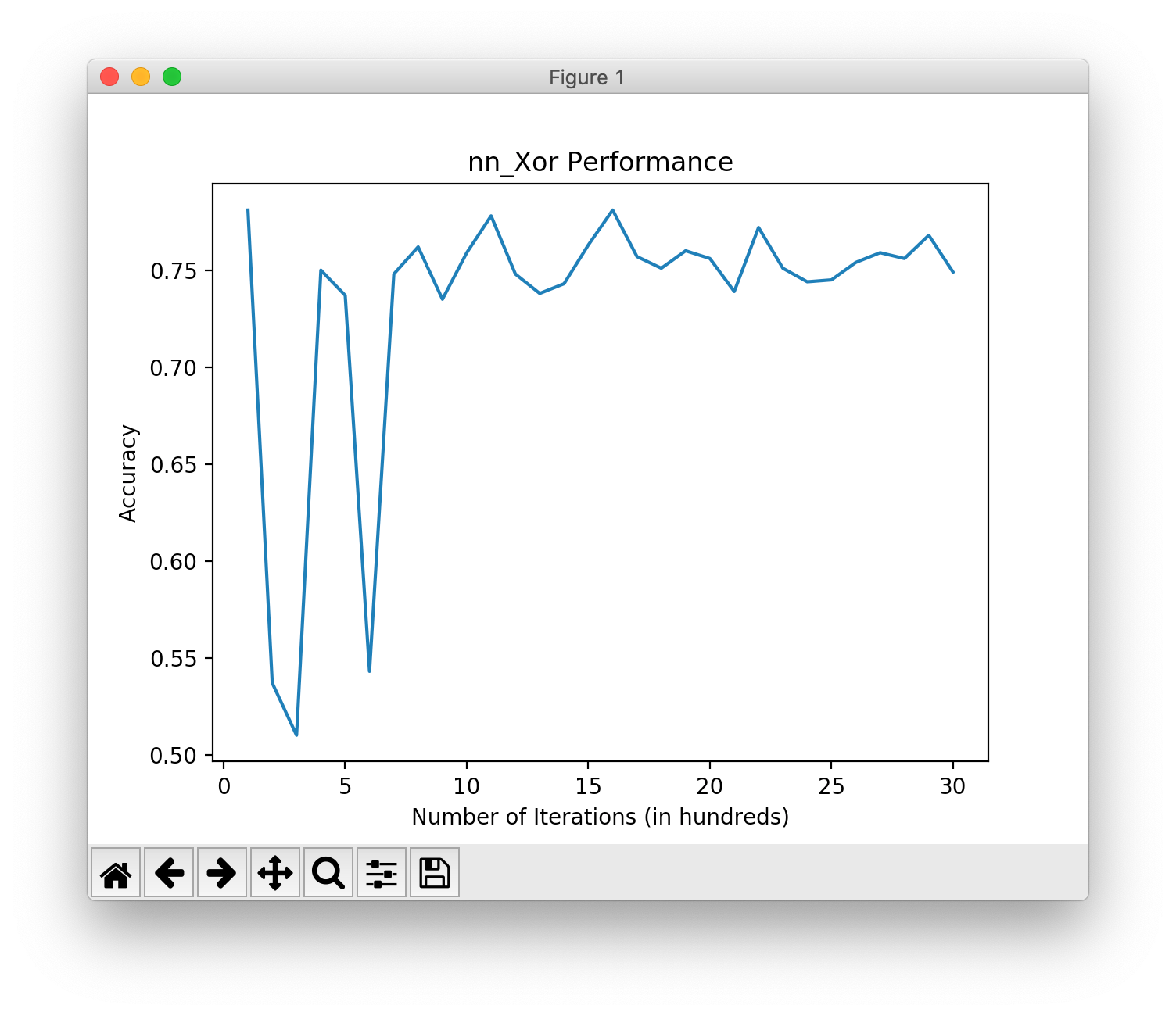


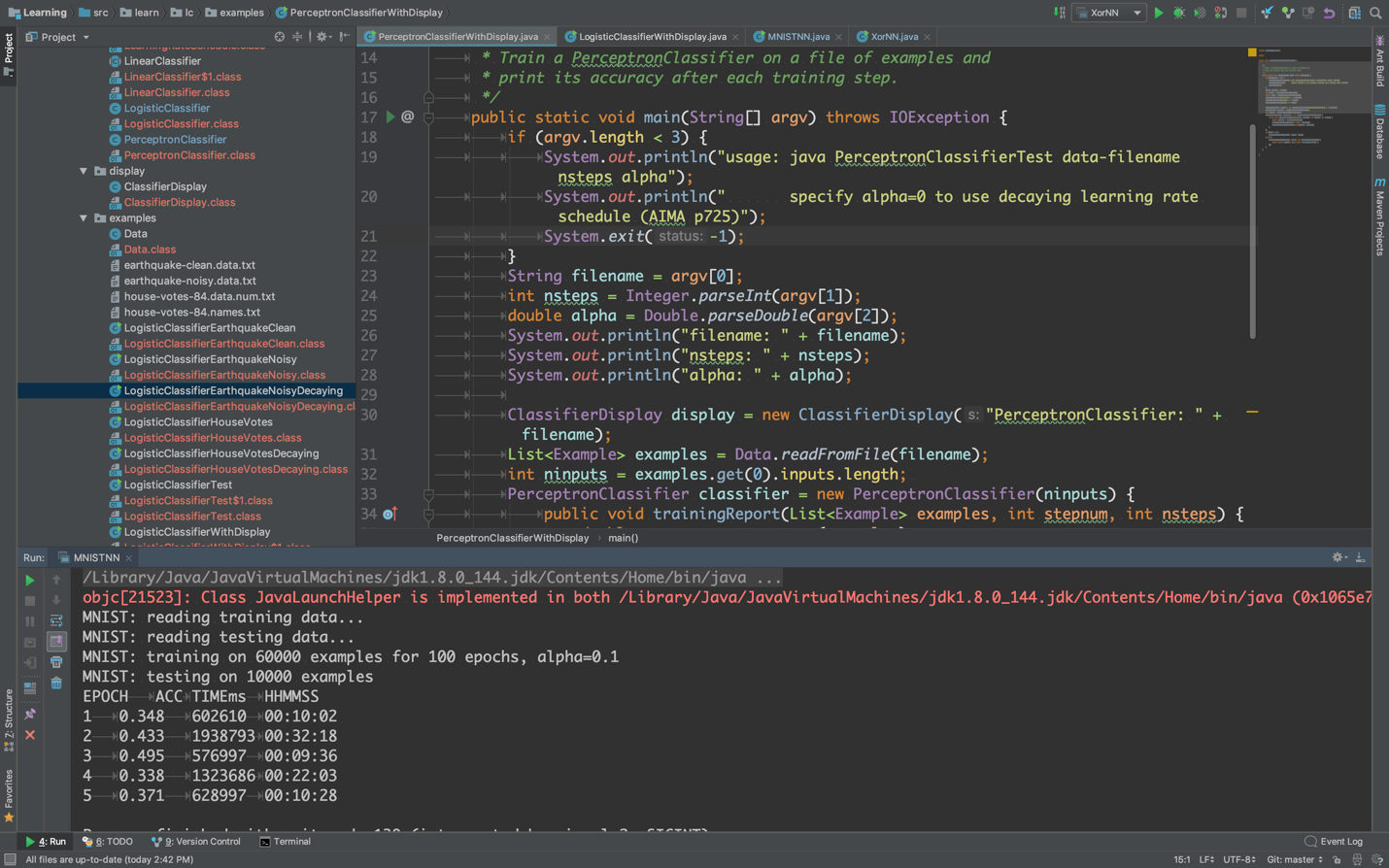




Neural Network:







Analysis and Explanation:

From many of the graphs, we can clearly see that as the number of iterations increases the accuracy is getting closer to 1, which shows that it is getting better and better.

Notice that the curve for perception classifier on earthquake noisy fluctuates around 0.5 and 0.9. This is because there is noisiness in the data, which causes the curve the fluctuates.

Moreover, when we run the code each time, we get different accuracies based on the iterations.