Name: Aditi Helekar UNCC ID: 800966667

Course: Machine Learning(ITCS_6156)

Neural Networks Algorithm Results

Name: Aditi Helekar UNCC ID: 800966667

Digit Recognition dataset:

Number of samples:

a. Training data: 3823

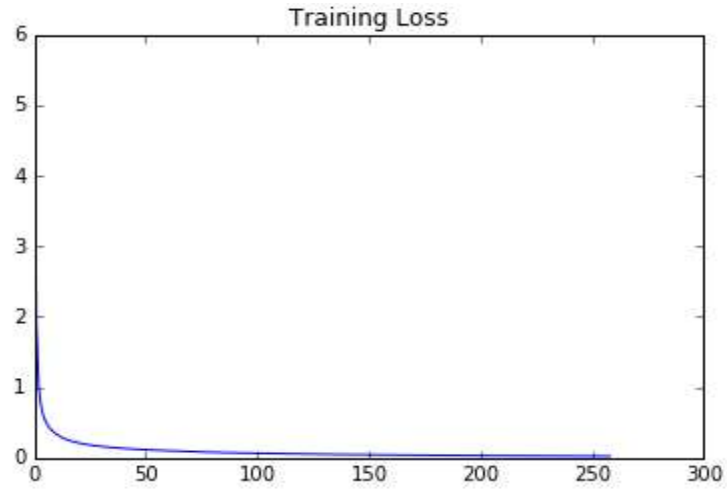
b. Test data: 1797

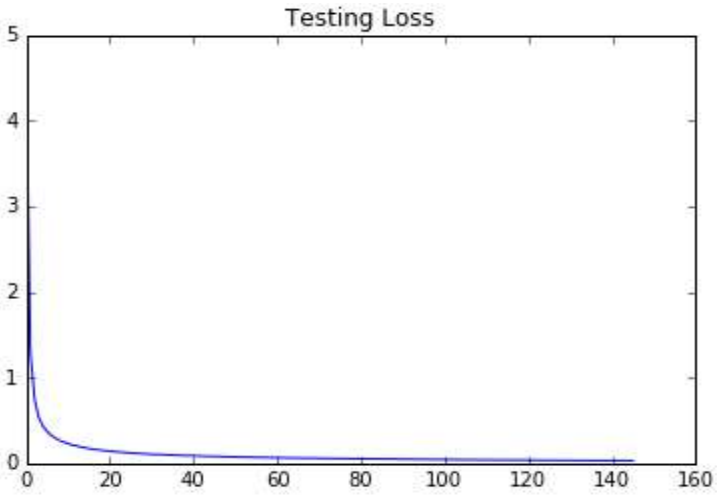
The figure below shows the output of program displaying the accuracy.

```
Training Accuracy: 0.967299
Training set loss: 0.022808
****************************
Testing Accuracy: 0.951559
Testing set loss: 0.030480
```

Training Accuracy = 0.9672 = 96.72%
Training loss = 0.0228 = 2.28%
Testing Accuracy = 0.9515 = 95.15%
Testing Loss = 0.0304 = 3.04%

Loss plots:

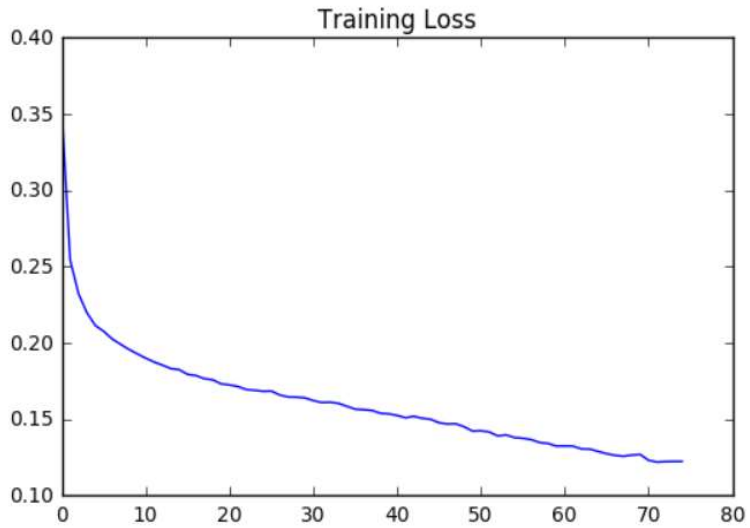


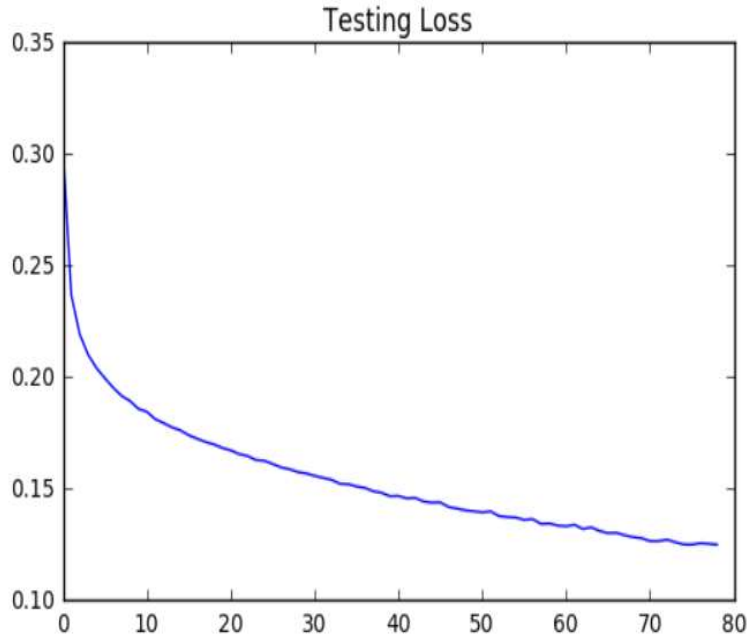


Name: Aditi Helekar UNCC ID: 800966667

Amazon dataset results:

1. Hidden layer neurons = 2
   Training Accuracy = 0.9023 = 90.23%
   Training loss = 0.1224 = 12.24%
   Testing Accuracy = 0.9067 = 90.67%
   Testing Loss = 0.125 = 12.5%
   Loss plots:





2. Hidden layer neurons = 10
   Training Accuracy = 0.9025 = 90.25%
   Training loss = 0.0716 = 7.16%
   Testing Accuracy = 0.9013 = 90.13%
   Testing Loss = 0.0492 = 4.92%
   Loss plots: