Neural Networks Report

After training the data and then reassigning the weights and testing it on the test data, I got around approximately **93% accuracy**. For this, in the beginning, I calculated the weights which had values ranging from -1 to 1 and shapes around sizes 784 x 30 and 30 x 10. This clearly indicated that we had around 784 inner layers, 30 hidden layers and 10 output layers as these weights served as connections from one layer to another. Then I fast propagated the values and got matrixes 1x30 and 1x10 respectively (sigmoid was applied on this as well). This along with the target labels were then passed for backward propagation where the errors were calculated in each layer. After finding the errors, we then passed these along with our input layer for updating our weights.

For the testing of data, after reading the files and reassigning the weights, the test and its labels were passed to the evaluate function which calculated the cross-entropy loss and the accuracy of the data.

Final Accuracy (After Testing on Test Data) -> Approximately **93 %**