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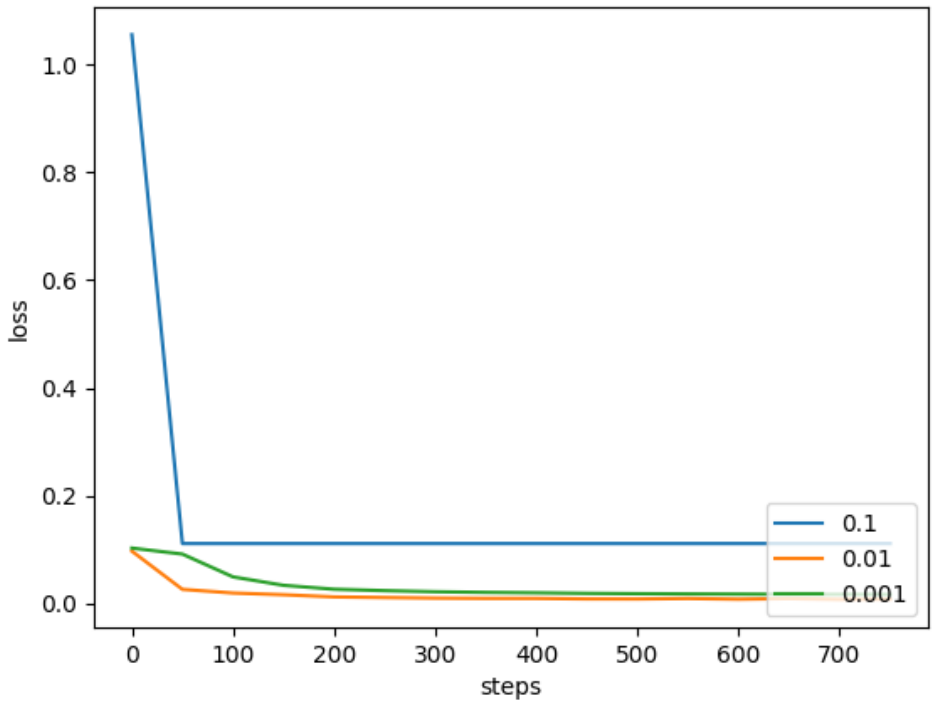
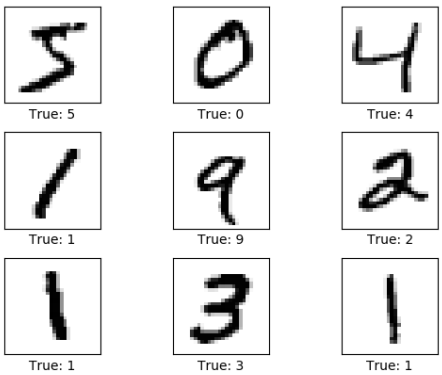
Deep Learning Lab
Exercise-3 Report

This was an interesting exercise where the goal was to create an autoencoder which was trained to recreate the given input to the network. This was not a very difficult exercise as we were already familiar with convolutional neural networks from the previous exercise and everything required for the exercise was already given in the exercise sheet.

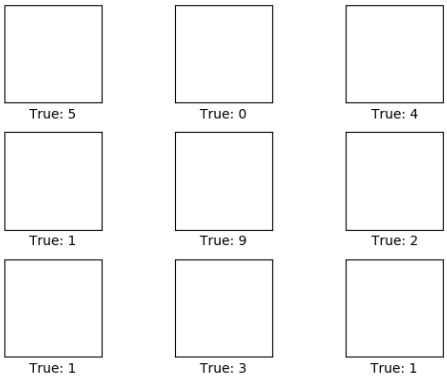
The first task was to implement the network for the autoencoder. The architecture was already given in the exercise sheet so it was straightforward. The second task was to train the autoencoder. In this task the function for calculating loss was also already provided. I trained the network for different learning rates. The best results were achieved when the learning rate of 0.01 was used. For the learning rate of 0.1, a blank image was produced because Adam optimizer needs lower learning rates.



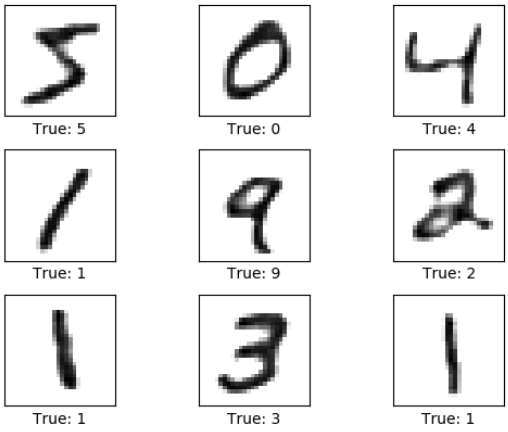
Following are the plotted images.



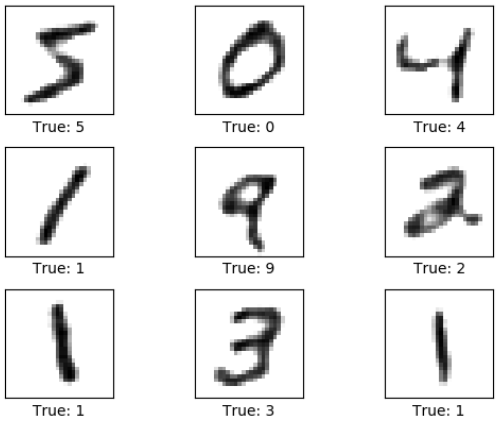
Original Image



Learning rate: 0.1



Learning rate: 0.01



Learning rate: 0.001