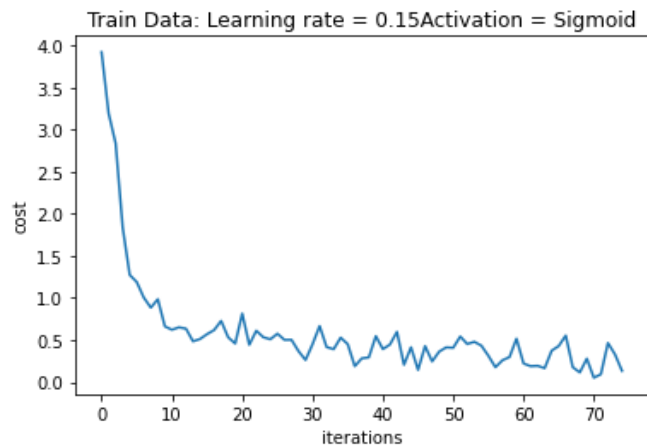
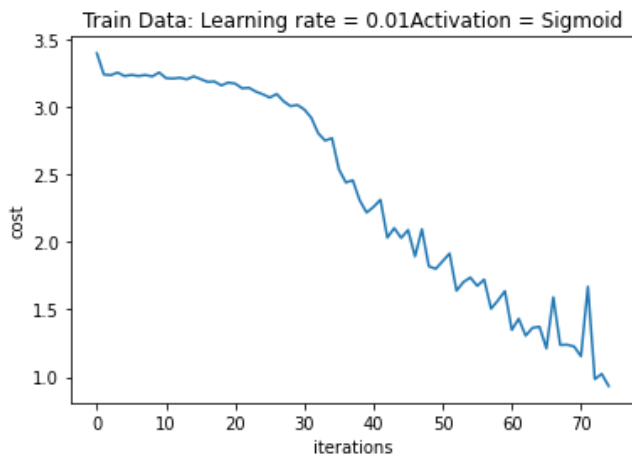


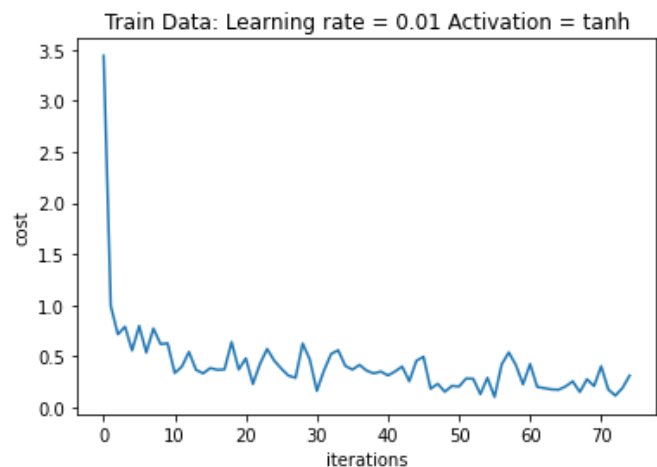
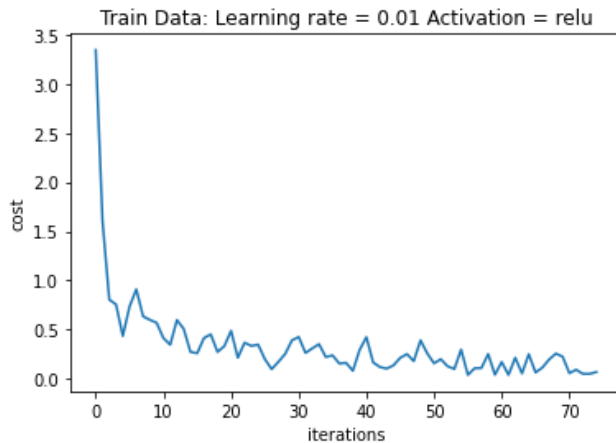
PA-1 Multi-layer Perceptron

Backpropagation from Scratch

Training the model using sigmoid activation with a learning rate of 0.01 gives accuracy of about 80%. Changing the learning rate to 0.15 improves the model.



We implement the ReLU and tanh activation functions as well.



Following is the train and test accuracy values

Activation	Learning rate	Train accuracy	Test accuracy
Sigmoid	0.01	80.945%	81.3%
Sigmoid	0.15	95.815%	95.36%
Tanh	0.01	96.423%	95.7%

We observe ReLU and tanh performing significantly well with the data.

MLP using Pytorch

The model performs well with the ADAM optimizer and gives a test accuracy of 97%