**Result**

C:\Users\Sreevatsa H V\Desktop\Assign3\DATA\car>python network.py car\_preprocessed.csv 80 10 2 4 2

Layer 0:

Neuron0 weights : [ 0.34394717 0.13308669 0.23314407 0.66070478]

Neuron1 weights : [ 0.34009137 0.64003331 0.74686884 0.59565272]

Neuron2 weights : [ 0.04158347 0.38779049 0.53296826 0.92367841]

Neuron3 weights : [ 0.30598675 0.64109289 0.67717377 0.00867594]

Neuron4 weights : [ 0.44787687 0.83774676 0.79310445 0.30698079]

Neuron5 weights : [ 0.94586966 0.5265626 0.42073995 0.82106585]

Layer 1:

Neuron0 weights : [ 0.18371932 0.96023572]

Neuron1 weights : [ 0.71956089 0.49172224]

Neuron2 weights : [ 0.4362601 0.30781075]

Neuron3 weights : [ 0.13009802 0.78529069]

Neuron4 weights : [ 0.01719786 0.34617283]

Layer 2:

Neuron0 weights : [-1.10752878]

Neuron1 weights : [-0.37284428]

Neuron2 weights : [-0.52605005]

Total training error = 0.0601828194422

Total test error = 0.0692952253363

**Analysis**

The pre-processing included removal of any data row that contained one or more null values or empty values. Any value other than numeric values are converted to numerical values within a particular range.

The experiment was conducted by changing the parameters like number of iterations, number of hidden layers, nodes in the hidden layers and split of data into training and test data sets.

The best result was obtained as seen above. We observed that as the number of iterations increased, there was a small improvement in accuracy. As the number of hidden layers increased, the accuracy decreased as the number of attributes used was less and hence caused overfitting.