Pre-processing strategy

- The car evaluation dataset contains 6 attributes, each of categorical data type.
- There are no missing values in the dataset.
- Encoding is performed using the following logic:
- Each unique value of an attribute is given a value
- Example:
  Buying has 4 values: v-high, high, med, low
  v-high = 0
  high = 1
  med = 2
  low = 3
- Similarly for other attributes, encoding is done.
- The class labels are also categorical: unacc, acc, good, v-good
- The are given values as 0, 1, 2, 3, and for computation purpose, these are scaled to the range 0-1.
- Labels:
  Unacc: 0
  Acc: 0.33
  Good: 0.66
  V-good: 1

Best Parameters

Training Size = 90

Max Iterations = 70

Learning Rate = 0.95

No. of Hidden Layers = 3

No. of Hidden Nodes in each layer = 4, 2, 3

Best Results

Training Accuracy = 85.27

Testing Accuracy = 84.97

Log of Experiments

Training Size = 80

Max Iterations = 100

Learning Rate = 0.9

No. of Hidden Layers = 2

No. of Hidden Nodes in each layer = 3, 2

Training Accuracy = 69.82

Testing Accuracy = 70.81

Training Size = 80

Max Iterations = 200

Learning Rate = 0.9

No. of Hidden Layers = 4

No. of Hidden Nodes in each layer = 3, 3, 2, 2

Training Accuracy = 74.60

Testing Accuracy = 75.43

Training Size = 90

Max Iterations = 70

Learning Rate = 0.95

No. of Hidden Layers = 3

No. of Hidden Nodes in each layer = 4, 2, 3

Training Accuracy = 85.27

Testing Accuracy = 84.97

Training Size = 50

Max Iterations = 50

Learning Rate = 0.8

No. of Hidden Layers = 3

No. of Hidden Nodes in each layer = 3, 2, 1

Training Accuracy = 77.89

Testing Accuracy = 73.49