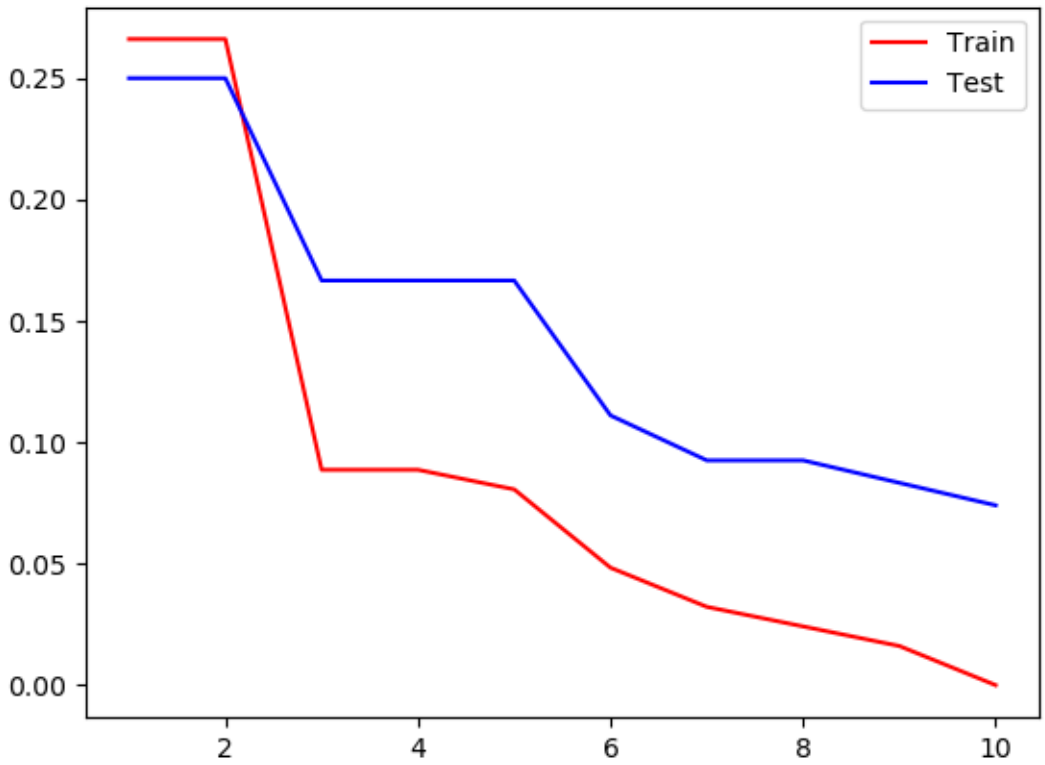
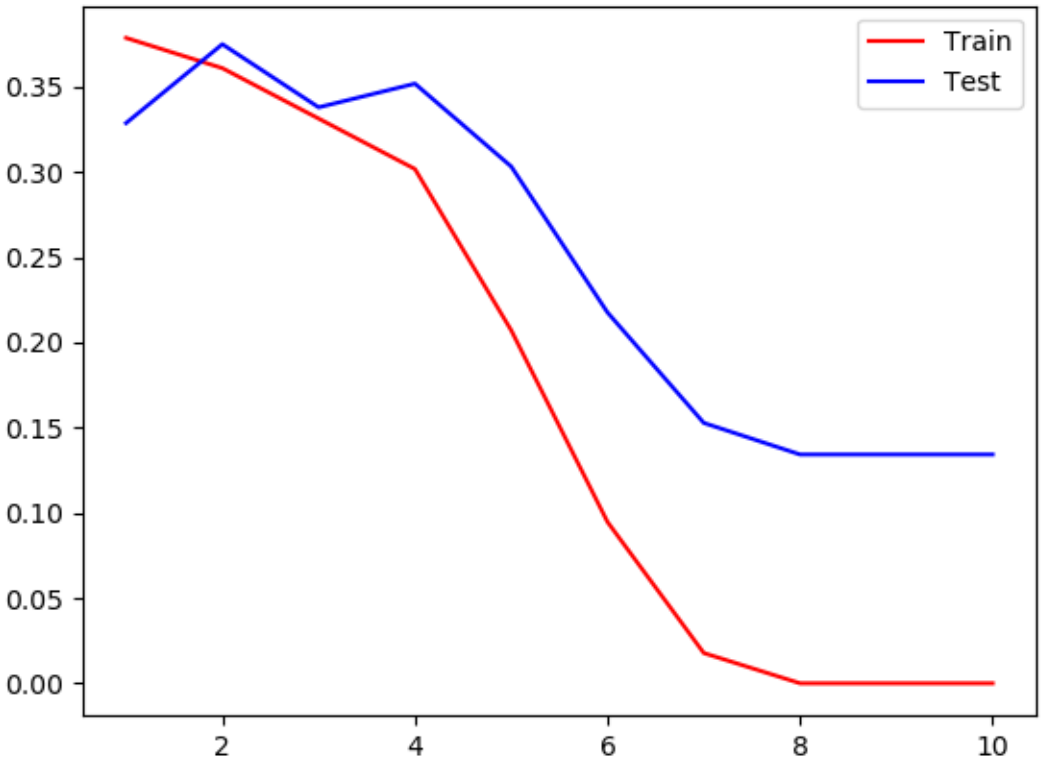
Leaners Curves

Below are three plots, one for each MONK's problem which plots training and test error curves for each problem with tree depth on the **x-axis** and error on the **y-axis**.

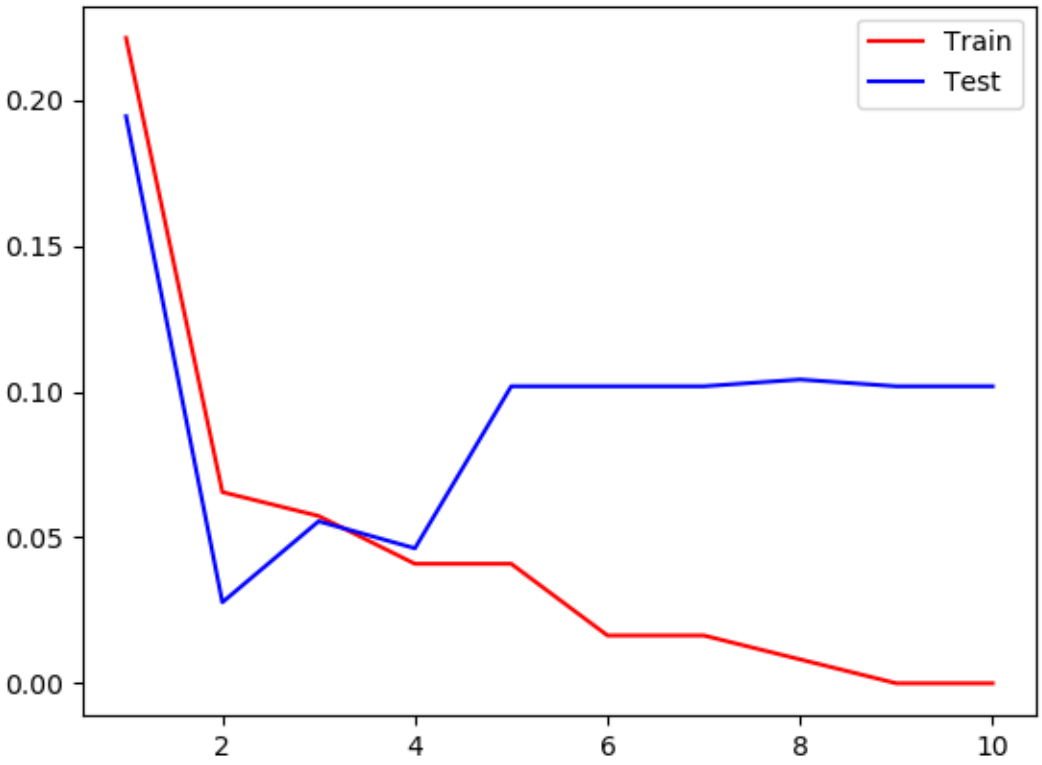
PLOT 1 : MONKS – 1



PLOT 2 : MONKS – 2



PLOT 3 : MONKS – 3

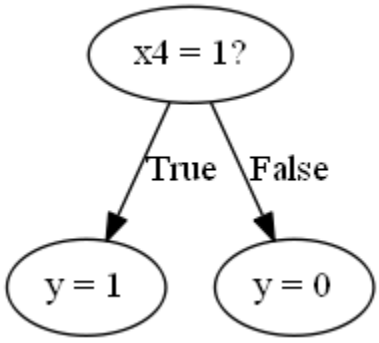


WEAK LEARNERS

MONKS – 1 :

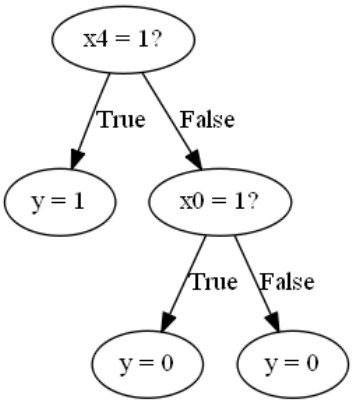
Decision tree – depth = 1

Decision tree for MONKS - 1 dataset for depth = 1



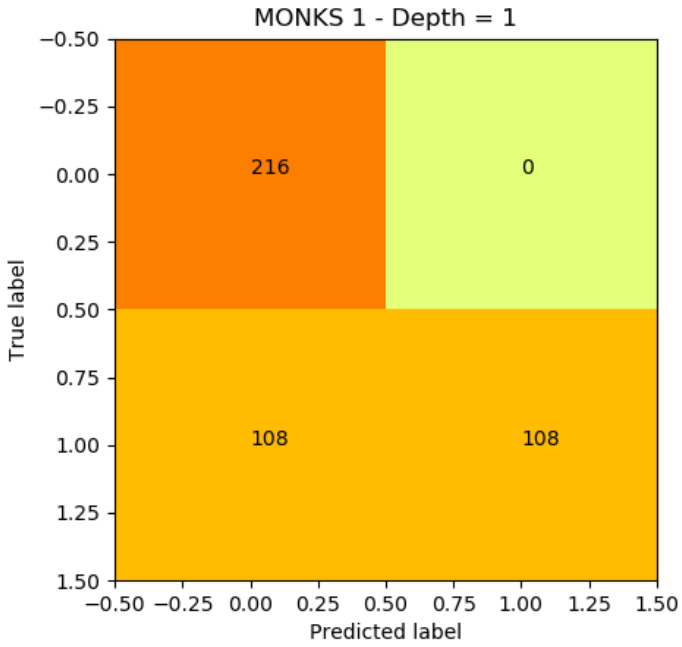
Decision tree – depth = 2

Decision tree for MONKS - 1 dataset for depth = 2



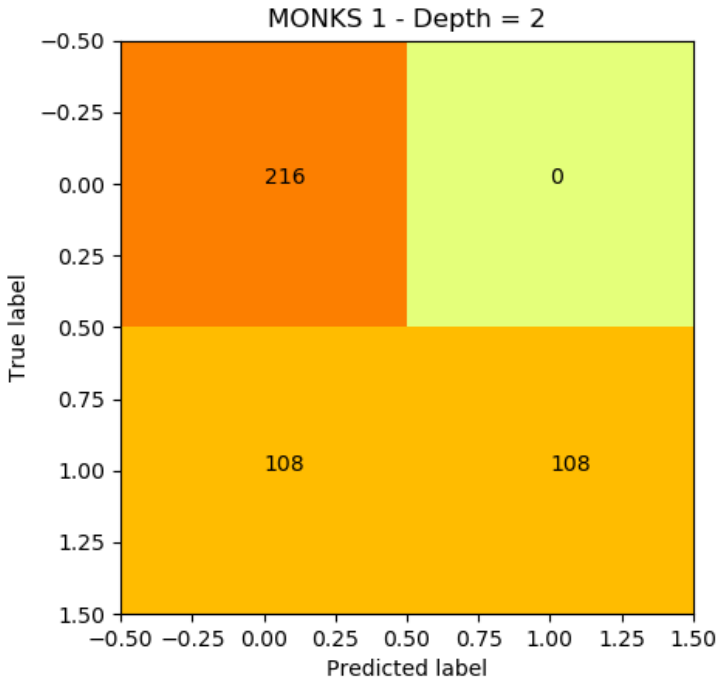
Confusion Matrix – depth 1

Confusion matrix for MONKS - 1 dataset for depth = 1



Confusion Matrix – depth 2

Confusion matrix for MONKS - 1 dataset for depth = 2

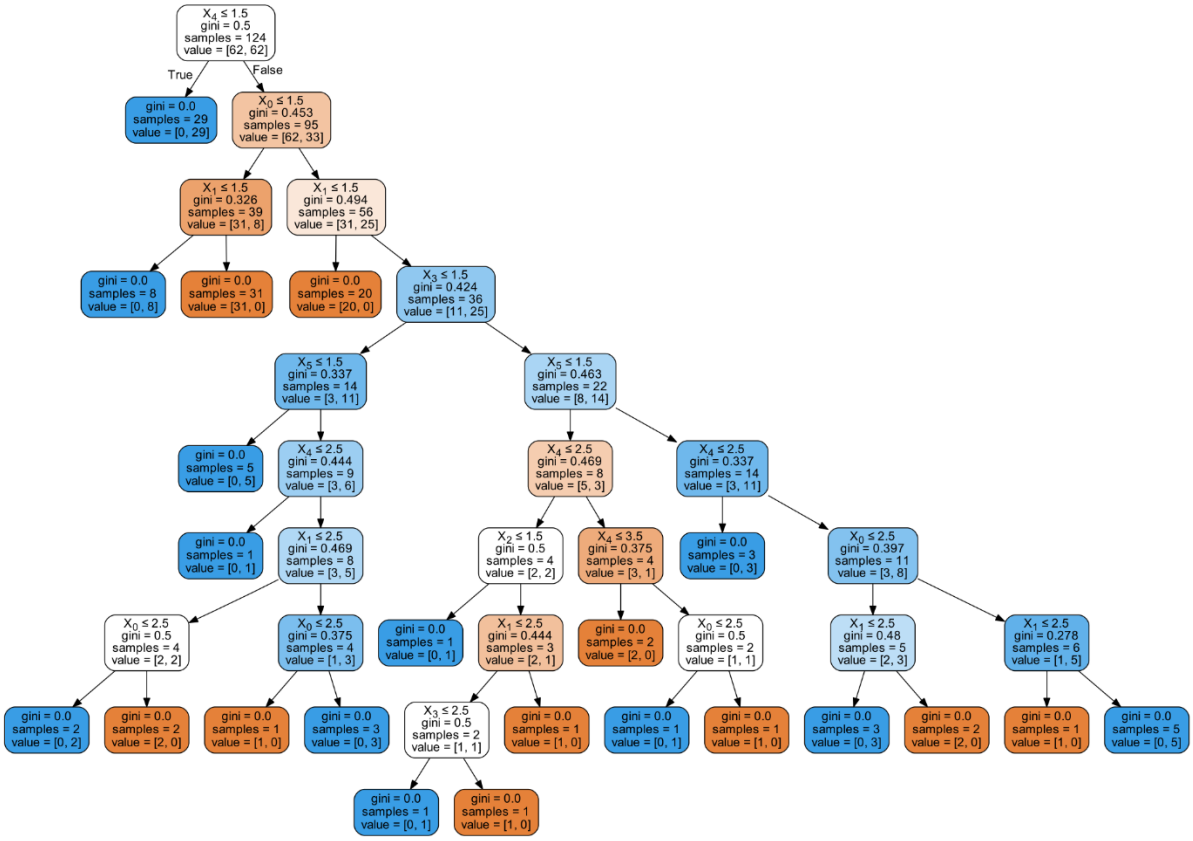


SCIKIT – LEARN

MONKS – 1

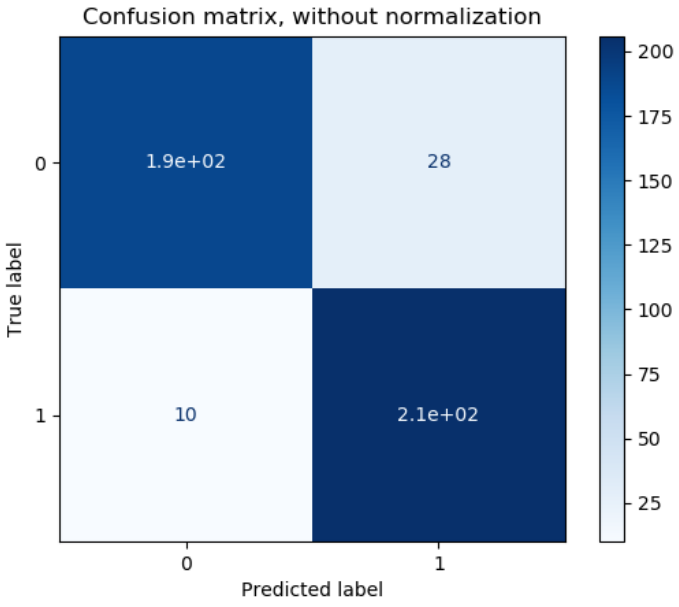
Decision Tree

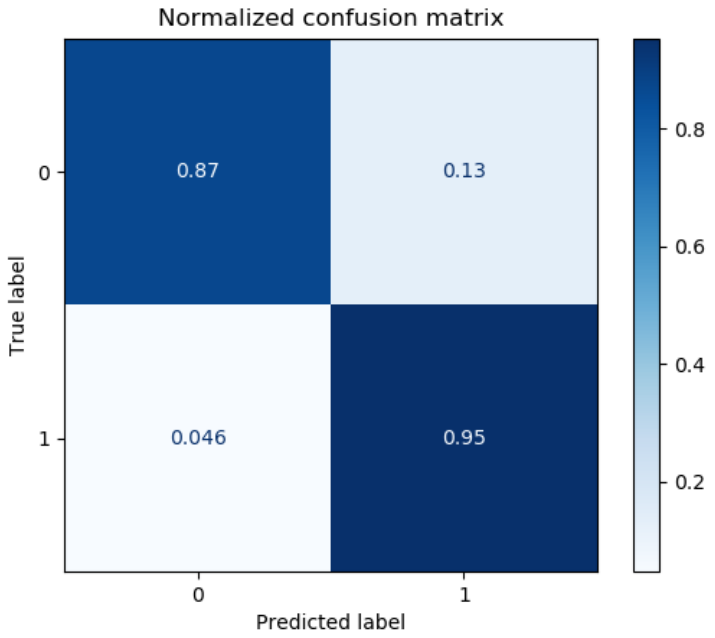
This is the visualized decision tree for MONKS - 1 dataset.



Confusion Matrix :

Below are non-normalized and normalized confusion matrix for MONKS-1 dataset created from scikit.

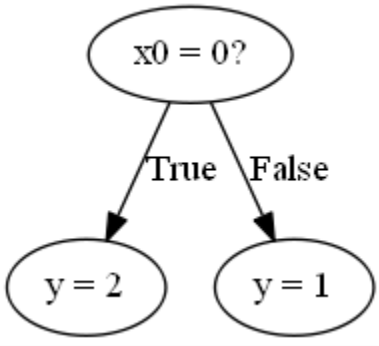




OTHER DATA SETS (Balance Scale Weight & Distance Database)

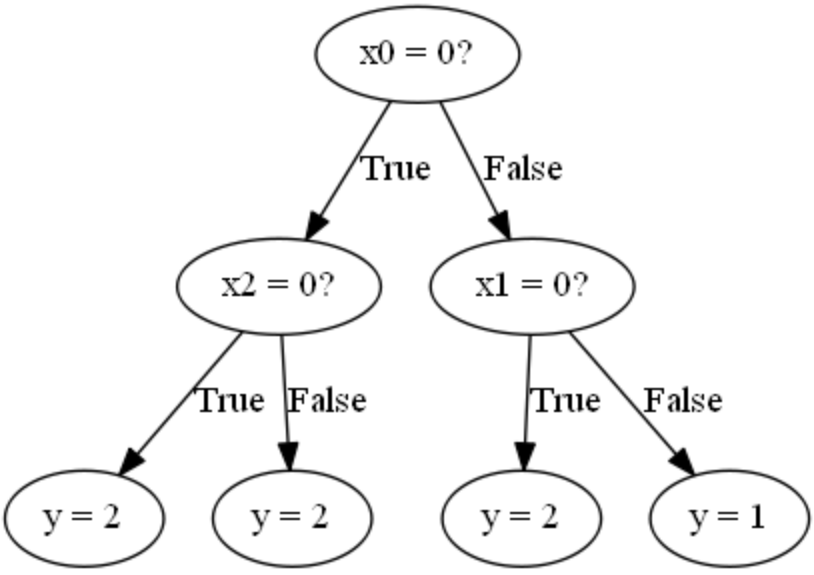
Decision tree – depth = 1 :

Decision tree for BALANCE-SCALE dataset for depth = 1



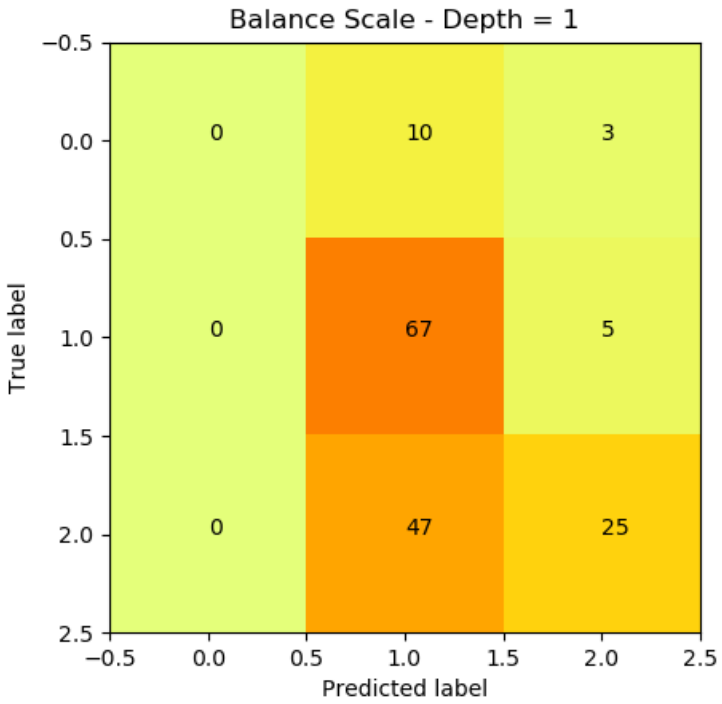
Decision tree – depth = 2 :

Decision tree for BALANCE-SCALE dataset for depth = 2



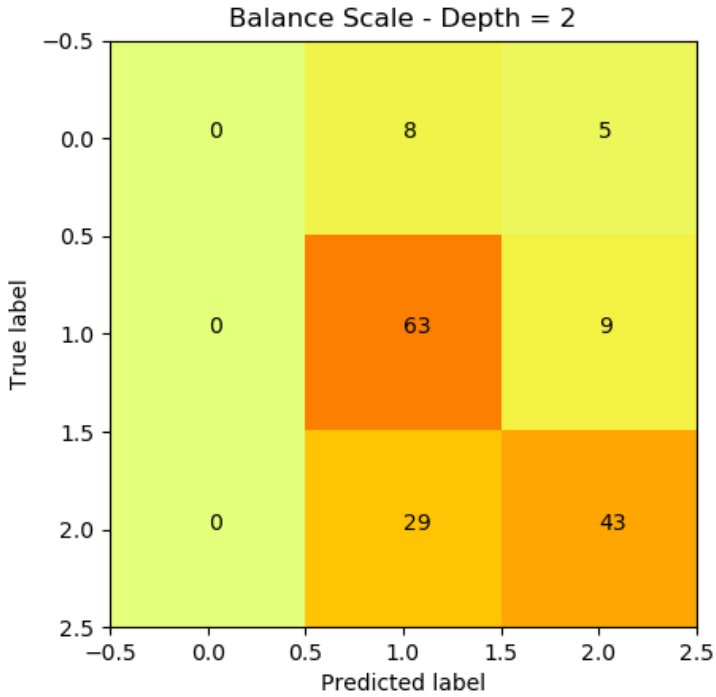
Confusion Matrix – depth = 1 :

Confusion matrix for BALANCE-SCALE dataset for depth = 1



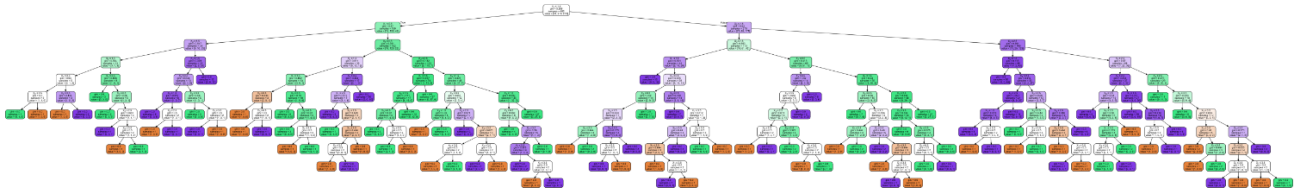
Confusion Matrix – depth = 2 :

Confusion matrix for BALANCE-SCALE dataset for depth = 2



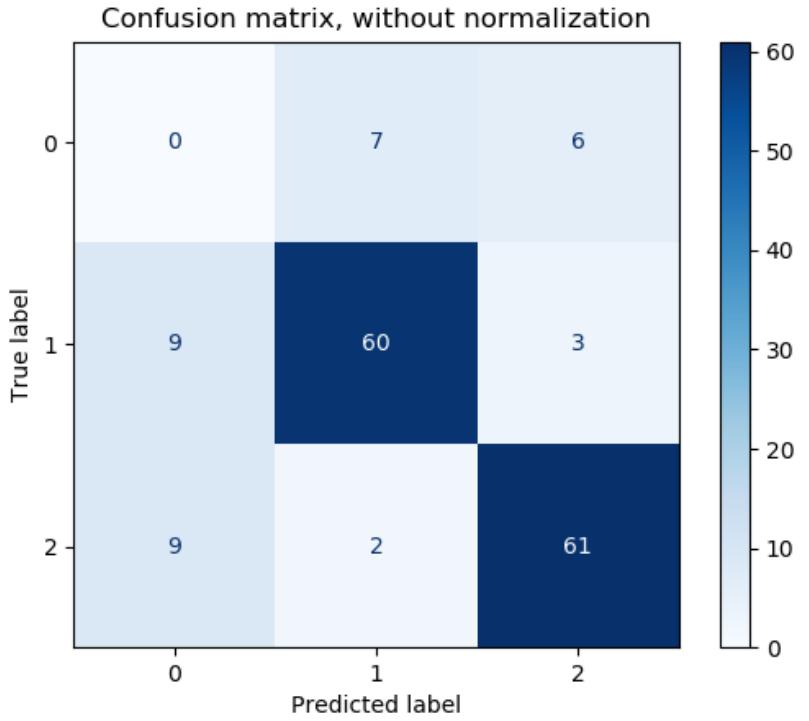
SCIKIT – Decision Tree

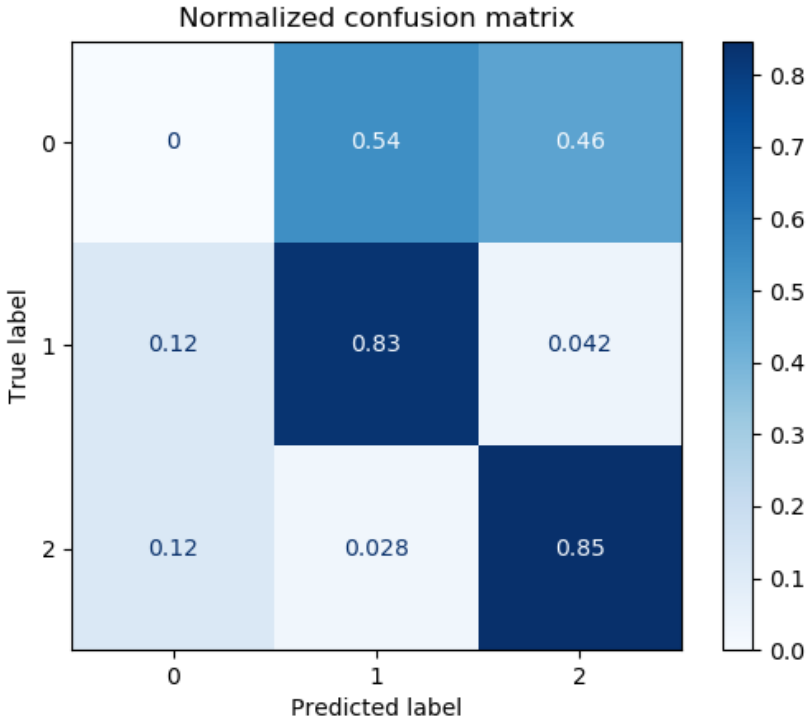
The decision tree made for BALANCE-SCALE dataset from scikit is too big to be visualized with this report. So a pdf containing this decision tree is attached in this submission named "**balance_scale-scikit.pdf**".



SCIKIT – Confusion Matrix :

Below are non-normalized and normalized confusion matrix for BALANCE-SCALE dataset created from scikit.


Confusion matrix, without normalization
0
7
6
9
60
3
9
2
61
True label
Predicted label
0
1
2
60
50
40
30
20
10
0


Normalized confusion matrix
0
0.54
0.46
0.12
0.83
0.042
0.12
0.028
0.85
True label
Predicted label
0
1
2
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0