Step 1 Results:

Accuracy of the random forest: 97.6744186047%.

Step 2 Results:

MPG Classifier Results:

Random Forest Confusion Matrix

MPG 1 2 3 4 5 6 7 8 9 10 Total Recognition(%)

----- --- --- --- --- --- --- --- --- --- ---- ------- ----------------

1 12 0 0 0 0 0 0 0 0 0 12 100

2 0 5 0 0 0 0 0 0 0 0 5 100

3 0 0 14 0 0 0 0 0 0 0 14 100

4 0 0 0 17 0 0 0 0 0 0 17 100

5 0 0 0 0 17 0 0 0 0 0 17 100

6 0 0 0 0 0 4 0 0 0 0 4 100

7 0 0 0 0 0 0 8 0 0 0 8 100

8 0 0 0 0 0 0 0 7 0 0 7 100

9 0 0 0 0 0 0 0 0 0 0 0 0

10 0 0 0 0 0 0 0 0 0 0 0 0

Lone Tree Confusion Matrix

MPG 1 2 3 4 5 6 7 8 9 10 Total Recognition(%)

----- --- --- --- --- --- --- --- --- --- ---- ------- ----------------

1 12 0 0 0 0 0 0 0 0 0 12 100

2 0 5 0 0 0 0 0 0 0 0 5 100

3 0 0 14 0 0 0 0 0 0 0 14 100

4 0 0 0 17 0 0 0 0 0 0 17 100

5 0 0 0 1 16 0 0 0 0 0 17 94.1176

6 0 0 0 0 0 4 0 0 0 0 4 100

7 0 0 0 0 0 0 8 0 0 0 8 100

8 0 0 0 0 0 0 0 7 0 0 7 100

9 0 0 0 0 0 0 0 0 0 0 0 0

10 0 0 0 0 0 0 0 0 0 0 0 0

Random Forest accuracy: 100.0%.

Lone Tree accuracy: 98.8095238095%.

Titanic Survival Classifier Results:

Random Forest Confusion Matrix

Survived yes no Total Recognition(%)

---------- ----- ---- ------- ----------------

yes 444 41 485 91.5464

no 135 112 247 45.3441

Lone Tree Confusion Matrix

Survived yes no Total Recognition(%)

---------- ----- ---- ------- ----------------

yes 376 109 485 77.5258

no 127 120 247 48.583

Random Forest accuracy: 75.956284153%.

Lone Tree accuracy: 67.7595628415%.

Step 3 Results:

Best M, N, and F values for Auto Dataset

M: 57 N: 220 F: 2

MPG 1 2 3 4 5 6 7 8 9 10 Total Recognition(%)

----- --- --- --- --- --- --- --- --- --- ---- ------- ----------------

1 7 0 0 0 0 0 0 0 0 0 7 100

2 0 6 0 0 0 0 0 0 0 0 6 100

3 0 0 8 0 0 0 0 0 0 0 8 100

4 0 0 0 21 0 0 0 0 0 0 21 100

5 0 0 0 0 18 0 0 0 0 0 18 100

6 0 0 0 0 0 5 0 0 0 0 5 100

7 0 0 0 0 0 0 9 0 0 0 9 100

8 0 0 0 0 0 0 0 3 0 0 3 100

9 0 0 0 0 0 0 0 0 1 0 1 100

10 0 0 0 0 0 0 0 0 0 0 0 0

Random Forest accuracy: 100%.

Lone Tree accuracy: 97.8723404255%.

Best M, N, and F values for Titanic Dataset

M: 21 N: 620 F: 2

Survived yes no Total Recognition(%)

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yes 470 17 487 96.5092

no 138 108 246 43.9024

Random Forest accuracy: 79.3565683646%.

Lone Tree accuracy: 67.4262734584%.

Step 4 Results:

Best M, N, and F values for Tumor Dataset

M: 75 N: 740 F: 2

Tumor Classifier Results:

Random Forest Confusion Matrix

Tumor 2 4 Total Recognition(%)

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2 148 2 150 98.6667

4 2 69 71 97.1831

Lone Tree Confusion Matrix

Tumor 2 4 Total Recognition(%)

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2 141 9 150 94

4 10 61 71 85.9155

Random Forest accuracy: 98.1900452489%.

Lone Tree accuracy: 91.4027149321%.