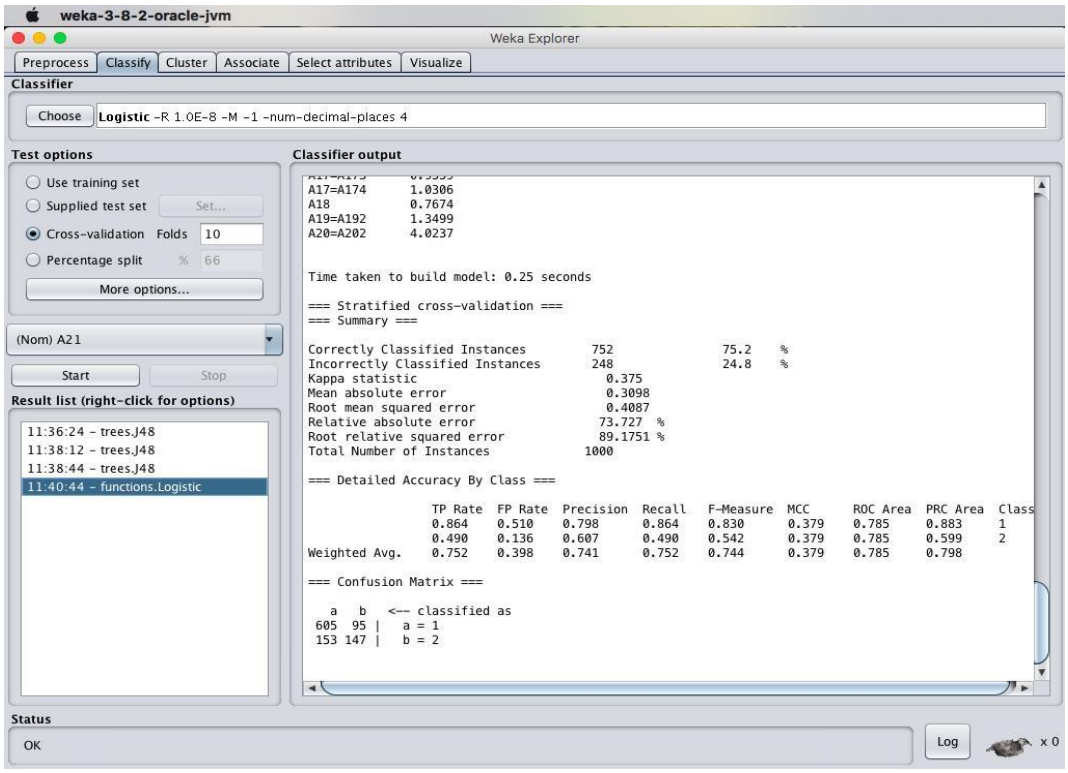
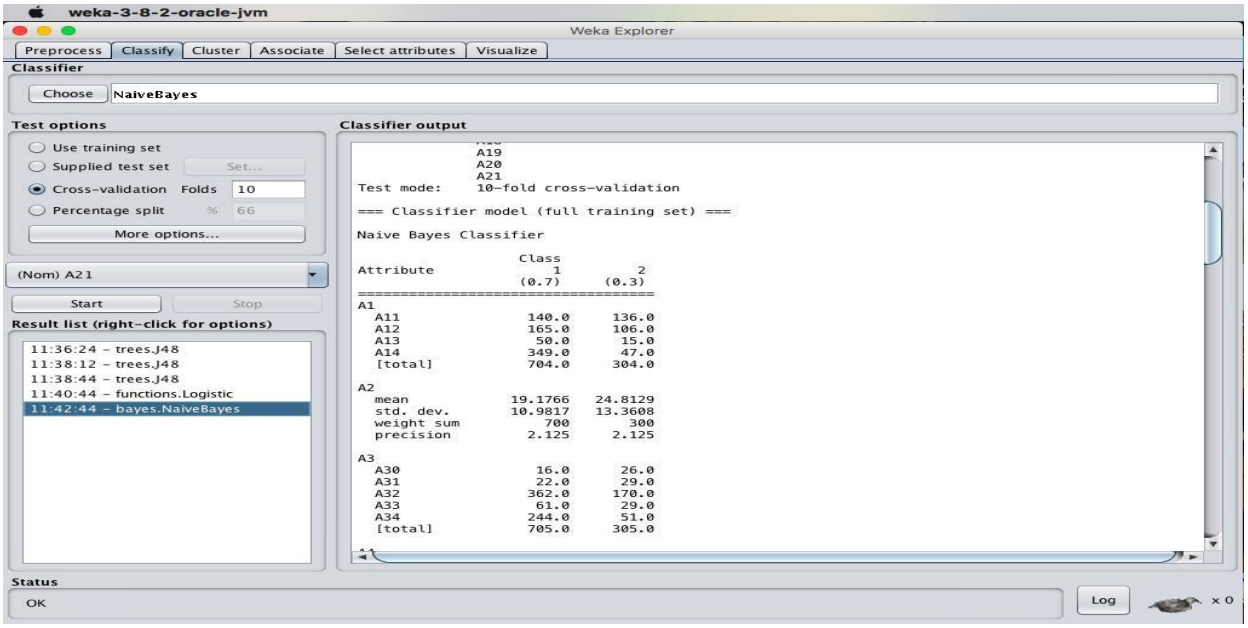
EXPERIMENT-13

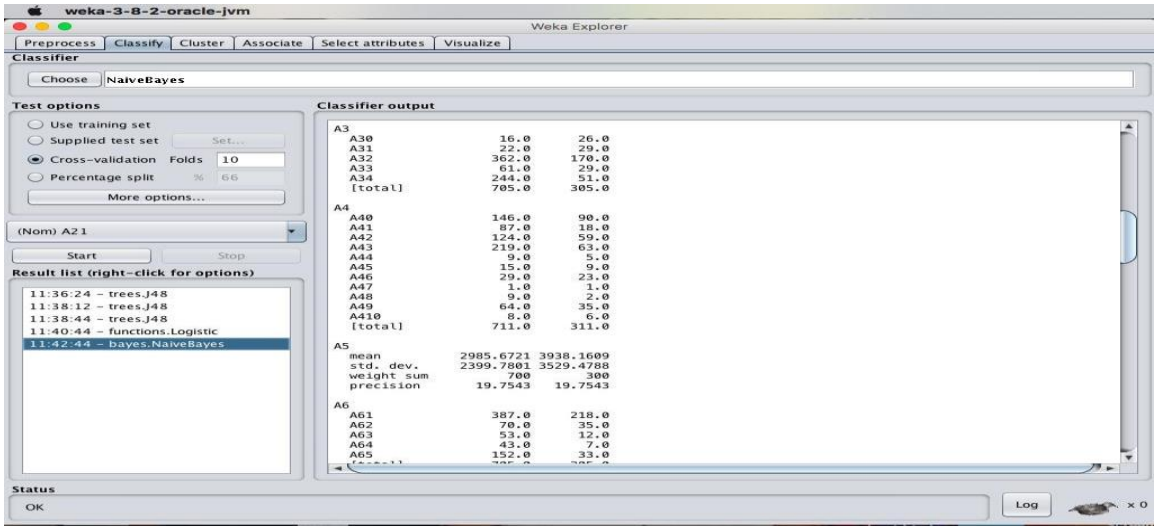
EVALUATING ACCURACY OF THE CLASSIFIERS

OUTPUT:

ANALYSIS:




weka-3-8-2-oracle-jvm
Weka Explorer
Preprocess
Classify
Cluster
Associate
Select attributes
Visualize
Classifier
Choose
NaiveBayes
Test options
Use training set
Supplied test set
Set...
Cross-validation
Folds
10
Percentage split
%
66
More options...
(Nom) A21
Start
Stop
Result list (right-click for options)
11:36:24 - trees.J48
11:38:12 - trees.J48
11:38:44 - trees.J48
11:40:44 - functions.Logistic
11:42:44 - bayes.NaiveBayes
Classifier output
A19
A20
A21
Test mode: 10-fold cross-validation
=== Classifier model (full training set) ===
Naive Bayes Classifier
Class
Attribute 1 2
(0.7) (0.3)
A1
A11 140.0 136.0
A12 165.0 106.0
A13 50.0 15.0
A14 349.0 47.0
[total] 704.0 304.0
A2
mean 19.1766 24.8129
std. dev. 10.9817 13.3608
weight sum 700 300
precision 2.125 2.125
A3
A30 16.0 26.0
A31 22.0 29.0
A32 362.0 170.0
A33 61.0 29.0
A34 244.0 51.0
[total] 705.0 305.0
Status
OK
Log
x 0


weka-3-8-2-oracle-jvm
Weka Explorer
Preprocess
Classify
Cluster
Associate
Select attributes
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Classifier
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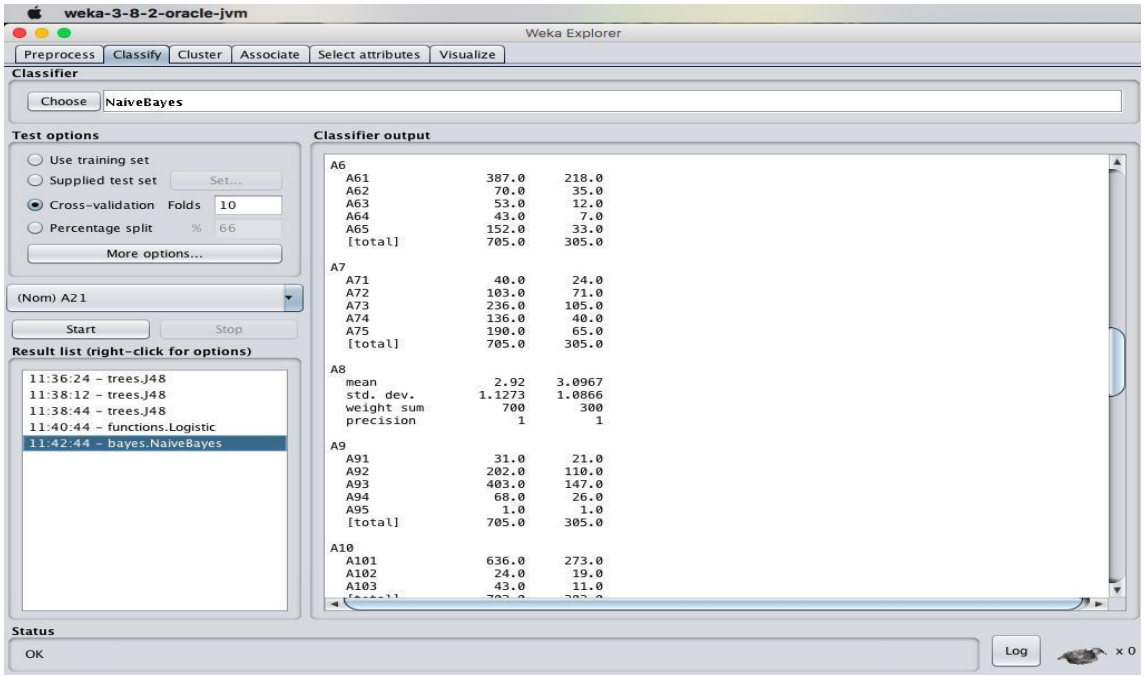
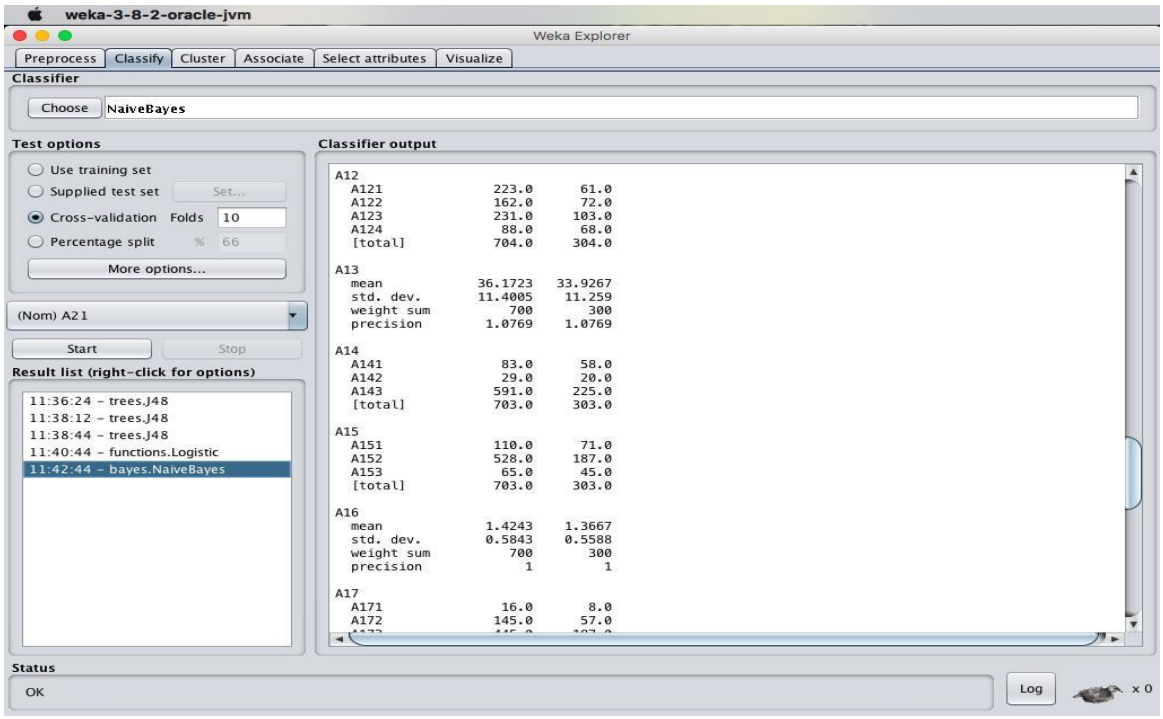
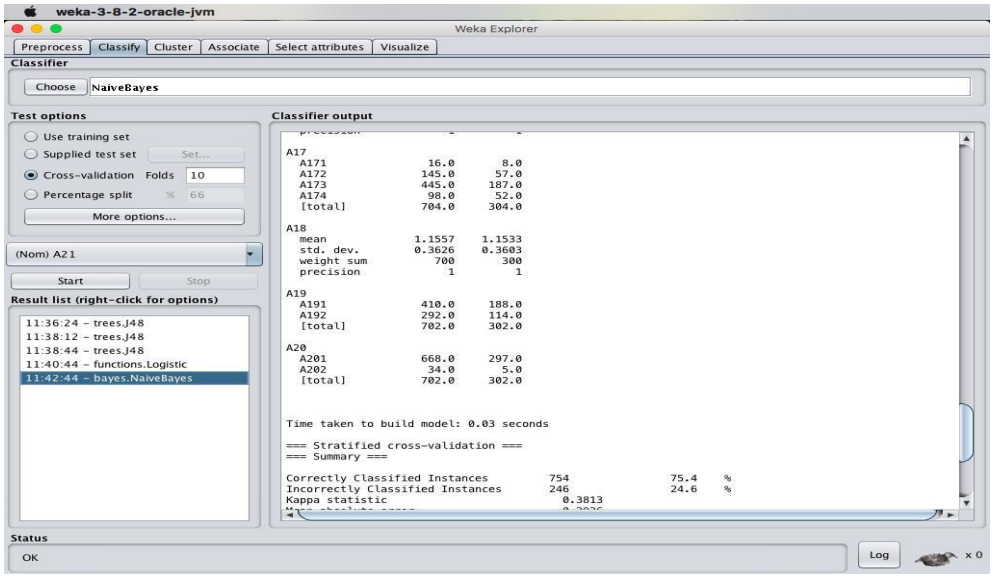
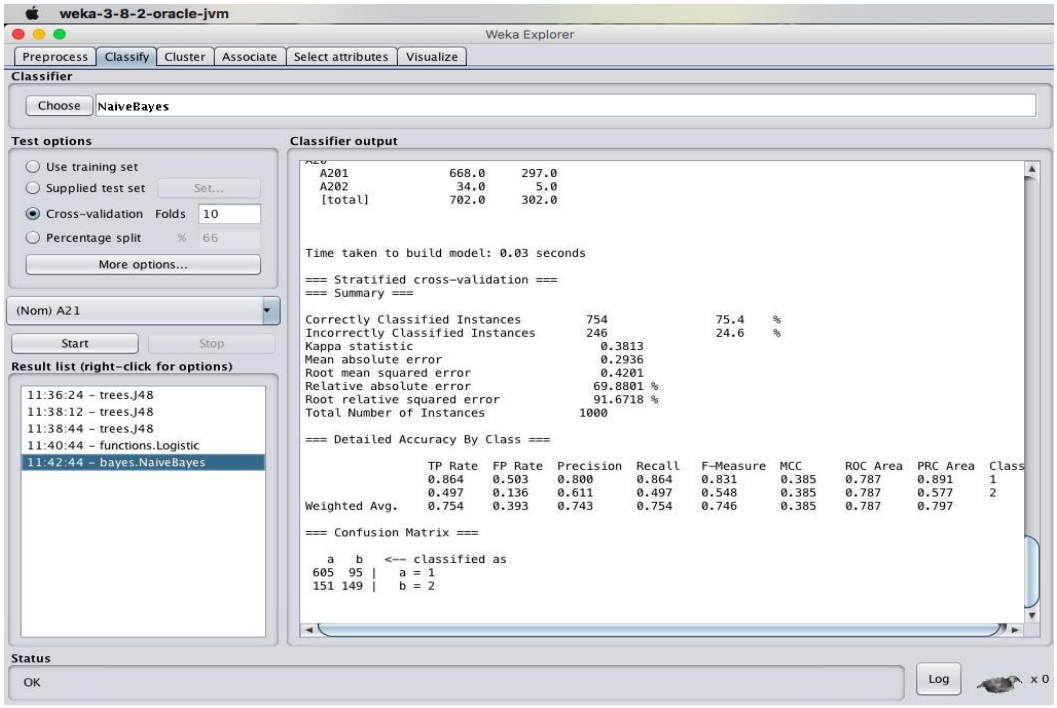
NaiveBayes
Test options
Use training set
Supplied test set
Set...
Cross-validation
Folds
10
Percentage split
%
66
More options...
(Nom) A21
Start
Stop
Result list (right-click for options)
11:36:24 - trees.J48
11:38:12 - trees.J48
11:38:44 - trees.J48
11:40:44 - functions.Logistic
11:42:44 - bayes.NaiveBayes
Classifier output
A3
A30 16.0 26.0
A31 22.0 29.0
A32 362.0 170.0
A33 61.0 29.0
A34 244.0 51.0
[total] 705.0 305.0
A4
A40 146.0 90.0
A41 87.0 18.0
A42 124.0 59.0
A43 219.0 63.0
A44 9.0 5.0
A45 15.0 9.0
A46 29.0 23.0
A47 1.0 1.0
A48 9.0 2.0
A49 64.0 35.0
A410 8.0 6.0
[total] 711.0 311.0
A5
mean 2985.6721 3938.1609
std. dev. 2399.7801 3529.4788
weight sum 700 300
precision 19.7543 19.7543
A6
A61 387.0 218.0
A62 70.0 35.0
A63 53.0 12.0
A64 43.0 7.0
A65 152.0 33.0
Status
OK
Log
x 0

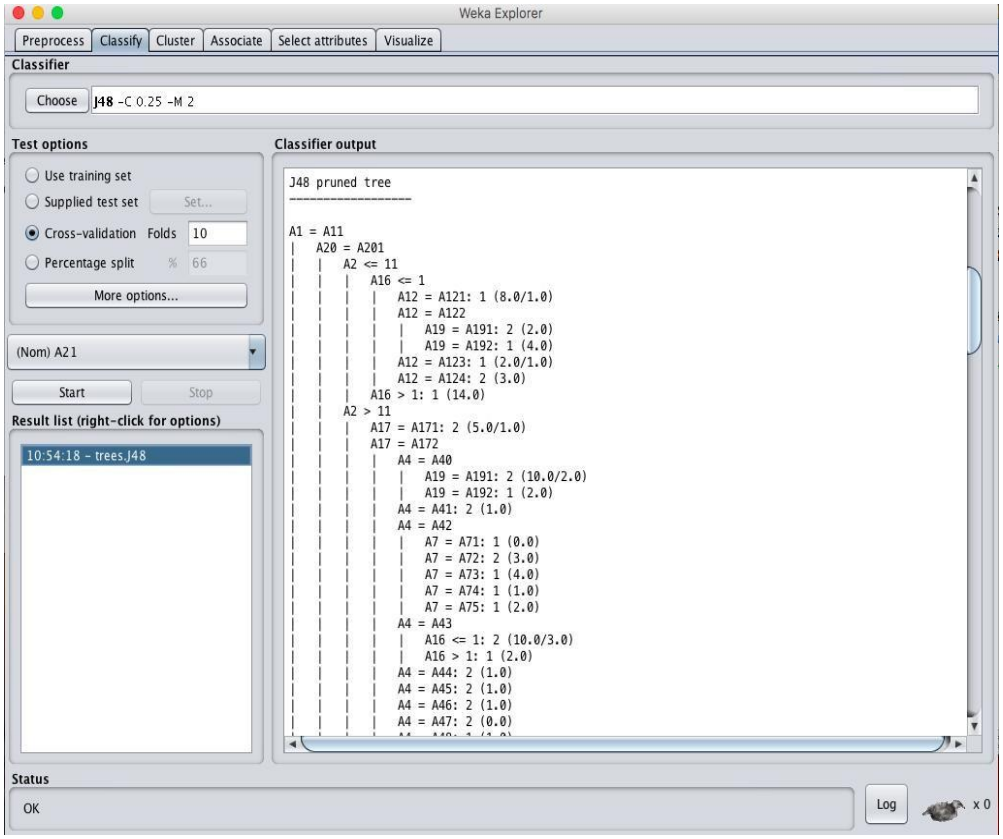

weka-3-8-2-oracle-jvm
Weka Explorer
Preprocess
Classify
Cluster
Associate
Select attributes
Visualize
Classifier
Choose
NaiveBayes
Test options
Use training set
Supplied test set
Set...
Cross-validation
Folds
10
Percentage split
%
66
More options...
(Nom) A21
Start
Stop
Result list (right-click for options)
11:36:24 - trees.J48
11:38:12 - trees.J48
11:38:44 - trees.J48
11:40:44 - functions.Logistic
11:42:44 - bayes.NaiveBayes
Classifier output
A6
A61 387.0 218.0
A62 70.0 35.0
A63 53.0 12.0
A64 43.0 7.0
A65 152.0 33.0
[total] 705.0 305.0
A7
A71 40.0 24.0
A72 103.0 71.0
A73 236.0 105.0
A74 136.0 40.0
A75 190.0 65.0
[total] 705.0 305.0
A8
mean 2.92 3.0967
std. dev. 1.1273 1.0866
weight sum 700 300
precision 1 1
A9
A91 31.0 21.0
A92 202.0 110.0
A93 403.0 147.0
A94 68.0 26.0
A95 1.0 1.0
[total] 705.0 305.0
A10
A101 636.0 273.0
A102 24.0 19.0
A103 43.0 11.0
Status
OK
Log
x 0

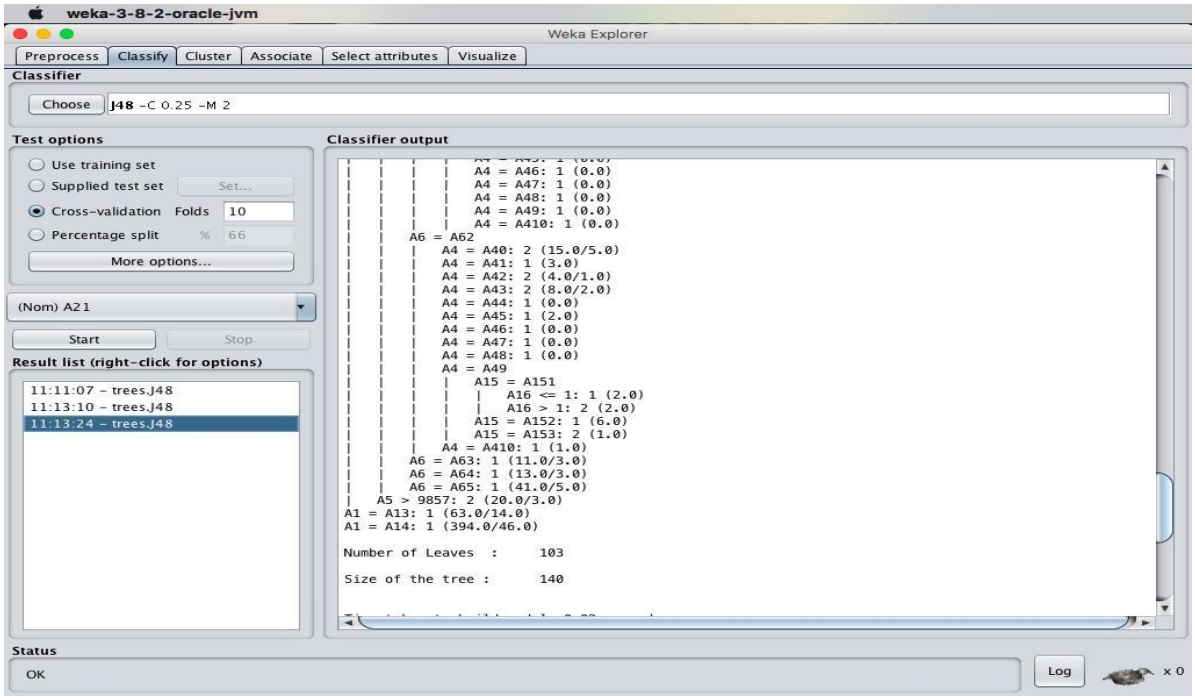

weka-3-8-2-oracle-jvm
Weka Explorer
Preprocess
Classify
Cluster
Associate
Select attributes
Visualize
Classifier
Choose
NaiveBayes
Test options
Use training set
Supplied test set
Set...
Cross-validation
Folds
10
Percentage split
%
66
More options...
(Nom) A21
Start
Stop
Result list (right-click for options)
11:36:24 - trees.J48
11:38:12 - trees.J48
11:38:44 - trees.J48
11:40:44 - functions.Logistic
11:42:44 - bayes.NaiveBayes
Classifier output
A12
A121 223.0 61.0
A122 162.0 72.0
A123 231.0 103.0
A124 88.0 68.0
[total] 704.0 304.0
A13
mean 36.1723 33.9267
std. dev. 11.4005 11.259
weight sum 700 300
precision 1.0769 1.0769
A14
A141 83.0 58.0
A142 29.0 20.0
A143 591.0 225.0
[total] 703.0 303.0
A15
A151 110.0 71.0
A152 528.0 187.0
A153 65.0 45.0
[total] 703.0 303.0
A16
mean 1.4243 1.3667
std. dev. 0.5843 0.5588
weight sum 700 300
precision 1 1
A17
A171 16.0 8.0
A172 145.0 57.0
Status
OK
Log
x 0

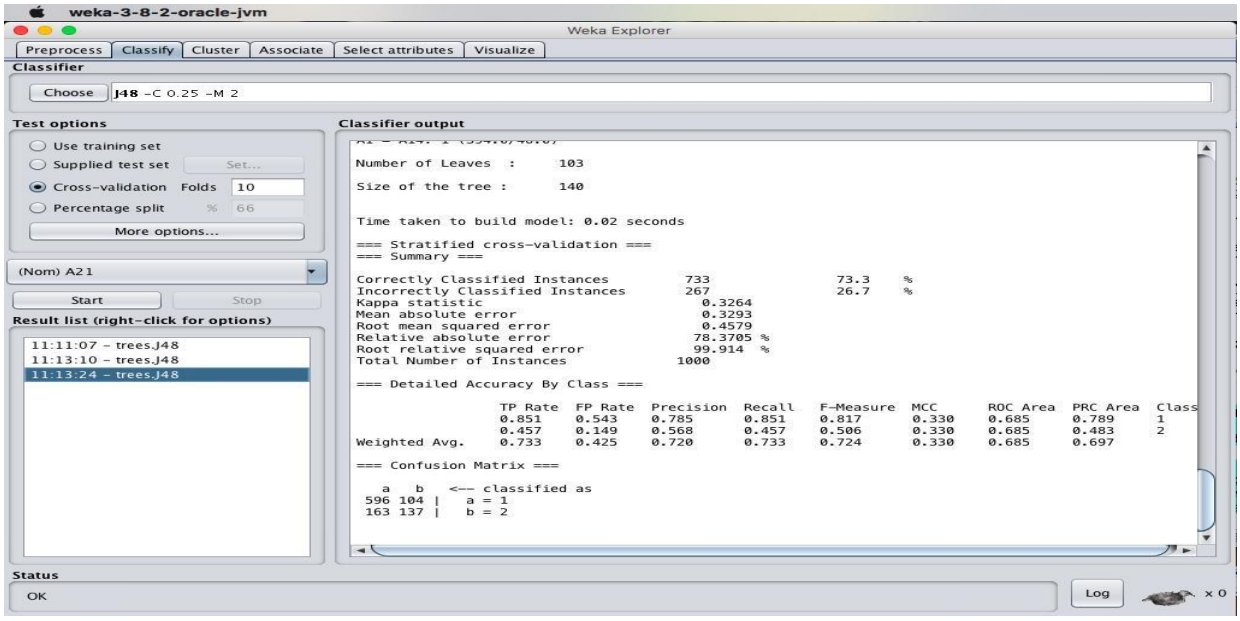


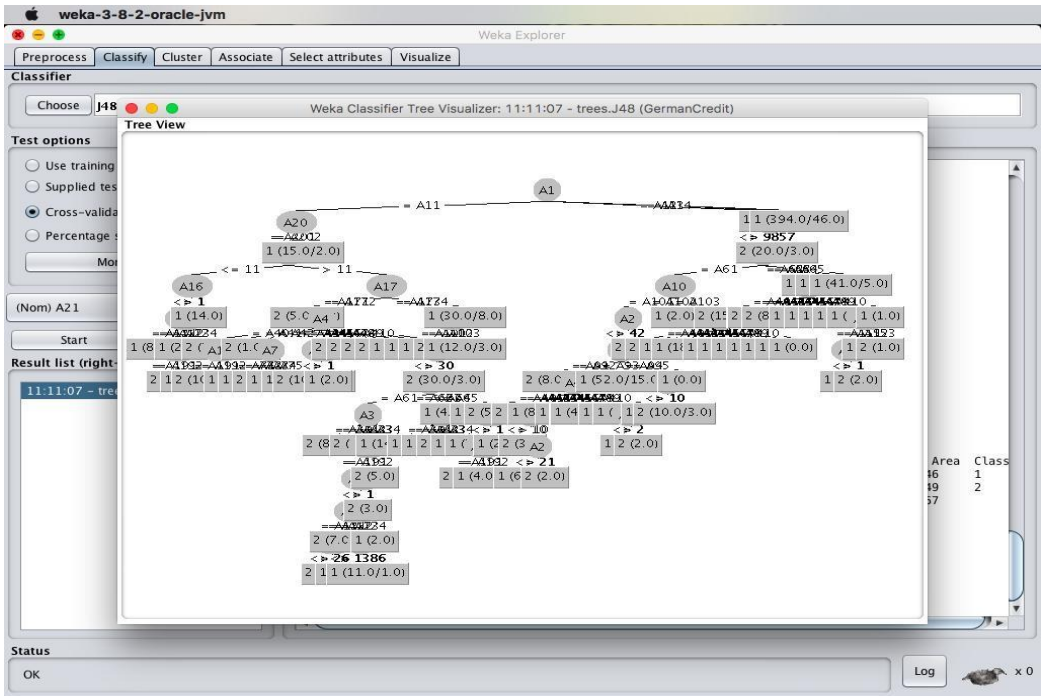


J48 ALGORITHM:

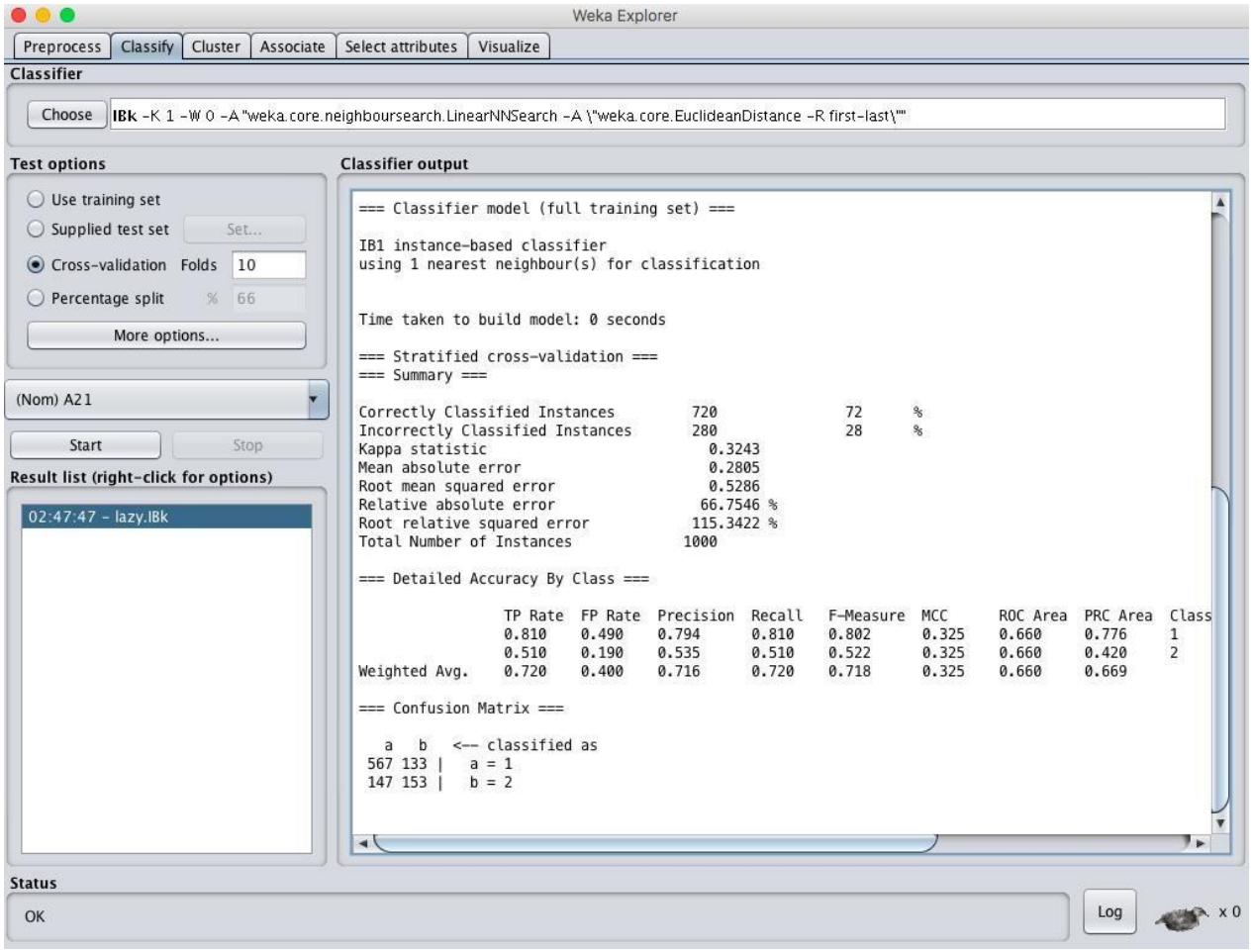

Weka Explorer
Preprocess
Classify
Cluster
Associate
Select attributes
Visualize
Classifier
Choose
J48 -C 0.25 -M 2
Test options
Use training set
Supplied test set
Set...
Cross-validation
Folds
10
Percentage split
%
66
More options...
(Nom) A21
Start
Stop
Result list (right-click for options)
10:54:18 - trees.J48
Classifier output
J48 pruned tree
A1 = A11
| A20 = A201
| | A2 <= 11
| | | A16 <= 1
| | | | A12 = A121: 1 (8.0/1.0)
| | | | A12 = A122
| | | | | A19 = A191: 2 (2.0)
| | | | | A19 = A192: 1 (4.0)
| | | | A12 = A123: 1 (2.0/1.0)
| | | | A12 = A124: 2 (3.0)
| | | A16 > 1: 1 (14.0)
| | A2 > 11
| | | A17 = A171: 2 (5.0/1.0)
| | | A17 = A172
| | | | A4 = A40
| | | | | A19 = A191: 2 (10.0/2.0)
| | | | | A19 = A192: 1 (2.0)
| | | | A4 = A41: 2 (1.0)
| | | | A4 = A42
| | | | | A7 = A71: 1 (0.0)
| | | | | A7 = A72: 2 (3.0)
| | | | | A7 = A73: 1 (4.0)
| | | | | A7 = A74: 1 (1.0)
| | | | | A7 = A75: 1 (2.0)
| | | | A4 = A43
| | | | | A16 <= 1: 2 (10.0/3.0)
| | | | | A16 > 1: 1 (2.0)
| | | | A4 = A44: 2 (1.0)
| | | | A4 = A45: 2 (1.0)
| | | | A4 = A46: 2 (1.0)
| | | | A4 = A47: 2 (0.0)
Status
OK
Log
x 0


weka-3-8-2-oracle-jvm
Weka Explorer
Preprocess
Classify
Cluster
Associate
Select attributes
Visualize
Classifier
Choose
J48 -C 0.25 -M 2
Test options
Use training set
Supplied test set
Set...
Cross-validation
Folds
10
Percentage split
%
66
More options...
(Nom) A21
Start
Stop
Result list (right-click for options)
11:11:07 - trees.J48
11:13:10 - trees.J48
11:13:24 - trees.J48
Classifier output
| | | | A4 = A46: 1 (0.0)
| | | | A4 = A47: 1 (0.0)
| | | | A4 = A48: 1 (0.0)
| | | | A4 = A49: 1 (0.0)
| | | | A4 = A410: 1 (0.0)
| | A6 = A62
| | | A4 = A40: 2 (15.0/5.0)
| | | A4 = A41: 1 (3.0)
| | | A4 = A42: 2 (4.0/1.0)
| | | A4 = A43: 2 (8.0/2.0)
| | | A4 = A44: 1 (0.0)
| | | A4 = A45: 1 (2.0)
| | | A4 = A46: 1 (0.0)
| | | A4 = A47: 1 (0.0)
| | | A4 = A48: 1 (0.0)
| | | A4 = A49
| | | | A15 = A151
| | | | | A16 <= 1: 1 (2.0)
| | | | | A16 > 1: 2 (2.0)
| | | | A15 = A152: 1 (6.0)
| | | | A15 = A153: 2 (1.0)
| | | A4 = A410: 1 (1.0)
| | A6 = A63: 1 (11.0/3.0)
| | A6 = A64: 1 (13.0/3.0)
| | A6 = A65: 1 (41.0/5.0)
| A5 > 9857: 2 (20.0/3.0)
A1 = A13: 1 (63.0/14.0)
A1 = A14: 1 (394.0/46.0)
Number of Leaves : 103
Size of the tree : 140
Status
OK
Log
x 0

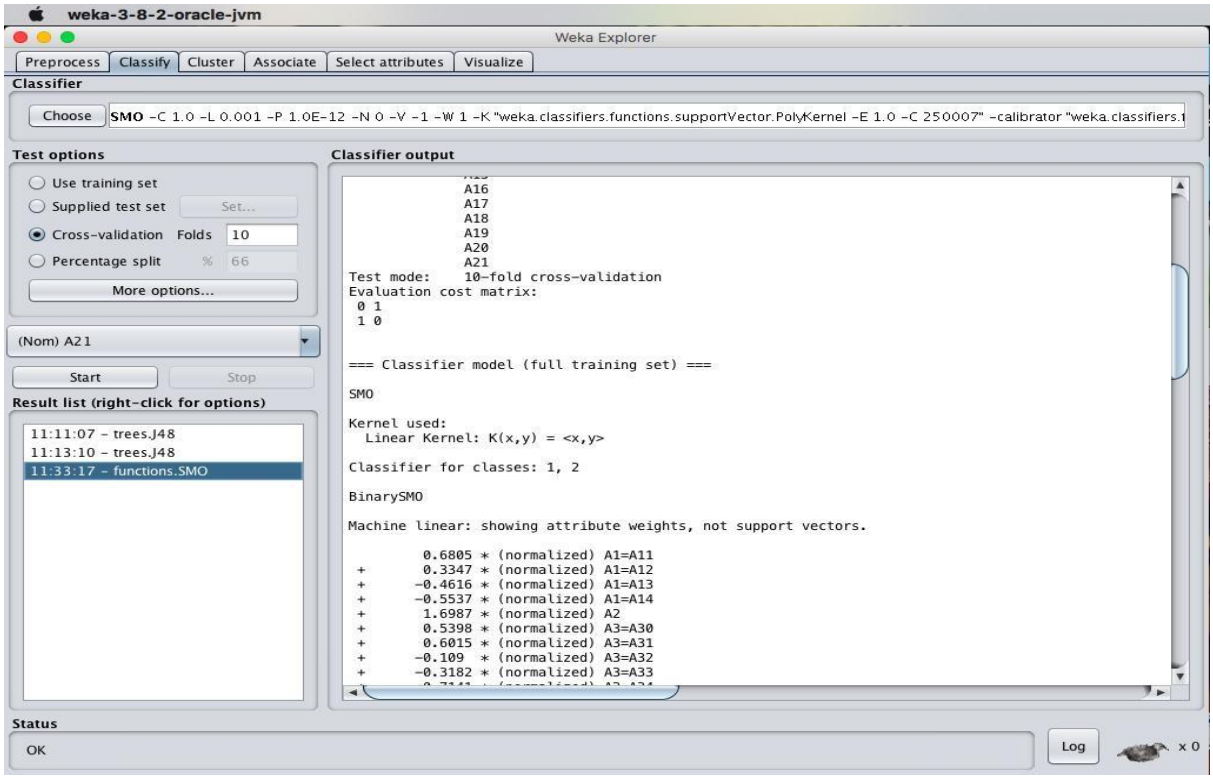


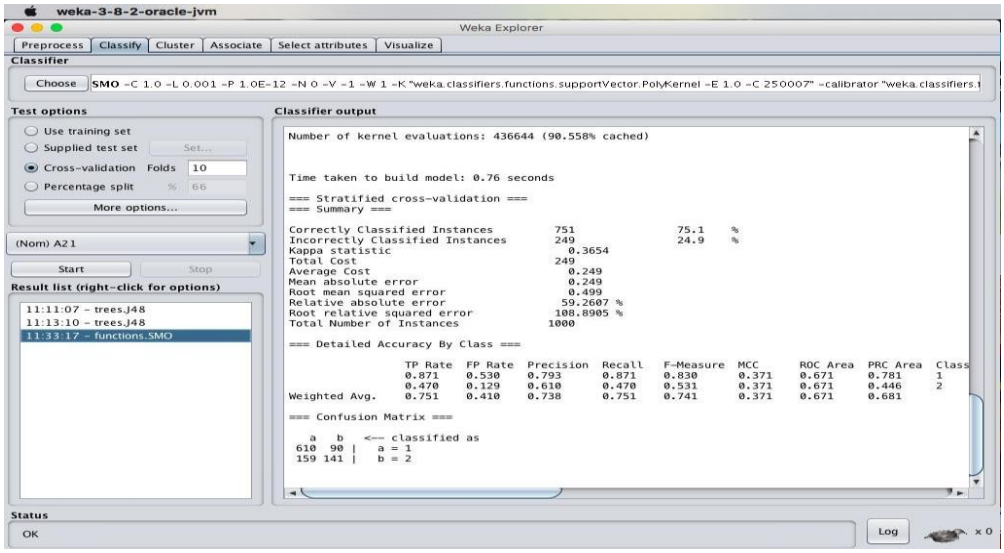


K-nearest neighbour:

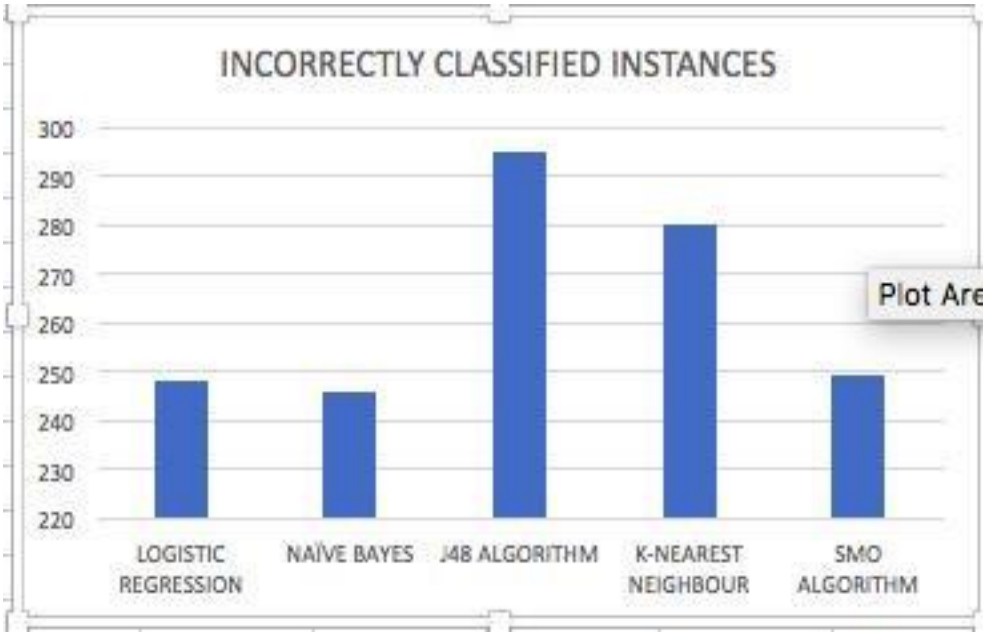


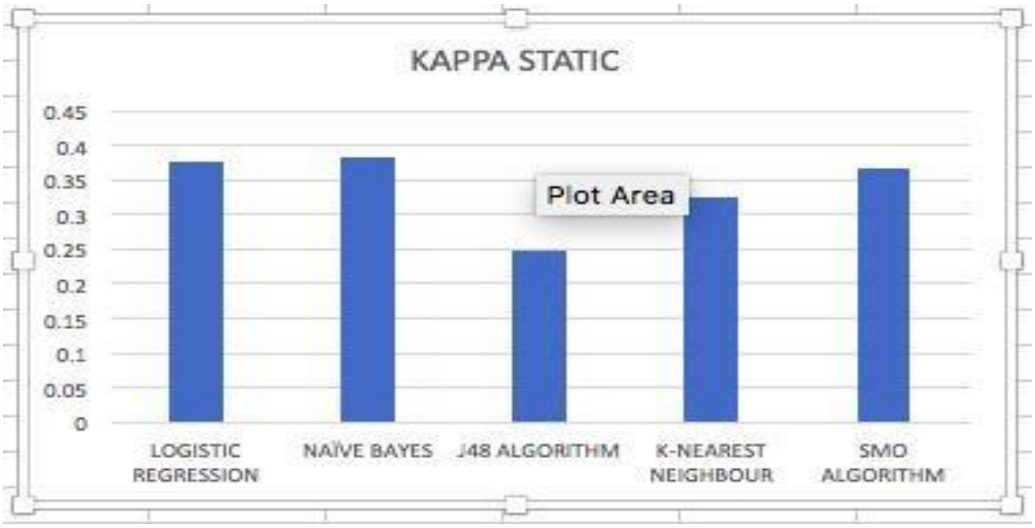
SMO ALGORITHM:

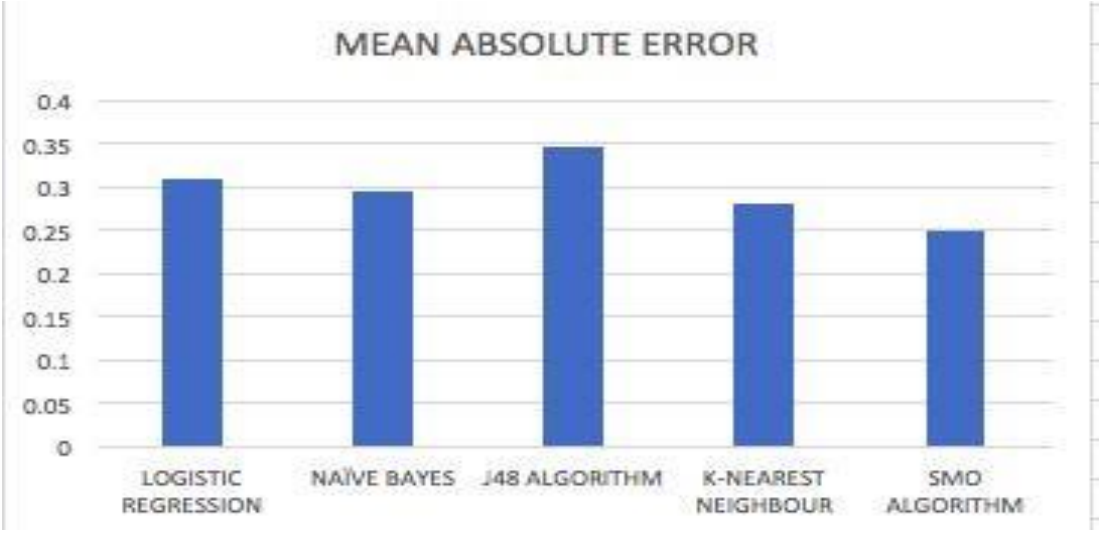


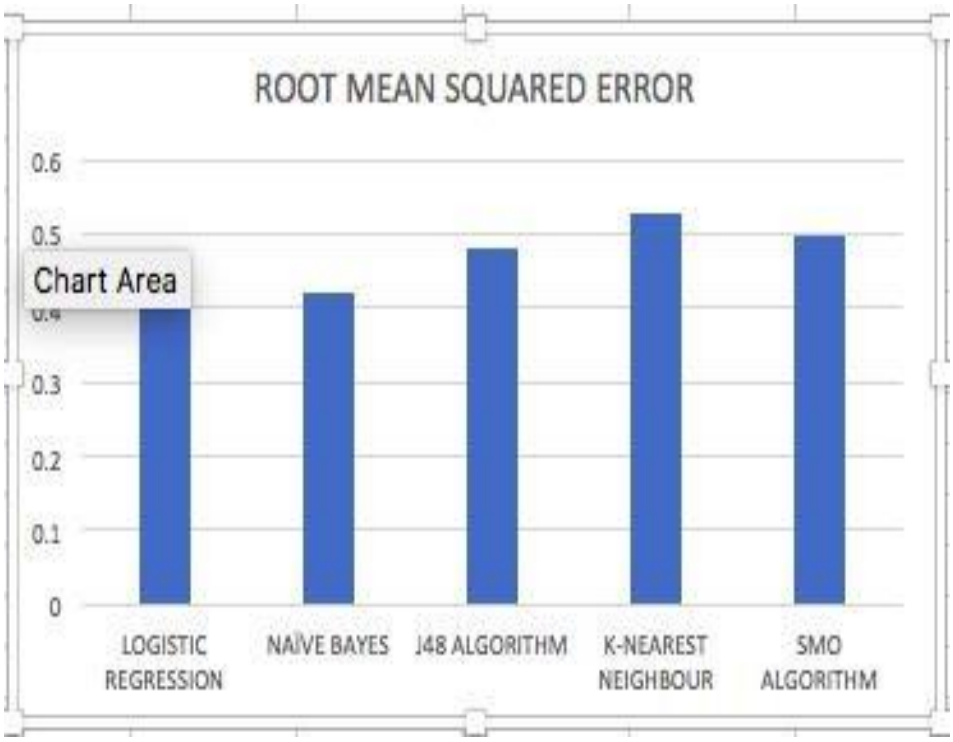


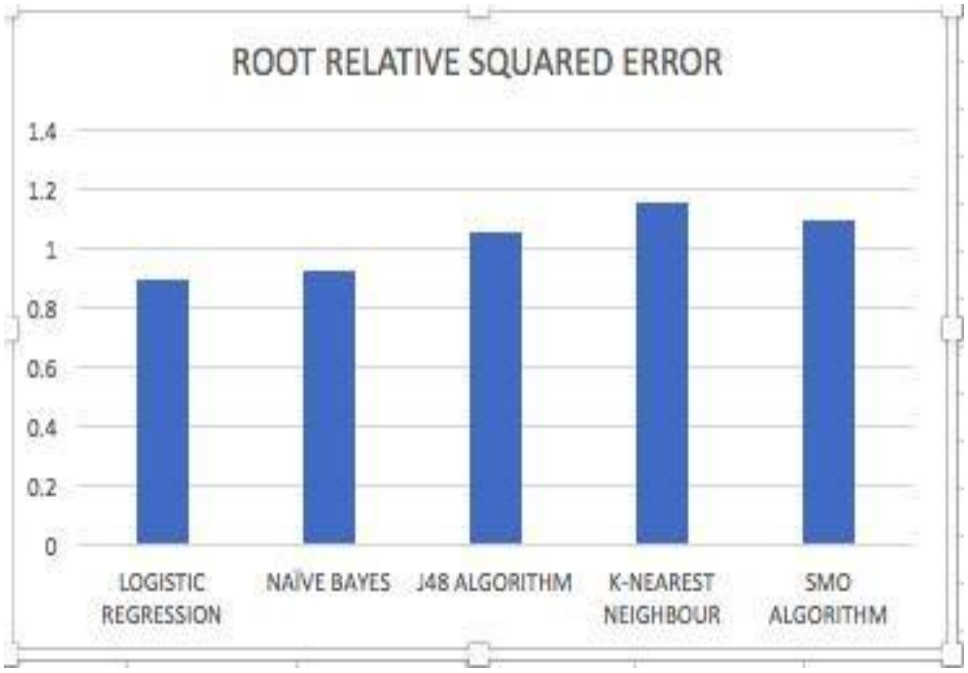
COMPARISON OF VALUES:


INCORRECTLY CLASSIFIED INSTANCES
300
290
280
270
260
250
240
230
220
LOGISTIC REGRESSION
NAÏVE BAYES
J48 ALGORITHM
K-NEAREST NEIGHBOUR
SMO ALGORITHM
Plot Are


KAPPA STATIC
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
LOGISTIC REGRESSION
NAÏVE BAYES
J48 ALGORITHM
K-NEAREST NEIGHBOUR
SMO ALGORITHM
Plot Area


MEAN ABSOLUTE ERROR
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
LOGISTIC REGRESSION
NAÏVE BAYES
J48 ALGORITHM
K-NEAREST NEIGHBOUR
SMO ALGORITHM


ROOT MEAN SQUARED ERROR
0.6
0.5
Chart Area
0.3
0.2
0.1
0
LOGISTIC REGRESSION
NAÏVE BAYES
J48 ALGORITHM
K-NEAREST NEIGHBOUR
SMO ALGORITHM


ROOT RELATIVE SQUARED ERROR
1.4
1.2
1
0.8
0.6
0.4
0.2
0
LOGISTIC REGRESSION
NAÏVE BAYES
J48 ALGORITHM
K-NEAREST NEIGHBOUR
SMO ALGORITHM

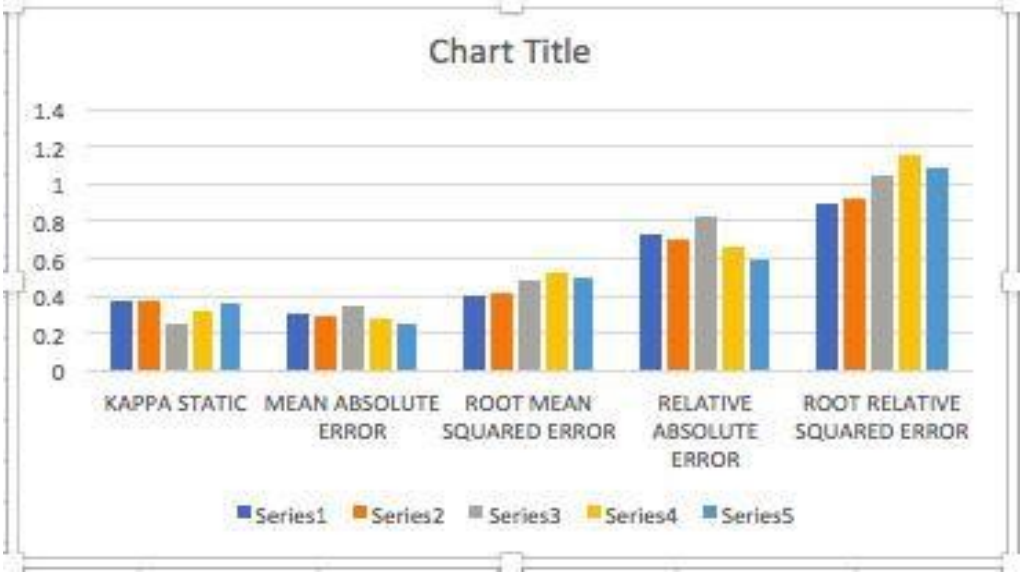


Chart Title
1.4
1.2
1
0.8
0.6
0.4
0.2
0
KAPPA STATIC
MEAN ABSOLUTE ERROR
ROOT MEAN SQUARED ERROR
RELATIVE ABSOLUTE ERROR
ROOT RELATIVE SQUARED ERROR
Series1
Series2
Series3
Series4
Series5