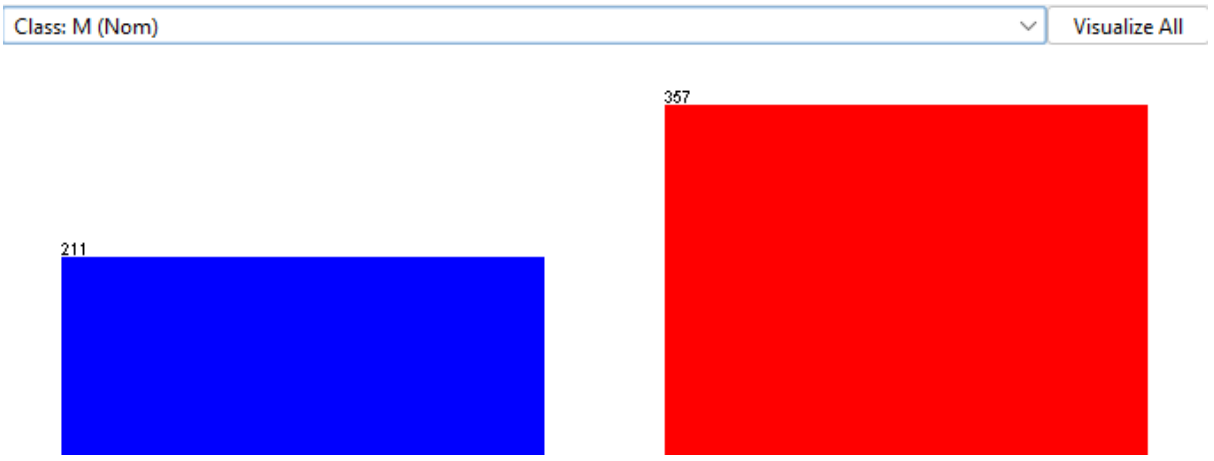
Exp 3 : Breast Cancer Wisconsin Dataset

Dataset Distribution and Classes:

- 2 Classes ‘B’ for benign and ‘M’ for malignin



211 - Malignin
367 - Benign

Classifiers

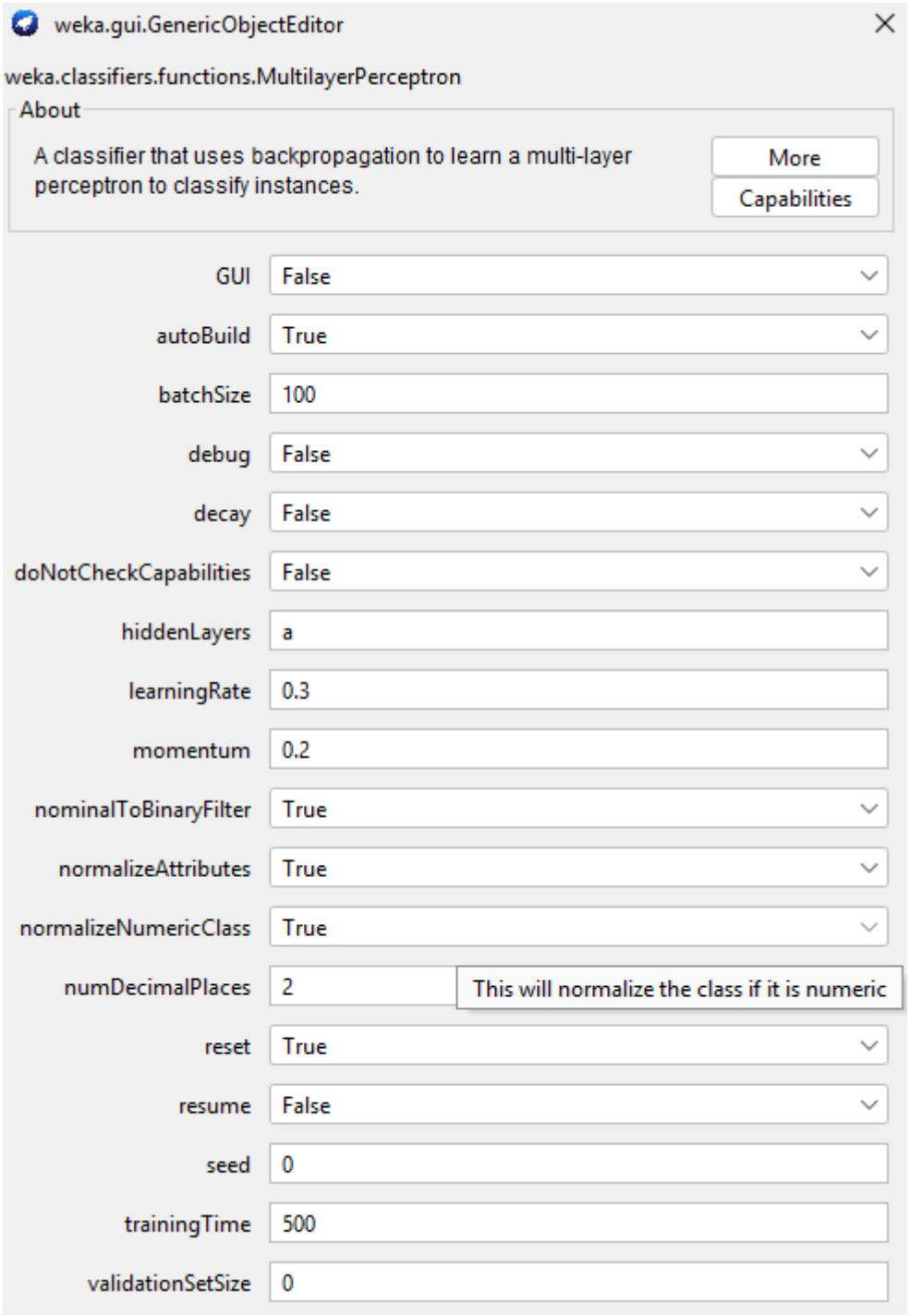
Logistic -

Datasplit - 80 % => train , 20% => test
Learning rate => 1.0E-8

```
=== Evaluation on test split ===

Time taken to test model on test split: 0 seconds

=== Summary ===

Correctly Classified Instances         102               89.4737 %
Incorrectly Classified Instances        12               10.5263 %
Total Number of Instances              114

=== Detailed Accuracy By Class ===

                 TP Rate  FP Rate  Precision  Recall   F-Measure  ROC Area  PRC Area  Class
                 0.902    0.110    0.822      0.902    0.860      0.944     0.855     M
                 0.890    0.098    0.942      0.890    0.915      0.933     0.935     B
Weighted Avg.    0.895    0.102    0.899      0.895    0.896      0.937     0.906

=== Confusion Matrix ===

  a  b   <-- classified as
 37  4 |  a = M
  8 65 |  b = B
```

MultiLayer Perceptron

Hyperparameters



Metrics

```
=== Evaluation on test split ===

Time taken to test model on test split: 0.01 seconds

=== Summary ===

Correctly Classified Instances         112               98.2456 %
Incorrectly Classified Instances         2                1.7544 %
Total Number of Instances              114

=== Detailed Accuracy By Class ===

                 TP Rate  FP Rate  Precision  Recall   F-Measure  ROC Area  PRC Area  Class
                 0.951    0.000    1.000      0.951    0.975      1.000     1.000     M
                 1.000    0.049    0.973      1.000    0.986      1.000     1.000     B
Weighted Avg.    0.982    0.031    0.983      0.982    0.982      1.000     1.000

=== Confusion Matrix ===

  a  b   <-- classified as
 39  2 |  a = M
  0 73 |  b = B
```

Random Forest

Hyperparameters

KValue	0
allowUnclassifiedInstances	False
batchSize	100
breakTiesRandomly	False
debug	False
doNotCheckCapabilities	False
maxDepth	0
minNum	1.0
minVarianceProp	0.001
numDecimalPlaces	2
numFolds	0
seed	1

Metrics

```
=== Evaluation on test split ===

Time taken to test model on test split: 0 seconds

=== Summary ===

Correctly Classified Instances         104               91.2281 %
Incorrectly Classified Instances        10                8.7719 %
Total Number of Instances              114

=== Detailed Accuracy By Class ===

                 TP Rate  FP Rate  Precision  Recall   F-Measure  ROC Area  PRC Area  Class
                 0.829    0.041    0.919      0.829    0.872      0.894     0.823     M
                 0.959    0.171    0.909      0.959    0.933      0.894     0.898     B
Weighted Avg.    0.912    0.124    0.913      0.912    0.911      0.894     0.871

=== Confusion Matrix ===

  a  b   <-- classified as
 34  7 |  a = M
  3 70 |  b = B
```

Clustering

Simple K-means clustering

Metrics

```
Time taken to build model (full training data) : 0.01 seconds

=== Model and evaluation on training set ===

Clustered Instances

0       188 ( 33%)
1       380 ( 67%)
```

Cluster visualization