

Simple Logistic

| | | |
|----------------------------------|-----------|----------|
| Correctly Classified Instances | 247 | 83.165 % |
| Incorrectly Classified Instances | 50 | 16.835 % |
| Kappa statistic | 0.6598 | |
| Mean absolute error | 0.2674 | |
| Root mean squared error | 0.3698 | |
| Relative absolute error | 53.7993 % | |
| Root relative squared error | 74.185 % | |

| | TP Rate | FP Rate | Precision | Recall | F-Measure | MCC | ROC Area | PRC Area | Class |
|---------------|---------|---------|-----------|--------|-----------|-------|----------|----------|-------|
| | 0.869 | 0.212 | 0.827 | 0.869 | 0.848 | 0.661 | 0.872 | 0.849 | 0 |
| | 0.788 | 0.131 | 0.837 | 0.788 | 0.812 | 0.661 | 0.872 | 0.872 | 1 |
| Weighted Avg. | 0.832 | 0.175 | 0.832 | 0.832 | 0.831 | 0.661 | 0.872 | 0.859 | |

```

a  b  <-- classified as
139 21 | a = 0
29 108 | b = 1

```

Logistic

| | | |
|----------------------------------|------------|-----------|
| Correctly Classified Instances | 193 | 64.9832 % |
| Incorrectly Classified Instances | 104 | 35.0168 % |
| Kappa statistic | 0.2925 | |
| Mean absolute error | 0.3438 | |
| Root mean squared error | 0.5727 | |
| Relative absolute error | 69.165 % | |
| Root relative squared error | 114.8823 % | |

| | TP Rate | FP Rate | Precision | Recall | F-Measure | MCC | ROC Area | PRC Area | Class |
|---------------|---------|---------|-----------|--------|-----------|-------|----------|----------|-------|
| | 0.700 | 0.409 | 0.667 | 0.700 | 0.683 | 0.293 | 0.710 | 0.685 | 0 |
| | 0.591 | 0.300 | 0.628 | 0.591 | 0.609 | 0.293 | 0.709 | 0.691 | 1 |
| Weighted Avg. | 0.650 | 0.359 | 0.649 | 0.650 | 0.649 | 0.293 | 0.709 | 0.688 | |

```

a  b  <-- classified as
112 48 | a = 0
56 81 | b = 1

```

Logistic – Reduced Attributes

| | | |
|----------------------------------|-----------|-----------|
| Correctly Classified Instances | 251 | 84.5118 % |
| Incorrectly Classified Instances | 46 | 15.4882 % |
| Kappa statistic | 0.6864 | |
| Mean absolute error | 0.2506 | |
| Root mean squared error | 0.3576 | |
| Relative absolute error | 50.4241 % | |
| Root relative squared error | 71.7333 % | |

| | TP Rate | FP Rate | Precision | Recall | F-Measure | MCC | ROC Area | PRC Area | Class |
|---------------|---------|---------|-----------|--------|-----------|-------|----------|----------|-------|
| | 0.894 | 0.212 | 0.831 | 0.894 | 0.861 | 0.689 | 0.880 | 0.853 | 0 |
| | 0.788 | 0.106 | 0.864 | 0.788 | 0.824 | 0.689 | 0.880 | 0.857 | 1 |
| Weighted Avg. | 0.845 | 0.163 | 0.846 | 0.845 | 0.844 | 0.689 | 0.880 | 0.855 | |

```

a  b  <-- classified as
143 17 | a = 0
29 108 | b = 1

```

Simple Logistic

=== Run information ===

```
Scheme:      weka.classifiers.functions.SimpleLogistic -I 0 -M 500 -H 50 -W 0.0
Relation:     logit-data-weka.filters.unsupervised.attribute.NumericToNominal-Rfirst-last
Instances:    297
Attributes:   14
              age
              sex
              cp
              trestbps
              chol
              fbs
              restecg
              thalach
              exang
              oldpeak
              slope
              ca
              thal
              heartdisease::category|0|1
Test mode:    10-fold cross-validation
```

=== Classifier model (full training set) ===

SimpleLogistic:

Class 0 :
-0.62 +
[cp=4] * -0.82 +
[ca=0] * 0.88 +
[thal=3] * 1.05

Class 1 :
0.62 +
[cp=4] * 0.82 +
[ca=0] * -0.88 +
[thal=3] * -1.05

Time taken to build model: 0.55 seconds

=== Stratified cross-validation ===

=== Summary ===

| | | |
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| Mean absolute error | 0.2674 | |
| Root mean squared error | 0.3698 | |
| Relative absolute error | 53.7993 % | |
| Root relative squared error | 74.185 % | |
| Total Number of Instances | 297 | |

=== Detailed Accuracy By Class ===

| | TP Rate | FP Rate | Precision | Recall | F-Measure | MCC | ROC Area | PRC Area | Class |
|---------------|---------|---------|-----------|--------|-----------|-------|----------|----------|-------|
| | 0.869 | 0.212 | 0.827 | 0.869 | 0.848 | 0.661 | 0.872 | 0.849 | 0 |
| | 0.788 | 0.131 | 0.837 | 0.788 | 0.812 | 0.661 | 0.872 | 0.872 | 1 |
| Weighted Avg. | 0.832 | 0.175 | 0.832 | 0.832 | 0.831 | 0.661 | 0.872 | 0.859 | |

=== Confusion Matrix ===

```
  a   b   <-- classified as
139  21 |   a = 0
 29 108 |   b = 1
```

Logistic

=== Run information ===

```
Scheme:      weka.classifiers.functions.Logistic -R 1.0E-8 -M -1 -num-decimal-places 4
Relation:    logit-data-weka.filters.unsupervised.attribute.NumericToNominal-Rfirst-last
Instances:   297
Attributes:  14
              age
              sex
              cp
              trestbps
              chol
              fbs
              restecg
              thalach
              exang
              oldpeak
              slope
              ca
              thal
              heartdisease::category|0|1
Test mode:   10-fold cross-validation
```

=== Classifier model (full training set) ===

Logistic Regression with ridge parameter of 1.0E-8
Coefficients...

```
Variable          Class
=====
...
```

Time taken to build model: 0.59 seconds

=== Stratified cross-validation ===
=== Summary ===

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| Correctly Classified Instances | 193 | 64.9832 % |
| Incorrectly Classified Instances | 104 | 35.0168 % |
| Kappa statistic | 0.2925 | |
| Mean absolute error | 0.3438 | |
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=== Detailed Accuracy By Class ===

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| | 0.700 | 0.409 | 0.667 | 0.700 | 0.683 | 0.293 | 0.710 | 0.685 | 0 |
| | 0.591 | 0.300 | 0.628 | 0.591 | 0.609 | 0.293 | 0.709 | 0.691 | 1 |
| Weighted Avg. | 0.650 | 0.359 | 0.649 | 0.650 | 0.649 | 0.293 | 0.709 | 0.688 | |

=== Confusion Matrix ===

```
  a  b  <-- classified as
112 48 |  a = 0
 56 81 |  b = 1
```

Logistic – Reduced Attributes

=== Run information ===

```
Scheme:      weka.classifiers.functions.Logistic -R 1.0E-8 -M -1 -num-decimal-places 4
Relation:    logit-data hw6_step10-weka.filters.unsupervised.attribute.NumericToNominal-Rfirst-last
Instances:   297
Attributes:  4
              cp
              ca
              thal
              heartdisease::category|0|1
Test mode:   10-fold cross-validation
```

=== Classifier model (full training set) ===

```
Logistic Regression with ridge parameter of 1.0E-8
Coefficients...
      Class
Variable      0
=====
...
```

Time taken to build model: 0.03 seconds

=== Stratified cross-validation ===
=== Summary ===

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| Kappa statistic | 0.6864 | |
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| Total Number of Instances | 297 | |

=== Detailed Accuracy By Class ===

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| | 0.894 | 0.212 | 0.831 | 0.894 | 0.861 | 0.689 | 0.880 | 0.853 | 0 |
| | 0.788 | 0.106 | 0.864 | 0.788 | 0.824 | 0.689 | 0.880 | 0.857 | 1 |
| Weighted Avg. | 0.845 | 0.163 | 0.846 | 0.845 | 0.844 | 0.689 | 0.880 | 0.855 | |

=== Confusion Matrix ===

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