=== Run information ===

Scheme: weka.classifiers.trees.J48 -R -N 3 -Q 1 -M 2

Relation: germandata decritize

Instances: 1000

Attributes: 21

checking

duration

credit history

purpose

credit amount

saving status

employment

installment-commitment

other parties

debtors

residence since

property magnitued

age

other installment

housing

existing credits

job

num-dependents

telephone

foreign worker

Class label

Test mode: 10-fold cross-validation

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

J48 pruned tree

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checking = A11

| foreign worker = A201

| | debtors = A101

| | | credit history = A34: good (32.0/10.0)

| | | credit history = A32

| | | | saving status = A65: bad (13.0/4.0)

| | | | saving status = A61: bad (68.0/30.0)

| | | | saving status = A63: good (2.0)

| | | | saving status = A64: good (3.0)

| | | | saving status = A62: bad (7.0/2.0)

| | | credit history = A33: bad (7.0/2.0)

| | | credit history = A30: bad (7.0/1.0)

| | | credit history = A31: bad (13.0/2.0)

| | debtors = A103: good (8.0/1.0)

| | debtors = A102: bad (10.0/4.0)

| foreign worker = A202: good (11.0)

checking = A12

| credit amount = A51

| | saving status = A65: good (19.0/2.0)

| | saving status = A61

| | | duration = a21

| | | | purpose = A43: good (26.0/4.0)

| | | | purpose = A46: good (2.0/1.0)

| | | | purpose = A42

| | | | | housing = A152

| | | | | | existing credits = A162: good (2.0/1.0)

| | | | | | existing credits = A161: bad (4.0)

| | | | | | existing credits = A163: bad (0.0)

| | | | | | existing credits = A164: bad (0.0)

| | | | | housing = A153: bad (0.0)

| | | | | housing = A151: good (5.0/1.0)

| | | | purpose = A40

| | | | | employment = A75: bad (2.0)

| | | | | employment = A73: good (1.0)

| | | | | employment = A74: good (2.0)

| | | | | employment = A71: good (0.0)

| | | | | employment = A72: good (2.0/1.0)

| | | | purpose = A41: good (0.0)

| | | | purpose = A49: good (4.0)

| | | | purpose = A44: good (0.0)

| | | | purpose = A45: good (2.0)

| | | | purpose = A410: good (0.0)

| | | | purpose = A48: good (1.0)

| | | duration = a23: bad (1.0)

| | | duration = a22

| | | | job = A173

| | | | | telephone = A192: bad (5.0/1.0)

| | | | | telephone = A191: good (5.0/1.0)

| | | | job = A172: bad (4.0)

| | | | job = A174: bad (2.0)

| | | | job = A171: bad (0.0)

| | | duration = a24: good (0.0)

| | saving status = A63

| | | job = A173: good (2.0/1.0)

| | | job = A172: bad (2.0)

| | | job = A174: bad (0.0)

| | | job = A171: good (1.0)

| | saving status = A64: good (8.0/1.0)

| | saving status = A62

| | | property magnitued = A121: good (4.0)

| | | property magnitued = A122

| | | | credit history = A34: bad (0.0)

| | | | credit history = A32: bad (2.0)

| | | | credit history = A33: good (1.0)

| | | | credit history = A30: bad (0.0)

| | | | credit history = A31: bad (2.0)

| | | property magnitued = A124: bad (5.0/1.0)

| | | property magnitued = A123

| | | | housing = A152: good (6.0/1.0)

| | | | housing = A153: good (0.0)

| | | | housing = A151: bad (4.0)

| credit amount = A52

| | installment-commitment = A84

| | | telephone = A192: good (2.0)

| | | telephone = A191: bad (5.0)

| | installment-commitment = A82

| | | credit history = A34: good (4.0/1.0)

| | | credit history = A32

| | | | purpose = A43: bad (3.0/1.0)

| | | | purpose = A46: good (0.0)

| | | | purpose = A42: good (0.0)

| | | | purpose = A40: good (3.0)

| | | | purpose = A41: good (0.0)

| | | | purpose = A49: good (0.0)

| | | | purpose = A44: good (0.0)

| | | | purpose = A45: good (0.0)

| | | | purpose = A410: good (0.0)

| | | | purpose = A48: good (0.0)

| | | credit history = A33: good (2.0)

| | | credit history = A30: bad (1.0)

| | | credit history = A31: bad (1.0)

| | installment-commitment = A83: good (2.0)

| | installment-commitment = A81: good (8.0/1.0)

| credit amount = A53

| | saving status = A65: good (2.0/1.0)

| | saving status = A61: bad (6.0)

| | saving status = A63: bad (0.0)

| | saving status = A64: bad (0.0)

| | saving status = A62: good (1.0)

| credit amount = A54: bad (6.0)

checking = A14: good (274.0/33.0)

checking = A13: good (40.0/7.0)

Number of Leaves : 80

Size of the tree : 103

Time taken to build model: 0.09 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances 716 71.6 %

Incorrectly Classified Instances 284 28.4 %

Kappa statistic 0.2755

Mean absolute error 0.3494

Root mean squared error 0.4579

Relative absolute error 83.1528 %

Root relative squared error 99.9262 %

Total Number of Instances 1000

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.847 0.590 0.770 0.847 0.807 0.280 0.682 0.790 good

0.410 0.153 0.535 0.410 0.464 0.280 0.682 0.457 bad

Weighted Avg. 0.716 0.459 0.700 0.716 0.704 0.280 0.682 0.690

=== Confusion Matrix ===

a b <-- classified as

593 107 | a = good

177 123 | b = bad