EVALUATING ACCURACY OF THE CLASSIFIERS
LOGISTICS REGRESSIONS
=== Run information ===
Scheme:weka.classifiers.functions.Logistic -R 1.0E-8 -M -1
Relation: german_credit
Instances: 1000
Attributes: 21
checking_status
duration
credit_history
purpose
credit_amount
savings_status
employment
installment_commitment
personal_status
other_parties
residence_since
property_magnitude
age
other_payment_plans
housing
existing_credits
job
num_dependents
own_telephone
foreign_worker
class
Test mode:10-fold cross-validation

=== Classifier model (full training set) ===
Logistic Regression with ridge parameter of 1.0E-8
Coefficients...

	Class
Variable	good
checking_status=<0	-0.778
checking_status=0<=X<200	-0.4032
checking_status=>=200	0.1877
checking_status=no checking	0.9338
duration	-0.0279
credit_history=no credits/all paid	-0.8129
credit_history=all paid	-0.9562

credit_history=existing paid -0.2268
credit_history=delayed previously 0.0403
credit_history=critical/other existing credit 0.6229
purpose=new car -0.692
purpose=used car 0.9744
purpose=furniture/equipment 0.0996
purpose=radio/tv 0.1996
purpose=domestic appliance -0.1692
purpose=repairs -0.4756
purpose=education -0.7283
purpose=vacation 0
purpose=retraining 1.3674
purpose=business 0.0481
purpose=other 0.7968
credit_amount -0.0001
savings_status=<100 -0.4402
savings_status=100<=X<500 -0.0825
savings_status=500<=X<1000 -0.0641
savings_status=>=1000 0.8989
savings_status=no known savings 0.5065
employment=unemployed -0.2934
employment=<1 -0.2265
employment=1<=X<4 -0.1106
employment=4<=X<7 0.5376
employment=>=7 -0.0168
installment_commitment -0.3301
personal_status=male div/sep -0.4923
personal_status=female div/dep/mar -0.2168
personal_status=male single 0.3238
personal_status=male mar/wid -0.1252
personal_status=female single 0
other_parties=none -0.1798
other_parties=co applicant -0.6158
other_parties=guarantor 0.7988
residence_since -0.0048
property_magnitude=real estate 0.2572
property_magnitude=life insurance -0.0242
property_magnitude=car 0.0627
property_magnitude=no known property -0.4732
age 0.0145
other_payment_plans=bank -0.3273
other_payment_plans=stores -0.2041
other_payment_plans=none 0.3191

housing=rent	-0.3498
housing=own	0.0939
housing=for free	0.3341
existing_credits	-0.2721
job=unemp/unskilled non res	0.5095
job=unskilled resident	-0.0265
job=skilled	-0.0451
job=high qualif/self emp/mgmt	0.0301
num_dependents	-0.2647
own_telephone	0.3
foreign_worker	1.3922
Intercept	3.1983

Odds Ratios...

Variable	Class good
checking_status=<0	0.4593
checking_status=0<=X<200	0.6682
checking_status=>=200	1.2064
checking_status=no checking	2.5443
duration	0.9725
credit_history=no credits/all paid	0.4436
credit_history=all paid	0.3843
credit_history=existing paid	0.7971
credit_history=delayed previously	1.0411
credit_history=critical/other existing credit	1.8643
purpose=new car	0.5006
purpose=used car	2.6497
purpose=furniture/equipment	1.1047
purpose=radio/tv	1.2209
purpose=domestic appliance	0.8443
purpose=repairs	0.6215
purpose=education	0.4827
purpose=vacation	1
purpose=retraining	3.9251
purpose=business	1.0493
purpose=other	2.2184
credit_amount	0.9999
savings_status=<100	0.6439
savings_status=100<=X<500	0.9208
savings_status=500<=X<1000	0.9379
savings_status=>=1000	2.4569

savings_status=no known savings 1.6594
employment=unemployed 0.7457
employment=<1 0.7973
employment=1<=X<4 0.8953
employment=4<=X<7 1.7119
employment=>=7 0.9834
installment_commitment 0.7189
personal_status=male div/sep 0.6112
personal_status=female div/dep/mar 0.8051
personal_status=male single 1.3824
personal_status=male mar/wid 0.8823
personal_status=female single 1
other_parties=none 0.8354
other_parties=co applicant 0.5402
other_parties=guarantor 2.2229
residence_since 0.9952
property_magnitude=real estate 1.2933
property_magnitude=life insurance 0.9761
property_magnitude=car 1.0647
property_magnitude=no known property 0.623
age 1.0146
other_payment_plans=bank 0.7209
other_payment_plans=stores 0.8154
other_payment_plans=none 1.3758
housing=rent 0.7049
housing=own 1.0984
housing=for free 1.3967
existing_credits 0.7618
job=unemp/unskilled non res 1.6645
job=unskilled resident 0.9738
job=skilled 0.9559
job=high qualif/self emp/mgmt 1.0306
num_dependents 0.7675
own_telephone 1.3499
foreign_worker 4.0237
Time taken to build model: 0.09 seconds
=== Stratified cross-validation ===
=== Summary ===
Correctly Classified Instances 752 75.2 %
Incorrectly Classified Instances 248 24.8 %
Kappa statistic 0.375
Mean absolute error 0.3098
Root mean squared error 0.4087

Relative absolute error 73.727 %
Root relative squared error 89.1751 %
Total Number of Instances 1000
=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	ROC Area	Class
	0.864	0.51	0.798	0.864	0.83	0.785	good
	0.49	0.136	0.607	0.49	0.542	0.785	bad
Weighted Avg.	0.752	0.398	0.741	0.752	0.744	0.785	

=== Confusion Matrix ===

a	b	<-- classified as
605	95	a = good
153	147	b = bad

NAVIVE BAYES ALGORITHM
=== Run information ===
Scheme:weka.classifiers.bayes.NaiveBayes
Relation: german_credit
Instances: 1000
Attributes: 21
checking_status
duration
credit_history
purpose
credit_amount
savings_status
employment
installment_commitment
personal_status
other_parties
residence_since
property_magnitude
age
other_payment_plans
housing
existing_credits
job
num_dependents
own_telephone
foreign_worker
class
Test mode:10-fold cross-validation

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

Naive Bayes Classifier

Attribute	Class good (0.7)	bad (0.3)
checking_status		
<0	140.0	136.0
0<=X<200	165.0	106.0
>=200	50.0	15.0
no checking	349.0	47.0
[total]	704.0	304.0
duration		
mean	19.1766	24.8129
std. dev.	10.9817	13.3608
weight sum	700	300
precision	2.125	2.125
credit_history		
no credits/all paid	16.0	26.0
all paid	22.0	29.0
existing paid	362.0	170.0
delayed previously	61.0	29.0
critical/other existing credit	244.0	51.0
[total]	705.0	305.0
purpose		
new car	146.0	90.0
used car	87.0	18.0
furniture/equipment	124.0	59.0
radio/tv	219.0	63.0
domestic appliance	9.0	5.0
repairs	15.0	9.0
education	29.0	23.0
vacation	1.0	1.0
retraining	9.0	2.0
business	64.0	35.0
other	8.0	6.0
[total]	711.0	311.0
credit_amount		
mean	2985.6721	3938.1609
std. dev.	2399.7801	3529.4788
weight sum	700	300
precision	19.7543	19.7543
savings_status		

<100	387.0	218.0
100<=X<500	70.0	35.0
500<=X<1000	53.0	12.0
>=1000	43.0	7.0
no known savings	152.0	33.0
[total]	705.0	305.0
employment		
unemployed	40.0	24.0
<1	103.0	71.0
1<=X<4	236.0	105.0
4<=X<7	136.0	40.0
>=7	190.0	65.0
[total]	705.0	305.0
installment_commitment		
mean	2.92	3.0967
std. dev.	1.1273	1.0866
weight sum	700	300
precision	1	1
personal_status		
male div/sep	31.0	21.0
female div/dep/mar	202.0	110.0
male single	403.0	147.0
male mar/wid	68.0	26.0
female single	1.0	1.0
[total]	705.0	305.0
other_parties		
none	636.0	273.0
co applicant	24.0	19.0
guarantor	43.0	11.0
[total]	703.0	303.0
residence_since		
mean	2.8429	2.85
std. dev.	1.1076	1.0928
weight sum	700	300
precision	1	1
property_magnitude		
real estate	223.0	61.0
life insurance	162.0	72.0
car	231.0	103.0
no known property	88.0	68.0
[total]	704.0	304.0
age		
mean	36.1723	33.9267

std. dev.	11.4005	11.259
weight sum	700	300
precision	1.0769	1.0769
other_payment_plans		
bank	83.0	58.0
stores	29.0	20.0
none	591.0	225.0
[total]	703.0	303.0
housing		
rent	110.0	71.0
own	528.0	187.0
for free	65.0	45.0
[total]	703.0	303.0
existing_credits		
mean	1.4243	1.3667
std. dev.	0.5843	0.5588
weight sum	700	300
precision	1	1
job		
unemp/unskilled non res	16.0	8.0
unskilled resident	145.0	57.0
skilled	445.0	187.0
high qualif/self emp/mgmt	98.0	52.0
[total]	704.0	304.0
num_dependents		
mean	1.1557	1.1533
std. dev.	0.3626	0.3603
weight sum	700	300
precision	1	1
own_telephone		
none	410.0	188.0
yes	292.0	114.0
[total]	702.0	302.0
foreign_worker		
yes	668.0	297.0
no	34.0	5.0
[total]	702.0	302.0

Time taken to build model: 0 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances 754 75.4 %
Incorrectly Classified Instances 246 24.6 %
Kappa statistic 0.3813
Mean absolute error 0.2936
Root mean squared error 0.4201
Relative absolute error 69.8801 %
Root relative squared error 91.6718 %
Total Number of Instances 1000

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	ROC Area	Class
	0.864	0.503	0.8	0.864	0.831	0.787	good
	0.497	0.136	0.611	0.497	0.548	0.787	bad
Weighted Avg.	0.754	0.393	0.743	0.754	0.746	0.787	

=== Confusion Matrix ===

a	b	<-- classified as
605	95	a = good
151	149	b = bad

TREE- J48
=== Run information ===

Scheme:weka.classifiers.trees.J48 -C 0.25 -M 2
Relation: german_credit
Instances: 1000
Attributes: 21
checking_status
duration
credit_history
purpose
credit_amount
savings_status
employment
installment_commitment
personal_status
other_parties
residence_since
property_magnitude
age
other_payment_plans
housing
existing_credits

job
num_dependents
own_telephone
foreign_worker
class
Test mode:10-fold cross-validation

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

J48 pruned tree
----

checking_status = <0
| foreign_worker = yes
| | duration <= 11
| | | existing_credits <= 1
| | | | property_magnitude = real estate: good (8.0/1.0)
| | | | property_magnitude = life insurance
| | | | | own_telephone = none: bad (2.0)
| | | | | own_telephone = yes: good (4.0)
| | | | property_magnitude = car: good (2.0/1.0)
| | | | property_magnitude = no known property: bad (3.0)
| | | existing_credits > 1: good (14.0)
| | duration > 11
| | | job = unemp/unskilled non res: bad (5.0/1.0)
| | | job = unskilled resident
| | | | purpose = new car
| | | | | own_telephone = none: bad (10.0/2.0)
| | | | | own_telephone = yes: good (2.0)
| | | | purpose = used car: bad (1.0)
| | | | purpose = furniture/equipment
| | | | | employment = unemployed: good (0.0)
| | | | | employment = <1: bad (3.0)
| | | | | employment = 1<=X<4: good (4.0)
| | | | | employment = 4<=X<7: good (1.0)
| | | | | employment = >=7: good (2.0)
| | | | purpose = radio/tv
| | | | | existing_credits <= 1: bad (10.0/3.0)
| | | | | existing_credits > 1: good (2.0)
| | | | purpose = domestic appliance: bad (1.0)
| | | | purpose = repairs: bad (1.0)
| | | | purpose = education: bad (1.0)
| | | | purpose = vacation: bad (0.0)

```
|  |  |  |  purpose = retraining: good (1.0)
|  |  |  |  purpose = business: good (3.0)
|  |  |  |  purpose = other: good (1.0)
|  |  |  job = skilled
|  |  |  |  other_parties = none
|  |  |  |  |  duration <= 30
|  |  |  |  |  |  savings_status = <100
|  |  |  |  |  |  |  credit_history = no credits/all paid: bad (8.0/1.0)
|  |  |  |  |  |  |  credit_history = all paid: bad (6.0)
|  |  |  |  |  |  |  credit_history = existing paid
|  |  |  |  |  |  |  |  own_telephone = none
|  |  |  |  |  |  |  |  |  existing_credits <= 1
|  |  |  |  |  |  |  |  |  |  property_magnitude = real estate
|  |  |  |  |  |  |  |  |  |  |  age <= 26: bad (5.0)
|  |  |  |  |  |  |  |  |  |  |  age > 26: good (2.0)
|  |  |  |  |  |  |  |  |  |  property_magnitude = life insurance: bad (7.0/2.0)
|  |  |  |  |  |  |  |  |  |  property_magnitude = car
|  |  |  |  |  |  |  |  |  |  |  credit_amount <= 1386: bad (3.0)
|  |  |  |  |  |  |  |  |  |  |  credit_amount > 1386: good (11.0/1.0)
|  |  |  |  |  |  |  |  |  |  property_magnitude = no known property: good (2.0)
|  |  |  |  |  |  |  |  |  existing_credits > 1: bad (3.0)
|  |  |  |  |  |  |  |  own_telephone = yes: bad (5.0)
|  |  |  |  |  |  |  credit_history = delayed previously: bad (4.0)
|  |  |  |  |  |  |  credit_history = critical/other existing credit: good (14.0/4.0)
|  |  |  |  |  |  savings_status = 100<=X<500
|  |  |  |  |  |  |  credit_history = no credits/all paid: good (0.0)
|  |  |  |  |  |  |  credit_history = all paid: good (1.0)
|  |  |  |  |  |  |  credit_history = existing paid: bad (3.0)
|  |  |  |  |  |  |  credit_history = delayed previously: good (0.0)
|  |  |  |  |  |  |  credit_history = critical/other existing credit: good (2.0)
|  |  |  |  |  |  savings_status = 500<=X<1000: good (4.0/1.0)
|  |  |  |  |  |  savings_status = >=1000: good (4.0)
|  |  |  |  |  |  savings_status = no known savings
|  |  |  |  |  |  |  existing_credits <= 1
|  |  |  |  |  |  |  |  |  own_telephone = none: bad (9.0/1.0)
|  |  |  |  |  |  |  |  |  own_telephone = yes: good (4.0/1.0)
|  |  |  |  |  |  |  existing_credits > 1: good (2.0)
|  |  |  |  |  duration > 30: bad (30.0/3.0)
|  |  |  |  other_parties = co applicant: bad (7.0/1.0)
|  |  |  |  other_parties = guarantor: good (12.0/3.0)
|  |  |  job = high qualif/self emp/mgmt: good (30.0/8.0)
|  foreign_worker = no: good (15.0/2.0)
checking_status = 0<=X<200
```

```
|   credit_amount <= 9857
|   |   savings_status = <100
|   |   |   other_parties = none
|   |   |   |   duration <= 42
|   |   |   |   |   personal_status = male div/sep: bad (8.0/2.0)
|   |   |   |   |   personal_status = female div/dep/mar
|   |   |   |   |   |   purpose = new car: bad (5.0/1.0)
|   |   |   |   |   |   purpose = used car: bad (1.0)
|   |   |   |   |   |   purpose = furniture/equipment
|   |   |   |   |   |   |   duration <= 10: bad (3.0)
|   |   |   |   |   |   |   duration > 10
|   |   |   |   |   |   |   |   duration <= 21: good (6.0/1.0)
|   |   |   |   |   |   |   |   duration > 21: bad (2.0)
|   |   |   |   |   |   purpose = radio/tv: good (8.0/2.0)
|   |   |   |   |   |   purpose = domestic appliance: good (0.0)
|   |   |   |   |   |   purpose = repairs: good (1.0)
|   |   |   |   |   |   purpose = education: good (4.0/2.0)
|   |   |   |   |   |   purpose = vacation: good (0.0)
|   |   |   |   |   |   purpose = retraining: good (0.0)
|   |   |   |   |   |   purpose = business
|   |   |   |   |   |   |   residence_since <= 2: good (3.0)
|   |   |   |   |   |   |   residence_since > 2: bad (2.0)
|   |   |   |   |   |   purpose = other: good (0.0)
|   |   |   |   |   personal_status = male single: good (52.0/15.0)
|   |   |   |   |   personal_status = male mar/wid
|   |   |   |   |   |   duration <= 10: good (6.0)
|   |   |   |   |   |   duration > 10: bad (10.0/3.0)
|   |   |   |   |   personal_status = female single: good (0.0)
|   |   |   |   duration > 42: bad (7.0)
|   |   |   other_parties = co applicant: good (2.0)
|   |   |   other_parties = guarantor
|   |   |   |   purpose = new car: bad (2.0)
|   |   |   |   purpose = used car: good (0.0)
|   |   |   |   purpose = furniture/equipment: good (0.0)
|   |   |   |   purpose = radio/tv: good (18.0/1.0)
|   |   |   |   purpose = domestic appliance: good (0.0)
|   |   |   |   purpose = repairs: good (0.0)
|   |   |   |   purpose = education: good (0.0)
|   |   |   |   purpose = vacation: good (0.0)
|   |   |   |   purpose = retraining: good (0.0)
|   |   |   |   purpose = business: good (0.0)
|   |   |   |   purpose = other: good (0.0)
|   |   savings_status = 100<=X<500
```

```
|   |   |   purpose = new car: bad (15.0/5.0)
|   |   |   purpose = used car: good (3.0)
|   |   |   purpose = furniture/equipment: bad (4.0/1.0)
|   |   |   purpose = radio/tv: bad (8.0/2.0)
|   |   |   purpose = domestic appliance: good (0.0)
|   |   |   purpose = repairs: good (2.0)
|   |   |   purpose = education: good (0.0)
|   |   |   purpose = vacation: good (0.0)
|   |   |   purpose = retraining: good (0.0)
|   |   |   purpose = business
|   |   |   |   housing = rent
|   |   |   |   |   existing_credits <= 1: good (2.0)
|   |   |   |   |   existing_credits > 1: bad (2.0)
|   |   |   |   housing = own: good (6.0)
|   |   |   |   housing = for free: bad (1.0)
|   |   |   purpose = other: good (1.0)
|   |   savings_status = 500<=X<1000: good (11.0/3.0)
|   |   savings_status = >=1000: good (13.0/3.0)
|   |   savings_status = no known savings: good (41.0/5.0)
|   credit_amount > 9857: bad (20.0/3.0)
checking_status = >=200: good (63.0/14.0)
checking_status = no checking: good (394.0/46.0)
Number of Leaves  :   103
Size of the tree :    140

Time taken to build model: 0.03 seconds
=== Stratified cross-validation ===
=== Summary ===
Correctly Classified Instances         705               70.5    %
Incorrectly Classified Instances       295               29.5    %
Kappa statistic                          0.2467
Mean absolute error                      0.3467
Root mean squared error                  0.4796
Relative absolute error                 82.5233 %
Root relative squared error            104.6565 %
Total Number of Instances              1000

=== Detailed Accuracy By Class ===
               TP Rate   FP Rate   Precision   Recall  F-Measure   ROC Area  Class
                 0.84      0.61       0.763     0.84      0.799      0.639    good
                 0.39      0.16       0.511     0.39      0.442      0.639    bad
Weighted Avg.    0.705     0.475      0.687     0.705     0.692      0.639
=== Confusion Matrix ===
```

```
  a   b   <-- classified as
588 112 |   a = good
183 117 |   b = bad
```

```
LASY.IB1
=== Run information ===
Scheme:weka.classifiers.lazy.IB1
Relation:     german_credit
Instances:    1000
Attributes:   21
              checking_status
              duration
              credit_history
              purpose
              credit_amount
              savings_status
              employment
              installment_commitment
              personal_status
              other_parties
              residence_since
              property_magnitude
              age
              other_payment_plans
              housing
              existing_credits
              job
              num_dependents
              own_telephone
              foreign_worker
              class
Test mode:10-fold cross-validation
=== Classifier model (full training set) ===
IB1 classifier
Time taken to build model: 0 seconds
=== Stratified cross-validation ===
=== Summary ===
Correctly Classified Instances         720               72      %
Incorrectly Classified Instances       280               28      %
Kappa statistic                          0.3243
Mean absolute error                      0.28
```

Root mean squared error 0.5292
Relative absolute error 66.6385 %
Root relative squared error 115.47 %
Total Number of Instances 1000
=== Detailed Accuracy By Class ===

TP Rate	FP Rate	Precision	Recall	F-Measure	ROC Area	Class
0.81	0.49	0.794	0.81	0.802	0.66	good
0.51	0.19	0.535	0.51	0.522	0.66	bad
Weighted Avg. 0.72	0.4	0.716	0.72	0.718	0.66	

=== Confusion Matrix ===

a	b	<-- classified as
567	133	a = good
147	153	b = bad

SMO ALGORITHM
=== Run information ===
Scheme:weka.classifiers.functions.SMO -C 1.0 -L 0.001 -P 1.0E-12 -N 0 -V -1 -W 1 -K "weka.classifiers.functions.supportVector.PolyKernel -C 250007 -E 1.0"
Relation: german_credit
Instances: 1000
Attributes: 21
checking_status
duration
credit_history
purpose
credit_amount
savings_status
employment
installment_commitment
personal_status
other_parties
residence_since
property_magnitude
age
other_payment_plans
housing
existing_credits
job
num_dependents
own_telephone
foreign_worker
class
Test mode:10-fold cross-validation

=== ClasSifier model (full training set) ===
SMO
Kernel used:
  Linear Kernel: K(x,y) = <x,y>
Classifier for classes: good, bad
BinarySMO
Machine linear: showing attribute weights, not support vectors.
        0.6805 * (normalized) checking_status=<0
 +   0.3347 * (normalized) checking_status=0<=X<200
 +   -0.4616 * (normalized) checking_status=>=200
 +   -0.5537 * (normalized) checking_status=no checking
 +   1.6987 * (normalized) duration
 +   0.5398 * (normalized) credit_history=no credits/all paid
 +   0.6015 * (normalized) credit_history=all paid
 +   -0.109 * (normalized) credit_history=existing paid
 +   -0.3182 * (normalized) credit_history=delayed previously
 +   -0.7141 * (normalized) credit_history=critical/other existing credit
 +   0.5673 * (normalized) purpose=new car
 +   -0.5615 * (normalized) purpose=used car
 +   -0.1464 * (normalized) purpose=furniture/equipment
 +   -0.0798 * (normalized) purpose=radio/tv
 +   0.5456 * (normalized) purpose=domestic appliance
 +   0   * (normalized) purpose=repairs
 +   0.4441 * (normalized) purpose=education
 +   -0.3951 * (normalized) purpose=retraining
 +   -0.0823 * (normalized) purpose=business
 +   -0.2919 * (normalized) purpose=other
 +   1.1473 * (normalized) credit_amount
 +   0.4056 * (normalized) savings_status=<100
 +   0.115 * (normalized) savings_status=100<=X<500
 +   0.1378 * (normalized) savings_status=500<=X<1000
 +   -0.3775 * (normalized) savings_status=>=1000
 +   -0.2809 * (normalized) savings_status=no known savings
 +   0.2887 * (normalized) employment=unemployed
 +   0.1663 * (normalized) employment=<1
 +   0.0021 * (normalized) employment=1<=X<4
 +   -0.3348 * (normalized) employment=4<=X<7
 +   -0.1222 * (normalized) employment=>=7
 +   0.6503 * (normalized) installment_commitment
 +   0.3335 * (normalized) personal_status=male div/sep
 +   0.1177 * (normalized) personal_status=female div/dep/mar
 +   -0.3697 * (normalized) personal_status=male single
 +   -0.0815 * (normalized) personal_status=male mar/wid

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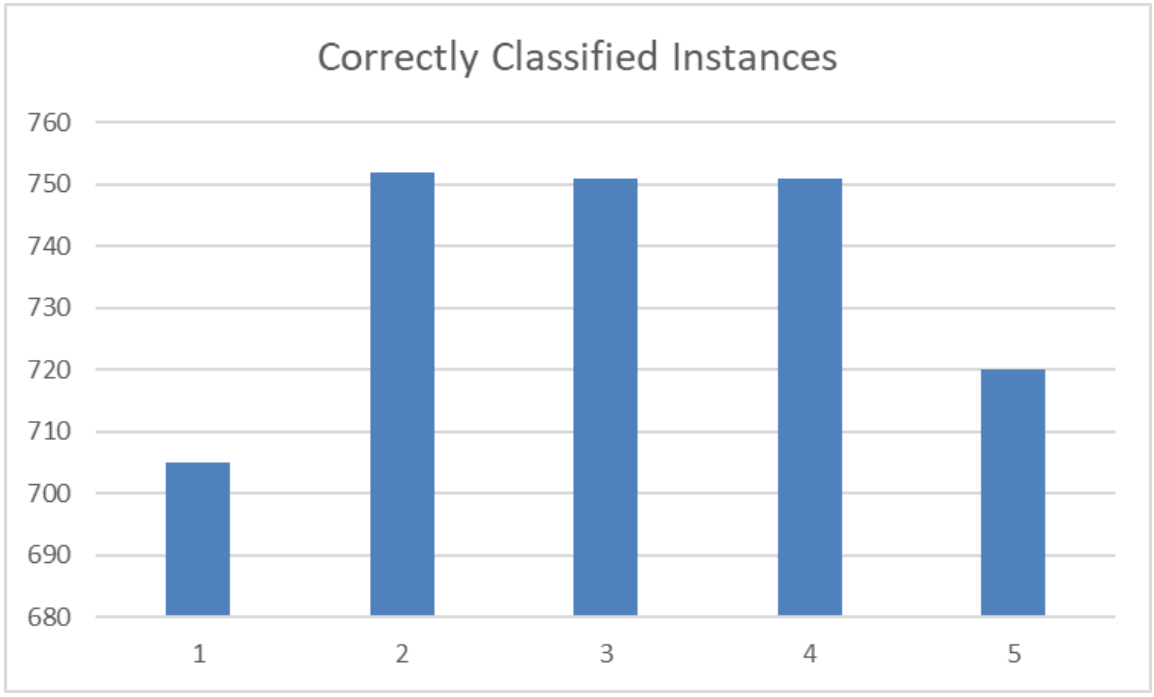
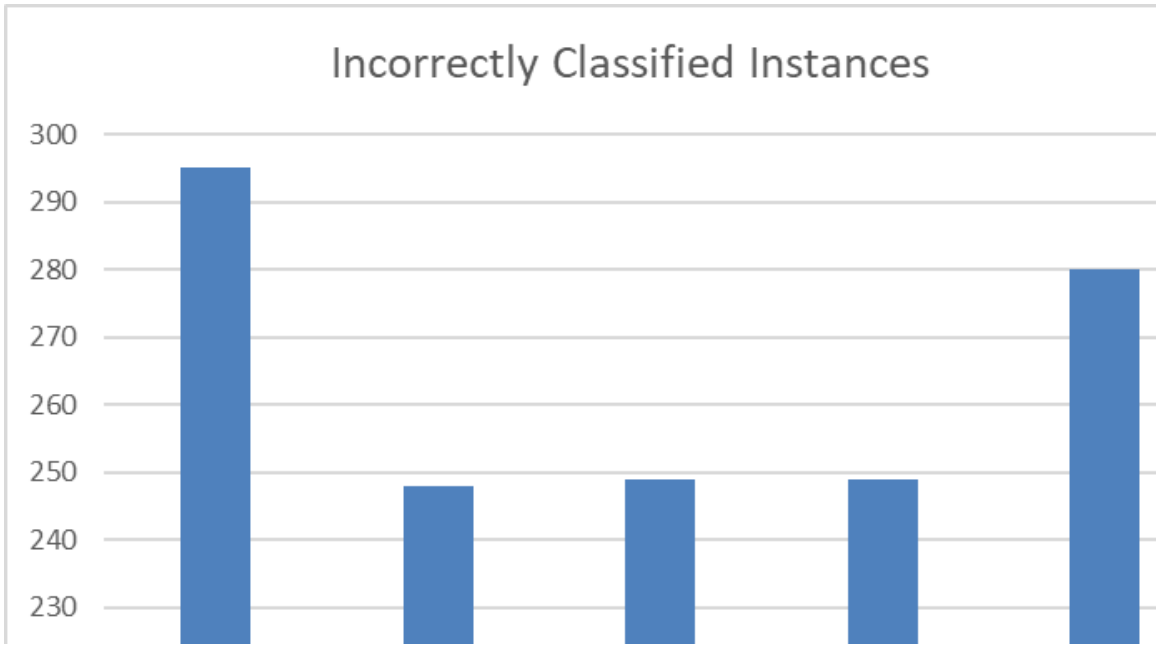
 +       0.0514 * (normalized) other_parties=none
 +       0.5697 * (normalized) other_parties=co applicant
 +      -0.6211 * (normalized) other_parties=guarantor
 +      -0.0001 * (normalized) residence_since
 +      -0.2247 * (normalized) property_magnitude=real estate
 +      -0.0544 * (normalized) property_magnitude=life insurance
 +      -0.0795 * (normalized) property_magnitude=car
 +       0.3586 * (normalized) property_magnitude=no known property
 +      -0.4191 * (normalized) age
 +       0.0697 * (normalized) other_payment_plans=bank
 +       0.159  * (normalized) other_payment_plans=stores
 +      -0.2287 * (normalized) other_payment_plans=none
 +       0.3271 * (normalized) housing=rent
 +      -0.0702 * (normalized) housing=own
 +      -0.257  * (normalized) housing=for free
 +       0.4503 * (normalized) existing_credits
 +      -0.2026 * (normalized) job=unemp/unskilled non res
 +       0.1501 * (normalized) job=unskilled resident
 +       0.1027 * (normalized) job=skilled
 +      -0.0502 * (normalized) job=high qualif/self emp/mgmt
 +       0.0198 * (normalized) num_dependents
 +      -0.1394 * (normalized) own_telephone
 +      -0.9888 * (normalized) foreign_worker
 -       1.5398
Number of kernel evaluations: 436644 (90.558% cached)
Time taken to build model: 0.2 seconds
=== Stratified cross-validation ===
=== Summary ===
Correctly Classified Instances         751               75.1    %
Incorrectly Classified Instances       249               24.9    %
Kappa statistic                          0.3654
Mean absolute error                      0.249
Root mean squared error                  0.499
Relative absolute error                 59.2607 %
Root relative squared error            108.8905 %
Total Number of Instances             1000
=== Detailed Accuracy By Class ===
               TP Rate   FP Rate   Precision   Recall  F-Measure   ROC Area  Class
                 0.871     0.53       0.793     0.871     0.83       0.671    good
                 0.47      0.129      0.61      0.47      0.531      0.671    bad
Weighted Avg.    0.751     0.41       0.738     0.751     0.741      0.671
=== Confusion Matrix ===
   a   b   <-- classified as
```

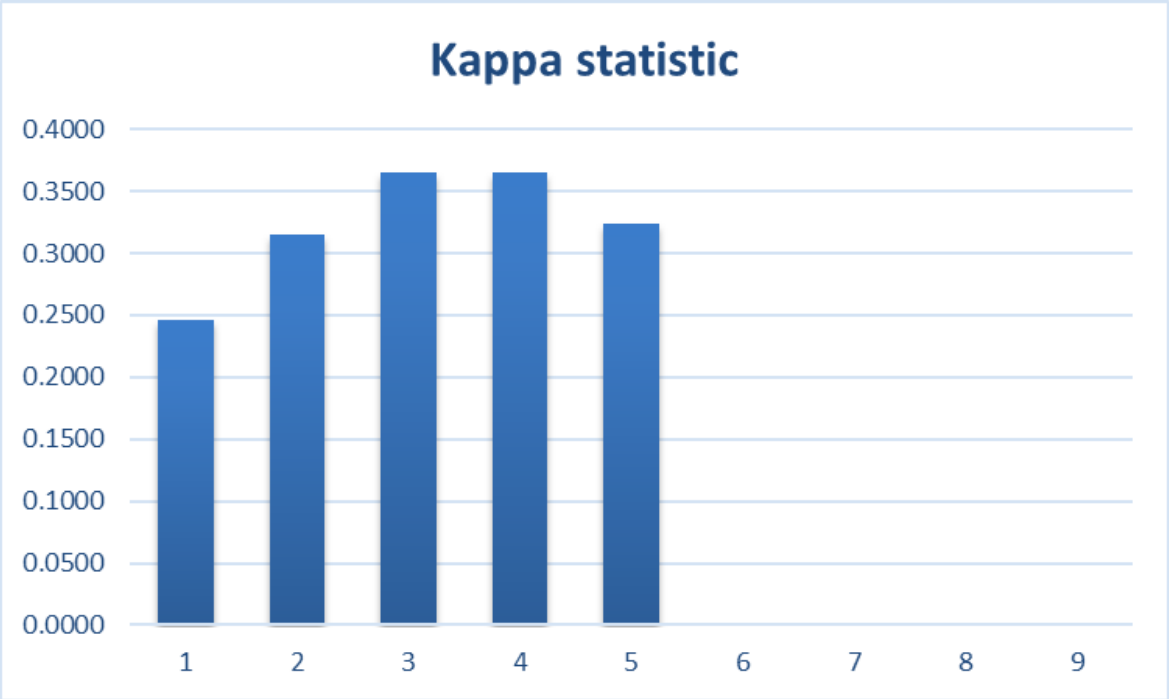
610 90 | a = good
159 141 | b = bad

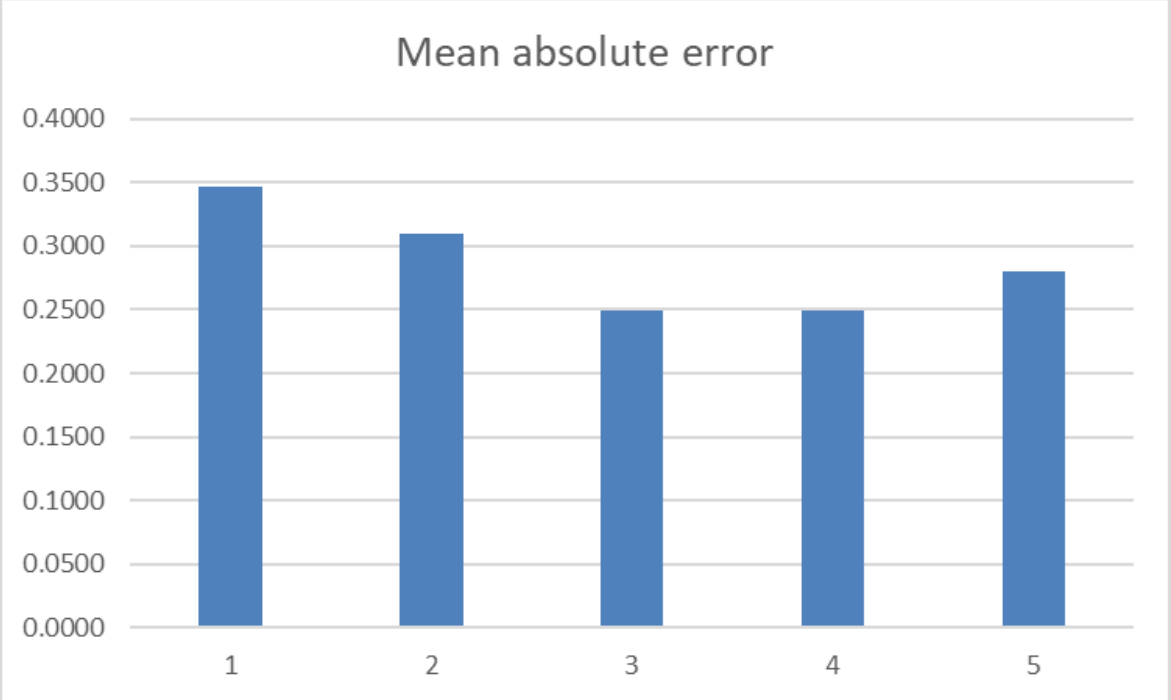
COMPARISION

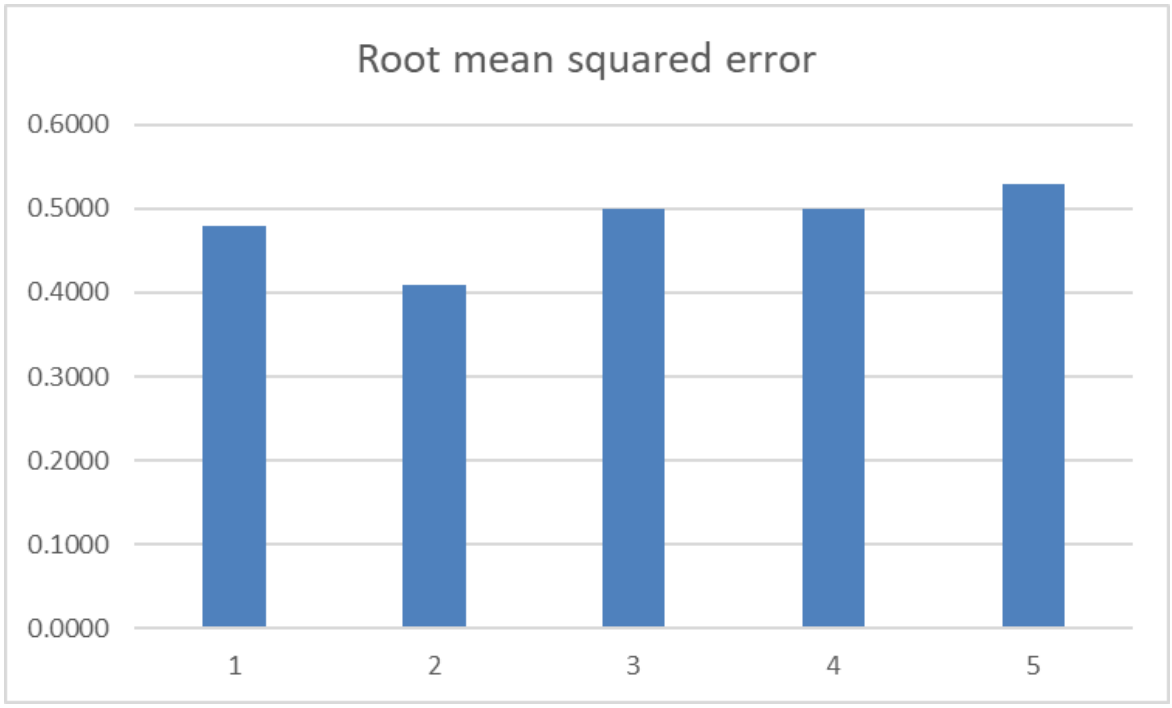
GRAPHS

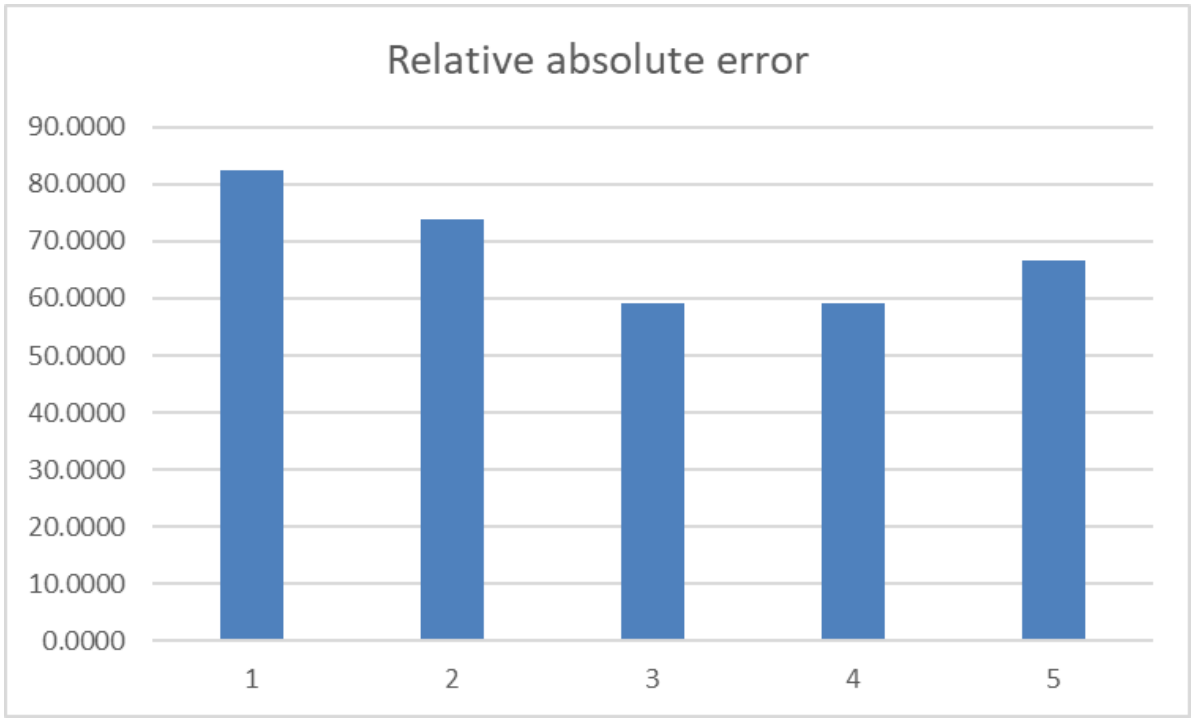


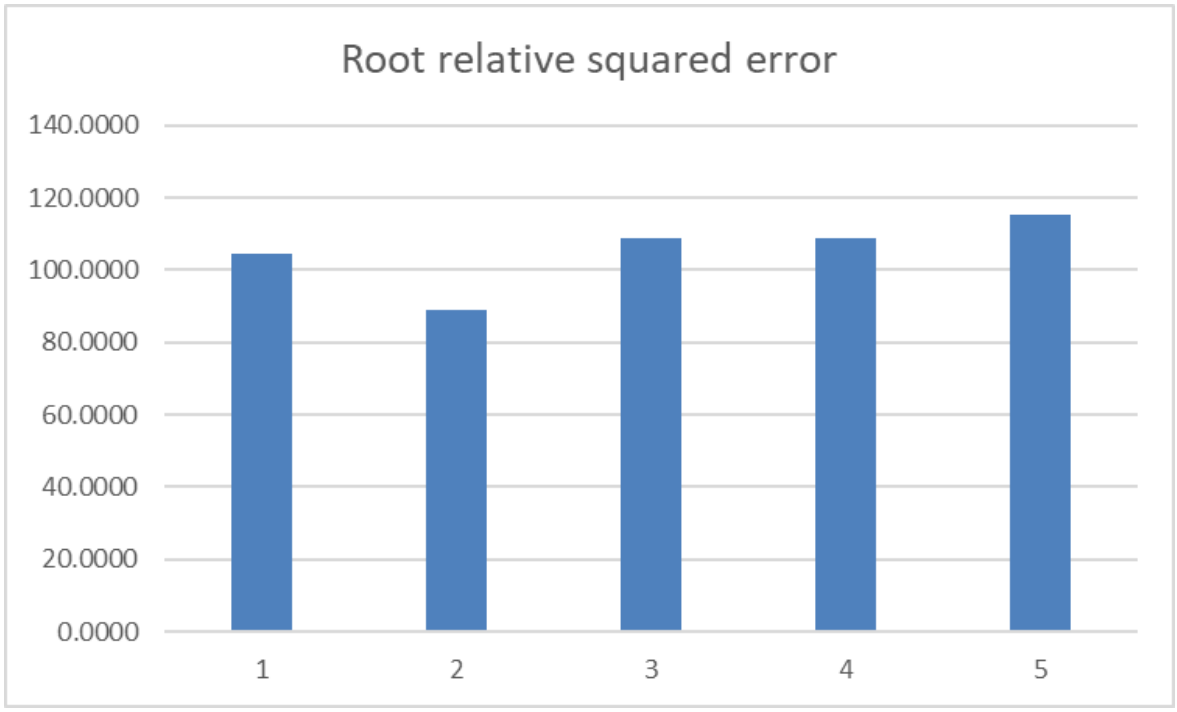


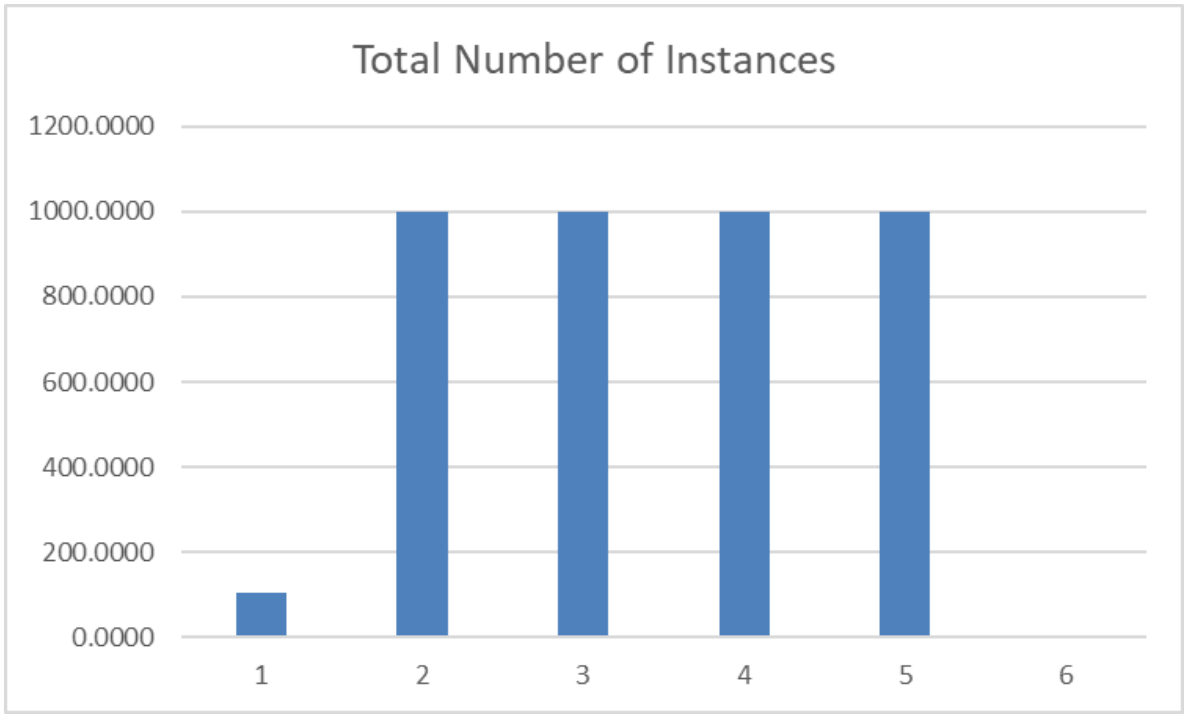

Kappa statistic
0.4000
0.3500
0.3000
0.2500
0.2000
0.1500
0.1000
0.0500
0.0000
1
2
3
4
5
6
7
8
9


Mean absolute error
0.4000
0.3500
0.3000
0.2500
0.2000
0.1500
0.1000
0.0500
0.0000
1
2
3
4
5


Root mean squared error
0.6000
0.5000
0.4000
0.3000
0.2000
0.1000
0.0000
1
2
3
4
5


Relative absolute error
90.0000
80.0000
70.0000
60.0000
50.0000
40.0000
30.0000
20.0000
10.0000
0.0000
1
2
3
4
5


Root relative squared error
140.0000
120.0000
100.0000
80.0000
60.0000
40.0000
20.0000
0.0000
1
2
3
4
5


Total Number of Instances
1200.0000
1000.0000
800.0000
600.0000
400.0000
200.0000
0.0000
1
2
3
4
5
6