Description of the German credit dataset.

1. Title: German Credit data

2. Source Information

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3. Number of Instances: 1000

Two datasets are provided. the original dataset, in the form provided by Prof. Hofmann, contains categorical/symbolic attributes and is in the file "german.data".

For algorithms that need numerical attributes, Strathclyde University produced the file "german.data-numeric". This file has been edited and several indicator variables added to make it suitable for algorithms which cannot cope with categorical variables. Several attributes that are ordered categorical (such as attribute 17) have been coded as integer. This was the form used by StatLog.

6. Number of Attributes german: 20 (7 numerical, 13 categorical)
   Number of Attributes german.numer: 24 (24 numerical)

7. Attribute description for german

Attribute 1: (qualitative)
Status of existing checking account
A11 : ... < 0 DM
A12 : 0 <= ... < 200 DM
A13 : ... >= 200 DM /
salary assignments for at least 1 year
A14 : no checking account

Attribute 2: (numerical)
Duration in month

Attribute 3: (qualitative)
Credit history
A30 : no credits taken/
all credits paid back duly
A31 : all credits at this bank paid back duly
A32 : existing credits paid back duly till now
A33 : delay in paying off in the past
A34 : critical account/
other credits existing (not at this bank)

Attribute 4: (qualitative)
            Purpose
            A40 : car (new)
            A41 : car (used)
            A42 : furniture/equipment
            A43 : radio/television
            A44 : domestic appliances
            A45 : repairs
            A46 : education
            A47 : (vacation - does not exist?)
            A48 : retraining
            A49 : business
            A410 : others

Attribute 5: (numerical)
            Credit amount

Attibute 6: (qualitative)
            Savings account/bonds
            A61 :   ... < 100 DM
            A62 :   100 <= ... < 500 DM
            A63 :   500 <= ... < 1000 DM
            A64 :   .. >= 1000 DM
              A65 :   unknown/ no savings account

Attribute 7: (qualitative)
            Present employment since
            A71 : unemployed
            A72 :   ... < 1 year
            A73 : 1 <= ... < 4 years
            A74 : 4 <= ... < 7 years
            A75 :   .. >= 7 years

Attribute 8: (numerical)
            Installment rate in percentage of disposable income

Attribute 9: (qualitative)
            Personal status and sex
            A91 : male   : divorced/separated
            A92 : female : divorced/separated/married
              A93 : male   : single
            A94 : male   : married/widowed
            A95 : female : single

Attribute 10: (qualitative)
            Other debtors / guarantors
            A101 : none
            A102 : co-applicant
            A103 : guarantor

Attribute 11: (numerical)
            Present residence since

Attribute 12: (qualitative)

Property
A121 : real estate
A122 : if not A121 : building society savings agreement/
life insurance
A123 : if not A121/A122 : car or other, not in attribute 6
A124 : unknown / no property

Attribute 13: (numerical)
Age in years

Attribute 14: (qualitative)
Other installment plans
A141 : bank
A142 : stores
A143 : none

Attribute 15: (qualitative)
Housing
A151 : rent
A152 : own
A153 : for free

Attribute 16: (numerical)
Number of existing credits at this bank

Attribute 17: (qualitative)
Job
A171 : unemployed/ unskilled - non-resident
A172 : unskilled - resident
A173 : skilled employee / official
A174 : management/ self-employed/
highly qualified employee/ officer

Attribute 18: (numerical)
Number of people being liable to provide maintenance for

Attribute 19: (qualitative)
Telephone
A191 : none
A192 : yes, registered under the customers name

Attribute 20: (qualitative)
foreign worker
A201 : yes
A202 : no

8. Cost Matrix

This dataset requires use of a cost matrix (see below)

	1	2

1	0	1
2	5	0

(1 = Good, 2 = Bad)

the rows represent the actual classification and the columns
the predicted classification.

It is worse to class a customer as good when they are bad (5),
than it is to class a customer as bad when they are good (1).