Homework 3
German Credit Dataset

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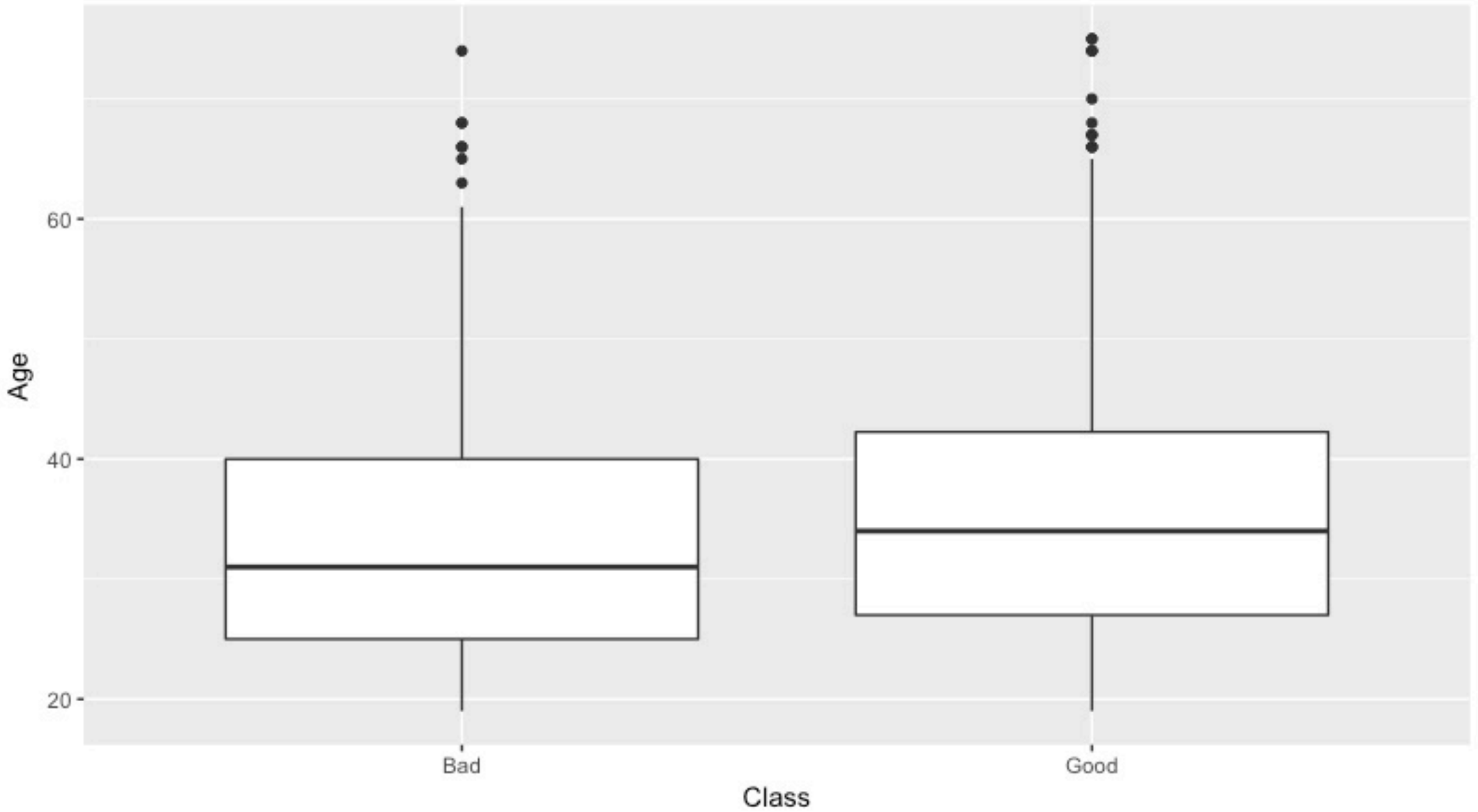
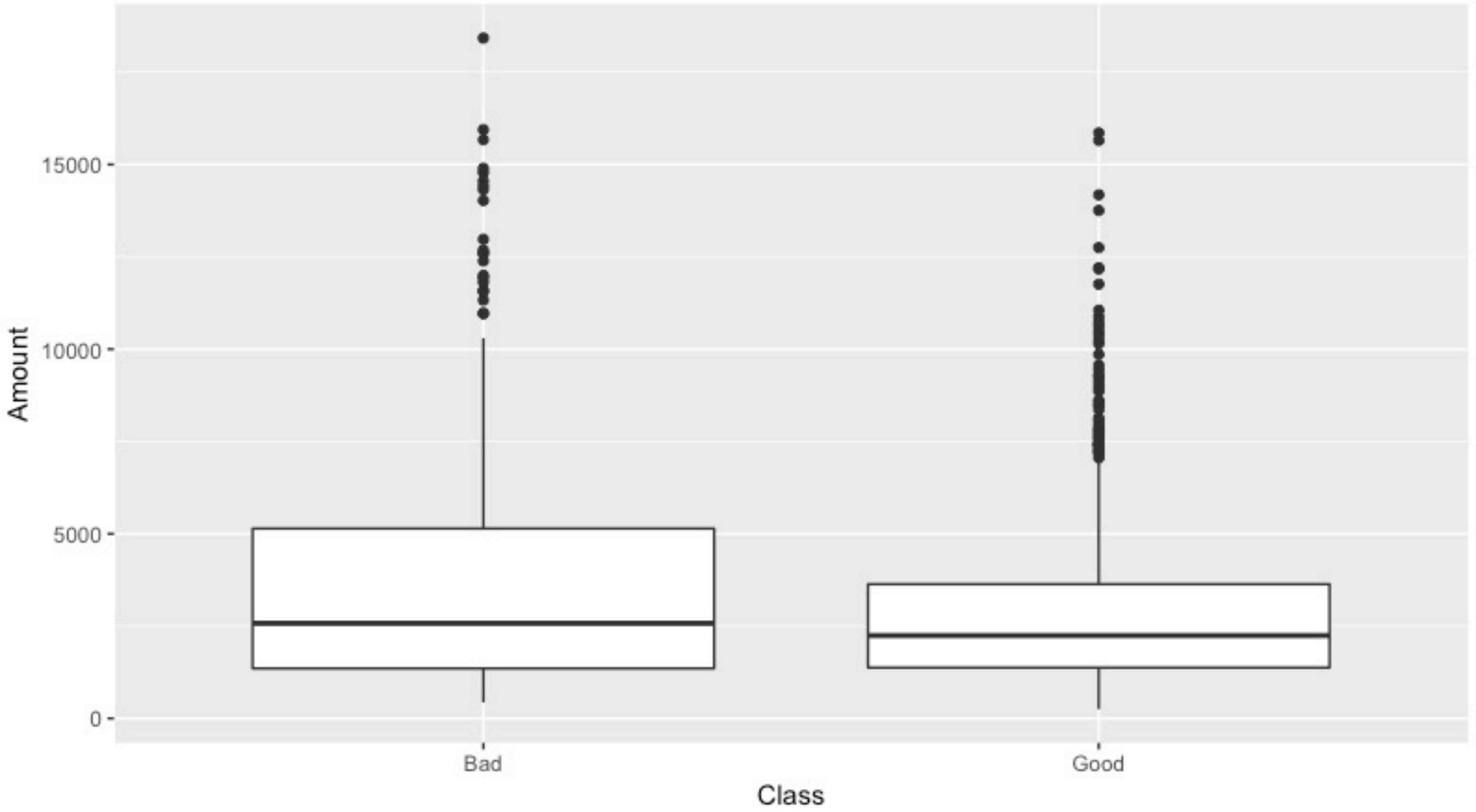
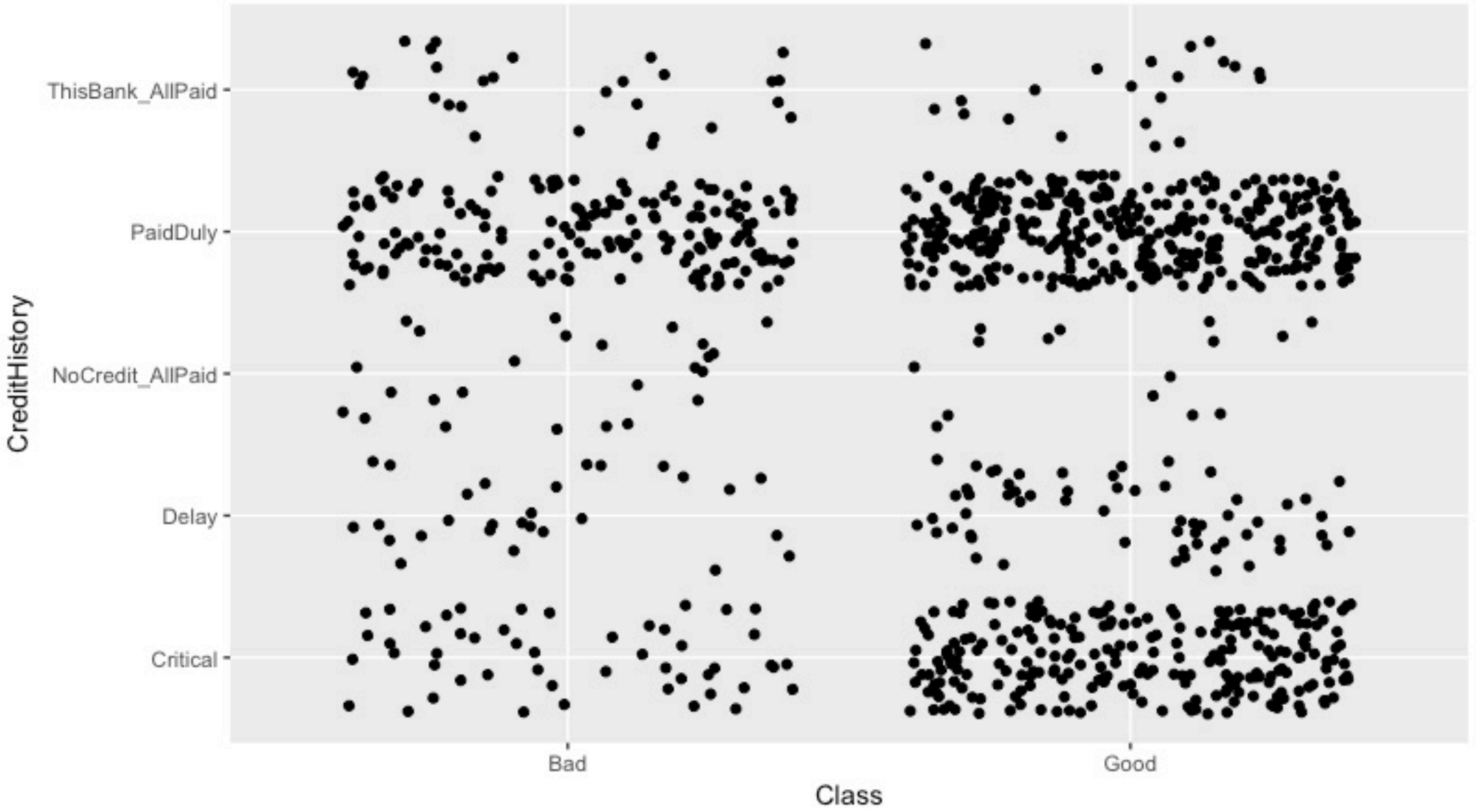
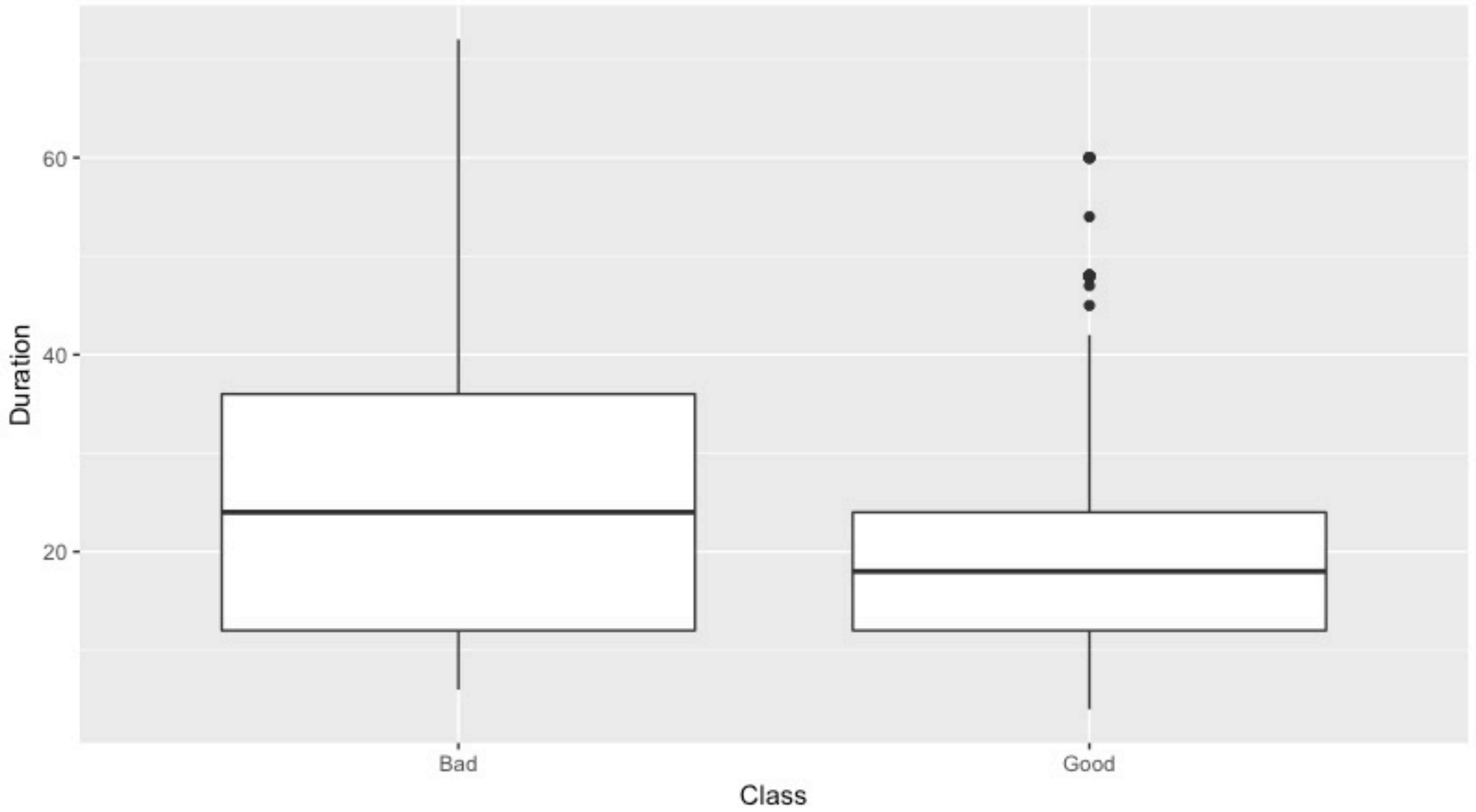
These are my of the features for study in German Credit dataset

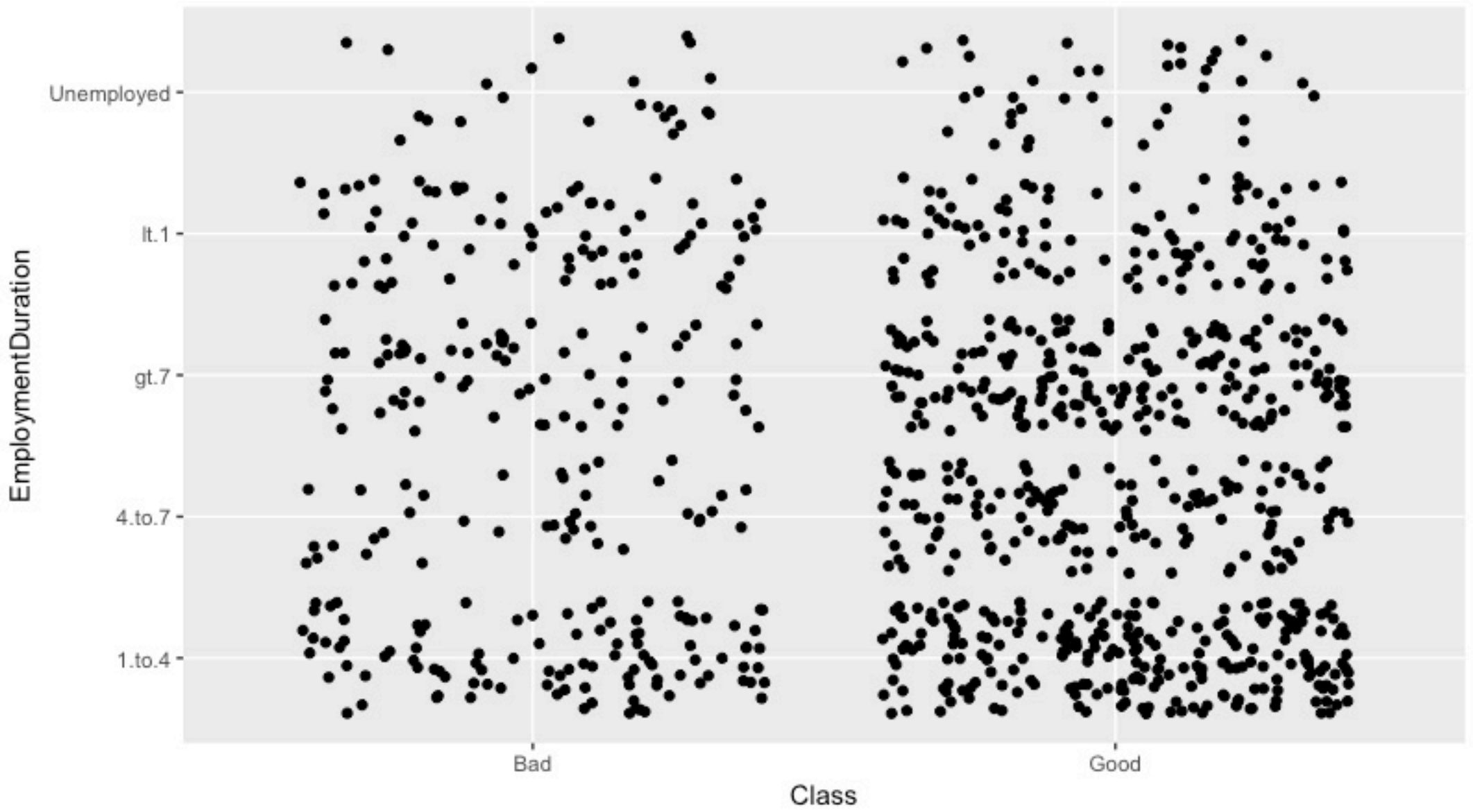
- Duration,
- Amount,
- InstallmentRatePercentage,
- Age,
- NumberExistingCredits,
- NumberPeopleMaintenance,
- Telephone,
- ForeignWorker,
- Class,
- CheckingAccountStatus.lt.0,
- CheckingAccountStatus.0.to.200,
- CheckingAccountStatus.gt.200,
- CheckingAccountStatus.none,
- CreditHistory.NoCredit.AllPaid,
- CreditHistory.ThisBank.AllPaid,
- CreditHistory.PaidDuly,
- CreditHistory.Delay,
- CreditHistory.Critical,
- SavingsAccountBonds.lt.100,
- SavingsAccountBonds.100.to.500,
- SavingsAccountBonds.500.to.1000,
- SavingsAccountBonds.gt.1000,
- SavingsAccountBonds.Unknown,
- EmploymentDuration.lt.1,
- EmploymentDuration.1.to.4,
- EmploymentDuration.4.to.7,
- EmploymentDuration.gt.7,
- EmploymentDuration.Unemployed,
- Personal.Male.Divorced.Seperated,
- Personal.Female.NotSingle,
- Personal.Male.Single,
- Personal.Male.Married.Widowed,
- Personal.Female.Single,
- Property.RealEstate,
- Property.Insurance,
- Property.CarOther,
- Property.Unknown,
- Housing.Rent,
- Housing.Own,
- Housing.ForFree

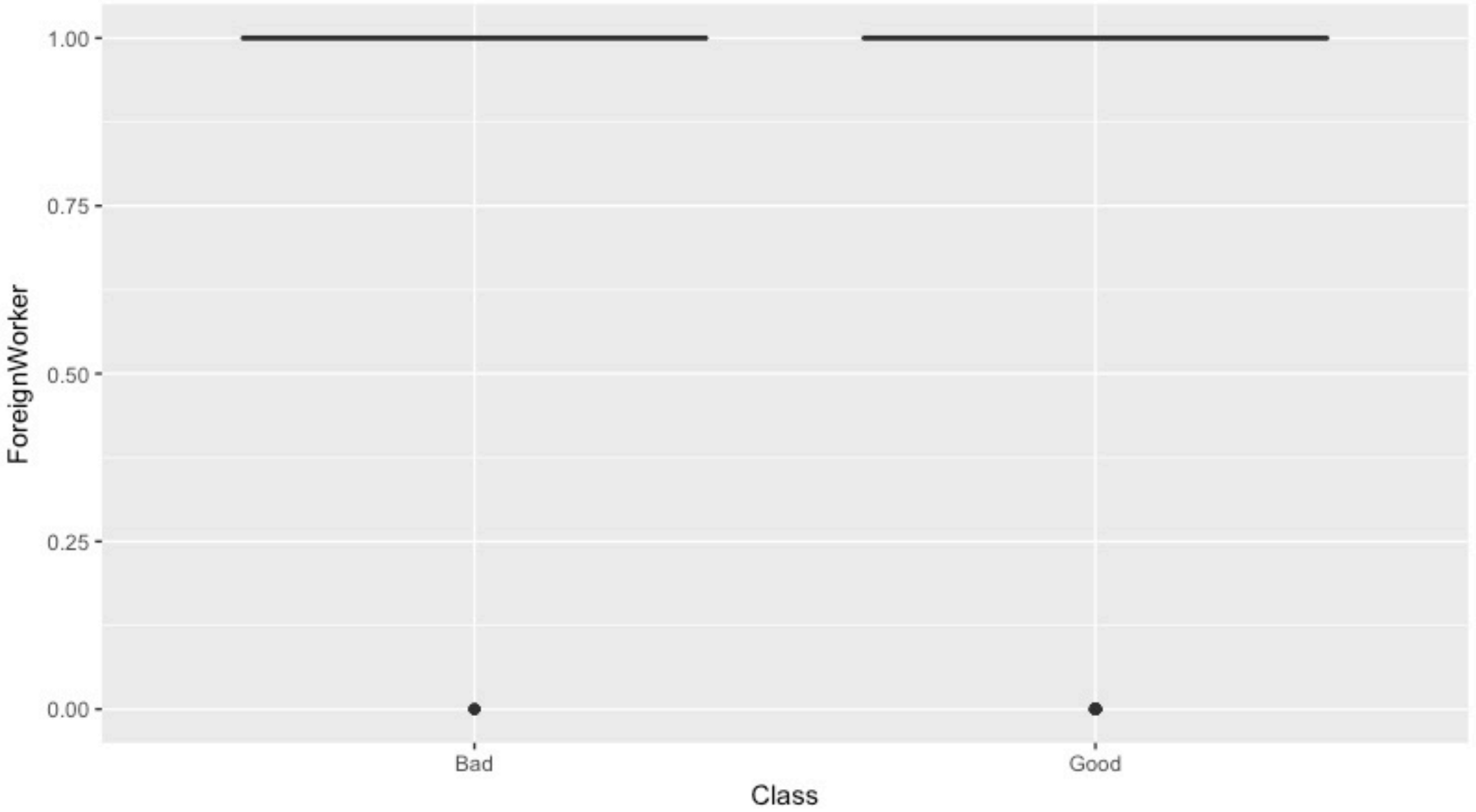

60
40
20
Age
Bad
Good
Class

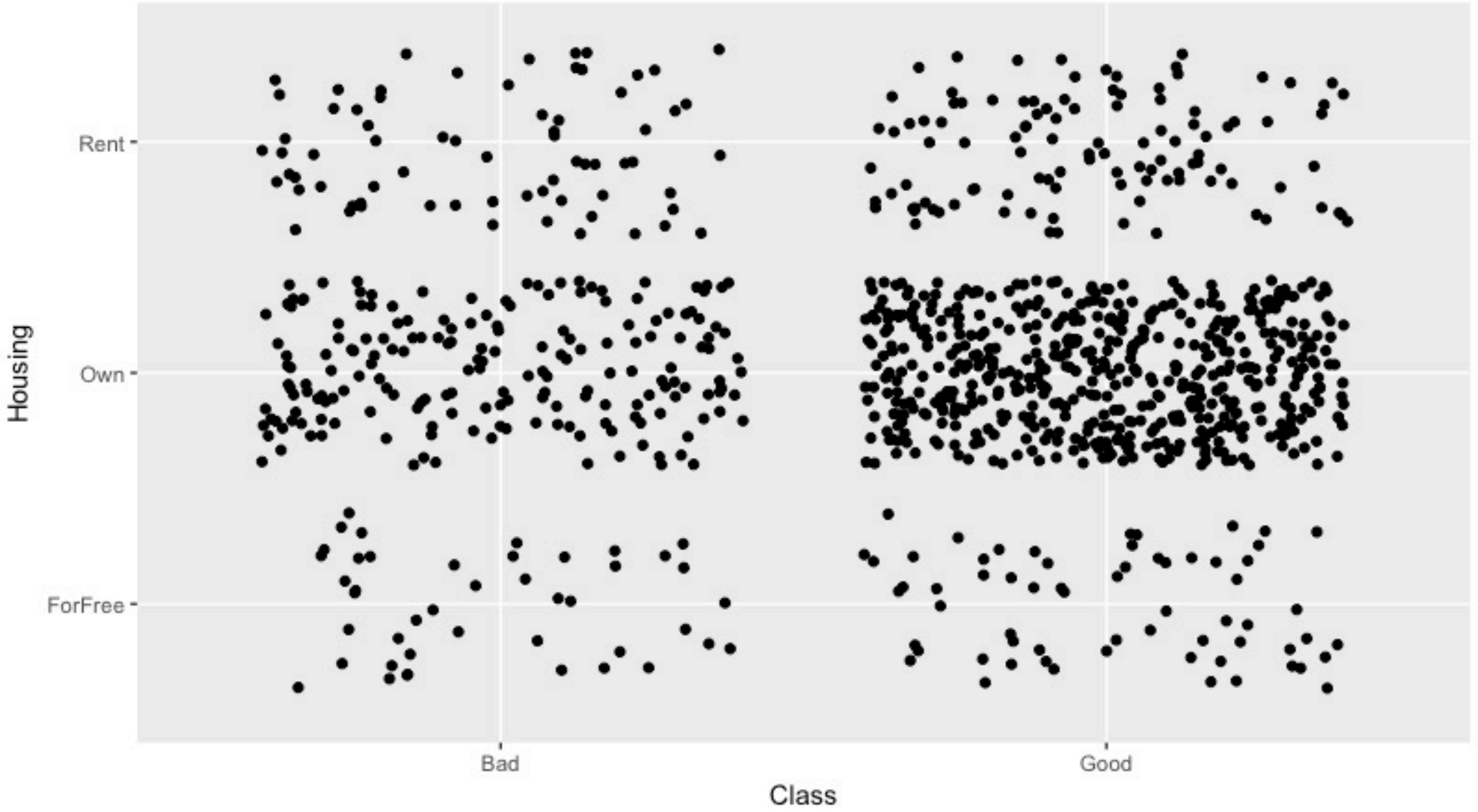

15000
10000
5000
0
Amount
Bad
Good
Class

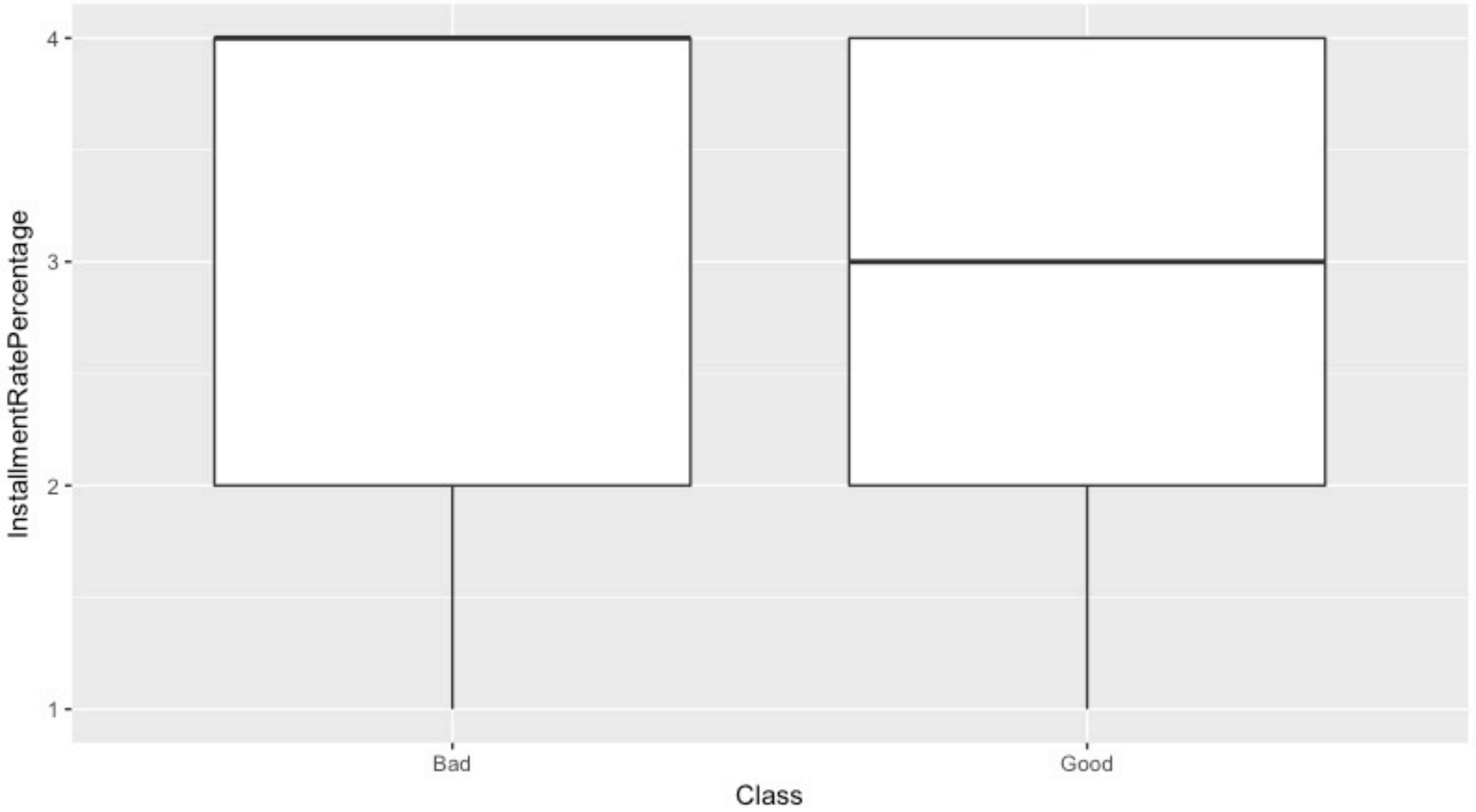

ThisBank_AllPaid
PaidDuly
NoCredit_AllPaid
Delay
Critical
CreditHistory
Bad
Good
Class

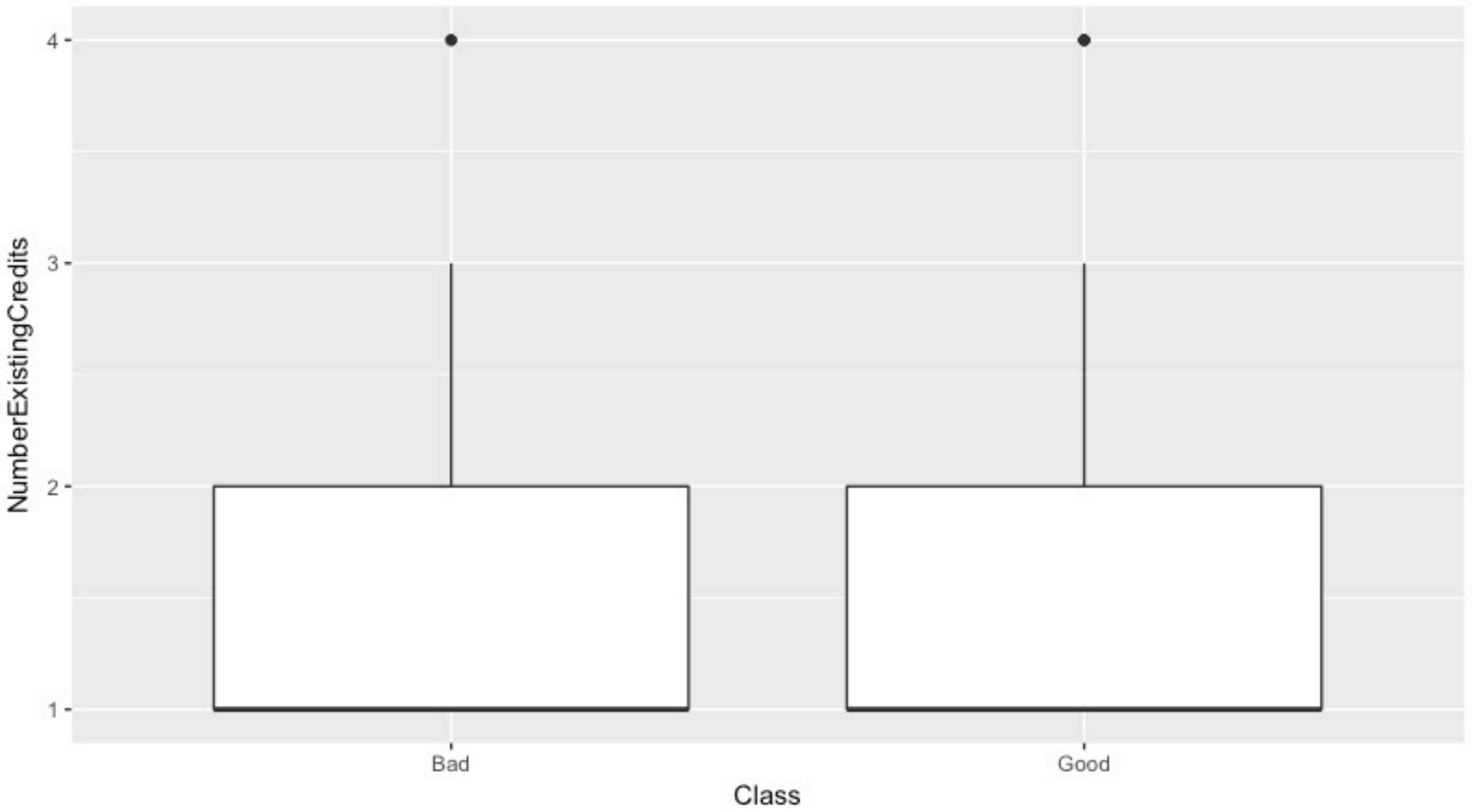

60
40
20
Duration
Bad
Good
Class

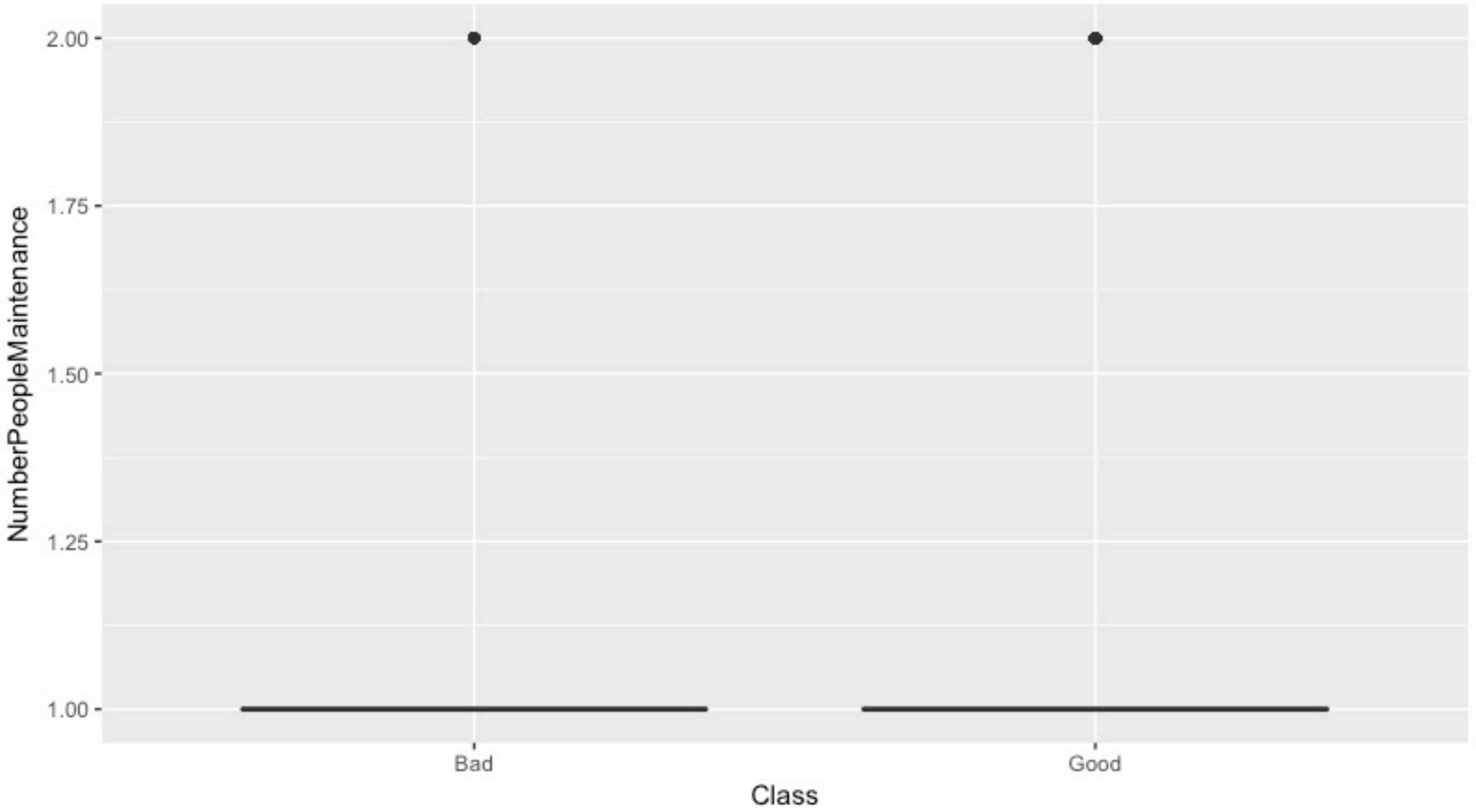

Unemployed
lt.1
gt.7
4.to.7
1.to.4
EmploymentDuration
Bad
Good
Class

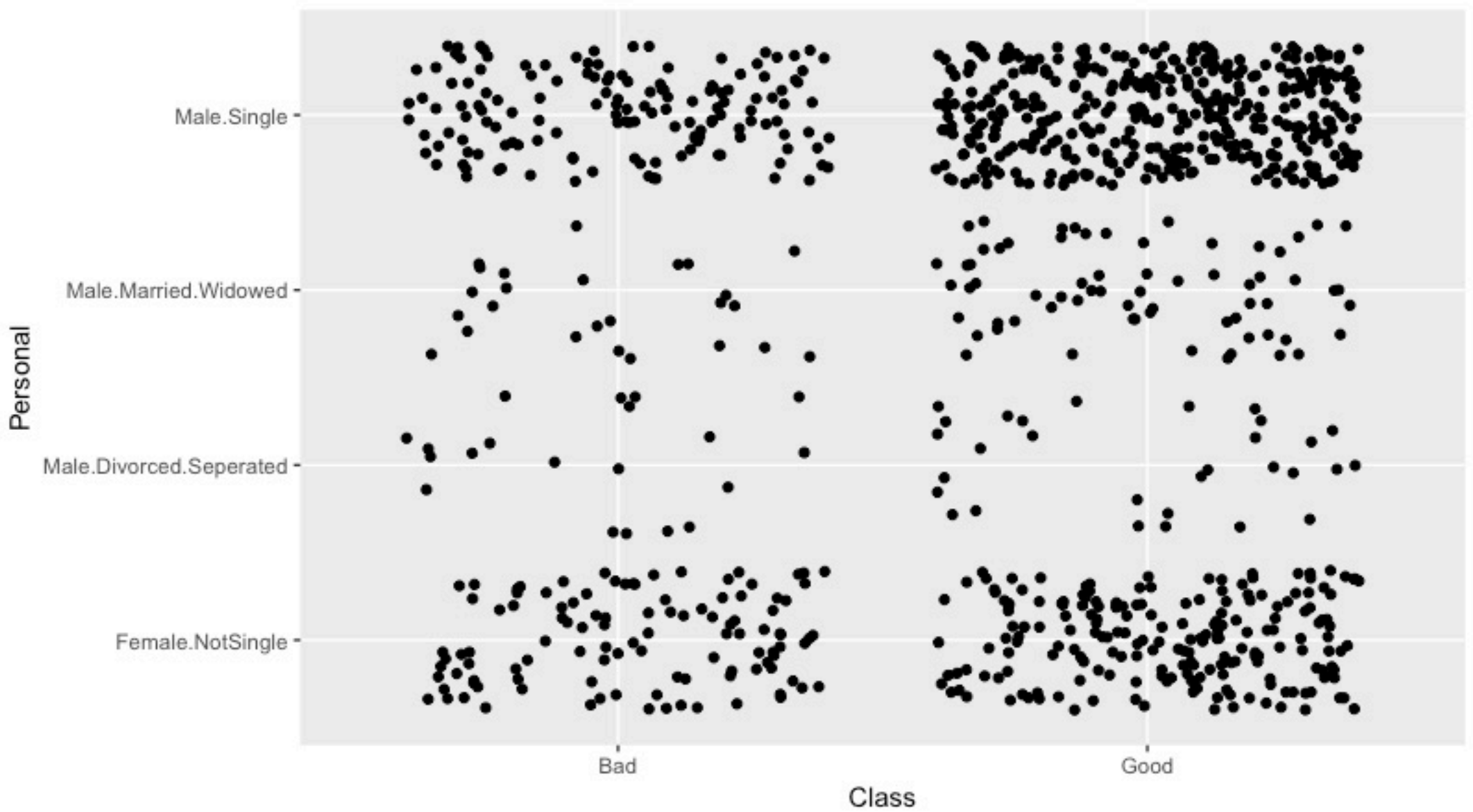

1.00
0.75
0.50
0.25
0.00
ForeignWorker
Bad
Good
Class

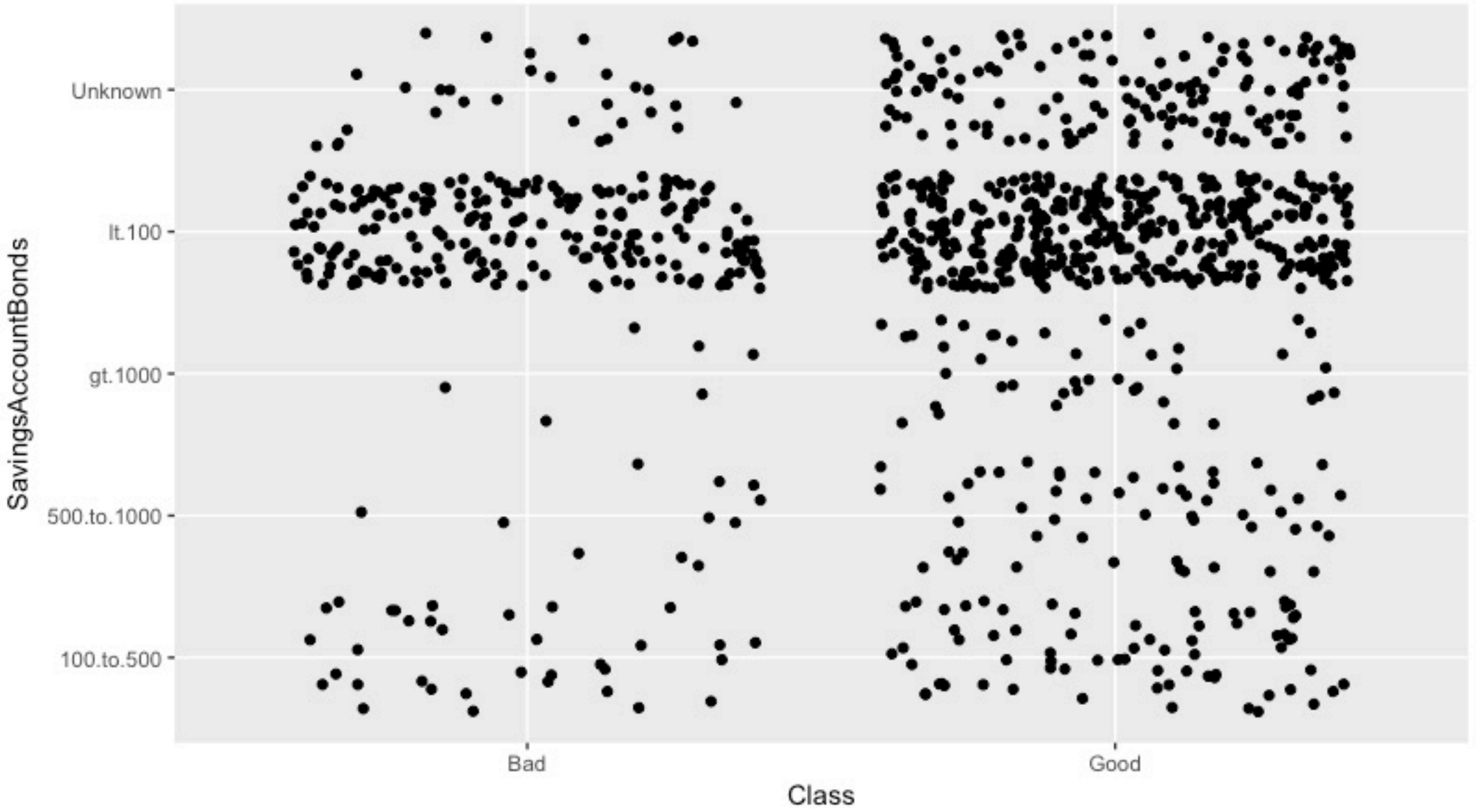

Housing
Rent
Own
ForFree
Bad
Good
Class


4
3
2
1
InstallmentRatePercentage
Bad
Good
Class

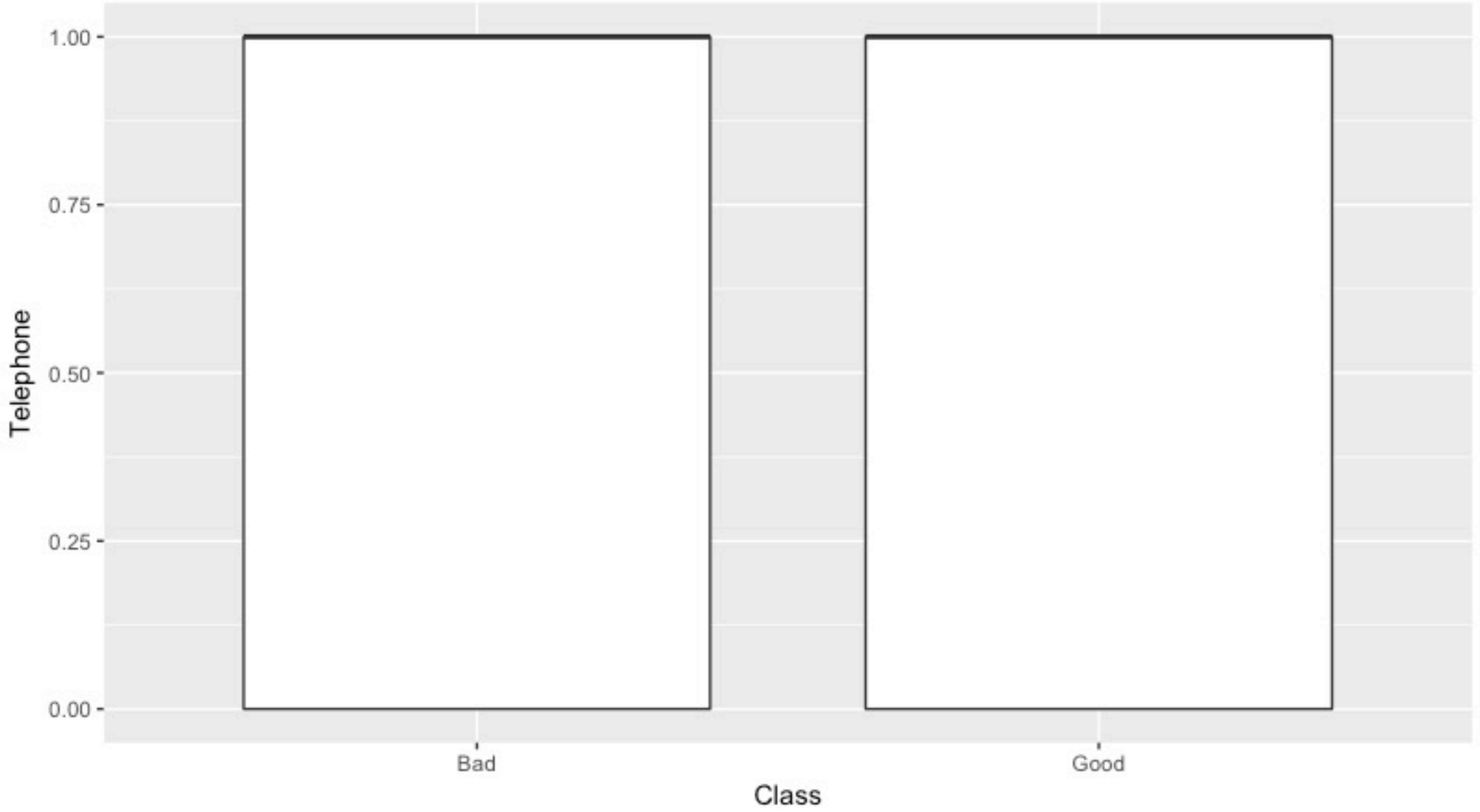

4
3
2
1
NumberExistingCredits
Bad
Good
Class


2.00
1.75
1.50
1.25
1.00
NumberPeopleMaintenance
Bad
Good
Class


Male.Single
Male.Married.Widowed
Male.Divorced.Seperated
Female.NotSingle
Personal
Bad
Good
Class


SavingsAccountBonds
Unknown
lt.100
gt.1000
500.to.1000
100.to.500
Bad
Good
Class

Class
Good
Bad
0.to.200
lt.0
none
CheckingAccountStatus


1.00
0.75
0.50
0.25
0.00
Telephone
Bad
Good
Class

Round: 1

Features	Accuracies
Duration	0.725
Amount	0.69
InstallmentRatePercentage	0.7
Age	0.685
NumberExistingCredits	0.7
NumberPeopleMaintenance	0.7
Telephone	0.7
ForeignWorker	0.7
CheckingAccountStatus	0.665
CreditHistory	0.7
SavingsAccountBonds	0.7
EmploymentDuratio	0.7
Personal	0.7
Property	0.7
Housing	0.7

Round: 2

Features	Accuracies
Duration + Amount	0.70
Duration + InstallmentRatePercentage	0.715
Duration + Age	0.715
Duration + NumberExistingCredits	0.725
Duration + NumberPeopleMaintenance	0.735
Duration + Telephone	0.725
Duration + ForeignWorker	0.72
Duration + CheckingAccountStatus	0.71
Duration + CreditHistory	0.71
Duration + SavingsAccountBonds	0.72
Duration + EmploymentDuratio	0.73
Duration + Personal	0.73
Duration + Property	0.70
Duration + Housing	0.7

Round: 3

Features	Accuracies
Duration + NumberPeopleMaintenance + Amount	0.71
Duration + NumberPeopleMaintenance + InstallmentRatePercentage	0.715
Duration + NumberPeopleMaintenance + Age	0.73
Duration + NumberPeopleMaintenance + NumberExistingCredits	0.74
Duration + NumberPeopleMaintenance + Telephone	0.725
Duration + NumberPeopleMaintenance + ForeignWorker	0.74
Duration + NumberPeopleMaintenance + CheckingAccountStatus	0.71
Duration + NumberPeopleMaintenance + CreditHistory	0.735
Duration + NumberPeopleMaintenance + SavingsAccountBonds	0.73
Duration + NumberPeopleMaintenance + EmploymentDuratio	0.715
Duration + NumberPeopleMaintenance + Personal	0.715
Duration + NumberPeopleMaintenance + Property	0.71
Duration + NumberPeopleMaintenance + Housing	0.765

Round: 4

Features	Accuracies
Duration + NumberPeopleMaintenance + Housing +Amount	0.72
Duration + NumberPeopleMaintenance + Housing + InstallmentRatePercentage	0.75
Duration + NumberPeopleMaintenance + Housing + Age	0.735
Duration + NumberPeopleMaintenance + Housing + NumberExistingCredits	0.73
Duration + NumberPeopleMaintenance + Housing + Telephone	0.775
Duration + NumberPeopleMaintenance + Housing + ForeignWorker	0.76
Duration + NumberPeopleMaintenance +Housing + CheckingAccountStatus	0.71
Duration + NumberPeopleMaintenance + Housing + CreditHistory	0.735
Duration + NumberPeopleMaintenance + Housing + SavingsAccountBonds	0.735
Duration + NumberPeopleMaintenance + Housing + EmploymentDuratio	0.72
Duration + NumberPeopleMaintenance + Housing + Personal	0.72
Duration + NumberPeopleMaintenance + Housing + Property	0.73

Round: 5

Features	Accuracies
Duration + NumberPeopleMaintenance + Housing + Telephone + Amount	0.735
Duration + NumberPeopleMaintenance + Housing + Telephone + InstallmentRatePercentage	0.71
Duration + NumberPeopleMaintenance + Housing + Telephone + Age	0.775
Duration + NumberPeopleMaintenance + Housing + Telephone + NumberExistingCredits	0.73
Duration + NumberPeopleMaintenance + Housing + Telephone + ForeignWorker	0.74
Duration + NumberPeopleMaintenance +Housing + Telephone + CheckingAccountStatus	0.665
Duration + NumberPeopleMaintenance + Housing + Telephone + CreditHistory	0.705
Duration + NumberPeopleMaintenance + Housing + Telephone + SavingsAccountBonds	0.735
Duration + NumberPeopleMaintenance + Housing + Telephone + EmploymentDuratio	0.705
Duration + NumberPeopleMaintenance + Housing +Telephone + Personal	0.74
Duration + NumberPeopleMaintenance + Housing + Telephone + Property	0.695

- Round 1:- Duration feature is best accuracy.
- Round 2:- Duration + NumberPeopleMaintenance features are best accuracy.
- Round 3:- Duration + NumberPeopleMaintenance + Housing features are best accuracy.
- Round 4:- Duration + NumberPeopleMaintenance + Housing + Telephone features are best accuracy.
- Round 5:- Duration + NumberPeopleMaintenance + Housing + Telephone + Age features are best accuracy.
- But I noticed that after Round 4 the some features accuracy going down compare to first 3 rounds.
- And In Round 5 only one feature's accuracy is going up compare to first 4 rounds.