**BAIYEWU AFOLAKE SIMBIAT**

**LAB 5 1**

**CONFUSION MATRIX**

> confmatrobj<-confusionMatrix(pred,trainobj)

> confmatrobj

Confusion Matrix and Statistics

Reference

Prediction 1 2 3 4 5

1 224 1 4 1 1

2 0 222 1 3 0

3 0 3 225 1 2

4 1 2 1 214 0

5 4 2 1 0 216

Overall Statistics

Accuracy : 0.9752

95% CI : (0.9644, 0.9835)

No Information Rate : 0.2055

P-Value [Acc > NIR] : < 2.2e-16

Kappa : 0.969

Mcnemar's Test P-Value : NA

Statistics by Class:

Class: 1 Class: 2 Class: 3 Class: 4 Class: 5

Sensitivity 0.9782 0.9652 0.9698 0.9772 0.9863

Specificity 0.9922 0.9956 0.9933 0.9956 0.9923

Pos Pred Value 0.9697 0.9823 0.9740 0.9817 0.9686

Neg Pred Value 0.9944 0.9911 0.9922 0.9945 0.9967

Prevalence 0.2028 0.2037 0.2055 0.1940 0.1940

Detection Rate 0.1984 0.1966 0.1993 0.1895 0.1913

Detection Prevalence 0.2046 0.2002 0.2046 0.1931 0.1975

Balanced Accuracy 0.9852 0.9804 0.9816 0.9864 0.9893

**CROSS TABLE**

> ########problem 8

> library(gmodels)

> CrossTable(predictions,testobj,prop.chisq = FALSE)

Cell Contents

|-------------------------|

| N |

| N / Row Total |

| N / Col Total |

| N / Table Total |

|-------------------------|

Total Observations in Table: 140

| testobj

predictions | 1 | 2 | 3 | 4 | 5 | Row Total |

-------------|-----------|-----------|-----------|-----------|-----------|-----------|

1 | 7 | 2 | 7 | 6 | 10 | 32 |

| 0.219 | 0.062 | 0.219 | 0.188 | 0.312 | 0.229 |

| 0.292 | 0.100 | 0.280 | 0.188 | 0.256 | |

| 0.050 | 0.014 | 0.050 | 0.043 | 0.071 | |

-------------|-----------|-----------|-----------|-----------|-----------|-----------|

2 | 8 | 4 | 3 | 5 | 8 | 28 |

| 0.286 | 0.143 | 0.107 | 0.179 | 0.286 | 0.200 |

| 0.333 | 0.200 | 0.120 | 0.156 | 0.205 | |

| 0.057 | 0.029 | 0.021 | 0.036 | 0.057 | |

-------------|-----------|-----------|-----------|-----------|-----------|-----------|

3 | 2 | 5 | 5 | 7 | 8 | 27 |

| 0.074 | 0.185 | 0.185 | 0.259 | 0.296 | 0.193 |

| 0.083 | 0.250 | 0.200 | 0.219 | 0.205 | |

| 0.014 | 0.036 | 0.036 | 0.050 | 0.057 | |

-------------|-----------|-----------|-----------|-----------|-----------|-----------|

4 | 3 | 5 | 6 | 7 | 8 | 29 |

| 0.103 | 0.172 | 0.207 | 0.241 | 0.276 | 0.207 |

| 0.125 | 0.250 | 0.240 | 0.219 | 0.205 | |

| 0.021 | 0.036 | 0.043 | 0.050 | 0.057 | |

-------------|-----------|-----------|-----------|-----------|-----------|-----------|

5 | 4 | 4 | 4 | 7 | 5 | 24 |

| 0.167 | 0.167 | 0.167 | 0.292 | 0.208 | 0.171 |

| 0.167 | 0.200 | 0.160 | 0.219 | 0.128 | |

| 0.029 | 0.029 | 0.029 | 0.050 | 0.036 | |

-------------|-----------|-----------|-----------|-----------|-----------|-----------|

Column Total | 24 | 20 | 25 | 32 | 39 | 140 |

| 0.171 | 0.143 | 0.179 | 0.229 | 0.279 | |

-------------|-----------|-----------|-----------|-----------|-----------|-----------|