bc_hw.R

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Sun May 20 13:03:48 2018

```r
library(e1071)
library(caret)
```

```
## Warning: package 'caret' was built under R version 3.4.4
```

```
## Loading required package: lattice
```

```
## Loading required package: ggplot2
```

```
## Warning in as.POSIXlt.POSIXct(Sys.time()): unknown timezone 'zone/tz/2018c.
## 1.0/zoneinfo/America/Chicago'
```

```r
data <- read.csv("vote2.csv")

n <- dim(data)[1]

t1 <- sample(1:n, n*.8)
t2 <- setdiff(1:n, t1)

cl <- data[t2,]$party

train <- subset(data[t1,])
test <- subset(data[t2,], select =- party)

model <- naiveBayes(party ~., data=train)

pred <- predict(model, test)

confusionMatrix(pred, cl)
```

```
## Confusion Matrix and Statistics
##
##             Reference
## Prediction   democrat republican
##   democrat         47          5
##   republican        3         32
##
##                Accuracy : 0.908
##                  95% CI : (0.8268, 0.9595)
##     No Information Rate : 0.5747
##     P-Value [Acc > NIR] : 7.152e-12
##
##                   Kappa : 0.8106
##  Mcnemar's Test P-Value : 0.7237
##
##             Sensitivity : 0.9400
##             Specificity : 0.8649
##          Pos Pred Value : 0.9038
##          Neg Pred Value : 0.9143
##              Prevalence : 0.5747
##          Detection Rate : 0.5402
##    Detection Prevalence : 0.5977
##       Balanced Accuracy : 0.9024
##
##        'Positive' Class : democrat
##
```