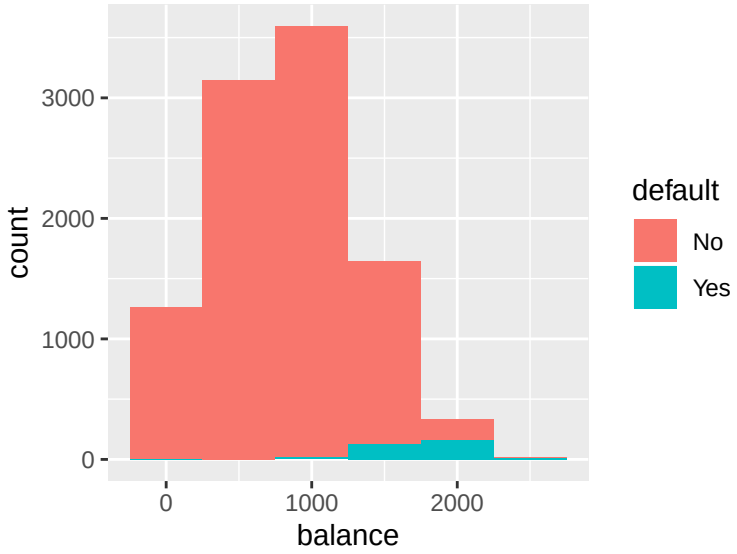
DA2 Resampling Homework

Name: _____

Data

Using the Default data from ISLR



Deliverables: Model Cross Validation

get the default data, and hold out 10% for testing. With the remaining 90%, use caret with the ranger package, and cross validate with 10 folds.

```
## note: only 2 unique complexity parameters in default grid. Truncating the grid to 2 .
```

```
## Confusion Matrix and Statistics
##
##           Reference
## Prediction  No Yes
##        No  971   2
##        Yes   0  27
##
##                Accuracy : 0.998
##                  95% CI : (0.9928, 0.9998)
##     No Information Rate : 0.971
##     P-Value [Acc > NIR] : 7.892e-11
##
##                   Kappa : 0.9633
##
##  Mcnemar's Test P-Value : 0.4795
```

```
##
##             Sensitivity : 1.0000
##             Specificity : 0.9310
##          Pos Pred Value : 0.9979
##          Neg Pred Value : 1.0000
##              Prevalence : 0.9710
##          Detection Rate : 0.9710
##    Detection Prevalence : 0.9730
##       Balanced Accuracy : 0.9655
##
##        'Positive' Class : No
##
```

Model Selection and Parameter estimation

Now compare the Random Forest with naive_bayes, svmRadial and rf. Map results to a grid and show:

```
## note: only 2 unique complexity parameters in default grid. Truncating the grid to 2 .
##
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```

```
##      [,1]          [,2]
## [1,] "naive_bayes" "0.571428571428571"
## [2,] "ranger"      "1"
## [3,] "svmRadial"   "0.75"
## [4,] "rf"          "1"
```

```
## Confusion Matrix and Statistics
##
##           Reference
## Prediction  No Yes
##        No  971   3
##        Yes   0  26
##
##                Accuracy : 0.997
##                  95% CI : (0.9913, 0.9994)
##     No Information Rate : 0.971
##     P-Value [Acc > NIR] : 8.123e-10
##
##                   Kappa : 0.9439
##
##  Mcnemar's Test P-Value : 0.2482
##
##             Sensitivity : 1.0000
##             Specificity : 0.8966
##          Pos Pred Value : 0.9969
##          Neg Pred Value : 1.0000
##              Prevalence : 0.9710
##          Detection Rate : 0.9710
##    Detection Prevalence : 0.9740
##       Balanced Accuracy : 0.9483
##
##        'Positive' Class : No
##
```