Datarobot Task

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

Include the libraries

```
library(caret)
library(class)
library(e1071)
```

Loading and preprocessing the data

Read in the data.

```
data1<-read.table("D:/bank.csv",sep=";",header=TRUE)
train <-  data1[1:3000,]
test <-data1[3001:4521,]
test_class <- test$y
test$y <-NULL
```

Create logistic regression model

```
pred <-
glm(y~age+balance+duration+campaign+pdays+previous,data=train,family=binomial
(link="logit"))
confint(pred)
```

```
## Waiting for profiling to be done...
```

```
##                      2.5 %        97.5 %
## (Intercept) -4.138302e+00 -3.040785e+00
## age         -4.833206e-03  1.822655e-02
## balance      7.306809e-06  8.226351e-05
## duration     3.147642e-03  3.978362e-03
## campaign    -1.335211e-01 -1.105939e-02
## pdays       -4.866917e-04  2.170382e-03
## previous     8.262966e-02  2.268519e-01
```

Apply the model to the test dataset

```
outc<- predict(pred,test,type = "response")
pred_class <- rep("no",1521)
pred_class[outc > 0.47] = "yes"
```

Create confusion matix

```
confusionMatrix(pred_class,test_class)
```

```
## Confusion Matrix and Statistics
##
##           Reference
## Prediction   no  yes
##        no  1319  144
##        yes   29   29
##
##                Accuracy : 0.8863
##                  95% CI : (0.8692, 0.9018)
##     No Information Rate : 0.8863
##     P-Value [Acc > NIR] : 0.5202
##
##                   Kappa : 0.2057
##  Mcnemar's Test P-Value : <2e-16
##
##             Sensitivity : 0.9785
##             Specificity : 0.1676
##          Pos Pred Value : 0.9016
##          Neg Pred Value : 0.5000
##              Prevalence : 0.8863
##          Detection Rate : 0.8672
##    Detection Prevalence : 0.9619
##       Balanced Accuracy : 0.5731
##
##        'Positive' Class : no
##
```

Observations

The logistic prediction model created has an accuracy of 0.886 and high true positive and low false negative rates.This can be inferred from the confusion matrix created.