

homework#2

R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

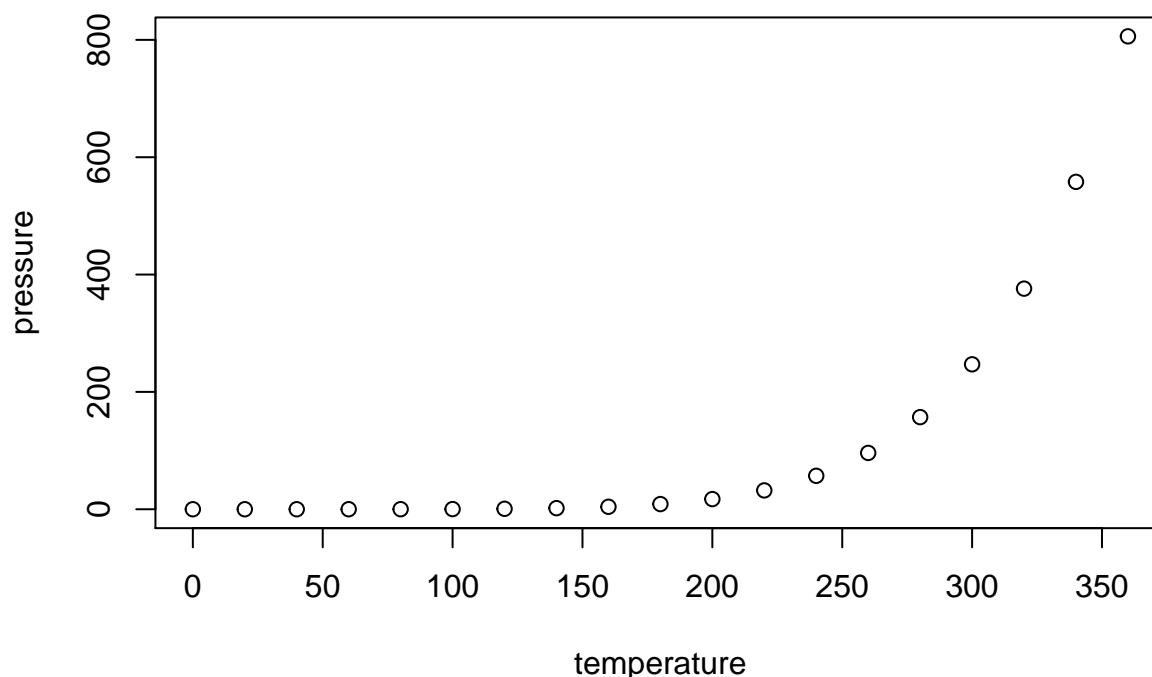
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
summary(cars)
```

```
##      speed      dist
##  Min.   : 4.0    Min.   :  2.00
##  1st Qu.:12.0    1st Qu.: 26.00
##  Median :15.0    Median : 36.00
##  Mean   :15.4    Mean   : 42.98
##  3rd Qu.:19.0    3rd Qu.: 56.00
##  Max.   :25.0    Max.   :120.00
```

Including Plots

You can also embed plots, for example:



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

```
data<-read.csv("C:/Users/Administrator/Desktop/UniversalBank.csv") head(data) library(dplyr) li-
brary(caret) library(FNN) mydata<-data[,-c(1,5)] mydata<-predict(dummyVars(~+as.factor(Education)-
Education,data=mydata),mydata) set.seed(20) validation_index<-createDataPartition(1:nrow(mydata),p=0.4,list=FALSE)
validation_data<-mydata[validation_index,] train_data<-mydata[-validation_index,] # new<-data.frame(Age
= 40, Experience = 10, Income = 84, Family = 2, CCAvg = 2, as.factor(Education)1 = 0,
as.factor(Education)2 = 1, as.factor(Education)3 = 0, Mortgage = 0, Securities.Account =
0, CD.Account = 0, Online = 1, CreditCard = 1) nn <- knn(train = train_data[,-8], test = new, cl =
train_data[8], k = 1, prob=TRUE) nn Serach_grid <- expand.grid(k=c(5,10,15,20,25,30,35,40,45,50,55,60,65,70,75,80,85,90,
model<-train(Personal.Loan~., data=train_data, method="knn", tuneGrid=Serach_grid) model
plot(model$results, model$results$RMSE) #K=70 IS THE BEST # nn <- knn(train = train_data[,-8], test =
validation_data[,-8], cl = train_data[8], k = 70, prob=TRUE) confusionMatrix(nn,as.factor(validation_data[8]))
# nn <- knn(train = train_data[,-8], test = new, cl = train_data[8], k = 70, prob=TRUE)
```

```
train_index<-createDataPartition(as.numeric(rownames(mydata)),p=0.5,list=FALSE) train_data<-
mydata[train_index,] test_valid_data<-mydata[-train_index,] valid_index<-createDataPartition(as.numeric(rownames(test_
p=0.6,list=FALSE) valid_data<-test_valid_data[valid_index,] test_data<-test_valid_data[-valid_index,]

nn1 <- knn(train = train_data[,-8], test = valid_data[,-8], cl = train_data[8], k = 70, prob=TRUE)
nn2 <- knn(train = train_data[,-8], test = test_data[,-8], cl = train_data[8], k = 70, prob=TRUE)
confusionMatrix(nn1,as.factor(valid_data[8])) confusionMatrix(nn2,as.factor(test_data[8]))
```