21BDS0340

Abhinav Dinesh Srivatsa

Programming for Data Science Lab

Digital Assignment – III

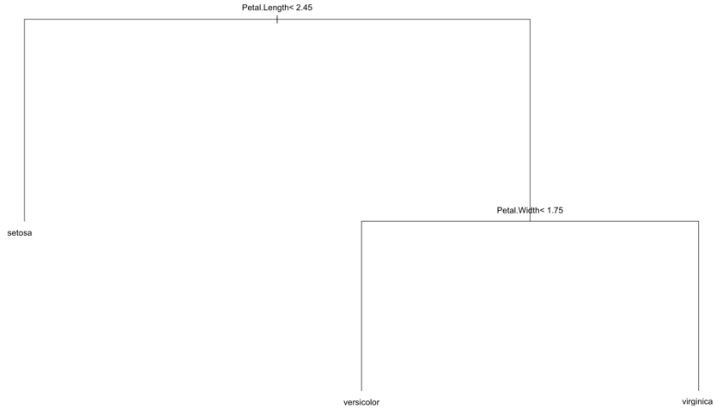
Code

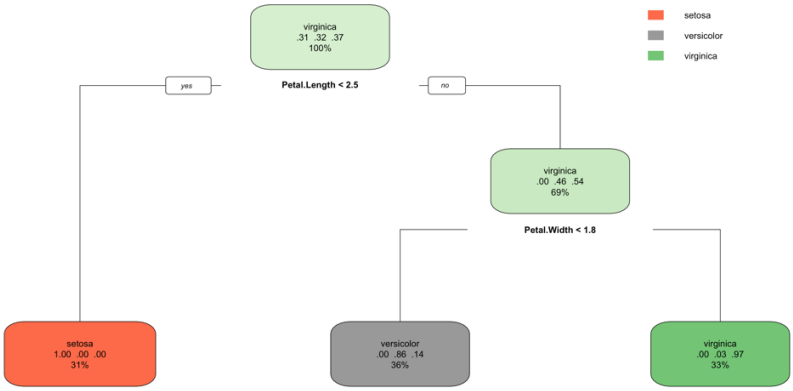
```
install.packages("rpart")
library(rpart)
install.packages("rpart.plot")
library(rpart.plot)
install.packages("table1")

head(iris)
dim(iris)

s <- sample(150, 100)
iris_train <- iris[s,]
iris_test <- iris[-s,]

dim(iris_train)
dim(iris_test)

dtm <- rpart(Species~., iris_train, method = "class")
plot(dtm)

text(dtm)
rpart.plot(dtm)

rpart.plot(dtm, type = 4, extra = 101)

p <- predict(dtm, iris_test, type = "class")
table(iris_test[, 5], p)
```

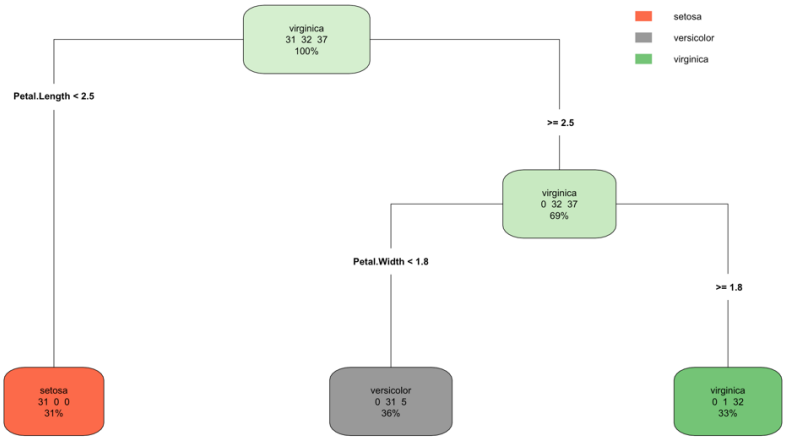
Output

```
> install.packages("rpart")
trying URL 'https://cran.rstudio.com/bin/macosx/big-sur-
arm64/contrib/4.2/rpart_4.1.23.tgz'
Content type 'application/x-gzip' length 737028 bytes (719 KB)
==================================================
downloaded 719 KB


The downloaded binary packages are in

/var/folders/2f/9fz2wbqj7vlcygt681kl2k0m0000gn/T//RtmpbqGhsX/downloaded_packages
> library(rpart)
> install.packages("rpart.plot")
```

```
trying URL 'https://cran.rstudio.com/bin/macosx/big-sur-
arm64/contrib/4.2/rpart.plot_3.1.2.tgz'
Content type 'application/x-gzip' length 1023650 bytes (999 KB)
==================================================
downloaded 999 KB


The downloaded binary packages are in

/var/folders/2f/9fz2wbqj7vlcygt681kl2k0m0000gn/T//RtmpbQ6hsX/downloaded_packages
> library(rpart.plot)
> install.packages("table1")
trying URL 'https://cran.rstudio.com/bin/macosx/big-sur-
arm64/contrib/4.2/table1_1.4.3.tgz'
Content type 'application/x-gzip' length 371714 bytes (363 KB)
==================================================
downloaded 363 KB


The downloaded binary packages are in

/var/folders/2f/9fz2wbqj7vlcygt681kl2k0m0000gn/T//RtmpbQ6hsX/downloaded_packages
> head(iris)
  Sepal.Length Sepal.Width Petal.Length Petal.Width Species
1          5.1         3.5          1.4         0.2  setosa
2          4.9         3.0          1.4         0.2  setosa
3          4.7         3.2          1.3         0.2  setosa
4          4.6         3.1          1.5         0.2  setosa
5          5.0         3.6          1.4         0.2  setosa
6          5.4         3.9          1.7         0.4  setosa
> dim(iris)
[1] 150   5
> s <- sample(150, 100)
> iris_train <- iris[s,]
> iris_test <- iris[-s,]
> dim(iris_train)
[1] 100   5
> dim(iris_test)
[1] 50  5
> dtm <- rpart(Species~., iris_train, method = "class")
> plot(dtm)
> text(dtm)
> rpart.plot(dtm)
> rpart.plot(dtm, type = 4, extra = 101)
> p <- predict(dtm, iris_test, type = "class")
> table(iris_test[, 5], p)
            p
             setosa versicolor virginica
  setosa         19          0         0
  versicolor      0         18         0
  virginica       0          0        13
```


Petal.Length< 2.45
setosa
Petal.Width< 1.75
versicolor
virginica


virginica
.31 .32 .37
100%
Petal.Length < 2.5
yes
no
setosa
1.00 .00 .00
31%
virginica
.00 .46 .54
69%
Petal.Width < 1.8
versicolor
.00 .86 .14
36%
virginica
.00 .03 .97
33%
setosa
versicolor
virginica


virginica
31 32 37
100%
Petal.Length < 2.5
>= 2.5
setosa
31 0 0
31%
virginica
0 32 37
69%
Petal.Width < 1.8
>= 1.8
versicolor
0 31 5
36%
virginica
0 1 32
33%
setosa
versicolor
virginica