

Lab4.R

Usuario

2021-03-17

```
# Sarha Carolina Bravo Gzz
# 1907306
# 11.03.21
# Laboratorio 4

# Importar datos -----
--

c1.url <-
paste0("https://raw.githubusercontent.com/Caarolinee/PrincipiosEstadistic
a2021/main/Cuadro1.csv")

inventario <- read.csv(c1.url)
head(inventario)

##   Arbol Fecha Especie Posicion Vecinos Diametro Altura
## 1     1    12      F        C        4     15.3   14.78
## 2     2    12      F        D        3     17.8   17.07
## 3     3     9      C        D        5     18.2   18.28
## 4     4     9      H        S        4      9.7    8.79
## 5     5     7      H        I        6     10.8   10.18
## 6     6    10      C        I        3     14.1   14.90

tail(inventario)

##   Arbol Fecha Especie Posicion Vecinos Diametro Altura
## 45    45    24      C        I        4     10.2   13.93
## 46    46    23      F        I        3     14.4   12.68
## 47    47    24      C        S        6      7.7   10.00
## 48    48    25      C        S        5      9.9    8.69
## 49    49    25      H        D        1     20.4   16.73
## 50    50    24      H        D        3     20.9   16.25

str(inventario)

## 'data.frame':   50 obs. of  7 variables:
##  $ Arbol      : int  1 2 3 4 5 6 7 8 9 10 ...
##  $ Fecha      : int  12 12 9 9 7 10 10 12 16 14 ...
##  $ Especie    : chr  "F" "F" "C" "H" ...
##  $ Posicion   : chr  "C" "D" "D" "S" ...
##  $ Vecinos    : int  4 3 5 4 6 3 2 2 4 5 ...
```

```
## $ Diametro: num 15.3 17.8 18.2 9.7 10.8 14.1 17.1 20.6 18.2 16.1 ...
## $ Altura : num 14.78 17.07 18.28 8.79 10.18 ...

dim(inventario)

## [1] 50 7

names(inventario)

## [1] "Arbol" "Fecha" "Especie" "Posicion" "Vecinos" "Diametro"
"Altura"

colnames(inventario)

## [1] "Arbol" "Fecha" "Especie" "Posicion" "Vecinos" "Diametro"
"Altura"

names(inventario[,4:7])

## [1] "Posicion" "Vecinos" "Diametro" "Altura"

summary(inventario)

##      Arbol      Fecha      Especie      Posicion
## Min.   : 1.00   Min.   : 2.00   Length:50   Length:50
## 1st Qu.:13.25   1st Qu.:12.00   Class :character   Class :character
## Median :25.50   Median :16.00   Mode  :character   Mode  :character
## Mean   :25.50   Mean   :15.94
## 3rd Qu.:37.75   3rd Qu.:20.75
## Max.   :50.00   Max.   :25.00
##      Vecinos      Diametro      Altura
## Min.   :0.00   Min.   : 7.70   Min.   : 8.47
## 1st Qu.:2.25   1st Qu.:13.88   1st Qu.:11.78
## Median :3.00   Median :15.70   Median :14.24
## Mean   :3.34   Mean   :15.79   Mean   :13.94
## 3rd Qu.:4.00   3rd Qu.:18.10   3rd Qu.:16.05
## Max.   :6.00   Max.   :22.70   Max.   :21.46

is.factor(inventario$Especie)

## [1] FALSE

inventario$Especie <- factor(inventario$Especie)
is.factor(inventario$Especie)

## [1] TRUE

summary(inventario)

##      Arbol      Fecha      Especie      Posicion      Vecinos
## Min.   : 1.00   Min.   : 2.00   C:22   Length:50   Min.
:0.00
## 1st Qu.:13.25   1st Qu.:12.00   F:14   Class :character   1st
Qu.:2.25
```

```
## Median :25.50 Median :16.00 H:14 Mode :character Median
:3.00
## Mean :25.50 Mean :15.94 Mean
:3.34
## 3rd Qu.:37.75 3rd Qu.:20.75 3rd
Qu.:4.00
## Max. :50.00 Max. :25.00 Max.
:6.00
## Diametro Altura
## Min. : 7.70 Min. : 8.47
## 1st Qu.:13.88 1st Qu.:11.78
## Median :15.70 Median :14.24
## Mean :15.79 Mean :13.94
## 3rd Qu.:18.10 3rd Qu.:16.05
## Max. :22.70 Max. :21.46
```

```
is.factor(inventario$Posicion)
```

```
## [1] FALSE
```

```
inventario$Posicion <- factor(inventario$Posicion)
summary(inventario)
```

```
## Arbol Fecha Especie Posicion Vecinos
## Min. : 1.00 Min. : 2.00 C:22 C:14 Min. :0.00
## 1st Qu.:13.25 1st Qu.:12.00 F:14 D: 9 1st Qu.:2.25
## Median :25.50 Median :16.00 H:14 I:19 Median :3.00
## Mean :25.50 Mean :15.94 S: 8 Mean :3.34
## 3rd Qu.:37.75 3rd Qu.:20.75 3rd Qu.:4.00
## Max. :50.00 Max. :25.00 Max. :6.00
## Diametro Altura
## Min. : 7.70 Min. : 8.47
## 1st Qu.:13.88 1st Qu.:11.78
## Median :15.70 Median :14.24
## Mean :15.79 Mean :13.94
## 3rd Qu.:18.10 3rd Qu.:16.05
## Max. :22.70 Max. :21.46
```

```
# Tablas de frecuencia -----
--
```

```
freq.pos <- table(inventario$Posicion)
freq.pos
```

```
##
## C D I S
## 14 9 19 8
```

```
#Frecuencia relativa
```

```

prop.pos <- freq.pos / sum(freq.pos)
prop.pos

##
##      C      D      I      S
## 0.28 0.18 0.38 0.16

# Frecuencia en porcentaje

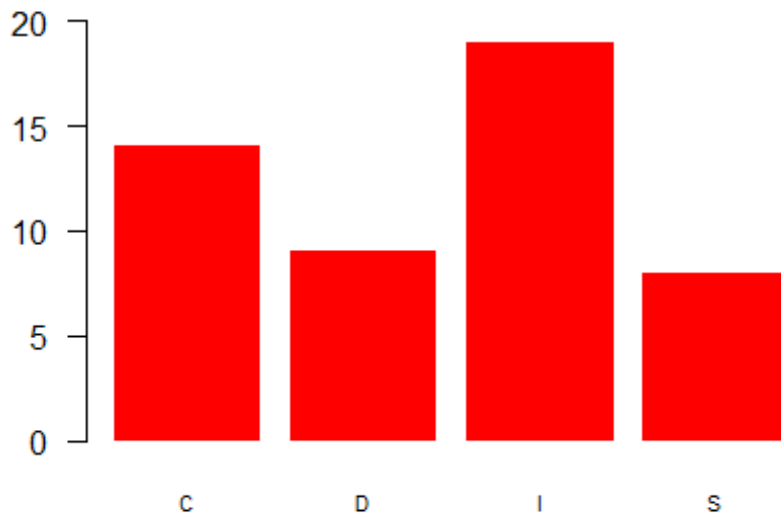
prop.porce <- prop.pos * 100
prop.porce

##
##  C  D  I  S
## 28 18 38 16

# Representación gráfica -----
--

barplot(freq.pos, col = "red", border = NA, las = 1, ylim = c(0, 20),
        cex.names = 0.7)

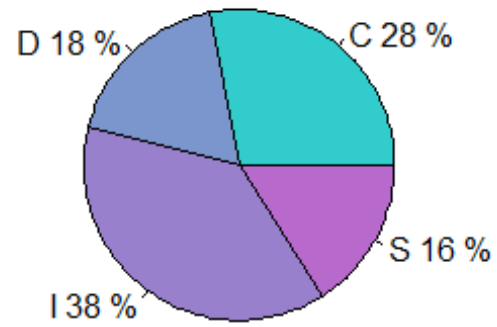
```



```

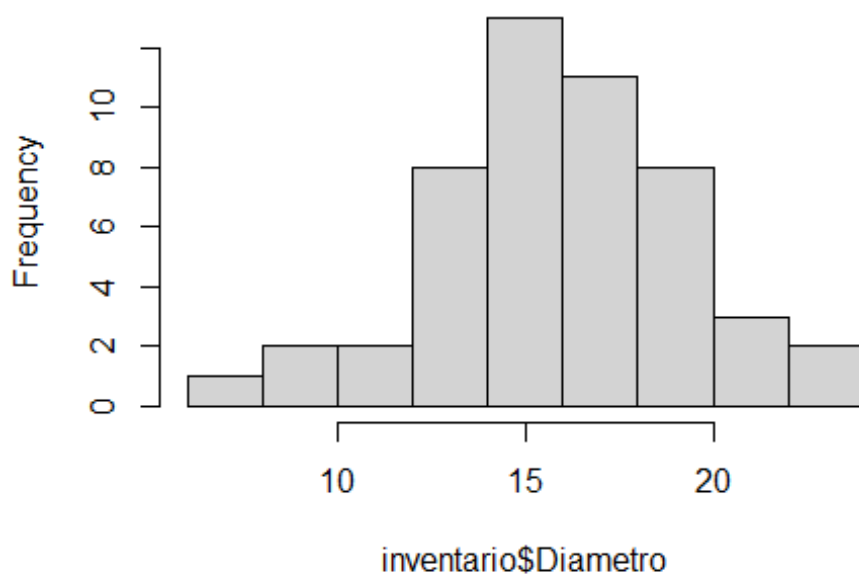
pie(freq.pos, labels = paste(levels(inventario$Posicion),
round(prop.porce,2), "%"),
    col = c("#33cccc", "#7a96cc", "#9980cc", "#b869cc"))

```



```
# Representación gráfica para variables cuantitativas -----  
--  
  
hist(inventario$Diametro)  
  
hist.diam <- hist(inventario$Diametro)
```

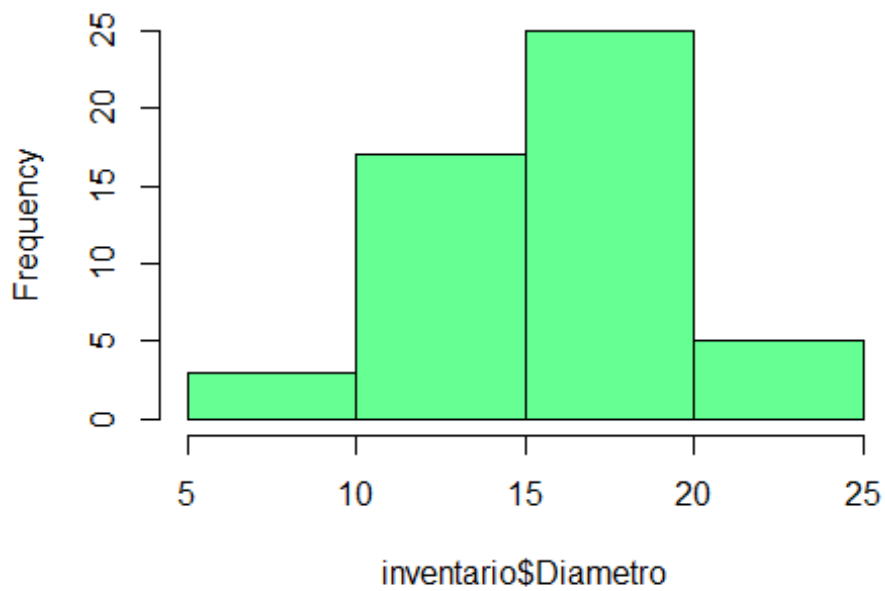
Histogram of inventario\$Diametro



```
hist.diam
## $breaks
## [1]  6  8 10 12 14 16 18 20 22 24
##
## $counts
## [1]  1  2  2  8 13 11  8  3  2
##
## $density
## [1] 0.01 0.02 0.02 0.08 0.13 0.11 0.08 0.03 0.02
##
## $mids
## [1]  7  9 11 13 15 17 19 21 23
##
## $xname
## [1] "inventario$Diametro"
##
## $equidist
## [1] TRUE
##
## attr(,"class")
## [1] "histogram"

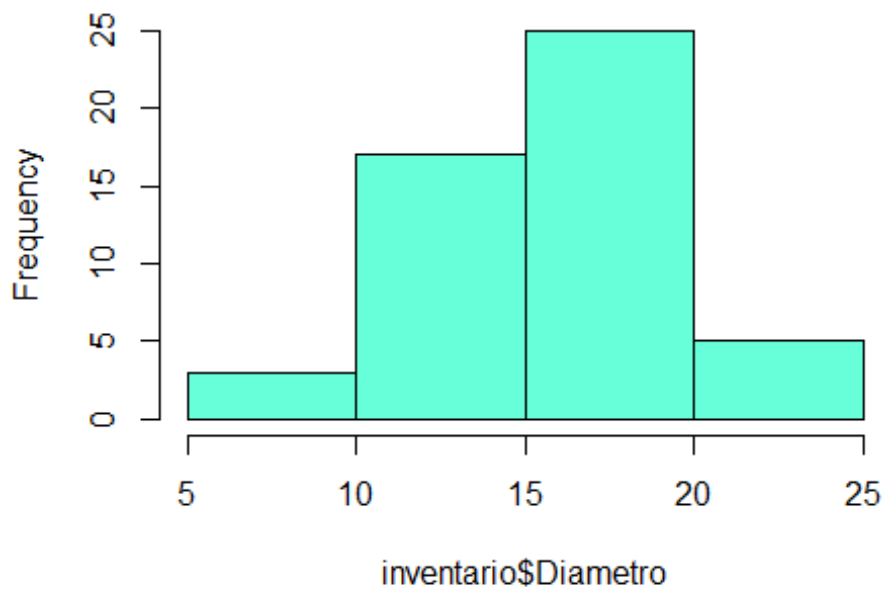
hist(inventario$Diametro,
      breaks = c(5, 10, 15, 20, 25),
      col = "#66ff94")
```

Histogram of inventario\$Diametro

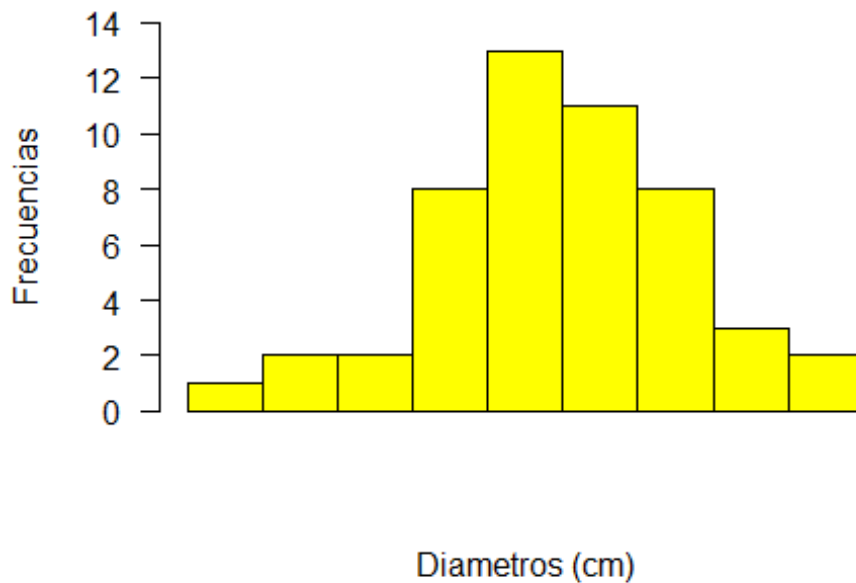


```
hist_3 <- hist(inventario$Diametro,  
               breaks = c(5, 10, 15, 20, 25),  
               col = "#66ffd9")
```

Histogram of inventario\$Diametro

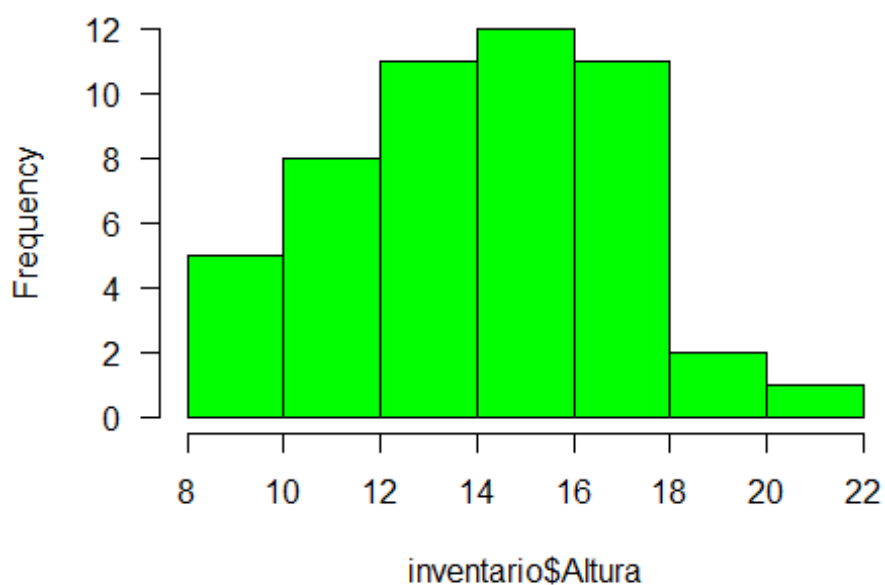


```
hist.diam$breaks
## [1] 6 8 10 12 14 16 18 20 22 24
h1 <- hist(inventario$Diametro, xaxt = "n",
           breaks = c(6, 8, 10, 12, 14, 16, 18, 20, 22, 24),
           col = "#ffff00",
           xlab = "Diametros (cm)",
           ylab = "Frecuencias",
           main = "",
           las = 1,
           ylim = c(0,14))
```



```
# Representación Gráfica de Altura -----
--
hist.alt <- hist(inventario$Altura, las = 1, col = "green")
```


Histogram of inventario\$Altura



```
hist.alt
## $breaks
## [1]  8 10 12 14 16 18 20 22
##
## $counts
## [1]  5  8 11 12 11  2  1
##
## $density
## [1] 0.05 0.08 0.11 0.12 0.11 0.02 0.01
##
## $mids
## [1]  9 11 13 15 17 19 21
##
## $xname
## [1] "inventario$Altura"
##
## $equidist
## [1] TRUE
##
## attr(,"class")
## [1] "histogram"

hist.alt$breaks
## [1]  8 10 12 14 16 18 20 22
```

```
h2 <- hist(inventario$Altura, xaxt = "n",  
           breaks = c(8, 10, 12, 14, 16, 18, 20, 22),  
           col = "#00cc99",  
           xlab = "Altura (cm)",  
           ylab = "Frecuencia",  
           main = "",  
           las = 1,  
           ylim = c(0,14))  
axis(1, h2$mids)
```

