

Laboratorio_4.R

Usuario

2021-03-17

```
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# Laboratorio 4
# 11.03.2021

# Importar datos -----
--

c1.url <-
paste0("https://raw.githubusercontent.com/Marimari02/PrincipiosEstadistic
a2021/main/cuadro1.csv")

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

##   Arbol Fecha Especie Clase 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 Clase 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" ...
##  $ Clase   : 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" "Clase" "Vecinos" "Diametro"
"Altura"

colnames(inventario)

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

names(inventario[,4:7])

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

summary(inventario)

## Arbol Fecha Especie Clase
## 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 Clase 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
```

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## 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$Clase)

## [1] FALSE

inventario$Clase <- factor(inventario$Clase)
summary(inventario)

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

# Tablas de frecuencia -----
--

freq.pos <- table(inventario$Clase)
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

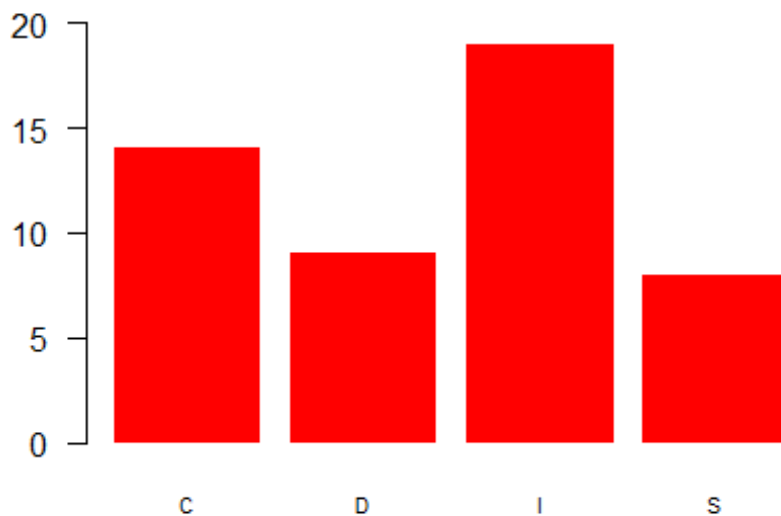
# Frecuencia en porcentaje

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

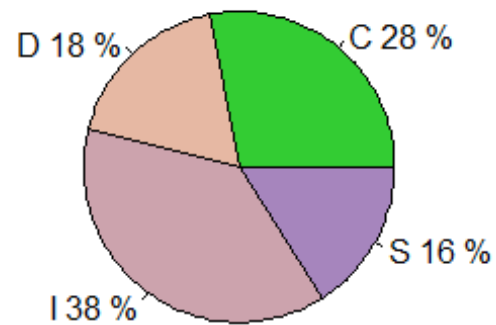
##
## C D I S
## 28 18 38 16

# Representacion grafica -----
--

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



```
pie(freq.pos, labels = paste(levels(inventario$Clase),
round(prop.porce,2), "%"),
col = c("#33cc33", "#e6b8a3", "#cca3ad", "#a685bd"))
```

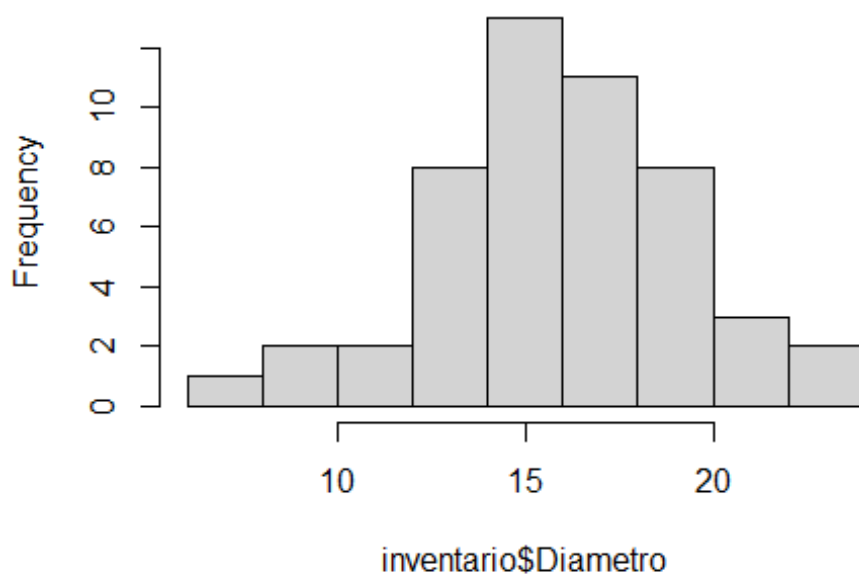


```
# Representacion de grafica para variables cuantitativas -----
--

hist(inventario$Diametro)

hist.diam <- hist(inventario$Diametro)
```

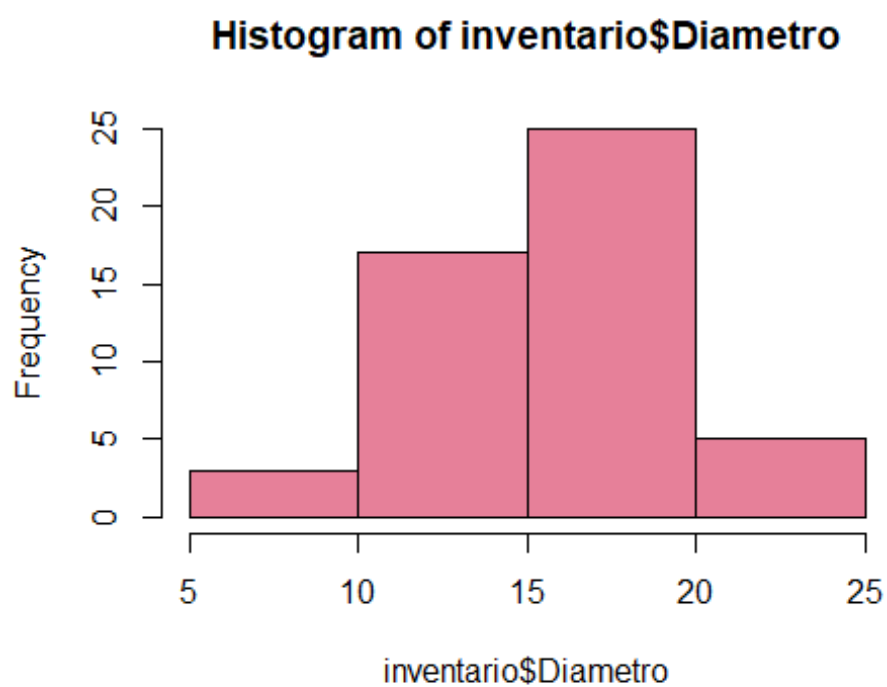
Histogram of inventario\$Diametro



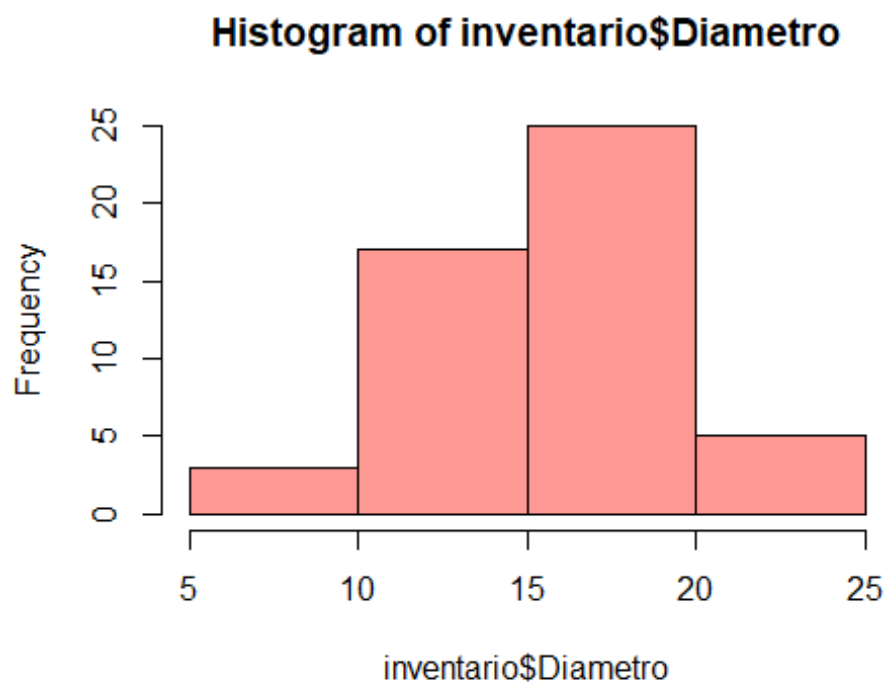
```
hist.diam

## $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"

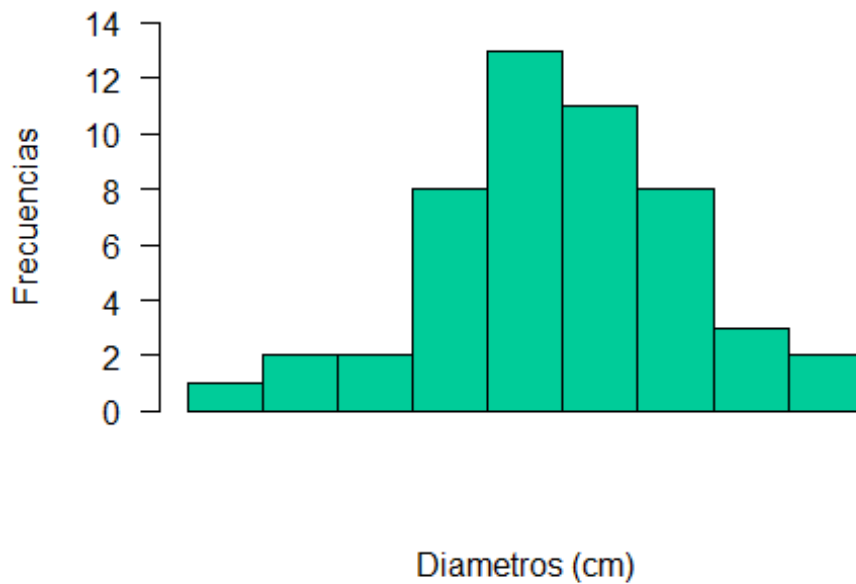
hist(inventario$Diametro,
      breaks = c(5, 10, 15, 20, 25),
      col = "#e68099")
```



```
hist_3 <- hist(inventario$Diametro,  
               breaks = c(5, 10, 15, 20, 25),  
               col = "#ff9994")
```

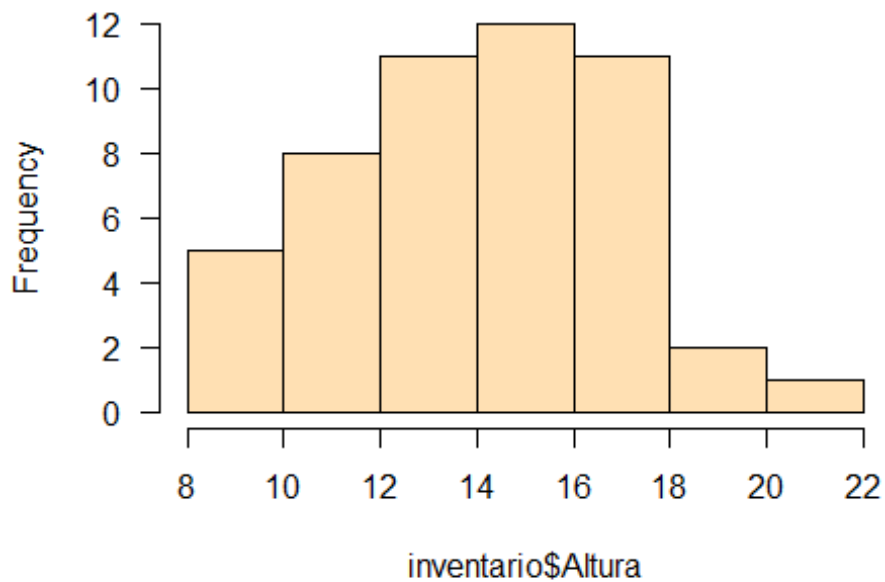


```
hist.diam$breaks
## [1] 6 8 10 12 14 16 18 20 22 24
h1 <- hist(inventario$Diametro, xaxt = "n",
           breaks = c(6, 8, 10, 12, 14, 16, 18, 20, 22, 24),
           col = "#00cc99", xlab = "Diametros (cm)",
           ylab = "Frecuencias",
           main = "",
           las = 1,
           ylim = c(0,14))
```



```
# Representacion grafica de La variable altura -----
-----
hist.alt <- hist(inventario$Altura, las = 1, col = "#ffe0b3")
```


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)
```

