PIA.R

Usuario

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```
# Diego David Flores Cadena
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# Matricula: 2070509

# Importar datos -------------------------------------------------------
setwd("C:/Repositorio_GIT_DiegoFlores/Met.ES/Codigos")
diametros <-read.csv("DAP Chapote y Ébano.csv", header = TRUE)
head(diametros) # Funcion head (sirve para ver los primeros 6 datos)
```

```
##   Chapote.amarillo Ébano
## 1            22.28 33.42
## 2            30.24 33.42
## 3            35.01 27.06
## 4            20.05 10.19
## 5            41.38 62.71
## 6            91.35 55.07
```

```
# Descriptivas ---------------------------------------------------------
# medidas de tendencia central media, mediana, rango

mean(diametros$Chapote.amarillo)
```

```
## [1] 34.102
```

```
mean(diametros$Ébano)#Media
```

```
## [1] 34.13
```

```
median(diametros$Chapote.amarillo)
```

```
## [1] 30.24
```

```
median(diametros$Ébano)#Mediana
```

```
## [1] 33.42
```

```
range(diametros$Chapote.amarillo)
```

```
## [1] 13.37 91.35
```

```
range(diametros$Ébano)#Rango
```

```
## [1] 10.19 62.71
```

```
fivenum(diametros$Chapote.amarillo)
```

```
## [1] 13.37 22.60 30.24 39.63 91.35
```

```
fivenum(diametros$Ébano)#Representa los 5 numeros del boxplot
```

```
## [1] 10.190 21.485 33.420 43.290 62.710
```

```
# medidas de dispersión desviacion estándar, varianza

sd(diametros$Chapote.amarillo)
```

```
## [1] 19.95893
```

```
sd(diametros$Ébano)
```

```
## [1] 17.01853
```

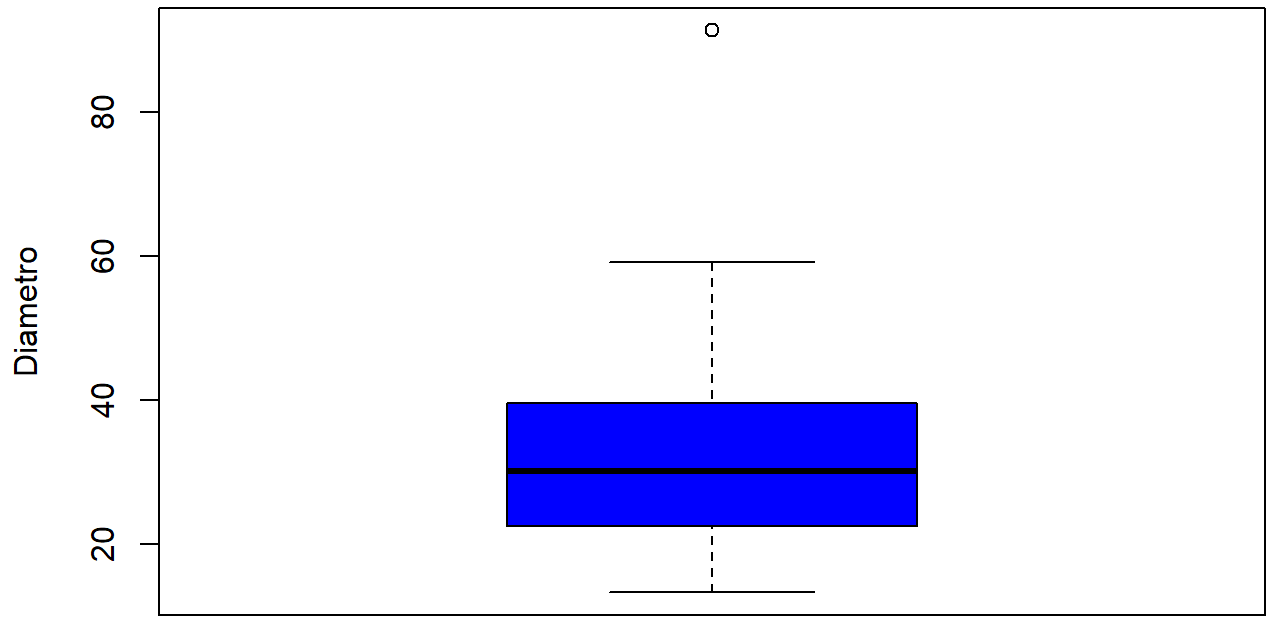
```
var(diametros$Chapote.amarillo)
```

```
## [1] 398.3588
```

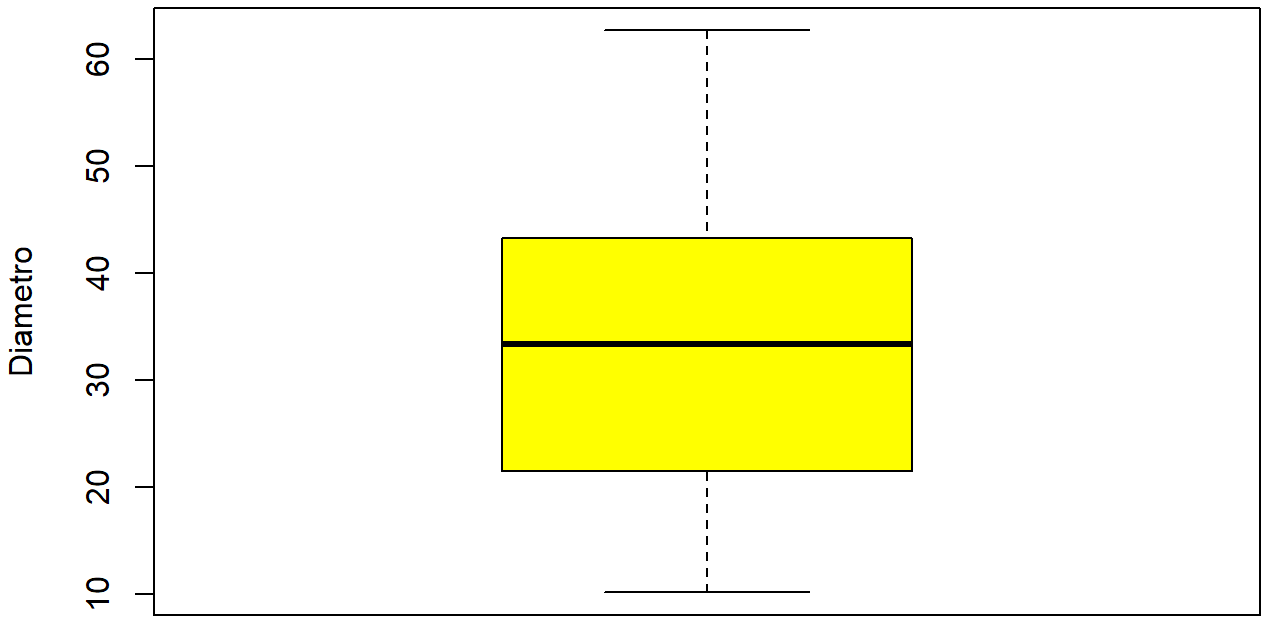
```
var(diametros$Ébano)
```

```
## [1] 289.6302
```

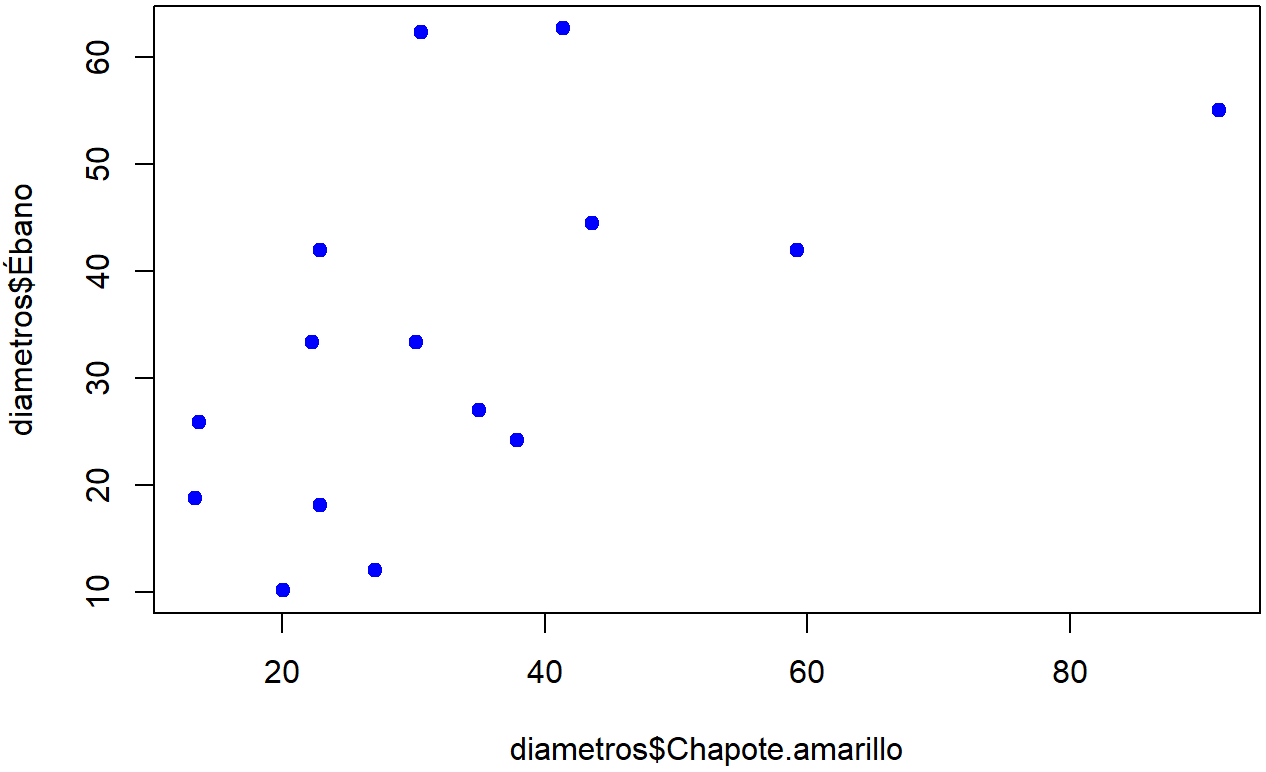
```
# Gráficas ----------------------------------------------------------------

boxplot(diametros$Chapote.amarillo, col = "blue", ylab = "Diametro", main = "Chapote amarillo")
```




```
boxplot(diametros$Ébano, col = "yellow", ylab = "Diametro", main = "Ébano")
```




```
plot(diametros$Chapote.amarillo, diametros$Ébano, col="blue", pch=19)
```




```
# Procedimiento -------------------------------------------------------------
# Aplicar la función de t.test (Nunca se pone la media, se ponen los datos de origen)
t.test(diametros$Chapote.amarillo,mu=11)
```

```
##
##  One Sample t-test
##
## data:  diametros$Chapote.amarillo
## t = 4.4829, df = 14, p-value = 0.0005158
## alternative hypothesis: true mean is not equal to 11
## 95 percent confidence interval:
##  23.04911 45.15489
## sample estimates:
## mean of x
##    34.102
```

```
t.test(diametros$Ébano,mu=11)
```

```
##
##  One Sample t-test
##
## data:  diametros$Ébano
## t = 5.2638, df = 14, p-value = 0.0001198
## alternative hypothesis: true mean is not equal to 11
## 95 percent confidence interval:
##  24.70545 43.55455
## sample estimates:
## mean of x
##     34.13
```

```
cor.test(diametros$Chapote.amarillo, diametros$Ébano)
```

```
##
##  Pearson's product-moment correlation
##
## data:  diametros$Chapote.amarillo and diametros$Ébano
## t = 2.4064, df = 13, p-value = 0.0317
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  0.0599010 0.8310616
## sample estimates:
##       cor
## 0.5551297
```

```
# t = 2.4064, df = 13, p-value = 0.0317

summary(diametros)
```

```
##  Chapote.amarillo     Ébano
##  Min.   :13.37    Min.   :10.19
##  1st Qu.:22.60    1st Qu.:21.48
##  Median :30.24    Median :33.42
##  Mean   :34.10    Mean   :34.13
##  3rd Qu.:39.63    3rd Qu.:43.29
##  Max.   :91.35    Max.   :62.71
```

```
# Chapote.amarillo     Ébano
# Min.   :13.37    Min.   :10.19
# 1st Qu.:22.60    1st Qu.:21.48
# Median :30.24    Median :33.42
# Mean   :34.10    Mean   :34.13
# 3rd Qu.:39.63    3rd Qu.:43.29
# Max.   :91.35    Max.   :62.71

# Hipótesis ----------------------------------------------------------------
# Chapote amarillo: t = 4.4829, df = 14, p-value = 0.0005158
# Ebano: t = 5.2638, df = 14, p-value = 0.0001198
# HIPOTESIS NULA: Es igual a 0
# HIPOTESIS ALTERNATIVA: la verdadera media no es igual a 11
```