examen_f.R

Usuario

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```
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#Examen final

# importar ------------------------------------------------------------
--

setwd("C:/Repositorio_LR/Met_ES/codigos")
madera <- read.csv("madera.csv", header = TRUE)
head(madera)
```

```
##   Encino Pino
## 1   16.6 12.6
## 2   16.8 14.4
## 3   17.2 12.6
## 4   17.6 12.0
## 5   17.2 13.2
## 6   18.6 13.2
```

```
# PARTE 1 -------------------------------------------------------------
--



# descriptivas --------------------------------------------------------
--

mean(madera$Encino) #17.46
```

```
## [1] 17.46
```

```
median(madera$Encino) #17.3
```

```
## [1] 17.3
```

```
range(madera$Encino)
```

```
## [1] 16.2 19.0
```

```
mean(madera$Pino) #12.68
```

```
## [1] 12.68
```

```r
median(madera$Pino) #12.5
```

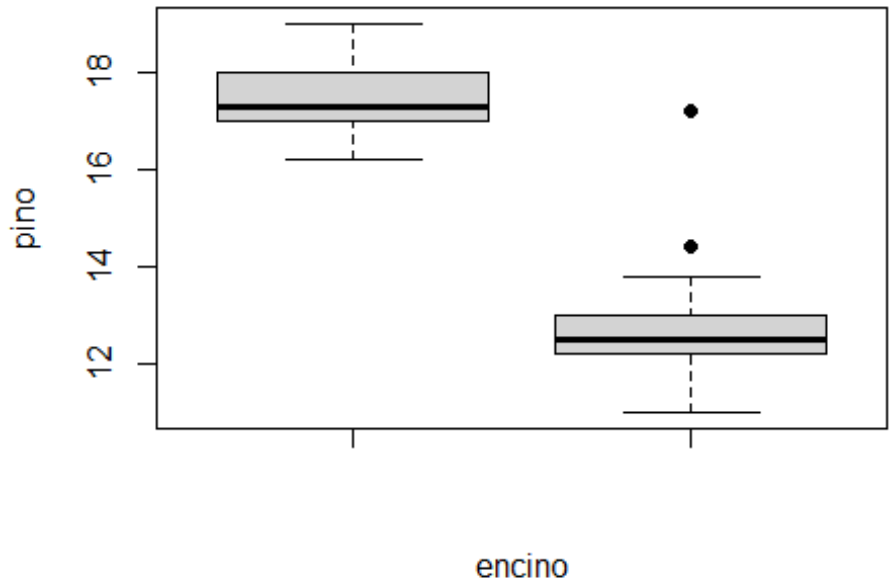
```
## [1] 12.5
```

```r
range(madera$Encino)
```

```
## [1] 16.2 19.0
```

```r
# grafica ----------------------------------------------------------------
--

boxplot(madera$Encino, madera$Pino , xlab = "encino",
        ylab = "pino", pch = 19)
```




```r
# PARTE 2 ----------------------------------------------------------------
--


# hipotesis --------------------------------------------------------------
--
#17.3 vs 12.5
#la madera de la especie de encino pesa mas que la de pino segun los
datos proporcionados


# procedimiento ----------------------------------------------------------
```

```
--
t.test(madera$Encino, mu = 17)

##
##  One Sample t-test
##
## data:  madera$Encino
## t = 3.3907, df = 29, p-value = 0.002029
## alternative hypothesis: true mean is not equal to 17
## 95 percent confidence interval:
##  17.18254 17.73746
## sample estimates:
## mean of x
##     17.46

#t = 3.3907, df = 29, p-value = 0.002029
t.test(madera$Encino, mu = 16.5)

##
##  One Sample t-test
##
## data:  madera$Encino
## t = 7.0763, df = 29, p-value = 8.743e-08
## alternative hypothesis: true mean is not equal to 16.5
## 95 percent confidence interval:
##  17.18254 17.73746
## sample estimates:
## mean of x
##     17.46

#t = 7.0763, df = 29, p-value = 8.743e-08
t.test(madera$Encino, mu = 16.6)

##
##  One Sample t-test
##
## data:  madera$Encino
## t = 6.3392, df = 29, p-value = 6.308e-07
## alternative hypothesis: true mean is not equal to 16.6
## 95 percent confidence interval:
##  17.18254 17.73746
## sample estimates:
## mean of x
##     17.46

#t = 6.3392, df = 29, p-value = 6.308e-07
t.test(madera$Encino, mu = 8.5)

##
##  One Sample t-test
##
## data:  madera$Encino
```

```
## t = 66.046, df = 29, p-value < 2.2e-16
## alternative hypothesis: true mean is not equal to 8.5
## 95 percent confidence interval:
##  17.18254 17.73746
## sample estimates:
## mean of x
##     17.46

#t = 66.046, df = 29, p-value < 2.2e-16

t.test(madera$Pino, mu = 13)

##
##  One Sample t-test
##
## data:  madera$Pino
## t = -1.5971, df = 29, p-value = 0.1211
## alternative hypothesis: true mean is not equal to 13
## 95 percent confidence interval:
##  12.2702 13.0898
## sample estimates:
## mean of x
##     12.68

#t = -1.5971, df = 29, p-value = 0.1211
t.test(madera$Pino, mu = 13.5)

##
##  One Sample t-test
##
## data:  madera$Pino
## t = -4.0925, df = 29, p-value = 0.000311
## alternative hypothesis: true mean is not equal to 13.5
## 95 percent confidence interval:
##  12.2702 13.0898
## sample estimates:
## mean of x
##     12.68

#t = -4.0925, df = 29, p-value = 0.000311
t.test(madera$Pino, mu = 13.6)

##
##  One Sample t-test
##
## data:  madera$Pino
## t = -4.5916, df = 29, p-value = 7.882e-05
## alternative hypothesis: true mean is not equal to 13.6
## 95 percent confidence interval:
##  12.2702 13.0898
## sample estimates:
```

```
## mean of x
##     12.68

#t = -4.5916, df = 29, p-value = 7.882e-05
t.test(madera$Pino, mu = 6.5)

##
##  One Sample t-test
##
## data:  madera$Pino
## t = 30.843, df = 29, p-value < 2.2e-16
## alternative hypothesis: true mean is not equal to 6.5
## 95 percent confidence interval:
##  12.2702 13.0898
## sample estimates:
## mean of x
##     12.68

#t = 30.843, df = 29, p-value < 2.2e-16


# recapibilidad ------------------------------------------------------
--

#Guardar la prueba t en un objeto llamado "prueba"
prueba <- t.test(madera$Encino, mu =17)

#Conocer el p-value
prueba$p.value

## [1] 0.002028846

#0.002028846

# Conocer los grados de libertad
prueba$parameter

## df
## 29

#df 29

# Conocer intervalos de confianza
prueba$conf.int

## [1] 17.18254 17.73746
## attr(,"conf.level")
## [1] 0.95

#17.18254 17.73746 #0.95
```

```r
# PARTE 3 ------------------------------------------------------------
--

# importar ----------------------------------------------------------
--

setwd("C:/Repositorio_LR/Met_ES/codigos")
emiciones <- read.csv("emiciones.csv", header = TRUE)
head(emiciones)

##   azufre
## 1   15.8
## 2   22.7
## 3   26.8
## 4   19.1
## 5   18.5
## 6   14.4

mean(emiciones$azufre) #18.7075

## [1] 18.7075

median(emiciones$azufre)#18.8

## [1] 18.8

t.test(emiciones$azufre, mu = 19)

##
##  One Sample t-test
##
## data:  emiciones$azufre
## t = -0.32359, df = 39, p-value = 0.748
## alternative hypothesis: true mean is not equal to 19
## 95 percent confidence interval:
##  16.87912 20.53588
## sample estimates:
## mean of x
##   18.7075

#t = -0.32359, df = 39, p-value = 0.748

#valor de p---------------------------------------------------------
--
#p-value = 0.748

# Resultado ---------------------------------------------------------
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#el valor de las emiciones de óxido de azufre registradas si son
```

```
significativamente mayores a los valores registrados por la empresa
#valor de la empresa 17.5 T/año
#valor calculado 18.70 T/año
```