Tarea_8_MelvinDeLaRosa.R

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```
#Tarea 8 Comparación de medias
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# Ejercicio1 ------------------------------------------------------------

# ingresar datos

Grupo <- gl(2, 12, labels = c("Fotografía", "Araña"))
Ansiedad <- c(30, 35, 45, 40, 50, 35, 55, 25, 30, 45, 40, 50, 40, 35, 50, 55,
              65, 55, 50, 35, 30, 50, 60, 39)

Datos <- data.frame(Grupo, Ansiedad)
head(Datos)
```

```
##        Grupo Ansiedad
## 1 Fotografía       30
## 2 Fotografía       35
## 3 Fotografía       45
## 4 Fotografía       40
## 5 Fotografía       50
## 6 Fotografía       35
```

```
length(Grupo)
```

```
## [1] 24
```

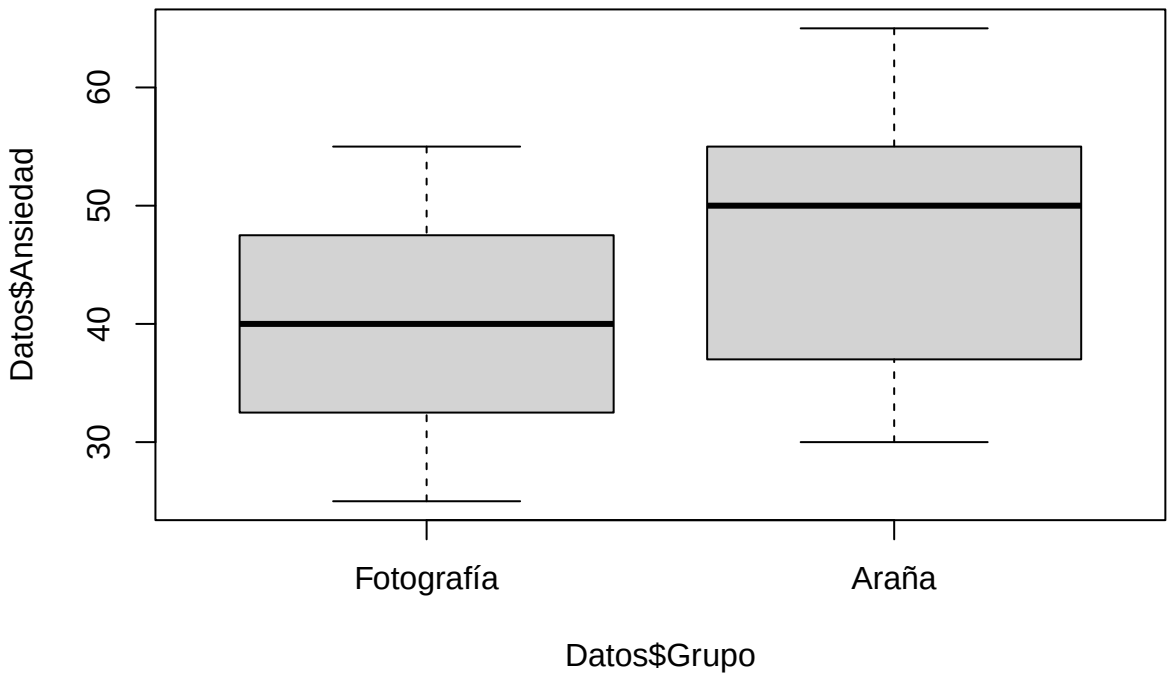
```
foto <- c(30, 35, 45, 40, 50, 35, 55, 25, 30, 45, 40, 50)
araña <- c(40, 35, 50, 55, 65, 55, 50, 35, 30, 50, 60, 39)

mean(foto)
```

```
## [1] 40
```

```
mean(araña)
```

```
## [1] 47
```

```
boxplot(Datos$Ansiedad ~ Datos$Grupo)
```




```
shapiro.test(Datos$Ansiedad)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  Datos$Ansiedad
## W = 0.96282, p-value = 0.4977
```

```
var(araña); var(foto)
```

```
## [1] 121.6364
```

```
## [1] 86.36364
```

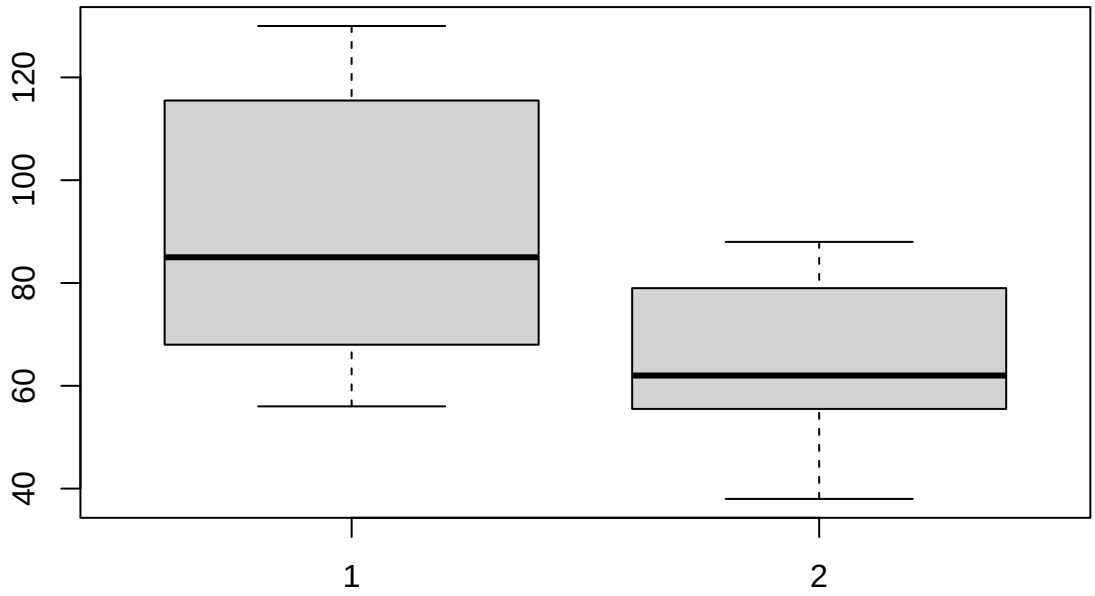
```
var.test(araña,foto)
```

```
##
##  F test to compare two variances
##
## data:  araña and foto
## F = 1.4084, num df = 11, denom df = 11, p-value = 0.5797
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  0.4054528 4.8924309
## sample estimates:
## ratio of variances
##           1.408421
```

```r
t.test(araña,foto, var.equal = T)
```

```
##
##  Two Sample t-test
##
## data:  araña and foto
## t = 1.6813, df = 22, p-value = 0.1068
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -1.634222 15.634222
## sample estimates:
## mean of x mean of y
##        47        40
```

```r
#H0 : "No existen diferencias significativas entre el valor medio
#      de ansiedad del grupo fotografía comparado con el grupo que sostuvo
#      una tarántula real"

# Ejercicio 2 ------------------------------------------------------------------


control <- c(130, 120, 61, 111, 93, 56, 85, 128, 73, 56,65, 71, 109, 122, 85)
cont <- c(44, 62, 77, 58, 88, 61, 42, 57, 70, 38, 66,82, 81, 54, 81)

boxplot(control, cont)
```



```r
help("t.test")
#conf.level = 0.99

t.test(control, cont, var.equal = F, conf.level = 0.99)
```

```
##
##  Welch Two Sample t-test
##
## data:  control and cont
## t = 3.3362, df = 22.461, p-value = 0.002934
## alternative hypothesis: true difference in means is not equal to 0
## 99 percent confidence interval:
##   4.220651 49.646015
## sample estimates:
## mean of x mean of y
##  91.00000  64.06667
```

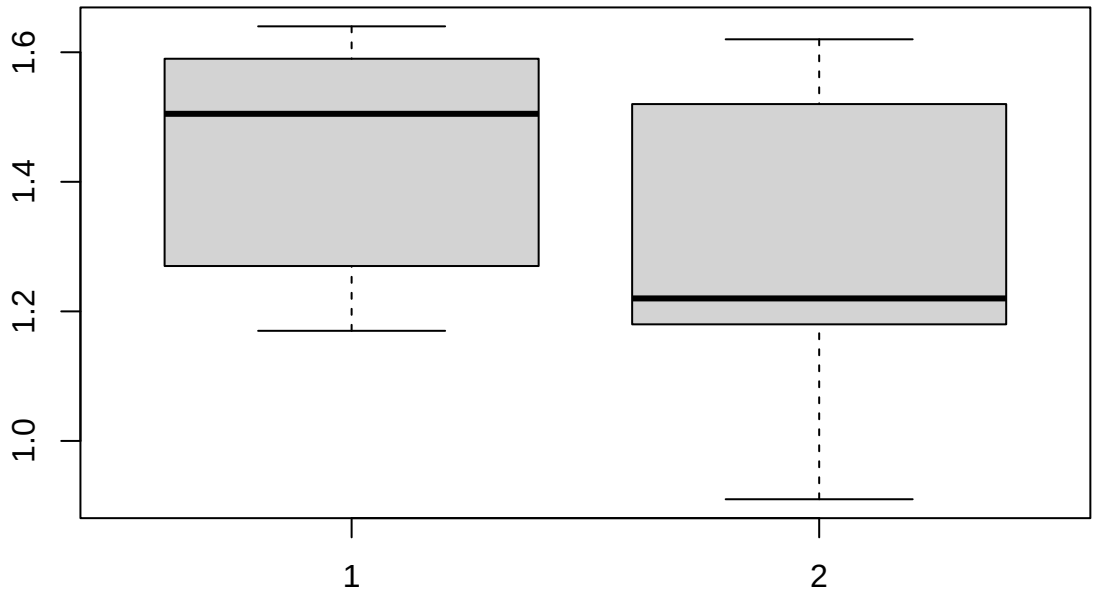
```r
t.test(control, cont, var.equal = F)
```

```
##
##  Welch Two Sample t-test
##
## data:  control and cont
## t = 3.3362, df = 22.461, p-value = 0.002934
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  10.21052 43.65615
## sample estimates:
## mean of x mean of y
##  91.00000  64.06667
```

```r
# Ejercicio 3 ------------------------------------------------------------

suelo <- 1:10
tiempo1 <- c(1.59,1.39,1.64,1.17,1.27,1.58,1.64,1.53,1.21,1.48)
tiempo2 <- c(1.21,0.92,1.31,1.52,1.62,0.91,1.23,1.21,1.58,1.18)
diferencia <- c(0.38,0.47,0.33,-0.35,-0.35,0.67,0.41,0.32,-0.37,0.30)

CDC <- data.frame(suelo,tiempo1,tiempo2,diferencia)

CDC
```

```
##    suelo tiempo1 tiempo2 diferencia
## 1      1    1.59    1.21       0.38
## 2      2    1.39    0.92       0.47
## 3      3    1.64    1.31       0.33
## 4      4    1.17    1.52      -0.35
## 5      5    1.27    1.62      -0.35
## 6      6    1.58    0.91       0.67
## 7      7    1.64    1.23       0.41
## 8      8    1.53    1.21       0.32
## 9      9    1.21    1.58      -0.37
## 10    10    1.48    1.18       0.30
```

```r
boxplot(CDC$tiempo1, CDC$tiempo2)
```




```
shapiro.test(CDC$tiempo1)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  CDC$tiempo1
## W = 0.88561, p-value = 0.1512
```

```
var(CDC$tiempo1); var(CDC$tiempo2)
```

```
## [1] 0.032
```

```
## [1] 0.06129889
```

```
var.test(CDC$tiempo1, CDC$tiempo2)
```

```
##
##  F test to compare two variances
##
## data:  CDC$tiempo1 and CDC$tiempo2
## F = 0.52203, num df = 9, denom df = 9, p-value = 0.347
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  0.1296654 2.1016990
## sample estimates:
## ratio of variances
##          0.5220323
```

```r
t.test(CDC$tiempo1, CDC$tiempo2, paired = T, var.equal = T)
```

```
##
##  Paired t-test
##
## data:  CDC$tiempo1 and CDC$tiempo2
## t = 1.4845, df = 9, p-value = 0.1718
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.09481109  0.45681109
## sample estimates:
## mean of the differences
##                   0.181
```