# clase_3.R

*52618*

*2019-08-11*

```
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# clase 3
#comparacion de media

# EJERCICIO 1 ------------------------------------------------------------

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)
```
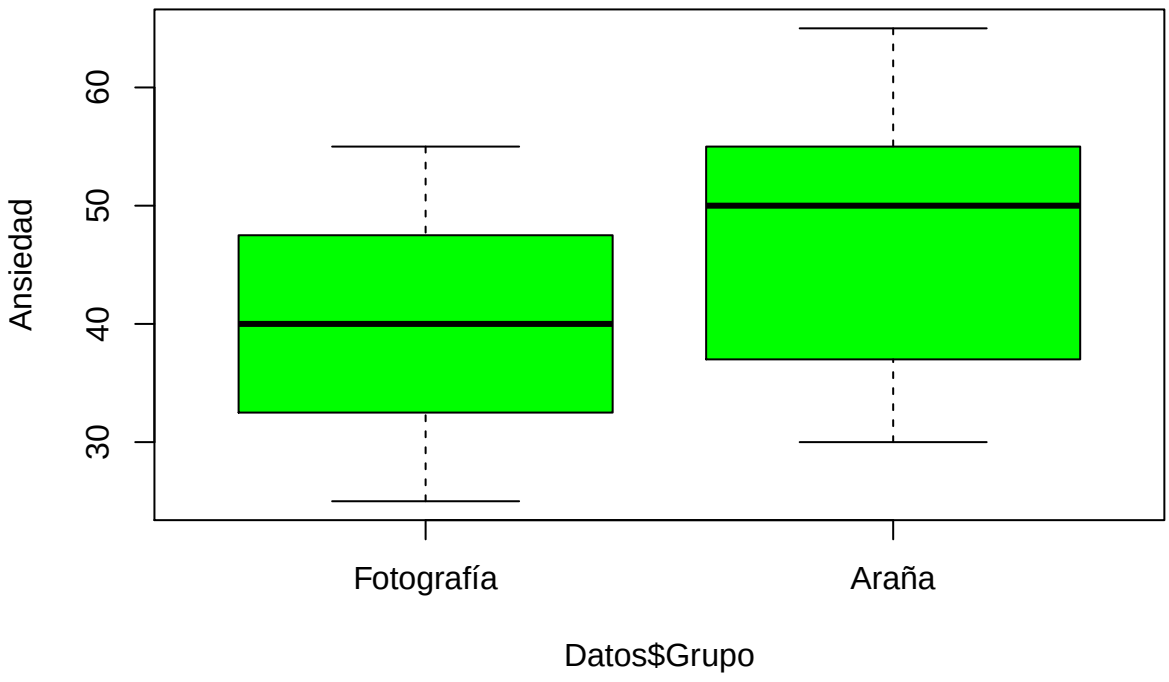

```
##        Grupo Ansiedad
## 1 Fotografía       30
## 2 Fotografía       35
## 3 Fotografía       45
## 4 Fotografía       40
## 5 Fotografía       50
## 6 Fotografía       35
```

```
boxplot(Datos$Ansiedad ~ Datos$Grupo, col="green", ylab="Ansiedad",)
```




```
mean(Datos$Ansiedad)
```

```
## [1] 43.5
```

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

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

```
bartlett.test(Datos$Ansiedad, Datos$Grupo)
```

```
##
##  Bartlett test of homogeneity of variances
##
## data:  Datos$Ansiedad and Datos$Grupo
## Bartlett's K-squared = 0.30702, df = 1, p-value = 0.5795
```

```
library(pastecs)
by(Datos$Ansiedad,Datos$Grupo, stat.desc, basic=FALSE, norm=TRUE)
```

```
## Datos$Grupo: Fotografía
##       median         mean      SE.mean CI.mean.0.95          var
##   40.0000000   40.0000000    2.6827168    5.9046200   86.3636364
##      std.dev     coef.var     skewness     skew.2SE     kurtosis
##    9.2932038    0.2323301    0.0000000    0.0000000   -1.3939289
##     kurt.2SE   normtest.W   normtest.p
```

```
##   -0.5656047    0.9650165    0.8522870
## ------------------------------------------------------
## Datos$Grupo: Araña
##        median          mean       SE.mean  CI.mean.0.95           var
##  50.000000000  47.000000000   3.183765638   7.007420922 121.636363636
##       std.dev      coef.var      skewness      skew.2SE      kurtosis
##  11.028887688   0.234657185  -0.005590699  -0.004386224  -1.459758279
##      kurt.2SE    normtest.W    normtest.p
##  -0.592315868   0.948872904   0.620569431
```

```
gr.t<- t.test(Datos$Ansiedad~Datos$Grupo, var.equal= TRUE)
gr.t
```

```
##
##  Two Sample t-test
##
## data:  Datos$Ansiedad by Datos$Grupo
## t = -1.6813, df = 22, p-value = 0.1068
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -15.634222   1.634222
## sample estimates:
## mean in group Fotografía      mean in group Araña
##                       40                       47
```

```
# EJERCICIO 2 ------------------------------------------------------------

costal<-c(87.7, 80.01, 77.28, 78.76, 81.52, 74.2, 80.71, 79.5, 77.87, 81.94, 80.7,
          82.32, 75.78, 80.19, 83.91, 79.4, 77.52, 77.62, 81.4, 74.89, 82.95,
          73.59, 77.92, 77.18, 79.83, 81.23, 79.28, 78.44, 79.01, 80.47, 76.23,
          78.89, 77.14, 69.94, 78.54, 79.7, 82.45, 77.29, 75.52, 77.21, 75.99,
          81.94, 80.41, 77.7)
mean(costal)
```

```
## [1] 78.91068
```

```
n<- length(costal)
n
```

```
## [1] 44
```

```
costa.media<- mean(costal)
costa.media
```

```
## [1] 78.91068
```

```
costa.sd<- sd(costal)
costa.sd
```

```
## [1] 3.056023
```

```
costa.se<- costa.sd/sqrt(n)
costa.se
```

```
## [1] 0.4607128
```

```
costa.T<-(costa.media-80)/costa.se
costa.T
```

```
## [1] -2.364419
```

```r
pt(costa.T, df=n-1)
```

```
## [1] 0.01132175
```

```r
t.test(costal, mu=80, alternative= "less")
```

```
##
##  One Sample t-test
##
## data:  costal
## t = -2.3644, df = 43, p-value = 0.01132
## alternative hypothesis: true mean is less than 80
## 95 percent confidence interval:
##      -Inf 79.68517
## sample estimates:
## mean of x
##  78.91068
```

```r
t.test(costal, mu=80, alternative= "greater")
```

```
##
##  One Sample t-test
##
## data:  costal
## t = -2.3644, df = 43, p-value = 0.9887
## alternative hypothesis: true mean is greater than 80
## 95 percent confidence interval:
##  78.13619      Inf
## sample estimates:
## mean of x
##  78.91068
```