

# Tarea: Medidas 1

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```
library("readxl")  
penguins<-read_excel("/cloud/project/penguins.xlsx")
```

## Media y mediana

```
summary(penguins)  
  
##           ID           especie           isla           largo_pico_mm  
## Length:344      Length:344      Length:344      Min.      :32.10  
## Class :character Class :character Class :character 1st Qu.:39.20  
## Mode  :character Mode  :character Mode  :character Median :44.45  
##                                           Mean  :43.92  
##                                           3rd Qu.:48.50  
##                                           Max.   :59.60  
## grosor_pico_mm largo_aleta_mm masa_corporal_g  genero  
## Min.      :13.10 Min.      :172.0 Min.      :2700 Length:344  
## 1st Qu.:15.60 1st Qu.:190.0 1st Qu.:3550 Class :character  
## Median :17.30 Median :197.0 Median :4050 Mode  :character  
## Mean   :17.15 Mean   :200.9 Mean   :4202  
## 3rd Qu.:18.70 3rd Qu.:213.2 3rd Qu.:4756  
## Max.   :21.50 Max.   :231.0 Max.   :6300  
## año  
## Min.      :2007  
## 1st Qu.:2007  
## Median :2008  
## Mean   :2008  
## 3rd Qu.:2009  
## Max.   :2009
```

## Moda

```
install.packages("modeest")  
  
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.2'  
## (as 'lib' is unspecified)  
library(modeest)  
  
mfv(penguins$isla) # categorica  
  
## [1] "Biscoe"
```

```
mfv(penguins$largo_pico_mm) # numerica
```

```
## [1] 41.1
```

## Medidas de dispersión

```
var(penguins$grosor_pico_mm)
```

```
## [1] 3.884256
```

```
sd(penguins$grosor_pico_mm)
```

```
## [1] 1.970852
```

```
media_pico<-mean(penguins$largo_pico_mm)  
error<-(penguins$largo_pico_mm-(media_pico))  
error
```

```
## [1] -4.82412791 -4.42412791 -3.62412791 -6.12412791 -7.22412791  
## [6] -4.62412791 -5.02412791 -4.72412791 -9.82412791 -1.92412791  
## [11] -6.12412791 -6.12412791 -2.82412791 -5.32412791 -9.32412791  
## [16] -7.32412791 -5.22412791 -1.42412791 -9.52412791 2.07587209  
## [21] -6.12412791 -6.22412791 -8.02412791 -5.72412791 -5.12412791  
## [26] -8.62412791 -3.32412791 -3.42412791 -6.02412791 -3.42412791  
## [31] -4.42412791 -6.72412791 -4.42412791 -3.02412791 -7.52412791  
## [36] -4.72412791 -5.12412791 -1.72412791 -6.32412791 -4.12412791  
## [41] -7.42412791 -3.12412791 -7.92412791 0.17587209 -6.92412791  
## [46] -4.32412791 -2.82412791 -6.42412791 -7.92412791 -1.62412791  
## [51] -4.32412791 -3.82412791 -8.92412791 -1.92412791 -9.42412791  
## [56] -2.52412791 -4.92412791 -3.32412791 -7.42412791 -6.32412791  
## [61] -8.22412791 -2.62412791 -6.32412791 -2.82412791 -7.52412791  
## [66] -2.32412791 -8.42412791 -2.82412791 -8.02412791 -2.12412791  
## [71] -10.42412791 -4.22412791 -4.32412791 1.87587209 -8.42412791  
## [76] -1.12412791 -3.02412791 -6.72412791 -7.72412791 -1.82412791  
## [81] -9.32412791 -1.02412791 -7.22412791 -8.82412791 -6.62412791  
## [86] -2.62412791 -7.62412791 -7.02412791 -5.62412791 -5.02412791  
## [91] -8.22412791 -2.82412791 -9.92412791 -4.32412791 -7.72412791  
## [96] -3.12412791 -5.82412791 -3.62412791 -10.82412791 -0.72412791  
## [101] -8.92412791 -2.92412791 -6.22412791 -6.12412791 -6.02412791  
## [106] -4.22412791 -5.32412791 -5.72412791 -5.82412791 -0.72412791  
## [111] -5.82412791 1.67587209 -4.22412791 -1.72412791 -4.32412791  
## [116] -1.22412791 -5.32412791 -6.62412791 -8.22412791 -2.82412791  
## [121] -7.72412791 -6.22412791 -3.72412791 -2.52412791 -8.72412791  
## [126] -3.32412791 -5.12412791 -2.42412791 -4.92412791 0.17587209  
## [131] -5.42412791 -0.82412791 -7.12412791 -6.42412791 -5.82412791  
## [136] -2.82412791 -8.32412791 -3.72412791 -6.92412791 -4.22412791  
## [141] -3.72412791 -3.32412791 -11.82412791 -3.22412791 -6.62412791  
## [146] -4.92412791 -4.72412791 -7.32412791 -7.92412791 -6.12412791  
## [151] -7.92412791 -2.42412791 2.17587209 6.07587209 4.77587209  
## [156] 6.07587209 3.67587209 2.57587209 1.47587209 2.77587209  
## [161] -0.62412791 2.87587209 -3.02412791 5.07587209 1.57587209  
## [166] 4.47587209 1.87587209 5.37587209 -1.92412791 5.27587209  
## [171] 2.27587209 4.77587209 6.27587209 1.17587209 2.57587209  
## [176] 2.37587209 -1.02412791 2.17587209 0.57587209 3.87587209  
## [181] 4.27587209 6.07587209 3.37587209 -1.12412791 1.17587209
```

```
## [186] 15.67587209 5.17587209 4.47587209 -1.32412791 0.47587209
## [191] 0.07587209 4.77587209 -1.22412791 5.67587209 1.37587209
## [196] 5.67587209 6.57587209 -0.32412791 1.57587209 6.57587209
## [201] 0.97587209 1.27587209 2.67587209 4.57587209 1.17587209
## [206] 6.17587209 2.57587209 1.07587209 -0.12412791 1.57587209
## [211] -0.72412791 6.47587209 1.37587209 2.27587209 1.77587209
## [216] 10.37587209 1.87587209 5.87587209 2.27587209 5.57587209
## [221] -0.42412791 6.77587209 3.77587209 2.47587209 4.27587209
## [226] 2.57587209 2.47587209 4.67587209 3.57587209 7.17587209
## [231] 1.27587209 1.27587209 5.17587209 8.57587209 3.47587209
## [236] 6.07587209 0.97587209 6.87587209 -0.52412791 7.37587209
## [241] 3.57587209 8.17587209 3.57587209 8.27587209 1.57587209
## [246] 5.57587209 0.57587209 6.87587209 5.47587209 2.97587209
## [251] 4.47587209 7.17587209 4.57587209 11.97587209 3.27587209
## [256] 5.17587209 3.37587209 2.87587209 -2.22412791 9.47587209
## [261] -0.62412791 4.17587209 6.57587209 5.87587209 -0.42412791
## [266] 7.57587209 2.27587209 11.17587209 0.57587209 4.87587209
## [271] 3.27587209 6.87587209 2.87587209 6.47587209 1.27587209
## [276] 5.97587209 2.57587209 6.07587209 7.37587209 1.47587209
## [281] 8.77587209 1.27587209 2.17587209 7.37587209 2.07587209
## [286] 7.37587209 2.67587209 7.77587209 3.07587209 8.07587209
## [291] 1.97587209 6.57587209 6.37587209 14.07587209 2.47587209
## [296] 5.27587209 -1.52412791 4.57587209 -0.72412791 6.67587209
## [301] 2.77587209 8.07587209 6.57587209 5.57587209 2.47587209
## [306] 8.87587209 -3.02412791 10.27587209 -1.42412791 7.07587209
## [311] 5.77587209 3.57587209 3.67587209 8.07587209 2.97587209
## [316] 9.57587209 5.07587209 2.27587209 6.97587209 1.57587209
## [321] 6.97587209 6.87587209 6.17587209 5.07587209 7.57587209
## [326] 5.87587209 4.17587209 7.47587209 1.77587209 6.77587209
## [331] -1.42412791 8.27587209 1.27587209 5.37587209 6.27587209
## [336] 1.67587209 7.97587209 2.87587209 1.77587209 11.87587209
## [341] -0.42412791 5.67587209 6.87587209 6.27587209
```

```
CV<-sd(penguins$largo_pico_mm)/mean(penguins$largo_pico_mm)*100
CV
```

```
## [1] 12.44487
```

```
IQR(penguins$largo_pico_mm)
```

```
## [1] 9.3
```

```
pico<-penguins$largo_pico_mm
rango<-max(pico)-min(pico)
rango
```

```
## [1] 27.5
```

```
summary(penguins)
```

## Medidas de posición

##	ID	especie	isla	largo_pico_mm
##	Length:344	Length:344	Length:344	Min. :32.10
##	Class :character	Class :character	Class :character	1st Qu.:39.20
##	Mode :character	Mode :character	Mode :character	Median :44.45

```
##                                     Mean   :43.92
##                                     3rd Qu.:48.50
##                                     Max.   :59.60
##  grosor_pico_mm  largo_aleta_mm  masa_corporal_g  genero
##  Min.   :13.10   Min.   :172.0   Min.   :2700   Length:344
##  1st Qu.:15.60   1st Qu.:190.0   1st Qu.:3550   Class :character
##  Median :17.30   Median :197.0   Median :4050   Mode  :character
##  Mean   :17.15   Mean   :200.9   Mean   :4202
##  3rd Qu.:18.70   3rd Qu.:213.2   3rd Qu.:4756
##  Max.   :21.50   Max.   :231.0   Max.   :6300
##      año
##  Min.   :2007
##  1st Qu.:2007
##  Median :2008
##  Mean   :2008
##  3rd Qu.:2009
##  Max.   :2009
```

```
quintil<-quantile(penguins[["largo_aleta_mm"]],
                  p=c(.20, .40, .60, .80))
quintil
```

```
## 20% 40% 60% 80%
## 188 194 203 215
```

```
decil<-quantile(penguins[["largo_aleta_mm"]],
                p=c(.10, .20, .30, .40, .50, .60,
                  .70, .80, .90))
decil
```

```
## 10% 20% 30% 40% 50% 60% 70% 80% 90%
## 185 188 191 194 197 203 210 215 221
```

```
percentil<-quantile(penguins[["largo_aleta_mm"]],
                    p=c(.33, .66, .99))
percentil
```

```
## 33% 66% 99%
## 192 209 230
```

**Interpretacion:**

**<192 = Bajo**

**192-209 = Intermedio**

**> 209 = Alto**