Gráficos

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Se va a trabajar con la matriz penguins

Imprtación de la matriz penguins

Import data / from excel /browse / seleccionar archivo / aceptar

1.- Instalar paqueteria

```
install.packages("readxl")
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.3'
## (as 'lib' is unspecified)
```

2.-Abrir librería

```
library("readxl")
```

3.- Exportación de la matriz de datos

```
penguins<-read_excel("penguins.xlsx")
```

Exploración

1.- Dimensión de la matriz.

```
dim(penguins)
```

```
## [1] 344   9
```

2.- Tipo de variables

```
str(penguins)
```

```
## tibble [344 x 9] (S3: tbl_df/tbl/data.frame)
##  $ ID             : chr [1:344] "i1" "i2" "i3" "i4" ...
##  $ especie        : chr [1:344] "Adelie" "Adelie" "Adelie" "Adelie" ...
##  $ isla           : chr [1:344] "Torgersen" "Torgersen" "Torgersen" "Torgersen" ...
##  $ largo_pico_mm  : num [1:344] 39.1 39.5 40.3 37.8 36.7 39.3 38.9 39.2 34.1 42 ...
##  $ grosor_pico_mm : num [1:344] 18.7 17.4 18 18.1 19.3 20.6 17.8 19.6 18.1 20.2 ...
##  $ largo_aleta_mm : num [1:344] 181 186 195 190 193 190 181 195 193 190 ...
##  $ masa_corporal_g: num [1:344] 3750 3800 3250 3700 3450 ...
##  $ genero         : chr [1:344] "male" "female" "female" "female" ...
##  $ año            : num [1:344] 2007 2007 2007 2007 2007 ...
```

3.-En busca de datos perdidos

```r
anyNA(penguins)
```

```
## [1] FALSE
```

Configuración de la matriz

Visualización de la columna

```r
penguins$especie
```

```
##   [1] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
##   [7] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
##  [13] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
##  [19] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
##  [25] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
##  [31] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
##  [37] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
##  [43] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
##  [49] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
##  [55] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
##  [61] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
##  [67] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
##  [73] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
##  [79] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
##  [85] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
##  [91] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
##  [97] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
## [103] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
## [109] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
## [115] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
## [121] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
## [127] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
## [133] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
## [139] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
## [145] "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"    "Adelie"
## [151] "Adelie"    "Adelie"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [157] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [163] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [169] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [175] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [181] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [187] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [193] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [199] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [205] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [211] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [217] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [223] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [229] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [235] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [241] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [247] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [253] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
```

```
## [259] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [265] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [271] "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"    "Gentoo"
## [277] "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap"
## [283] "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap"
## [289] "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap"
## [295] "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap"
## [301] "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap"
## [307] "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap"
## [313] "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap"
## [319] "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap"
## [325] "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap"
## [331] "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap"
## [337] "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap" "Chinstrap"
## [343] "Chinstrap" "Chinstrap"
```

```
penguins$isla
```

```
##   [1] "Torgersen" "Torgersen" "Torgersen" "Torgersen" "Torgersen" "Torgersen"
##   [7] "Torgersen" "Torgersen" "Torgersen" "Torgersen" "Torgersen" "Torgersen"
##  [13] "Torgersen" "Torgersen" "Torgersen" "Torgersen" "Torgersen" "Torgersen"
##  [19] "Torgersen" "Torgersen" "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
##  [25] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
##  [31] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
##  [37] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
##  [43] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
##  [49] "Dream"     "Dream"     "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
##  [55] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
##  [61] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
##  [67] "Biscoe"    "Biscoe"    "Torgersen" "Torgersen" "Torgersen" "Torgersen"
##  [73] "Torgersen" "Torgersen" "Torgersen" "Torgersen" "Torgersen" "Torgersen"
##  [79] "Torgersen" "Torgersen" "Torgersen" "Torgersen" "Torgersen" "Torgersen"
##  [85] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
##  [91] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
##  [97] "Dream"     "Dream"     "Dream"     "Dream"     "Biscoe"    "Biscoe"
## [103] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [109] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [115] "Biscoe"    "Biscoe"    "Torgersen" "Torgersen" "Torgersen" "Torgersen"
## [121] "Torgersen" "Torgersen" "Torgersen" "Torgersen" "Torgersen" "Torgersen"
## [127] "Torgersen" "Torgersen" "Torgersen" "Torgersen" "Torgersen" "Torgersen"
## [133] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
## [139] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
## [145] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
## [151] "Dream"     "Dream"     "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [157] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [163] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [169] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [175] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [181] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [187] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [193] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [199] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [205] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [211] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [217] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
```

```
## [223] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [229] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [235] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [241] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [247] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [253] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [259] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [265] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [271] "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"    "Biscoe"
## [277] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
## [283] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
## [289] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
## [295] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
## [301] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
## [307] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
## [313] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
## [319] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
## [325] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
## [331] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
## [337] "Dream"     "Dream"     "Dream"     "Dream"     "Dream"     "Dream"
## [343] "Dream"     "Dream"
```

```
penguins$genero
```

```
##   [1] "male"   "female" "female" "female" "female" "male"   "female" "male"
##   [9] "female" "male"   "female" "female" "female" "male"   "male"   "female"
##  [17] "female" "male"   "female" "male"   "female" "male"   "female" "male"
##  [25] "male"   "female" "male"   "female" "female" "male"   "female" "male"
##  [33] "female" "male"   "female" "male"   "male"   "female" "female" "male"
##  [41] "female" "male"   "female" "male"   "female" "male"   "male"   "female"
##  [49] "female" "male"   "female" "male"   "female" "male"   "female" "male"
##  [57] "female" "male"   "female" "male"   "female" "male"   "female" "male"
##  [65] "female" "male"   "female" "male"   "female" "male"   "female" "male"
##  [73] "female" "male"   "female" "male"   "female" "male"   "female" "male"
##  [81] "female" "male"   "female" "male"   "female" "male"   "male"   "female"
##  [89] "male"   "female" "female" "male"   "female" "male"   "female" "male"
##  [97] "female" "male"   "female" "male"   "female" "male"   "female" "male"
## [105] "female" "male"   "female" "male"   "female" "male"   "female" "male"
## [113] "female" "male"   "female" "male"   "female" "male"   "female" "male"
## [121] "female" "male"   "female" "male"   "female" "male"   "female" "male"
## [129] "female" "male"   "female" "male"   "female" "male"   "female" "male"
## [137] "female" "male"   "female" "male"   "female" "male"   "female" "male"
## [145] "female" "male"   "male"   "female" "female" "male"   "female" "male"
## [153] "female" "male"   "female" "male"   "male"   "female" "female" "male"
## [161] "female" "male"   "female" "male"   "female" "male"   "female" "male"
## [169] "female" "male"   "female" "male"   "male"   "female" "female" "male"
## [177] "female" "male"   "female" "male"   "female" "male"   "male"   "female"
## [185] "female" "male"   "female" "male"   "female" "male"   "female" "male"
## [193] "female" "male"   "female" "male"   "male"   "female" "female" "male"
## [201] "female" "male"   "female" "male"   "female" "male"   "female" "male"
## [209] "female" "male"   "female" "male"   "female" "male"   "female" "male"
## [217] "female" "male"   "female" "male"   "female" "male"   "female" "male"
## [225] "male"   "female" "female" "male"   "female" "male"   "female" "male"
## [233] "female" "male"   "female" "male"   "female" "male"   "female" "male"
## [241] "female" "male"   "female" "male"   "female" "male"   "female" "male"
```

```
## [249] "male"   "female" "female" "male"   "female" "male"   "female" "male"
## [257] "female" "male"   "female" "male"   "female" "male"   "female" "male"
## [265] "female" "male"   "female" "male"   "female" "male"   "female" "male"
## [273] "female" "male"   "female" "male"   "female" "male"   "male"   "female"
## [281] "male"   "female" "female" "male"   "female" "male"   "female" "male"
## [289] "female" "male"   "female" "male"   "male"   "female" "female" "male"
## [297] "female" "male"   "female" "male"   "female" "male"   "female" "male"
## [305] "female" "male"   "female" "male"   "female" "male"   "male"   "female"
## [313] "female" "male"   "female" "male"   "male"   "female" "male"   "female"
## [321] "female" "male"   "female" "male"   "male"   "female" "female" "male"
## [329] "female" "male"   "female" "male"   "female" "male"   "male"   "female"
## [337] "male"   "female" "female" "male"   "female" "male"   "male"   "female"
```

```
penguins$año
```

```
##   [1] 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007
##  [16] 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007
##  [31] 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007
##  [46] 2007 2007 2007 2007 2007 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008
##  [61] 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008
##  [76] 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008
##  [91] 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2009 2009 2009 2009 2009
## [106] 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009
## [121] 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009
## [136] 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009
## [151] 2009 2009 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007
## [166] 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007
## [181] 2007 2007 2007 2007 2007 2007 2008 2008 2008 2008 2008 2008 2008 2008 2008
## [196] 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008
## [211] 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008
## [226] 2008 2008 2008 2008 2008 2008 2008 2009 2009 2009 2009 2009 2009 2009 2009
## [241] 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009
## [256] 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009
## [271] 2009 2009 2009 2009 2009 2009 2007 2007 2007 2007 2007 2007 2007 2007 2007
## [286] 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007 2007
## [301] 2007 2007 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008 2008
## [316] 2008 2008 2008 2008 2008 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009
## [331] 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009 2009
```

1.- Convertir las variables categóticas a factores

```
penguins$especie<-factor(penguins$especie,
                         levels=c("Adelie", "Gentoo", "Chinstrap"))
```

```
penguins$isla<-factor(penguins$isla,
                      levels=c("Torgersen", "Biscoe", "Dream"))
```

```
penguins$genero<-factor(penguins$genero,
                        levels=c("male", "female"))
```

```
penguins$año<-factor(penguins$año,
                     levels=c("2007", "2008", "2009"))
```

1.1 Tipo de variables

```
str(penguins)
```

```
## tibble [344 x 9] (S3: tbl_df/tbl/data.frame)
##  $ ID             : chr [1:344] "i1" "i2" "i3" "i4" ...
##  $ especie        : Factor w/ 3 levels "Adelie","Gentoo",..: 1 1 1 1 1 1 1 1 1 1 ...
##  $ isla           : Factor w/ 3 levels "Torgersen","Biscoe",..: 1 1 1 1 1 1 1 1 1 1 ...
##  $ largo_pico_mm  : num [1:344] 39.1 39.5 40.3 37.8 36.7 39.3 38.9 39.2 34.1 42 ...
##  $ grosor_pico_mm : num [1:344] 18.7 17.4 18 18.1 19.3 20.6 17.8 19.6 18.1 20.2 ...
##  $ largo_aleta_mm : num [1:344] 181 186 195 190 193 190 181 195 193 190 ...
##  $ masa_corporal_g: num [1:344] 3750 3800 3250 3700 3450 ...
##  $ genero         : Factor w/ 2 levels "male","female": 1 2 2 2 2 1 2 1 2 1 ...
##  $ año            : Factor w/ 3 levels "2007","2008",..: 1 1 1 1 1 1 1 1 1 1 ...
```

1.2 Media y mediana

```
summary(penguins)
```

```
##       ID                 especie           isla     largo_pico_mm
##  Length:344         Adelie   :152   Torgersen: 52   Min.   :32.10
##  Class :character   Gentoo   :124   Biscoe   :168   1st Qu.:39.20
##  Mode  :character   Chinstrap: 68   Dream    :124   Median :44.45
##                                                     Mean   :43.92
##                                                     3rd Qu.:48.50
##                                                     Max.   :59.60
##  grosor_pico_mm  largo_aleta_mm  masa_corporal_g    genero      año
##  Min.   :13.10   Min.   :172.0   Min.   :2700    male  :170   2007:110
##  1st Qu.:15.60   1st Qu.:190.0   1st Qu.:3550    female:174   2008:114
##  Median :17.30   Median :197.0   Median :4050                 2009:120
##  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
```

1.3 Visualización

```
penguins
```

```
## # A tibble: 344 x 9
##    ID    especie isla      largo_pico_mm grosor_pico_mm largo_aleta_mm
##    <chr> <fct>   <fct>             <dbl>          <dbl>          <dbl>
##  1 i1    Adelie  Torgersen          39.1           18.7            181
##  2 i2    Adelie  Torgersen          39.5           17.4            186
##  3 i3    Adelie  Torgersen          40.3           18              195
##  4 i4    Adelie  Torgersen          37.8           18.1            190
##  5 i5    Adelie  Torgersen          36.7           19.3            193
##  6 i6    Adelie  Torgersen          39.3           20.6            190
##  7 i7    Adelie  Torgersen          38.9           17.8            181
##  8 i8    Adelie  Torgersen          39.2           19.6            195
##  9 i9    Adelie  Torgersen          34.1           18.1            193
## 10 i10   Adelie  Torgersen          42             20.2            190
## # i 334 more rows
## # i 3 more variables: masa_corporal_g <dbl>, genero <fct>, año <fct>
```

2.- Creamos una nueva matriz de datos donde se seleccionan

Las columnas de la 2 a la 9

```
BD1<-penguins[,2:9]
```

```
colnames(BD1)
```

```
## [1] "especie"         "isla"            "largo_pico_mm"   "grosor_pico_mm"
## [5] "largo_aleta_mm"  "masa_corporal_g" "genero"          "año"
```

Librerías

1.- Instalar paquetería

```
install.packages("ggplot2")
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.3'
## (as 'lib' is unspecified)
```

2.- Abrir librería

```
library(ggplot2)
```

Boxplot

1.- Creación de un vector de color

```
color=c("lightpink2","lightblue1")
```

2.- Creacion del grafico

```
BX<-ggplot(BD1, aes(x=genero, y=largo_pico_mm))+
  geom_boxplot(fill=color)+
  ggtitle("Boxplot")+
  xlab("Género")+
  ylab("largo de la aleta (mm)")+
  theme_bw()
```

3.- Visualización del boxplot

```
BX
```

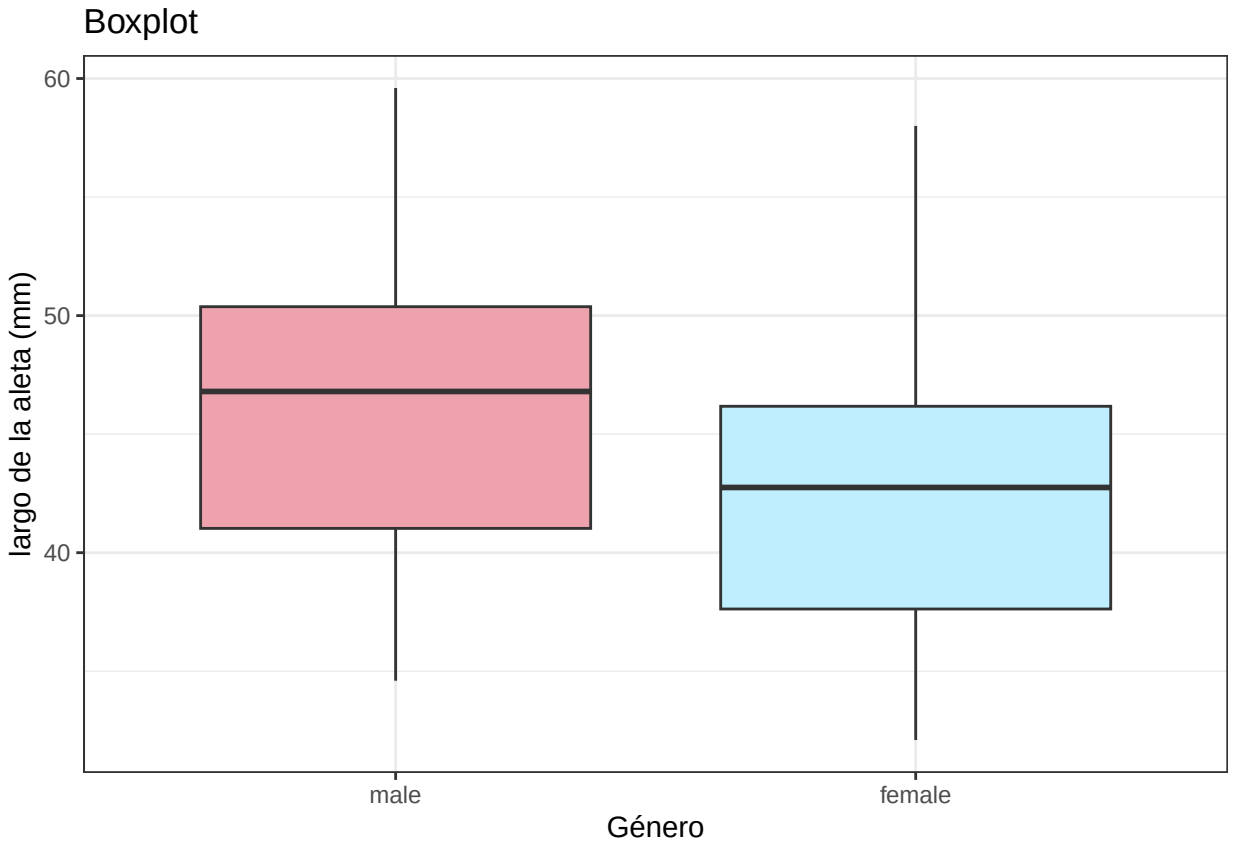


Gráfico de barras

1.- Creación de un vector de color

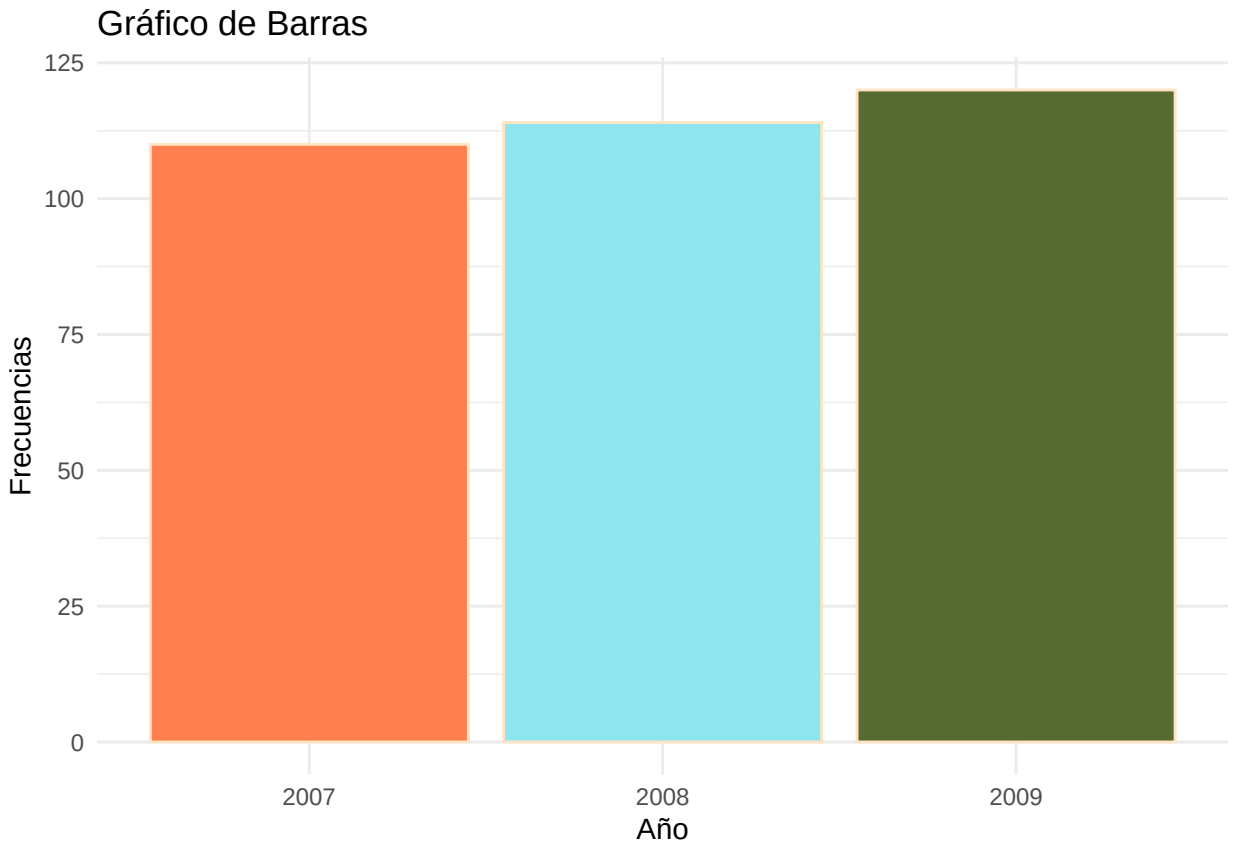
```
color=c("coral", "cadetblue2", "darkolivegreen")
```

2.- Creación del gráfico

```
GB1<-ggplot(BD1, aes(x=año))+
  geom_bar(colour= "bisque", fill=color)+
  ggtitle("Gráfico de Barras")+
  xlab("Año")+
  ylab("Frecuencias")+
  theme_minimal()
```

3.- Visualizacion del grafico

```
GB1
```

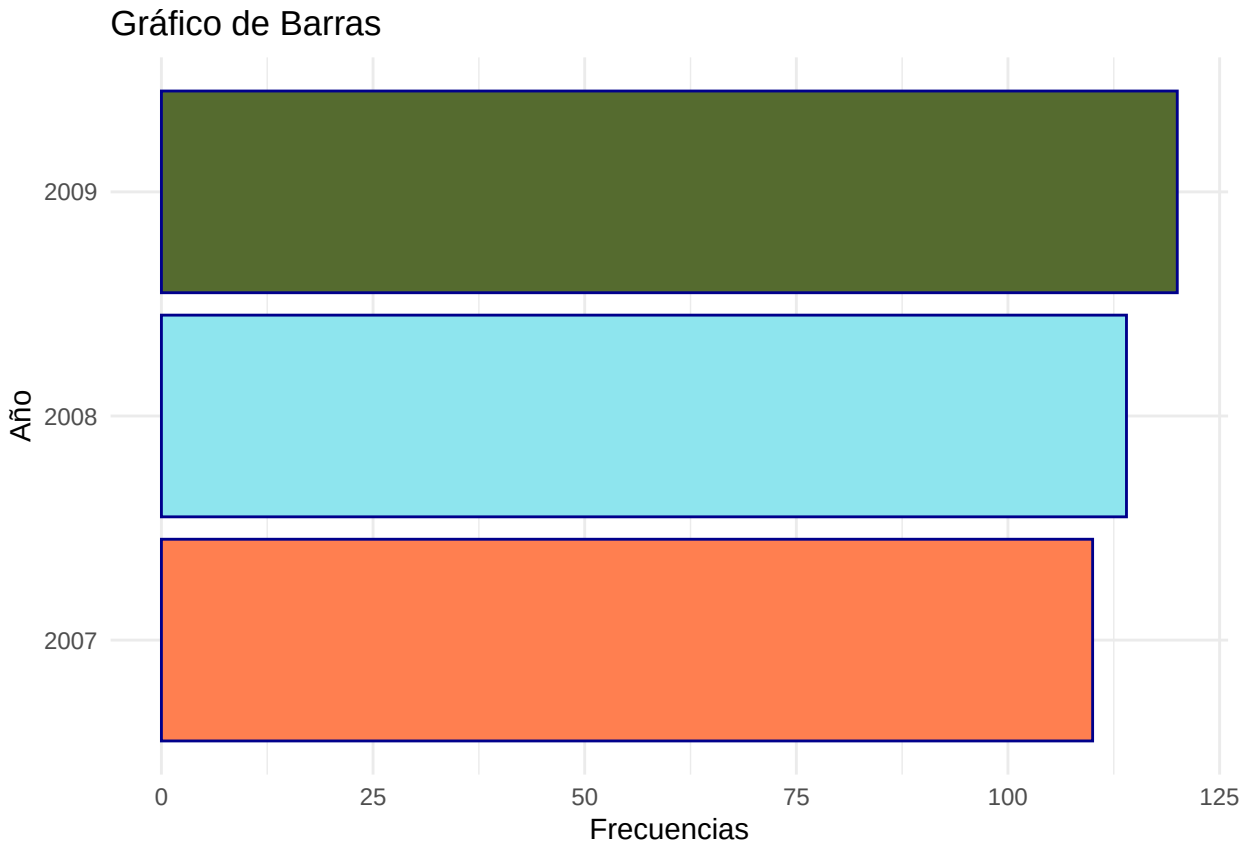


4.- Barras verticales

```
GB2<-ggplot(BD1, aes(x=año))+
  geom_bar(colour= "darkblue", fill=color)+
  ggtitle("Gráfico de Barras")+
  xlab("Año")+
  ylab("Frecuencias")+
  coord_flip()+
  theme_minimal()
```

5. Visualizacion del objeto

```
GB2
```



Histograma

1.- Construccion del grafico

```
HG<-ggplot(BD1, aes(x=largo_aleta_mm))+
  geom_histogram(col="chocolate1", fill="darkseagreen3")+
  ggtitle("Histograma")+
  xlab("Largo de la aleta (mm)")+
  ylab("Frecuencias")+
  theme_classic()
```

2.- Visualizacion del grafico

```
HG
```

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```

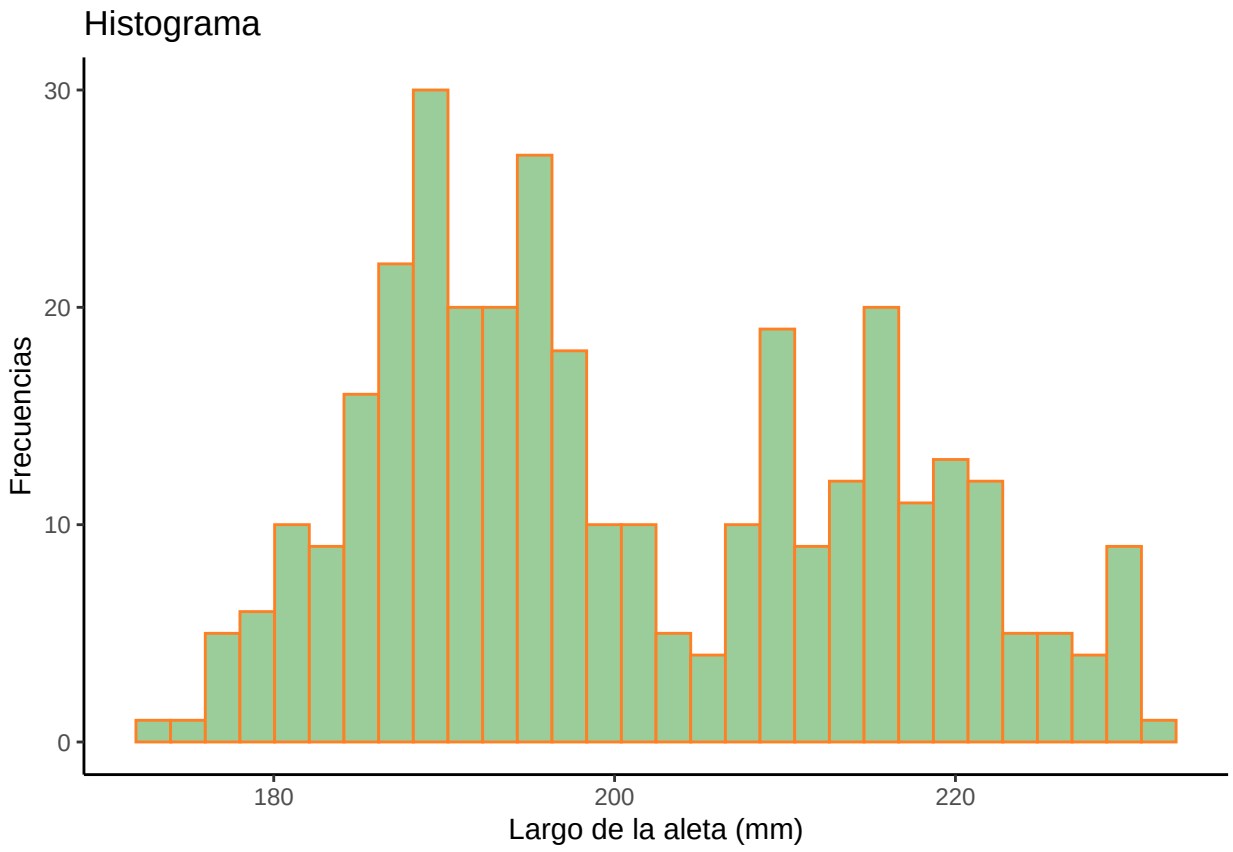


Gráfico de dispersión

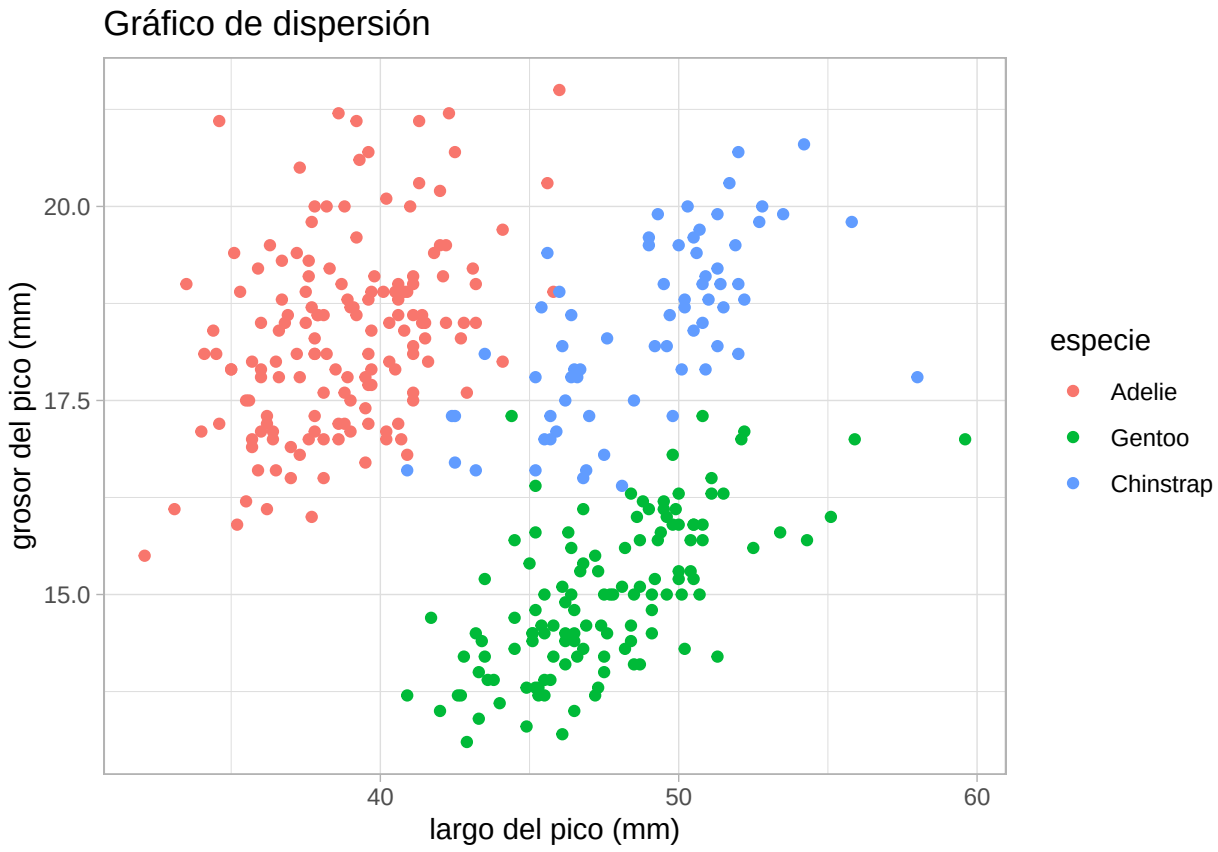
1.- Construccion del grafico

```
GD<-ggplot(BD1, aes(x=largo_pico_mm, y=grosor_pico_mm))+
  geom_point(aes(color=especie))+
  ggtitle("Gráfico de dispersión")+
  xlab("largo del pico (mm)")+
  ylab("grosor del pico (mm)")+
  theme_light()
```

Nota: es bd1 porque es nuestra matriz modificada, es decir, eliminamos la primera columna de penguins

2.- Visualizacion del objeto

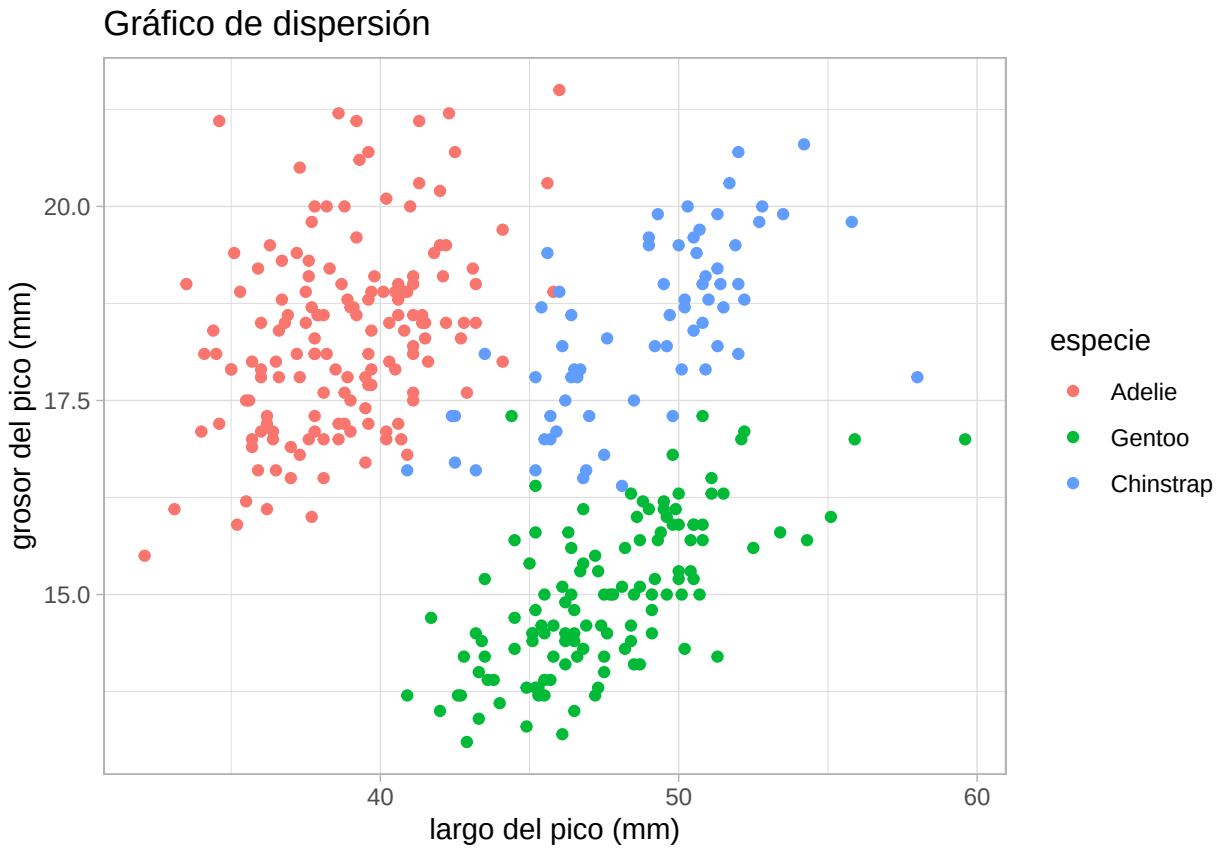
```
GD
```



Otros 2 ejemplos

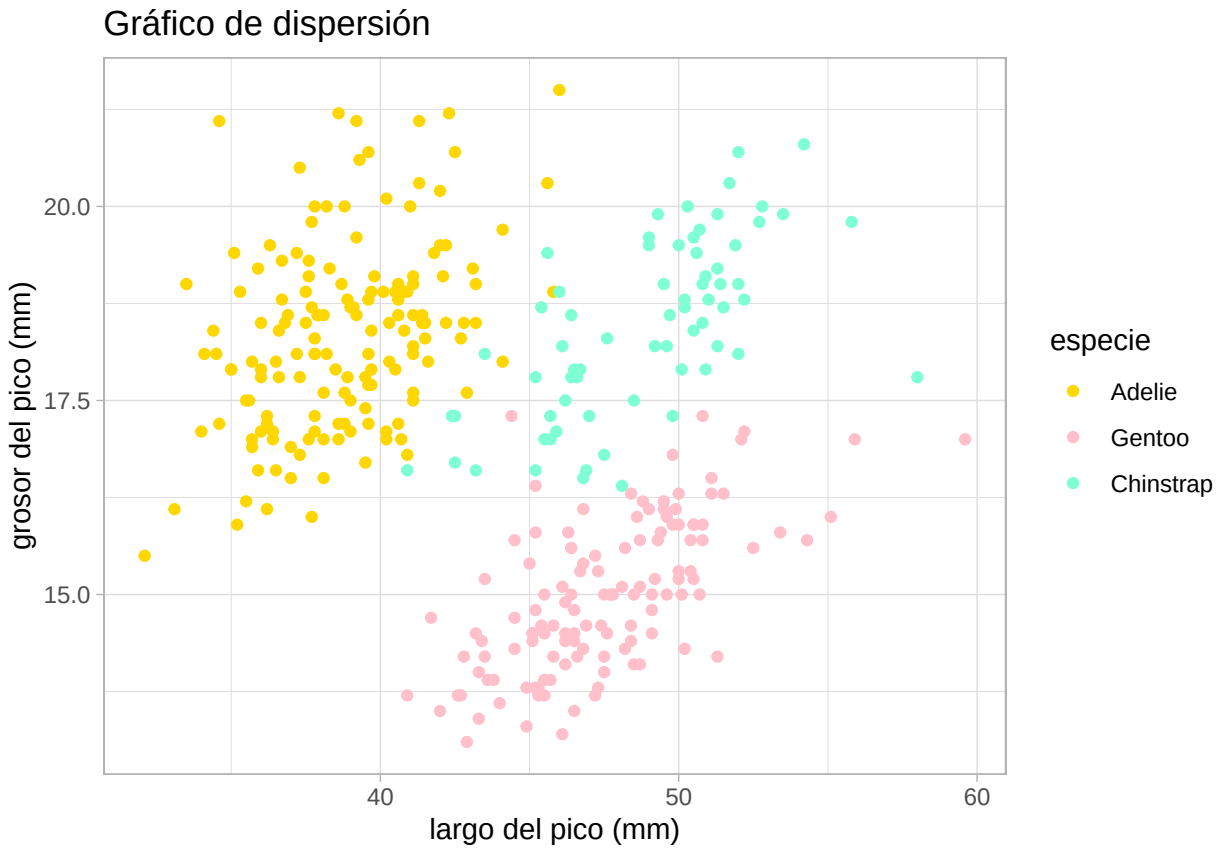
```
GD2<-ggplot(BD1, aes(x=largo_pico_mm, y=grosor_pico_mm))+
  geom_point(aes(color=especie))+
  ggtitle("Gráfico de dispersión")+
  xlab("largo del pico (mm)")+
  ylab("grosor del pico (mm)")+
  theme_light()
```

```
GD2
```




```
GD3<-ggplot(BD1, aes(x=largo_pico_mm, y=grosor_pico_mm))+
  geom_point(aes(color=especie))+
  scale_color_manual(values=c("gold","pink","aquamarine"))+
  ggtitle("Gráfico de dispersión")+
  xlab("largo del pico (mm)")+
  ylab("grosor del pico (mm)")+
  theme_light()
```

```
GD3
```



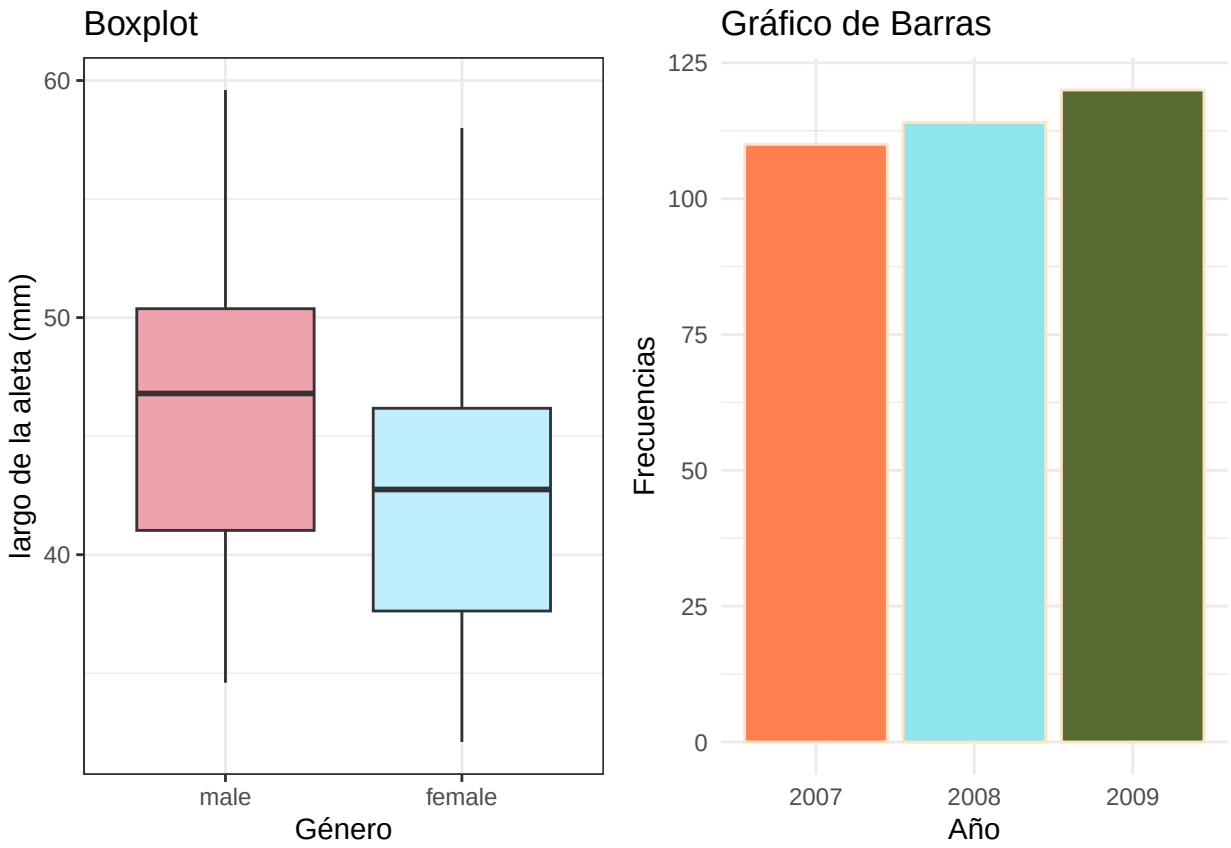
Organización de gráficos

1.- Abrir librería de paquete gridExtra

```
library(gridExtra)
```

2.- Organizacion 2 graficos en una fila y dos columnas

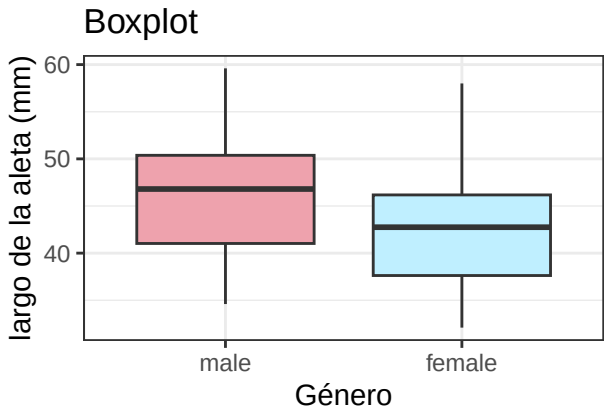
```
grid.arrange(BX,GB1, nrow=1, ncol=2)
```

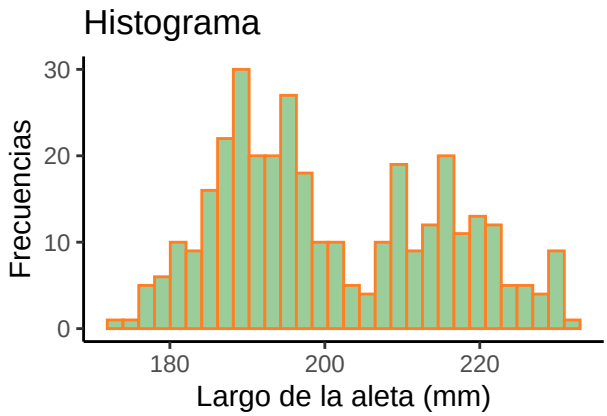


3.-Organizacion 3 graficos en dos filas y dos columnas

```
grid.arrange(BX,GB1,HG, nrow=2, ncol=2)
```

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```





4.-Organizacion 4 graficos en dos filas y dos columnas

```
grid.arrange(BX,GB1,HG,GD3, nrow=2, ncol=2)
```

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```

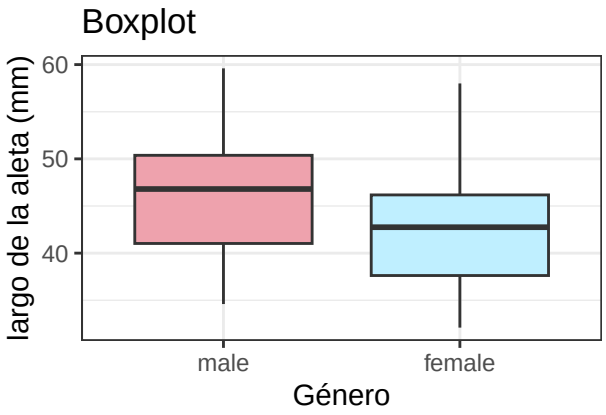
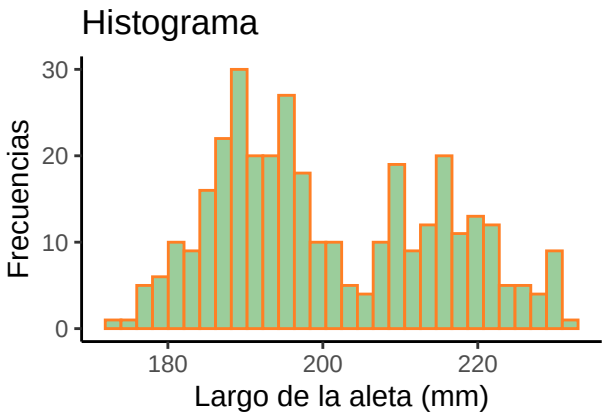

Boxplot
largo de la aleta (mm)
60
50
40
male
female
Género


Gráfico de Barras
Frecuencias
125
100
75
50
25
0
2007
2008
2009
Año


Histograma
Frecuencias
30
20
10
0
180
200
220
Largo de la aleta (mm)

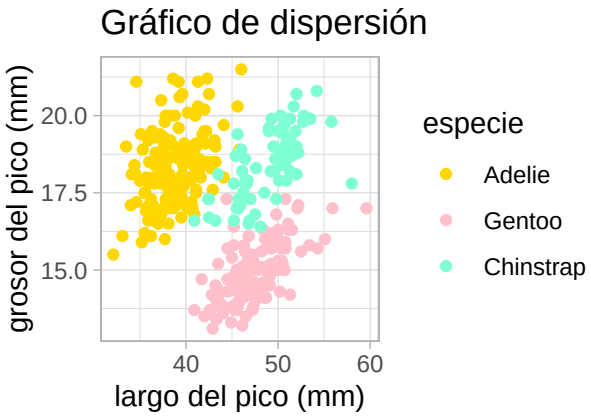


Gráfico de dispersión
grosor del pico (mm)
20.0
17.5
15.0
40
50
60
largo del pico (mm)
especie
Adelie
Gentoo
Chinstrap