Codificación de Variables

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************* RECODIFICACION DE VARIABLES **********

**

Importación de matriz

**

1.-Lectura de la matriz

```
BD <-read.csv ("BD1.csv")
```

2.-Seleccionar las columnas 2 a la 9

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

3.- Se obtiene una copia de la matriz

```
BD2 <-BD1
```

****

Renombrar variables

****

1.- Visualización del nombre de las variables

```
colnames (BD1)
```

```
## [1] "species"           "island"            "bill_length_mm"
## [4] "bill_depth_mm"     "flipper_length_mm" "body_mass_g"
## [7] "sex"               "year"
```

2.- Renombrar las variables en orden de las columnas.

```
names (BD2) = c ("Especies", "Isla", "Largo_pico_mm", "Ancho_pico_mm", "Largo_aleta_mm",
                   "Masa_corporal_g", "Sexo", "Año")
```

3.- Se vuelve a visualizar los nombres de las variables

```
colnames (BD2)
```

```
## [1] "Especies"        "Isla"            "Largo_pico_mm"   "Ancho_pico_mm"
## [5] "Largo_aleta_mm"  "Masa_corporal_g" "Sexo"            "Año"
```

** ********************

Tratamiento de las variables cualitativas

** ********************

1.-Factor

#a) Verificar el orden de la variable

```
str (BD2 $ Especies)
```

```
##  chr [1:344] "Adelie" "Adelie" "Adelie" "Adelie" "Adelie" "Adelie" "Adelie" ...
```

```
BD2 $ Especies
```

```
##   [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"
```

1) Especie variable: originalmente está como caracter, pero se requiere convertir un factor de 3 niveles.

```
BD2$Especies<-factor (BD2 $ Especies,
                         levels = c ("Adelie", "Gentoo", "Chinstrap"))
```

Se verifica que la variable sea un factor.

```
str (BD2 $ Especies)
```

```
##  Factor w/ 3 levels "Adelie","Gentoo",..: 1 1 1 1 1 1 1 1 1 1 ...
```

2) Isla variable

```
str (BD2 $ Isla)
```

```
##  chr [1:344] "Torgersen" "Torgersen" "Torgersen" "Torgersen" "Torgersen" ...
```

```
BD2 $ 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"
```

```r
BD2 $ Isla <-factor (BD2 $ Isla,
                     levels = c ("Torgersen", "Sueño", "Biscoe"))
str (BD2 $ Isla)
```

```
##  Factor w/ 3 levels "Torgersen","Sueño",..: 1 1 1 1 1 1 1 1 1 1 ...
```

3) Sexo variable

```
BD2$Sexo
```

```
##   [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"
```

```
BD2$Sexo<-factor(BD2$Sexo,
                        levels = c ("male", "female"),
                        labels = c ("Masculino", "Femenino"))
str (BD2$Sexo)
```

```
##  Factor w/ 2 levels "Masculino","Femenino": 1 2 2 2 2 1 2 1 2 1 ...
```

4) Año variable

```
BD2 $ 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
```

```
BD2 $ Año <-factor (BD2 $ Año, levels = c ("2007", "2008", "2009"))
str (BD2 $ Año)
```

```
##  Factor w/ 3 levels "2007","2008",..: 1 1 1 1 1 1 1 1 1 1 ...
```

Para obtener los estadísticos descriptivos de las variables

```
summary(BD2)
```

```
##       Especies           Isla      Largo_pico_mm    Ancho_pico_mm
##  Adelie    :152   Torgersen: 52   Min.   :32.10   Min.   :13.10
##  Gentoo    :124   Sueño    :  0   1st Qu.:39.20   1st Qu.:15.60
##  Chinstrap: 68    Biscoe    :168   Median :44.45   Median :17.30
##                   NA's     :124   Mean   :43.92   Mean   :17.15
##                                   3rd Qu.:48.50   3rd Qu.:18.70
##                                   Max.   :59.60   Max.   :21.50
##  Largo_aleta_mm  Masa_corporal_g        Sexo       Año
```

```
##  Min.   :172.0   Min.   :2700    Masculino:170   2007:110
##  1st Qu.:190.0   1st Qu.:3550    Femenino :174   2008:114
##  Median :197.0   Median :4050                    2009:120
##  Mean   :200.9   Mean   :4202
##  3rd Qu.:213.2   3rd Qu.:4756
##  Max.   :231.0   Max.   :6300
```

Guardar matriz de datos final

```
BD3 <-as.data.frame(BD2)
```

Activar la librería para realizar los gráficos

```
library (ggplot2)
```

```
## Warning: package 'ggplot2' was built under R version 4.0.5
```

Gráfico boxplot de exploración

```
color = c ("deepskyblue1", "magenta")
BX <-ggplot (BD3, aes (x = Sexo, y = Ancho_pico_mm)) +
  geom_boxplot (fill = color) +
  ggtitle ("Boxplot") +
  xlab ("Sexo") +
  ylab ("Ancho del pico (mm)")
BX
```

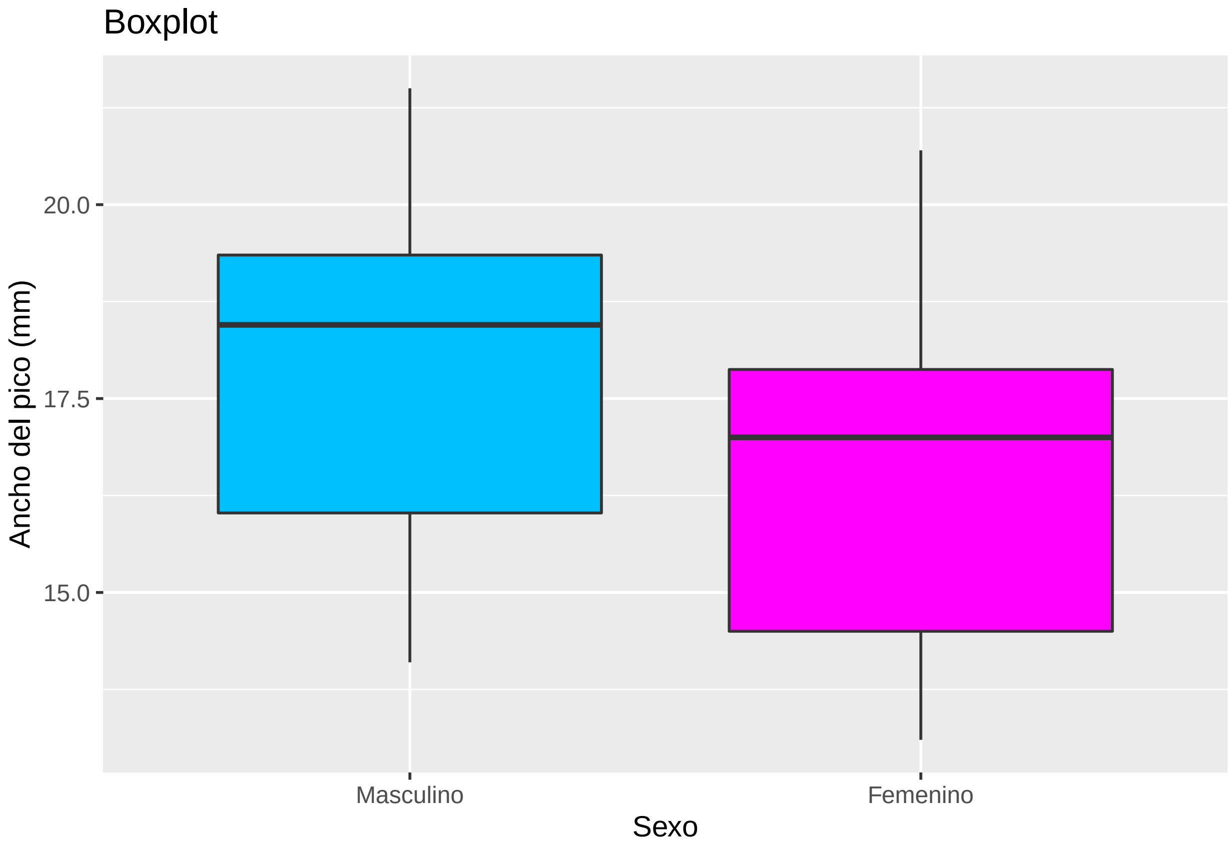
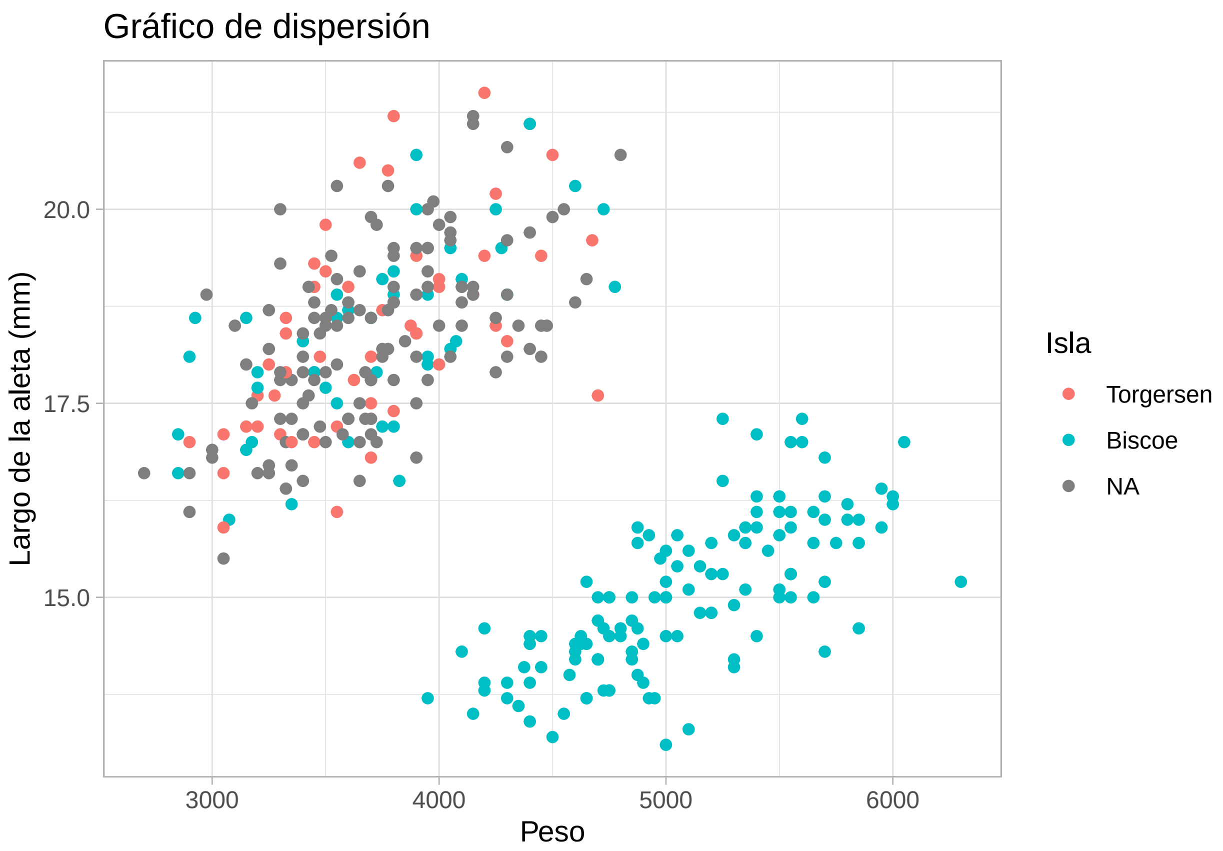


Gráfico de dispersión

```
DD <-ggplot (BD3, aes (Masa_corporal_g, Ancho_pico_mm)) +
  geom_point (aes (color = Isla)) +
  labs (title = "Gráfico de dispersión") +
  xlab ("Peso") +
  ylab ("Largo de la aleta (mm)") +
  theme_light ()
DD
```



NOTA: ggplot reconoce que masa corporal es el eje *"x"* y el ancho del pico es el eje *"y"*

Guardar la matriz de datos

```
write.csv ( BD3 , " BD3_penguins.csv " )
```