Actividad 2: Manejo de RStudio

Alejandra Caballero

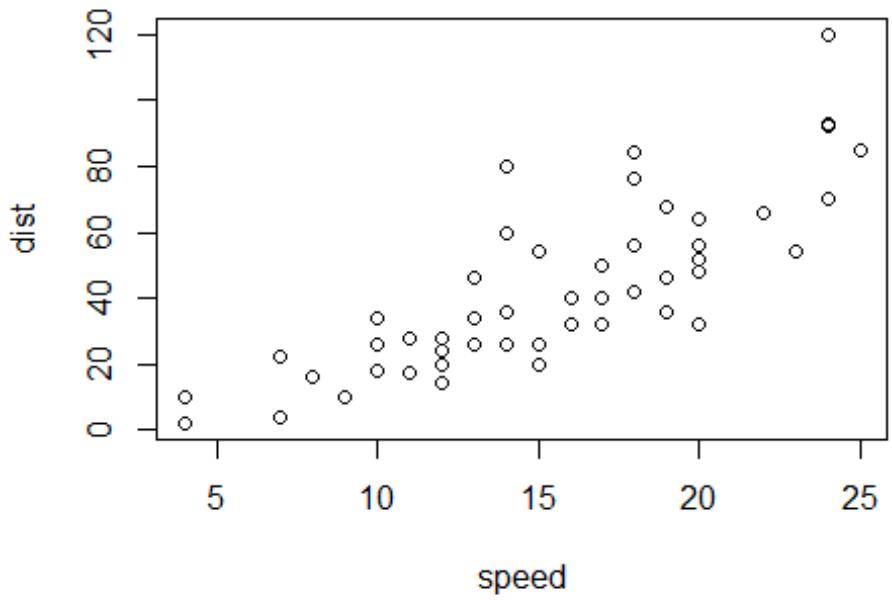
2023-03-19

Equipo:

“Alejandra Caballero” “Andrea Lopez” “Natalia Macias”

Primera clase

```
plot(cars)
```




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

library(ggplot2)

x<-35
y<-10
x

## [1] 35

y
```

```
## [1] 10
```

```
x*y
```

```
## [1] 350
```

```
x/y
```

```
## [1] 3.5
```

```
x>y #mayor que
```

```
## [1] TRUE
```

```
x<y #menor que
```

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

```
x>=35 #mayor o igual que
```

```
## [1] TRUE
```

```
y==10 #igual
```

```
## [1] TRUE
```

```
x!=10 #diferente
```

```
## [1] TRUE
```

```
#formas de asignación de variables
v1<-100 ; v1
```

```
## [1] 100
```

```
v2<<-200 ; v2
```

```
## [1] 200
```

```
v3=300 ; v3
```

```
## [1] 300
```

```
1000->v4 ; v4
```

```
## [1] 1000
```

```
v5<-(1:10) ; v5
```

```
##  [1]  1  2  3  4  5  6  7  8  9 10
```

```
v6 <- c(1:10) ; v6
```

```
##  [1]  1  2  3  4  5  6  7  8  9 10
```

```r
#matriz (vector numérico, row, column)
m1<- matrix(1:9,3,3) ; m1
```

```
##      [,1] [,2] [,3]
## [1,]    1    4    7
## [2,]    2    5    8
## [3,]    3    6    9
```

```r
print("hola mundo")
```

```
## [1] "hola mundo"
```

```r
v10<- c("IBT","BIOTECNOLOGIA","INGENIERIA") ; v10 #concatenación
```

```
## [1] "IBT"           "BIOTECNOLOGIA" "INGENIERIA"
```

```r
v11<- (1:3)/3 ; v11
```

```
## [1] 0.3333333 0.6666667 1.0000000
```

```r
v12<- (v11*3); v12
```

```
## [1] 1 2 3
```

```r
v13<- v12/v12; v13
```

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

```r
x<-(1:3)
y<-c("IBT","BIOTECNOLOGIA","INGENIERIA")
z<-c(TRUE, TRUE, FALSE)
m2<-data.frame(x,y,z) ; m2 #data frame para almacenamiento de datos heterogéneos
```

```
##   x            y     z
## 1 1          IBT  TRUE
## 2 2 BIOTECNOLOGIA  TRUE
## 3 3    INGENIERIA FALSE
```

```r
head(iris)
```

```
##   Sepal.Length Sepal.Width Petal.Length Petal.Width Species
## 1          5.1         3.5          1.4         0.2  setosa
## 2          4.9         3.0          1.4         0.2  setosa
## 3          4.7         3.2          1.3         0.2  setosa
## 4          4.6         3.1          1.5         0.2  setosa
## 5          5.0         3.6          1.4         0.2  setosa
## 6          5.4         3.9          1.7         0.4  setosa
```

```r
tail(iris)
```

```
##     Sepal.Length Sepal.Width Petal.Length Petal.Width   Species
## 145          6.7         3.3          5.7         2.5 virginica
## 146          6.7         3.0          5.2         2.3 virginica
```

```
## 147          6.3         2.5          5.0         1.9 virginica
## 148          6.5         3.0          5.2         2.0 virginica
## 149          6.2         3.4          5.4         2.3 virginica
## 150          5.9         3.0          5.1         1.8 virginica
```

```
x<-iris ; x #asignación
```

```
##     Sepal.Length Sepal.Width Petal.Length Petal.Width    Species
## 1            5.1         3.5          1.4         0.2     setosa
## 2            4.9         3.0          1.4         0.2     setosa
## 3            4.7         3.2          1.3         0.2     setosa
## 4            4.6         3.1          1.5         0.2     setosa
## 5            5.0         3.6          1.4         0.2     setosa
## 6            5.4         3.9          1.7         0.4     setosa
## 7            4.6         3.4          1.4         0.3     setosa
## 8            5.0         3.4          1.5         0.2     setosa
## 9            4.4         2.9          1.4         0.2     setosa
## 10           4.9         3.1          1.5         0.1     setosa
## 11           5.4         3.7          1.5         0.2     setosa
## 12           4.8         3.4          1.6         0.2     setosa
## 13           4.8         3.0          1.4         0.1     setosa
## 14           4.3         3.0          1.1         0.1     setosa
## 15           5.8         4.0          1.2         0.2     setosa
## 16           5.7         4.4          1.5         0.4     setosa
## 17           5.4         3.9          1.3         0.4     setosa
## 18           5.1         3.5          1.4         0.3     setosa
## 19           5.7         3.8          1.7         0.3     setosa
## 20           5.1         3.8          1.5         0.3     setosa
## 21           5.4         3.4          1.7         0.2     setosa
## 22           5.1         3.7          1.5         0.4     setosa
## 23           4.6         3.6          1.0         0.2     setosa
## 24           5.1         3.3          1.7         0.5     setosa
## 25           4.8         3.4          1.9         0.2     setosa
## 26           5.0         3.0          1.6         0.2     setosa
## 27           5.0         3.4          1.6         0.4     setosa
## 28           5.2         3.5          1.5         0.2     setosa
## 29           5.2         3.4          1.4         0.2     setosa
## 30           4.7         3.2          1.6         0.2     setosa
## 31           4.8         3.1          1.6         0.2     setosa
## 32           5.4         3.4          1.5         0.4     setosa
## 33           5.2         4.1          1.5         0.1     setosa
## 34           5.5         4.2          1.4         0.2     setosa
## 35           4.9         3.1          1.5         0.2     setosa
## 36           5.0         3.2          1.2         0.2     setosa
## 37           5.5         3.5          1.3         0.2     setosa
## 38           4.9         3.6          1.4         0.1     setosa
## 39           4.4         3.0          1.3         0.2     setosa
## 40           5.1         3.4          1.5         0.2     setosa
## 41           5.0         3.5          1.3         0.3     setosa
## 42           4.5         2.3          1.3         0.3     setosa
```

```
## 43           4.4         3.2          1.3         0.2     setosa
## 44           5.0         3.5          1.6         0.6     setosa
## 45           5.1         3.8          1.9         0.4     setosa
## 46           4.8         3.0          1.4         0.3     setosa
## 47           5.1         3.8          1.6         0.2     setosa
## 48           4.6         3.2          1.4         0.2     setosa
## 49           5.3         3.7          1.5         0.2     setosa
## 50           5.0         3.3          1.4         0.2     setosa
## 51           7.0         3.2          4.7         1.4 versicolor
## 52           6.4         3.2          4.5         1.5 versicolor
## 53           6.9         3.1          4.9         1.5 versicolor
## 54           5.5         2.3          4.0         1.3 versicolor
## 55           6.5         2.8          4.6         1.5 versicolor
## 56           5.7         2.8          4.5         1.3 versicolor
## 57           6.3         3.3          4.7         1.6 versicolor
## 58           4.9         2.4          3.3         1.0 versicolor
## 59           6.6         2.9          4.6         1.3 versicolor
## 60           5.2         2.7          3.9         1.4 versicolor
## 61           5.0         2.0          3.5         1.0 versicolor
## 62           5.9         3.0          4.2         1.5 versicolor
## 63           6.0         2.2          4.0         1.0 versicolor
## 64           6.1         2.9          4.7         1.4 versicolor
## 65           5.6         2.9          3.6         1.3 versicolor
## 66           6.7         3.1          4.4         1.4 versicolor
## 67           5.6         3.0          4.5         1.5 versicolor
## 68           5.8         2.7          4.1         1.0 versicolor
## 69           6.2         2.2          4.5         1.5 versicolor
## 70           5.6         2.5          3.9         1.1 versicolor
## 71           5.9         3.2          4.8         1.8 versicolor
## 72           6.1         2.8          4.0         1.3 versicolor
## 73           6.3         2.5          4.9         1.5 versicolor
## 74           6.1         2.8          4.7         1.2 versicolor
## 75           6.4         2.9          4.3         1.3 versicolor
## 76           6.6         3.0          4.4         1.4 versicolor
## 77           6.8         2.8          4.8         1.4 versicolor
## 78           6.7         3.0          5.0         1.7 versicolor
## 79           6.0         2.9          4.5         1.5 versicolor
## 80           5.7         2.6          3.5         1.0 versicolor
## 81           5.5         2.4          3.8         1.1 versicolor
## 82           5.5         2.4          3.7         1.0 versicolor
## 83           5.8         2.7          3.9         1.2 versicolor
## 84           6.0         2.7          5.1         1.6 versicolor
## 85           5.4         3.0          4.5         1.5 versicolor
## 86           6.0         3.4          4.5         1.6 versicolor
## 87           6.7         3.1          4.7         1.5 versicolor
## 88           6.3         2.3          4.4         1.3 versicolor
## 89           5.6         3.0          4.1         1.3 versicolor
## 90           5.5         2.5          4.0         1.3 versicolor
## 91           5.5         2.6          4.4         1.2 versicolor
## 92           6.1         3.0          4.6         1.4 versicolor
```

```
## 93           5.8         2.6          4.0         1.2 versicolor
## 94           5.0         2.3          3.3         1.0 versicolor
## 95           5.6         2.7          4.2         1.3 versicolor
## 96           5.7         3.0          4.2         1.2 versicolor
## 97           5.7         2.9          4.2         1.3 versicolor
## 98           6.2         2.9          4.3         1.3 versicolor
## 99           5.1         2.5          3.0         1.1 versicolor
## 100          5.7         2.8          4.1         1.3 versicolor
## 101          6.3         3.3          6.0         2.5  virginica
## 102          5.8         2.7          5.1         1.9  virginica
## 103          7.1         3.0          5.9         2.1  virginica
## 104          6.3         2.9          5.6         1.8  virginica
## 105          6.5         3.0          5.8         2.2  virginica
## 106          7.6         3.0          6.6         2.1  virginica
## 107          4.9         2.5          4.5         1.7  virginica
## 108          7.3         2.9          6.3         1.8  virginica
## 109          6.7         2.5          5.8         1.8  virginica
## 110          7.2         3.6          6.1         2.5  virginica
## 111          6.5         3.2          5.1         2.0  virginica
## 112          6.4         2.7          5.3         1.9  virginica
## 113          6.8         3.0          5.5         2.1  virginica
## 114          5.7         2.5          5.0         2.0  virginica
## 115          5.8         2.8          5.1         2.4  virginica
## 116          6.4         3.2          5.3         2.3  virginica
## 117          6.5         3.0          5.5         1.8  virginica
## 118          7.7         3.8          6.7         2.2  virginica
## 119          7.7         2.6          6.9         2.3  virginica
## 120          6.0         2.2          5.0         1.5  virginica
## 121          6.9         3.2          5.7         2.3  virginica
## 122          5.6         2.8          4.9         2.0  virginica
## 123          7.7         2.8          6.7         2.0  virginica
## 124          6.3         2.7          4.9         1.8  virginica
## 125          6.7         3.3          5.7         2.1  virginica
## 126          7.2         3.2          6.0         1.8  virginica
## 127          6.2         2.8          4.8         1.8  virginica
## 128          6.1         3.0          4.9         1.8  virginica
## 129          6.4         2.8          5.6         2.1  virginica
## 130          7.2         3.0          5.8         1.6  virginica
## 131          7.4         2.8          6.1         1.9  virginica
## 132          7.9         3.8          6.4         2.0  virginica
## 133          6.4         2.8          5.6         2.2  virginica
## 134          6.3         2.8          5.1         1.5  virginica
## 135          6.1         2.6          5.6         1.4  virginica
## 136          7.7         3.0          6.1         2.3  virginica
## 137          6.3         3.4          5.6         2.4  virginica
## 138          6.4         3.1          5.5         1.8  virginica
## 139          6.0         3.0          4.8         1.8  virginica
## 140          6.9         3.1          5.4         2.1  virginica
## 141          6.7         3.1          5.6         2.4  virginica
## 142          6.9         3.1          5.1         2.3  virginica
```

```
## 143          5.8         2.7          5.1         1.9  virginica
## 144          6.8         3.2          5.9         2.3  virginica
## 145          6.7         3.3          5.7         2.5  virginica
## 146          6.7         3.0          5.2         2.3  virginica
## 147          6.3         2.5          5.0         1.9  virginica
## 148          6.5         3.0          5.2         2.0  virginica
## 149          6.2         3.4          5.4         2.3  virginica
## 150          5.9         3.0          5.1         1.8  virginica
```

```
y<-data.frame(a=iris$Petal.Length, b=iris$Species); y
```

```
##       a          b
## 1   1.4     setosa
## 2   1.4     setosa
## 3   1.3     setosa
## 4   1.5     setosa
## 5   1.4     setosa
## 6   1.7     setosa
## 7   1.4     setosa
## 8   1.5     setosa
## 9   1.4     setosa
## 10  1.5     setosa
## 11  1.5     setosa
## 12  1.6     setosa
## 13  1.4     setosa
## 14  1.1     setosa
## 15  1.2     setosa
## 16  1.5     setosa
## 17  1.3     setosa
## 18  1.4     setosa
## 19  1.7     setosa
## 20  1.5     setosa
## 21  1.7     setosa
## 22  1.5     setosa
## 23  1.0     setosa
## 24  1.7     setosa
## 25  1.9     setosa
## 26  1.6     setosa
## 27  1.6     setosa
## 28  1.5     setosa
## 29  1.4     setosa
## 30  1.6     setosa
## 31  1.6     setosa
## 32  1.5     setosa
## 33  1.5     setosa
## 34  1.4     setosa
## 35  1.5     setosa
## 36  1.2     setosa
## 37  1.3     setosa
## 38  1.4     setosa
```

```
## 39  1.3     setosa
## 40  1.5     setosa
## 41  1.3     setosa
## 42  1.3     setosa
## 43  1.3     setosa
## 44  1.6     setosa
## 45  1.9     setosa
## 46  1.4     setosa
## 47  1.6     setosa
## 48  1.4     setosa
## 49  1.5     setosa
## 50  1.4     setosa
## 51  4.7 versicolor
## 52  4.5 versicolor
## 53  4.9 versicolor
## 54  4.0 versicolor
## 55  4.6 versicolor
## 56  4.5 versicolor
## 57  4.7 versicolor
## 58  3.3 versicolor
## 59  4.6 versicolor
## 60  3.9 versicolor
## 61  3.5 versicolor
## 62  4.2 versicolor
## 63  4.0 versicolor
## 64  4.7 versicolor
## 65  3.6 versicolor
## 66  4.4 versicolor
## 67  4.5 versicolor
## 68  4.1 versicolor
## 69  4.5 versicolor
## 70  3.9 versicolor
## 71  4.8 versicolor
## 72  4.0 versicolor
## 73  4.9 versicolor
## 74  4.7 versicolor
## 75  4.3 versicolor
## 76  4.4 versicolor
## 77  4.8 versicolor
## 78  5.0 versicolor
## 79  4.5 versicolor
## 80  3.5 versicolor
## 81  3.8 versicolor
## 82  3.7 versicolor
## 83  3.9 versicolor
## 84  5.1 versicolor
## 85  4.5 versicolor
## 86  4.5 versicolor
## 87  4.7 versicolor
## 88  4.4 versicolor
```

```
## 89  4.1 versicolor
## 90  4.0 versicolor
## 91  4.4 versicolor
## 92  4.6 versicolor
## 93  4.0 versicolor
## 94  3.3 versicolor
## 95  4.2 versicolor
## 96  4.2 versicolor
## 97  4.2 versicolor
## 98  4.3 versicolor
## 99  3.0 versicolor
## 100 4.1 versicolor
## 101 6.0  virginica
## 102 5.1  virginica
## 103 5.9  virginica
## 104 5.6  virginica
## 105 5.8  virginica
## 106 6.6  virginica
## 107 4.5  virginica
## 108 6.3  virginica
## 109 5.8  virginica
## 110 6.1  virginica
## 111 5.1  virginica
## 112 5.3  virginica
## 113 5.5  virginica
## 114 5.0  virginica
## 115 5.1  virginica
## 116 5.3  virginica
## 117 5.5  virginica
## 118 6.7  virginica
## 119 6.9  virginica
## 120 5.0  virginica
## 121 5.7  virginica
## 122 4.9  virginica
## 123 6.7  virginica
## 124 4.9  virginica
## 125 5.7  virginica
## 126 6.0  virginica
## 127 4.8  virginica
## 128 4.9  virginica
## 129 5.6  virginica
## 130 5.8  virginica
## 131 6.1  virginica
## 132 6.4  virginica
## 133 5.6  virginica
## 134 5.1  virginica
## 135 5.6  virginica
## 136 6.1  virginica
## 137 5.6  virginica
## 138 5.5  virginica
```

```
## 139 4.8  virginica
## 140 5.4  virginica
## 141 5.6  virginica
## 142 5.1  virginica
## 143 5.1  virginica
## 144 5.9  virginica
## 145 5.7  virginica
## 146 5.2  virginica
## 147 5.0  virginica
## 148 5.2  virginica
## 149 5.4  virginica
## 150 5.1  virginica
```

```
summary(iris)
```

```
##   Sepal.Length    Sepal.Width     Petal.Length    Petal.Width
##  Min.   :4.300   Min.   :2.000   Min.   :1.000   Min.   :0.100
##  1st Qu.:5.100   1st Qu.:2.800   1st Qu.:1.600   1st Qu.:0.300
##  Median :5.800   Median :3.000   Median :4.350   Median :1.300
##  Mean   :5.843   Mean   :3.057   Mean   :3.758   Mean   :1.199
##  3rd Qu.:6.400   3rd Qu.:3.300   3rd Qu.:5.100   3rd Qu.:1.800
##  Max.   :7.900   Max.   :4.400   Max.   :6.900   Max.   :2.500
##        Species
##  setosa    :50
##  versicolor:50
##  virginica :50
##
##
##
```

```
getwd()
```

```
## [1] "C:/Users/alejc/Documents"
```

```
setwd("C:/Users/alejc/Desktop/datasets")
```

If else

```
x = 2 #valor determinado
if (x>1 & x<7){
  print("x is between 1 and 7")
  #Si hay un valor entre los parametros establecidos se imprime la frase
}else if (x>8 & x<15){
  print("x is between 8 and 15 =D")
}
```

```
## [1] "x is between 1 and 7"
```

Como el valor es 2, se imprimio la primera frase. So hubiera sido mayor a 7, hubiera sido la segunda frase.

For

```r
#Obtener el mismo valor con diferentes comandos
x = c(1,2,3,4,5) #vector con valores numéricos
y <- c(1:5)
z <- 1:5

#Llamamos variables
x
```

```
## [1] 1 2 3 4 5
```

```r
y
```

```
## [1] 1 2 3 4 5
```

```r
z
```

```
## [1] 1 2 3 4 5
```

```r
for (i in 1:8){
  print(x[i]) #Como no hat valores después de 5, se asignan como NA
}
```

```
## [1] 1
## [1] 2
## [1] 3
## [1] 4
## [1] 5
## [1] NA
## [1] NA
## [1] NA
```

While

```r
x= 2.987 #Valor asignado de x

while(x <= 4.987){
  x = x + 0.987 #Mientras x sea menor o igual a 4.987 se suman 0.987
  print(c(x,x-2,x-1)) #3 filas en resultados, una con x normal, otra con
x menos 2
  #La última es de x menos 1
}
```

```
## [1] 3.974 1.974 2.974
## [1] 4.961 2.961 3.961
## [1] 5.948 3.948 4.948
```

Break statement

```r
x = 1:10
for (i in x){
  if (i ==8){
    break #Cuando i sea igual a 8 termina el operador
```

```
  }
  print(i)
}
```

```
## [1] 1
## [1] 2
## [1] 3
## [1] 4
## [1] 5
## [1] 6
## [1] 7
```

Next statement

```
x = 1:10
for (i in x){
  if (i == 8){
    next} #Hay un skip cuando el valor es 8, es decir no se imprimira
    print(i)
}
```

```
## [1] 1
## [1] 2
## [1] 3
## [1] 4
## [1] 5
## [1] 6
## [1] 7
## [1] 9
## [1] 10
```

Instrucciones básicas

```
#instalación
##install.packages("ggplot2")
##install.packages("reshape2")
##install.packages("readxl")
##install.packages("scatterplot3d")

#importar bibliotecas

library("ggplot2") #para las gráficas.2
library("reshape2") #para barras por grupos
library("readxl") #para importar archivos XLSX
library("scatterplot3d") #para scatterplot en 3D
```

Importar datos

Arrchivo CSV (Pacientes de nuevo ingreso)

```
#archivo CSV
setwd("C:/Users/alejc/Desktop/datasets")
```

```
mydata_csv <- read.csv("9_PACIENTES_DE_NUEVO_INGRESO.csv")
head(mydata_csv)
```

```
##   FOLIO EDAD      SEXO           ESTADO                 MUNICIPIO
## 1     1   80  Femenino         GUERRERO HUITZUCO DE LOS FIGUEROA
## 2     2   71 Masculino DISTRITO FEDERAL                   TLALPAN
## 3     3   45 Masculino          MORELOS                   CUAUTLA
## 4     4   33 Masculino           MEXICO                  ZUMPANGO
## 5     5   46  Femenino           MEXICO      NAUCALPAN DE JUAREZ
## 6     6   86 Masculino DISTRITO FEDERAL                   TLALPAN
##              DESCRIPCION.DIAGNOSTICO
## 1           TUMOR MALIGNO DE LA MAMA
## 2      TUMOR MALIGNO DE LA PROSTATA
## 3      TUMOR MALIGNO DE LA PROSTATA
## 4 OTROS TUMORES MALIGNOS DE LA PIEL
## 5           TUMOR MALIGNO DE LA MAMA
## 6            TUMOR MALIGNO DEL RECTO
```

Archivo de texto (CC)

```
#archivo TXT
setwd("C:/Users/alejc/Desktop/datasets")
mydata_txt <- read.delim("cc.txt", header =FALSE)
head(mydata_txt)
```

```
##    V1    V2    V3    V4
## 1  20 0.121 0.093 0.077
## 2  50 0.283 0.252 0.162
## 3  70 0.430 0.413 0.384
## 4  80 0.455 0.488 0.487
## 5 100 0.539 0.521 0.519
## 6 130 0.705 0.697 0.721
```

Archivo de excel (Cons energía)

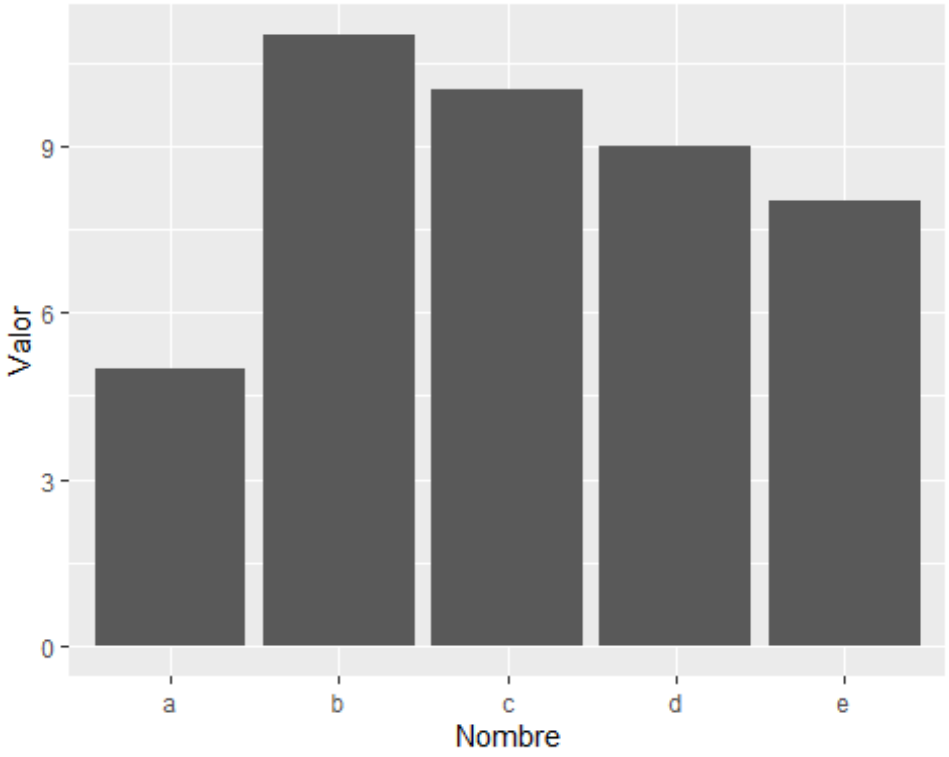
```
#archivo XLSX
setwd("C:/Users/alejc/Desktop/datasets")
mydata_xlsx <- read_excel("Cons_Energia.xlsx")
head(mydata_xlsx)
```

```
## # A tibble: 6 × 3
##   Cons_Energ atip_sup Atip_Sup_Inf
##        <dbl>    <dbl>        <dbl>
## 1       2.97     2.97         2
## 2       6.8      6.8          6.8
## 3       7.73     7.73         7.73
## 4       8.61     8.61         8.61
## 5       9.6      9.6          9.6
## 6      10.3     10.3         10.3
```

Gráficos con ggplot2

Gráfica de barras

```
####Barras
#Creamos un dataframe
data <- data.frame(
  Nombre = letters[1:5], #variable dependiente
  Valor = sample(seq(4,15),5), #variable independiente RANDOM
  sd = c(1,0.2,3,2,4) #error predesignado
)

#Solo barras, diseño simple ----------------
ggplot(data, aes(Nombre,Valor)) + geom_bar(stat = "identity")
```



Barras con error

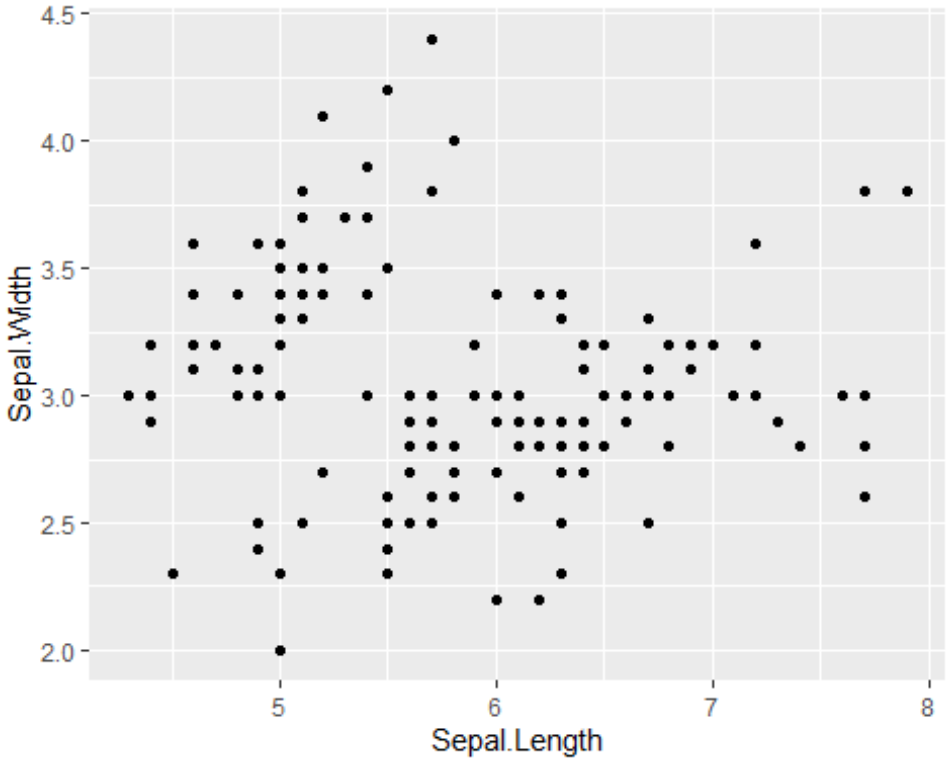
```
#Barras de error -----------
b <- ggplot(data) +
  geom_bar(aes(x = Nombre, y = Valor), stat = "identity", fill= "red",
alpha = 0.7) + #barras
  geom_errorbar(aes(x=Nombre, ymin=Valor-sd, ymax=Valor+sd), width=0.4,
colour= "brown",
                alpha=0.9, size=1.3) #margen de error

## Warning: Using `size` aesthetic for lines was deprecated in ggplot2
3.4.0.
## ℹ Please use `linewidth` instead.
```

```
b + ggtitle("Bar plot with errorbars") + xlab("Dependent variable")+
ylab("Independent variable")
```


```
#texto añadido al gráfico
```

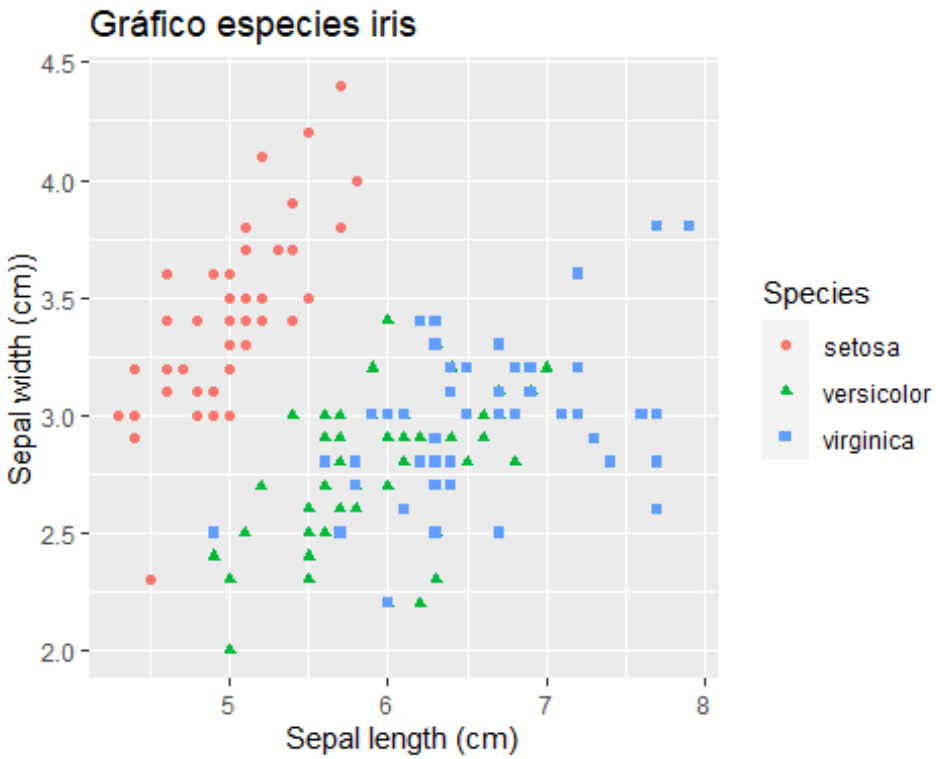
Scatterplots Simple

```
####Scatterplots -----------
#simple
ggplot(iris,aes(x = Sepal.Length, y = Sepal.Width)) +
  geom_point()
```



Scatterplot más complejo que simple Usando set de datos iris

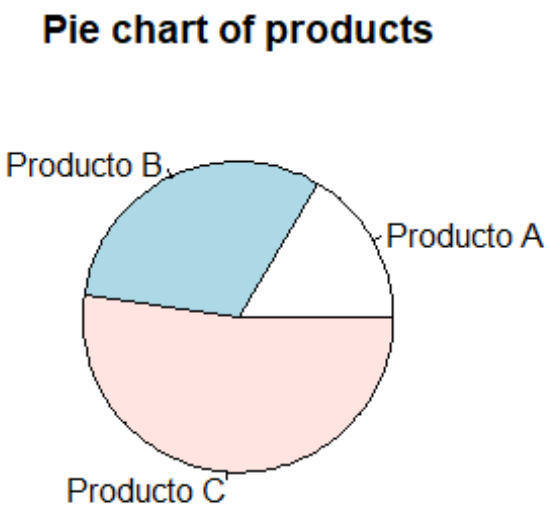
```
#"Complejo"
c <- ggplot(data = iris, aes(x=Sepal.Length, y = Sepal.Width))+
#Asignamos valores
  geom_point(aes(color=Species, shape=Species))

c + ggtitle ("Gráfico especies iris") + xlab("Sepal length (cm)") +
ylab("Sepal width (cm))")
```




```
#Añadimos texto al gráfico
```

Gráfico PIE

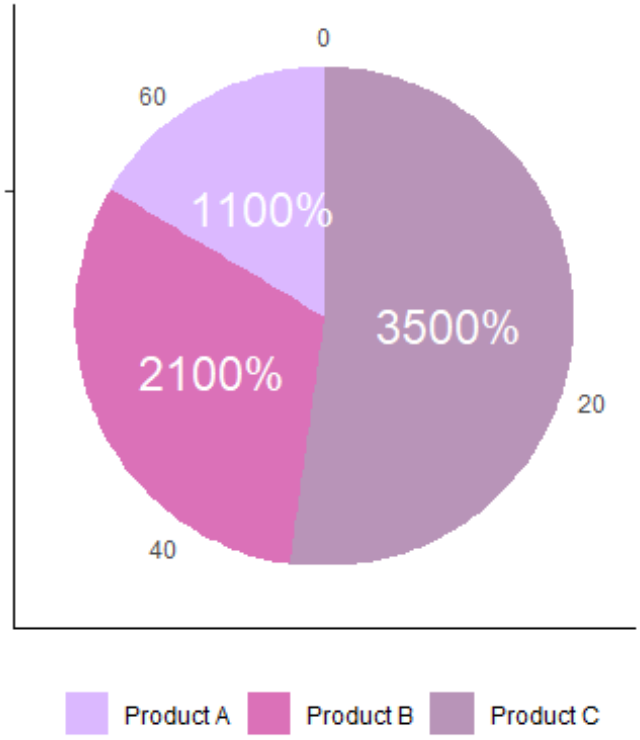
```
#Pie ----------
x <- c(11,21,35) #Hacemos una compilación
lbls <- c("Producto A", "Producto B", "Producto C") #Nombramos labels
pie(x,labels = lbls, main = "Pie chart of products") #Realizamos gráfico
```



De barras a PIE

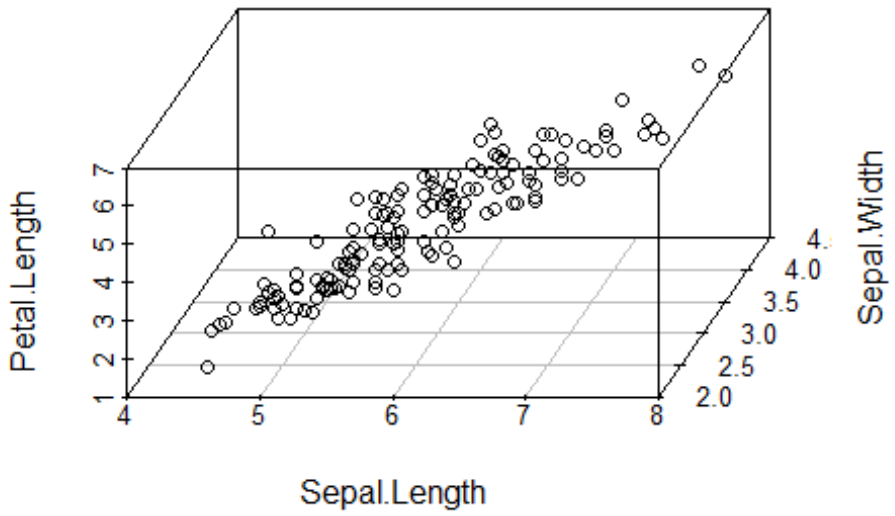
```
#Otro ----- (No entendi bien, pero sale un PIE y tarda en cargar)
df = data.frame("Products" = c("Product A", "Product B", "Product C"),
"porciento" = c(11,21,35))

#Basic bar
pC = ggplot(df, aes(x= "", y = porciento, fill = Products)) +
geom_bar(stat = "identity", width = 1, alpha =0.7)

#Conversión a pie
pC = pC+coord_polar("y", start = 0) + geom_text(aes(label =
paste0(round(porciento*100),
                                                                    "%")),
position = position_stack(

vjust = 0.5), size = 6, color ="white")
#Añade color
pC = pC + scale_fill_manual(values=c("#CC99FF", "#CC3399", "#996699"))
#Proporcionamos colores de manera manual

#Remueve labels + titulo
pC = pC + labs (x= NULL, y = NULL, fill = NULL)

#Limpieza final
pC = pC + theme_classic()
```

```
pC <- pC + theme(legend.position = "bottom")

pC #Llamamos al gráfico final
```



Scatterplots en 3D, usando dataset iris

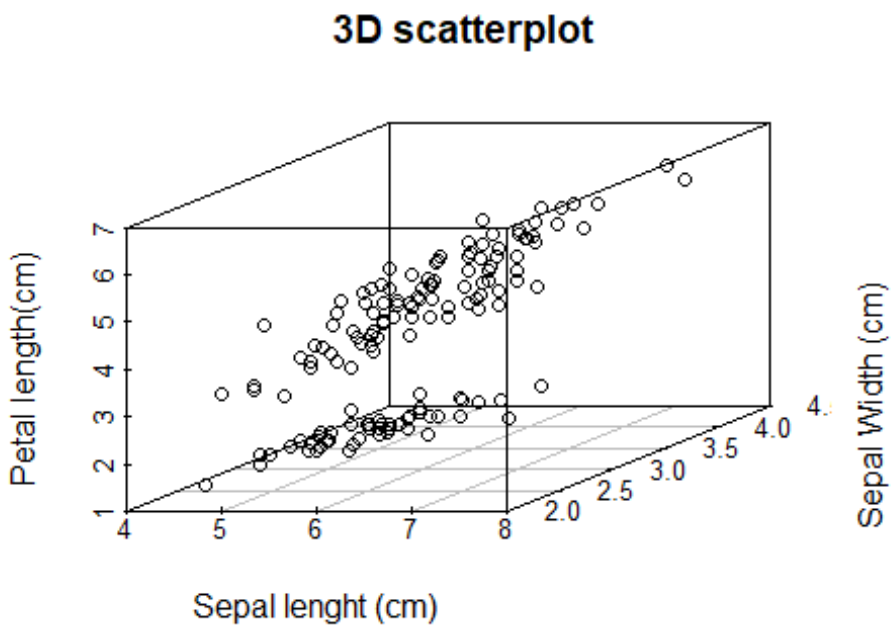
```
#Scatterplots-----

#3D instalación
install.packages("scatterplot3d")

## Warning: package 'scatterplot3d' is in use and will not be installed

library("scatterplot3d")

#Gráfico simple
scatterplot3d(iris[,1:3], angle = 75)
```



Scatterplot 3D

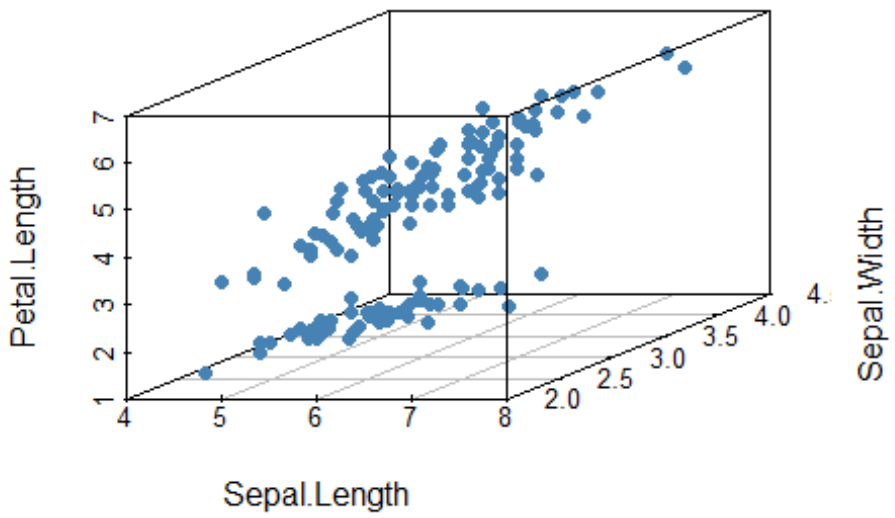
con ejes titulados

```
#Especificaciones para cada label
scatterplot3d(iris[,1:3],
              main = "3D scatterplot",
              xlab = "Sepal lenght (cm)",
              ylab = "Sepal Width (cm)",
              zlab = "Petal length(cm)")
```



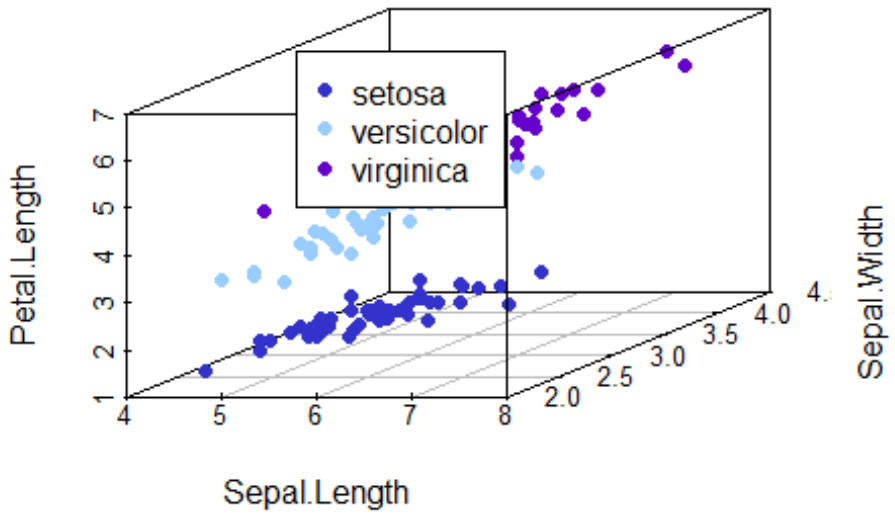
Cambiemos color de marcadores

```
#Cambiar color marcadores
scatterplot3d(iris[,1:3], pch = 16, color = "steelblue") #Asignamos color
azul
```



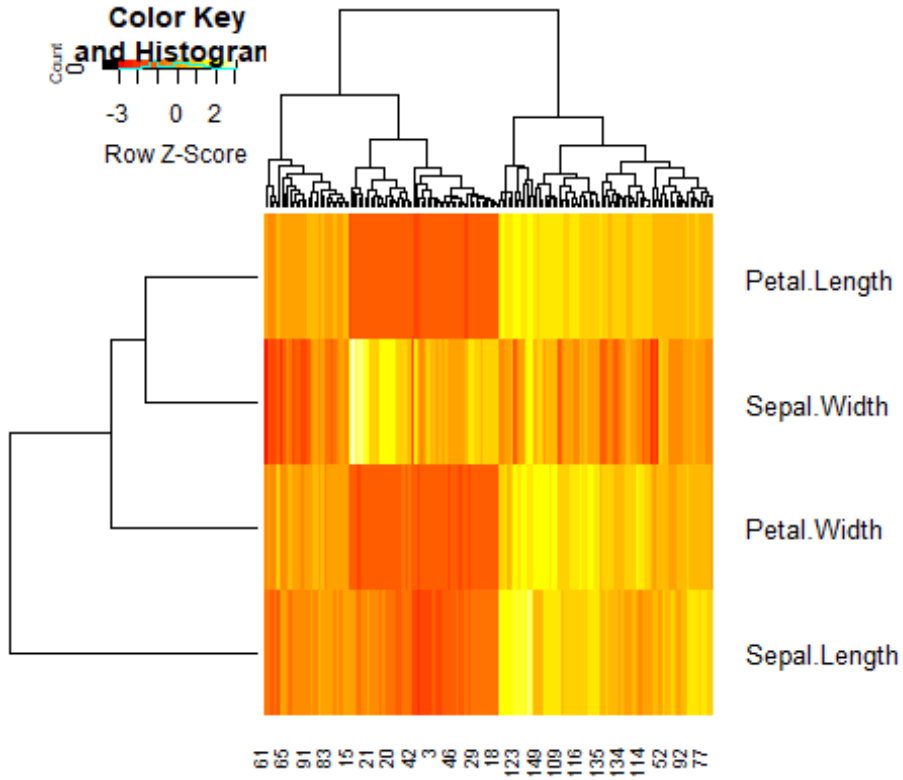
Asignamos colores específicos dependiendo de la especie

```
#Especies c/ color
colors <- c("#3333CC", "#99CCFF", "#6600CC") #Asignamos colores
colors <- colors[as.numeric(iris$Species)] #Colores asignados por especie
s3d <- scatterplot3d(iris[,1:3], pch = 16, color = colors)
#Especificaciones gráfico
legend(s3d$xyz.convert(6.3, 4.5), legend = levels(iris$Species), col = c(
  "#3333CC", "#99CCFF", "#6600CC"), pch = 16) #Para leyendas
```



Gráficos: heatmaps

```
#Heatmaps
library("gplots")

##
## Attaching package: 'gplots'

## The following object is masked from 'package:stats':
##
##     lowess

heatmap.2(t(iris[,1:4]), trace = "none", scale = "row", key = TRUE, mar=
c(2,8),
          cexRow = 1, ColsideColors = c("orange", "purple",
"magenta")[iris$Species])

## Warning in plot.window(...): "ColsideColors" is not a graphical
parameter

## Warning in plot.xy(xy, type, ...): "ColsideColors" is not a graphical
parameter

## Warning in title(...): "ColsideColors" is not a graphical parameter
```




```
          #Heatmap tiene sus propios colores asignados, por los que se
mantienen los del preset
          #aunque asignemos unos en colsidecolors
```

Detalles de heatmaps No encontre ggarrange ! !

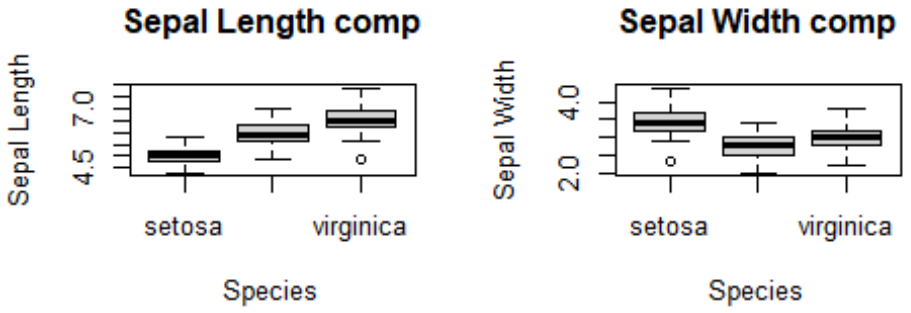
Chunk no funciona

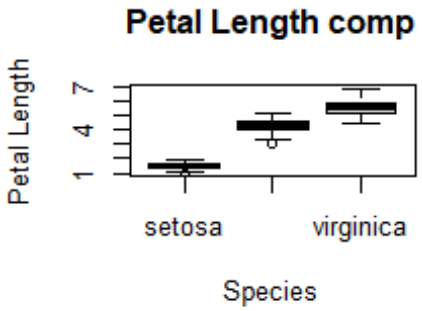
```
#Parametros extra para diseño
#library("ggarrange")
#tiff("ABI.tiff", width = 4000, height = 4000, units = 'px', res=300,
     #compression = 'lzw')
#ggarrange(pC, b, box, labels = c("A","B","C"))
#dev.off()
```

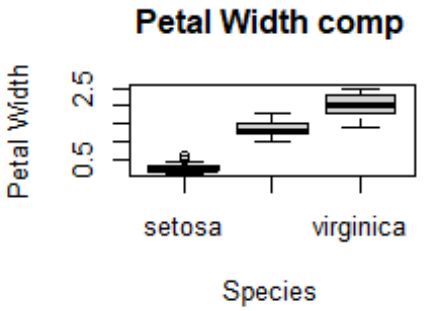
Gráficos: boxplot

```
#Boxplot
par(mfrow=c(2,2)) #subplot

#Asignamos valores a comparar de cada caja
#Comparación 1
boxplot(Sepal.Length~Species,data = iris,
        xlab = "Species", ylab = "Sepal Length", main = "Sepal Length
comp")

#Comparación 2
boxplot(Sepal.Width~Species,data = iris,
```

```
        xlab = "Species", ylab = "Sepal Width", main = "Sepal Width
comp")

#Comparación 3
boxplot(Petal.Length~Species,data = iris,
        xlab = "Species", ylab = "Petal Length", main = "Petal Length
comp")

#Comparación 4
boxplot(Petal.Width~Species,data = iris,
        xlab = "Species", ylab = "Petal Width", main = "Petal Width
comp")
```



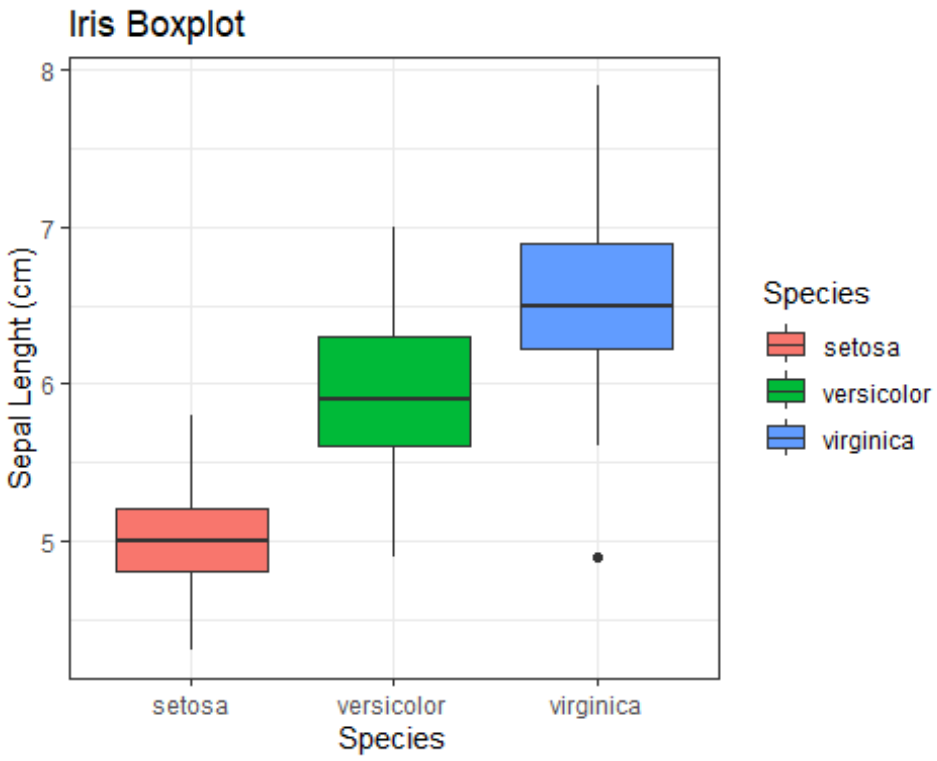





```
par(mfrow=c(1,1)) #Grafica individual
```

Gráfica compacta de 3 colores, usando Iris como dataset

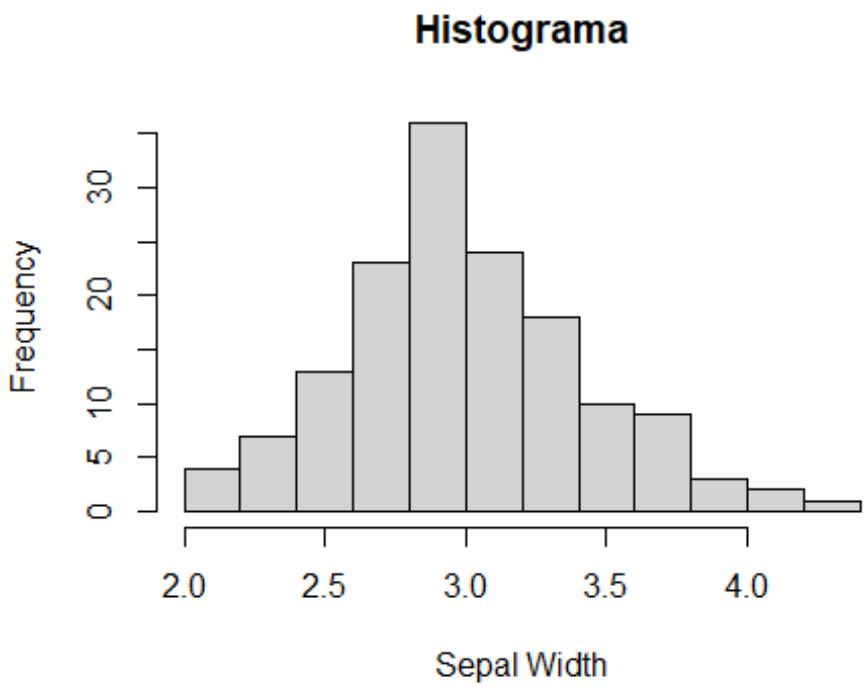
```
#Color
box <- ggplot(data=iris, aes(x=Species, y=Sepal.Length)) #Asignamos
valores
box <- box + geom_boxplot(aes(fill=Species)) +
  ylab("Sepal Lenght (cm)") + ggtitle("Iris Boxplot") #Título y nombre
eje Y
box <- box + theme_bw() #Asignamos tema visual del gráfico
box #Llamamos gráfico
```



Gráficos:

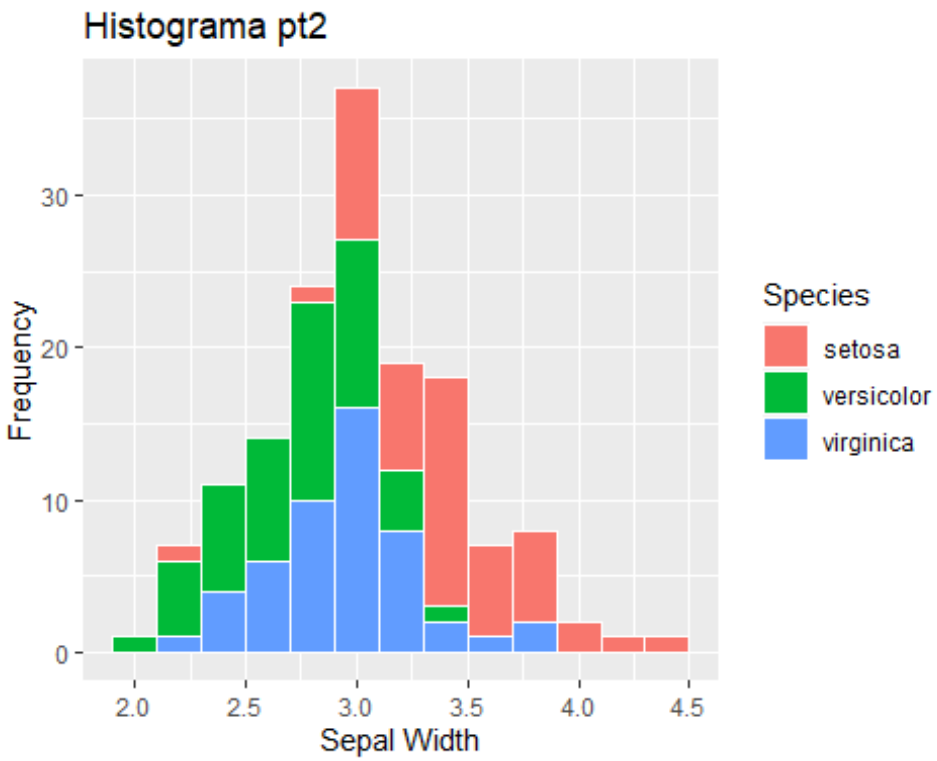
histograma

```
#Histograma
#Simple
hist(iris$Sepal.Width, freq = NULL, density= NULL, breaks=12,
     xlab = "Sepal Width", ylab = "Frequency", main = "Histograma")
#Títulos
```



Comparación entre 3 especies

```
#Comparando las 3 especies
histogram <- ggplot(data=iris, aes( x=Sepal.Width))

#Asignamos valores a histograma
histogram + geom_histogram(binwidth = 0.2, color = "white",
aes(fill=Species))+
  xlab("Sepal Width") + ylab("Frequency") + ggtitle ("Histograma pt2")
```



Barras por grupos

```
#Gráfica de barras por grupos
install.packages("reshape2")

## Warning: package 'reshape2' is in use and will not be installed

library("reshape2")

#Usamos base de datos iris para el gráfico
head(iris)

##   Sepal.Length Sepal.Width Petal.Length Petal.Width Species
## 1          5.1         3.5          1.4         0.2  setosa
## 2          4.9         3.0          1.4         0.2  setosa
## 3          4.7         3.2          1.3         0.2  setosa
## 4          4.6         3.1          1.5         0.2  setosa
## 5          5.0         3.6          1.4         0.2  setosa
## 6          5.4         3.9          1.7         0.4  setosa

iris2 <- melt(iris, id.vars = "Species")
iris2[1:3,]

##   Species     variable value
## 1  setosa Sepal.Length   5.1
## 2  setosa Sepal.Length   4.9
## 3  setosa Sepal.Length   4.7
```

```
head(iris2)

##   Species     variable value
## 1  setosa Sepal.Length   5.1
## 2  setosa Sepal.Length   4.9
## 3  setosa Sepal.Length   4.7
## 4  setosa Sepal.Length   4.6
## 5  setosa Sepal.Length   5.0
## 6  setosa Sepal.Length   5.4

x <- iris

#Asignamos valores para el gráfico
bar1 <- ggplot(data=iris2, aes(x=Species, y=value, fill=variable))
bar1 + geom_bar (stat= "identity", position= "dodge") +
  #Asignamos colores del gráfico
  scale_fill_manual(values=c("#660000", "#FFCC33", "#CC0033", "#6600CC"),
                    name= "Iris\nMeasurements",
                    #Ponemos nombre/valor de los 4 segmentos del gráfico
                    breaks = c("Sepal.Length", "Sepal.Width",
"Petal.Length",
                               "Petal.Width"),
                    labels = c("Sepal.Length", "Sepal.Width",
"Petal.Length",
                               "Petal.Width"))
```