



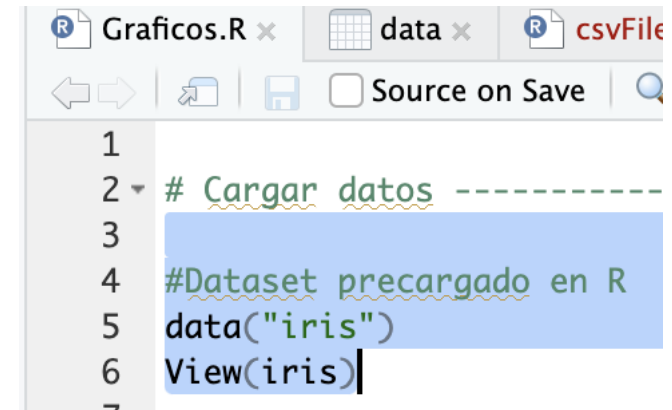
Graficación de datos

Herramientas computacionales: el arte
de la analítica

Semana Tec

Dataset precargado en R

	◀ ▶	📄	Filter			
	▲	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

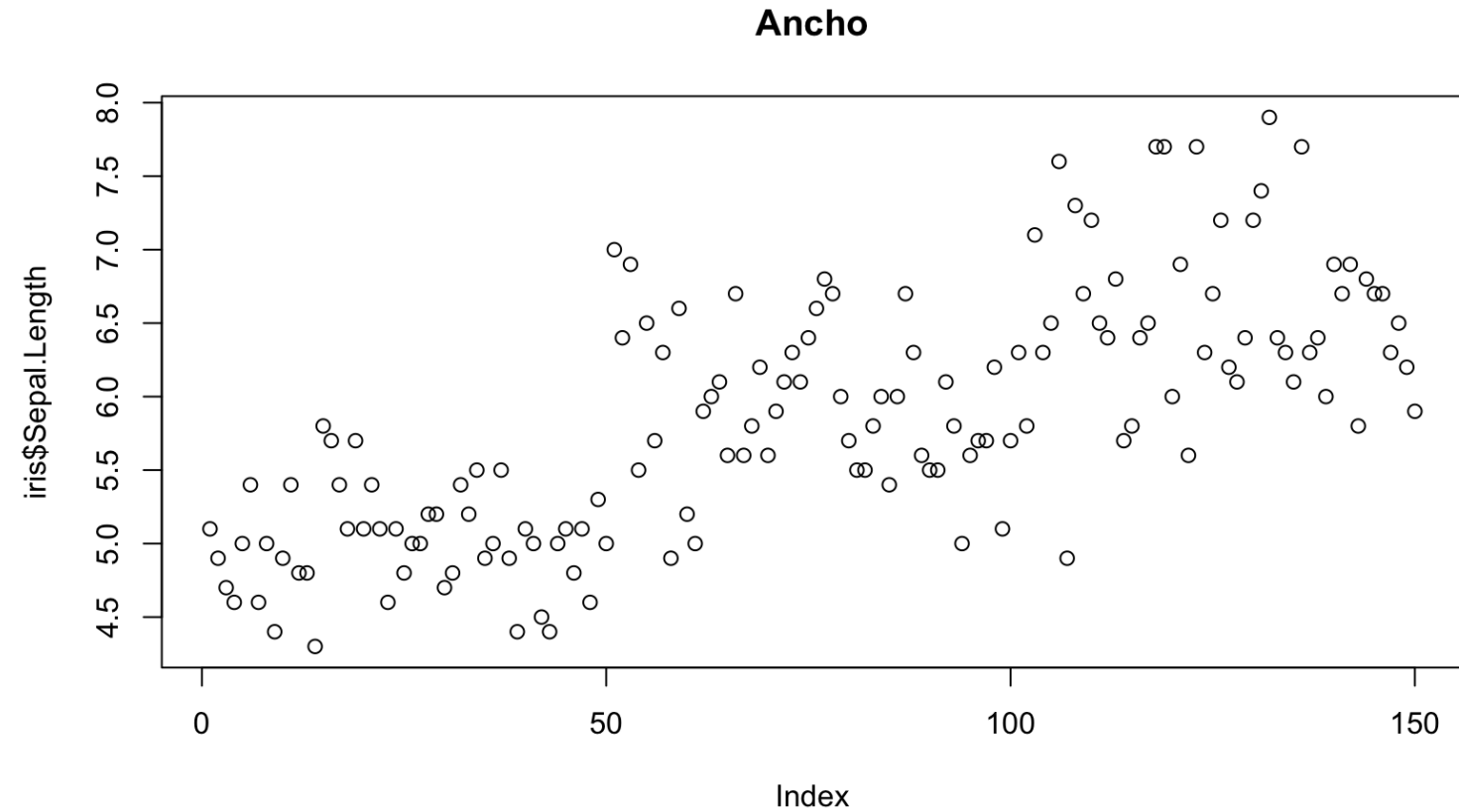


The screenshot shows the RStudio interface with three tabs: 'Graficos.R', 'data', and 'csvFile'. The 'data' tab is active. The script editor shows the following R code:

```
1  
2 # Cargar datos -----  
3  
4 #Dataset precargado en R  
5 data("iris")  
6 View(iris)  
7
```

Gráficos de dispersión

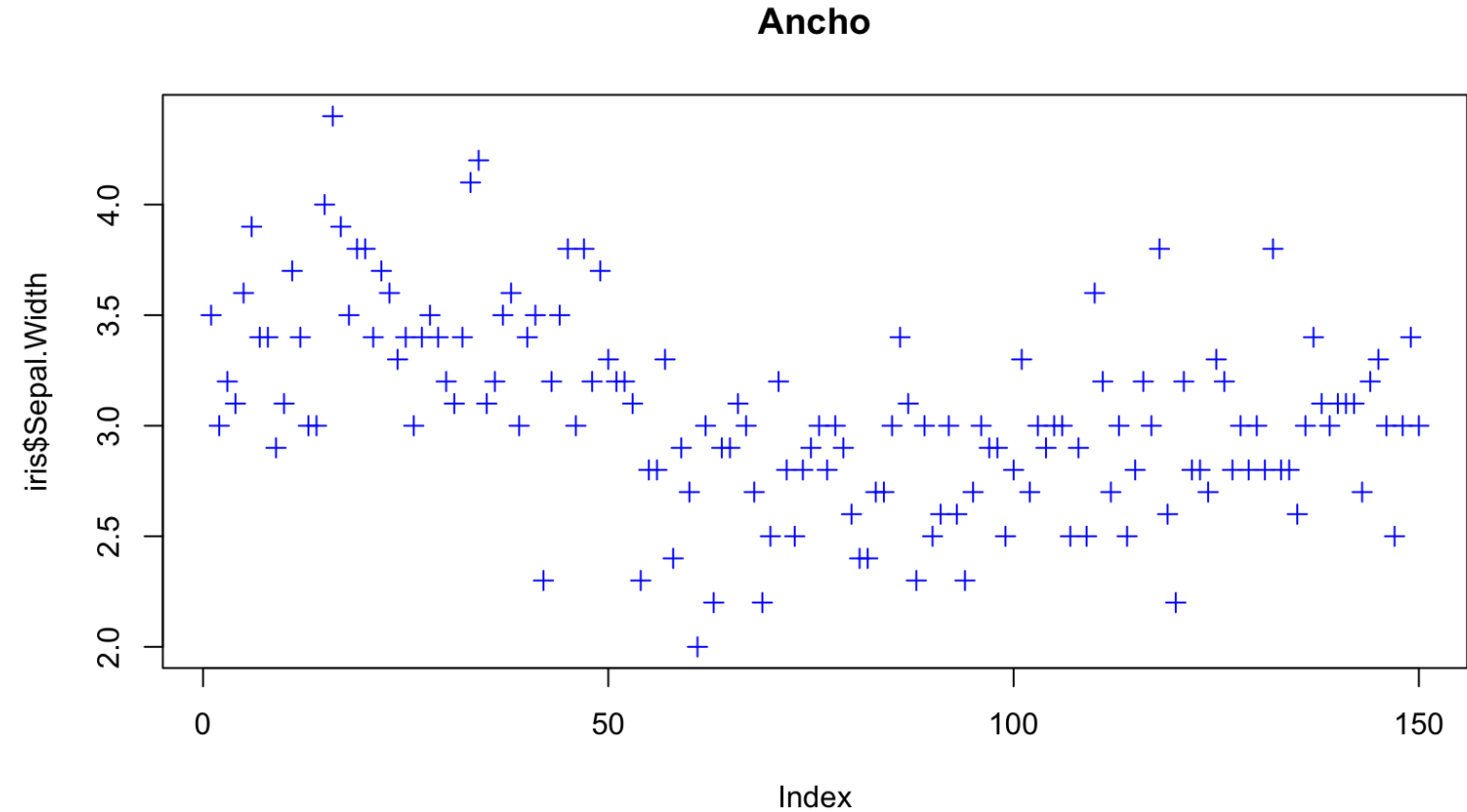
Gráfica de dispersión



```
plot(iris$Sepal.Length, main = "Ancho")
```

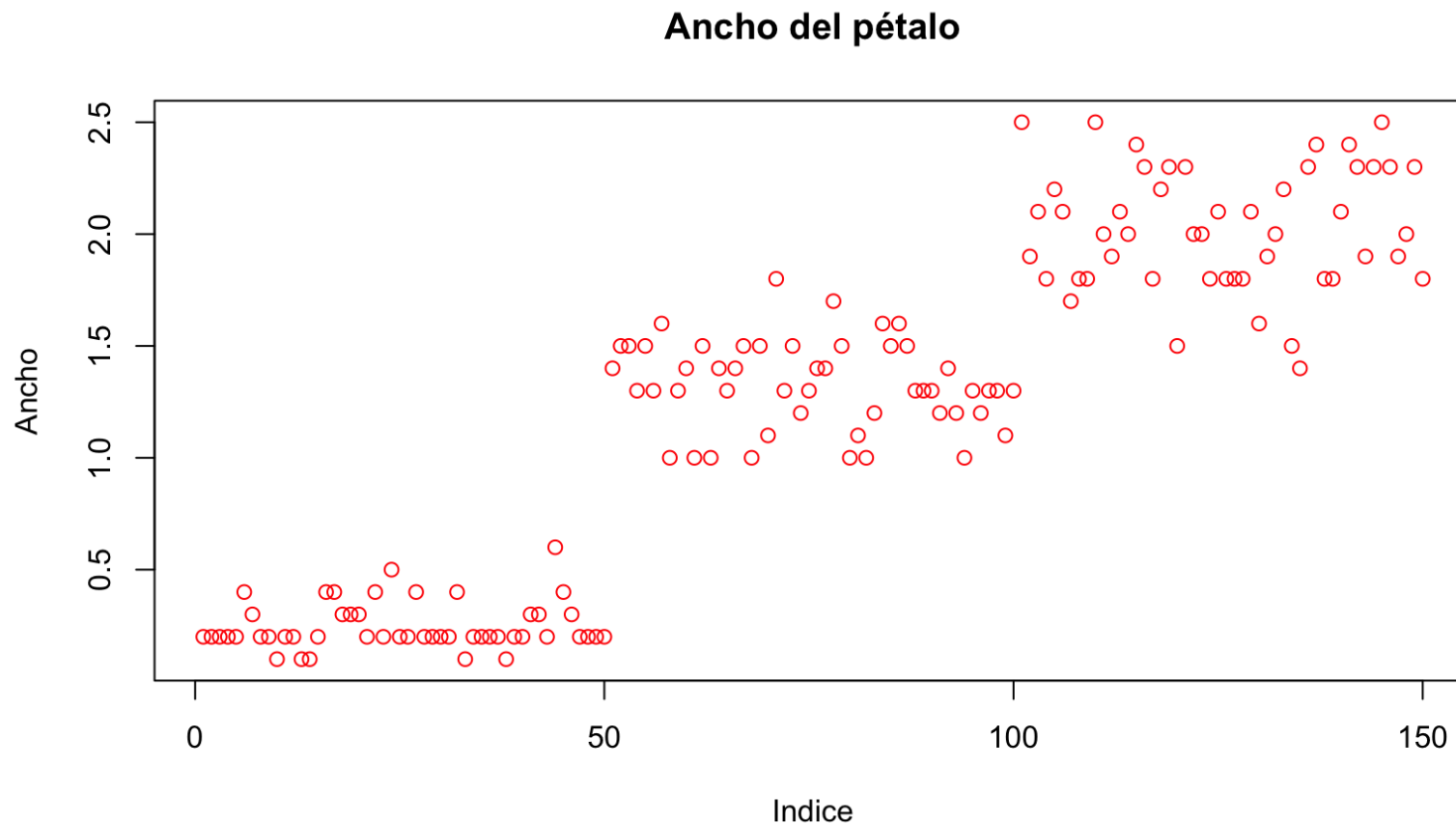

Gráfica de dispersión ...

0	1	2	3	4	
□	○	△	+	×	
5	6	7	8	9	
◇	▽	⊠	✱	⬠	
10	11	12	13	14	
⊕	⊗	⊞	⊗	⊞	
15	16	17	18	19	
■	●	▲	◆	●	
20	21	22	23	24	25
●	●	■	◆	▲	▼



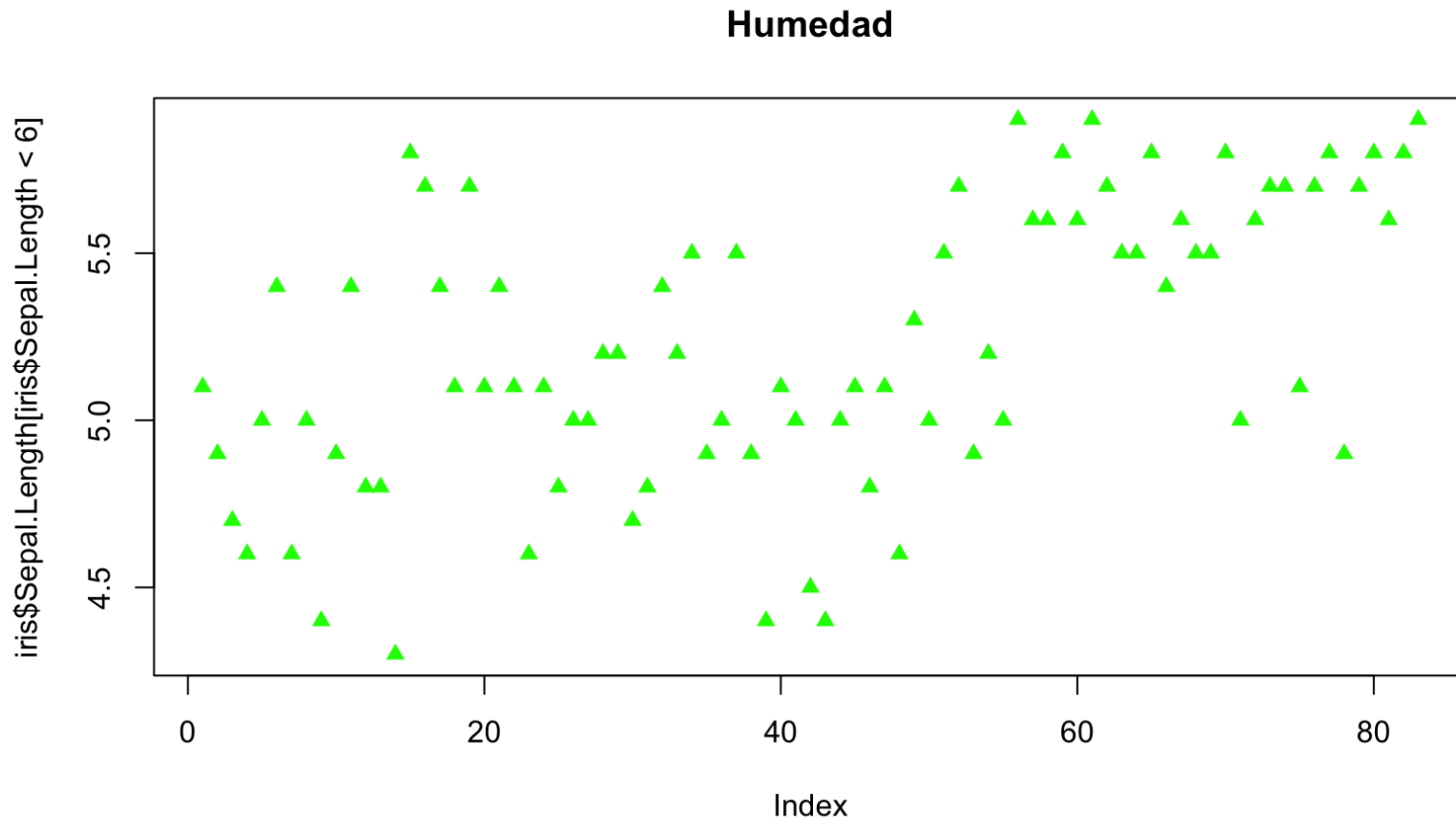
```
plot(iris$Sepal.Width, main="Ancho",pch=3,col="blue")
```

Gráfica de dispersion...

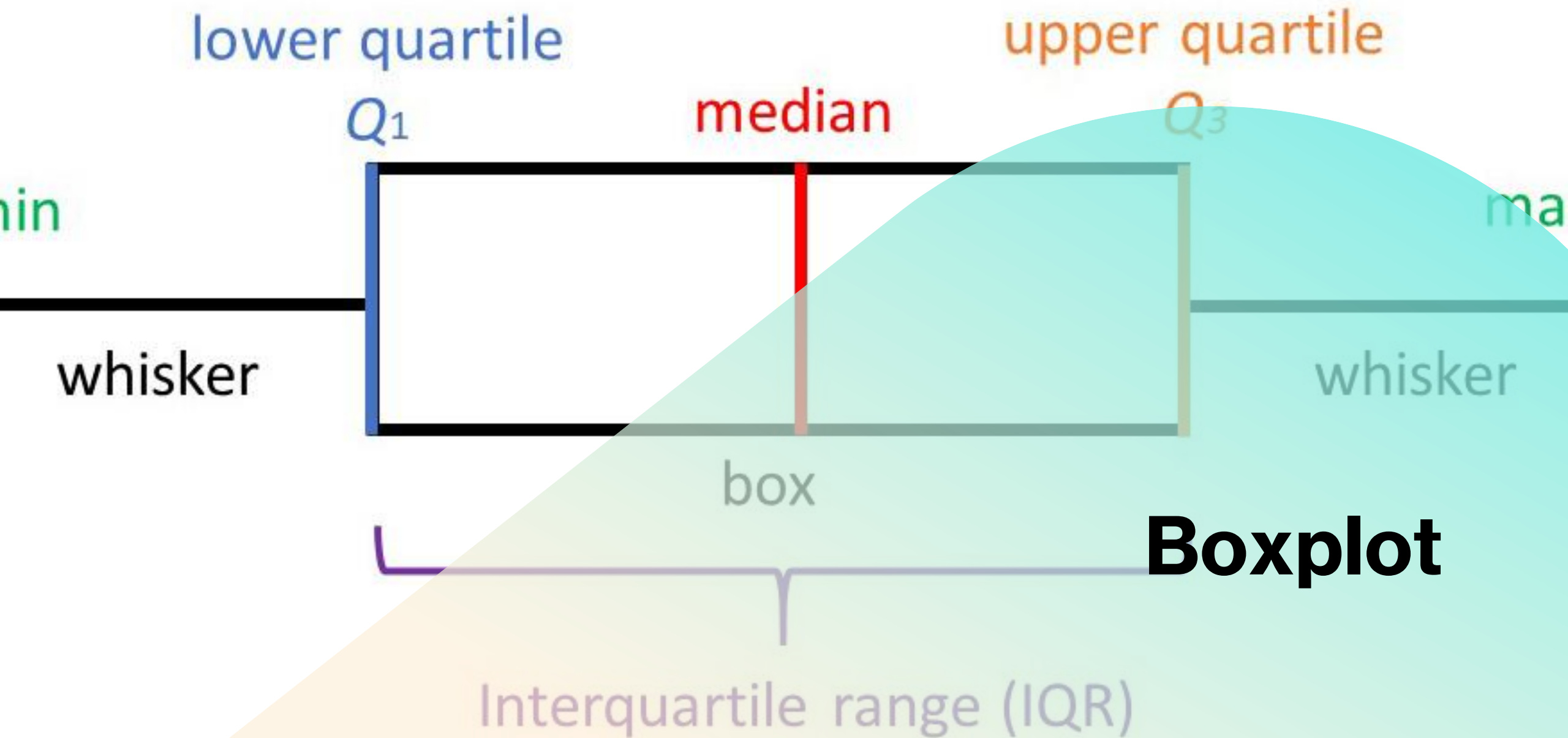


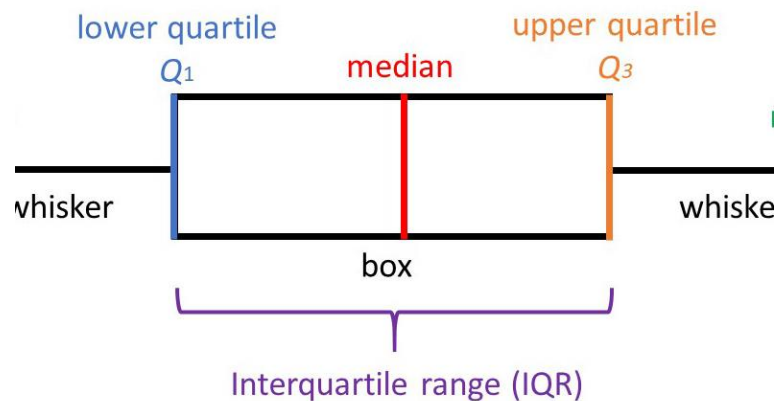
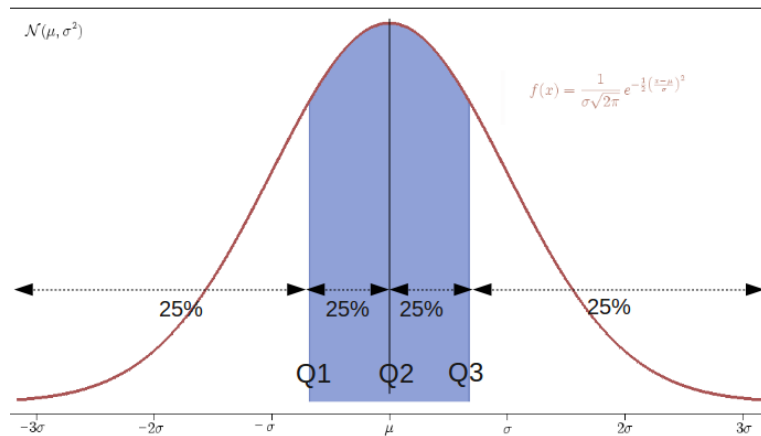
```
plot(iris$Petal.Width,main="Ancho del pétalo",xlab="Indice",ylab="Ancho",col="red")
```

Gráfica de dispersion ...



```
#datos de Sepal length menores a 6  
plot(iris$Sepal.Length[iris$Sepal.Length < 6],main="Humedad",pch=17,col="green")
```

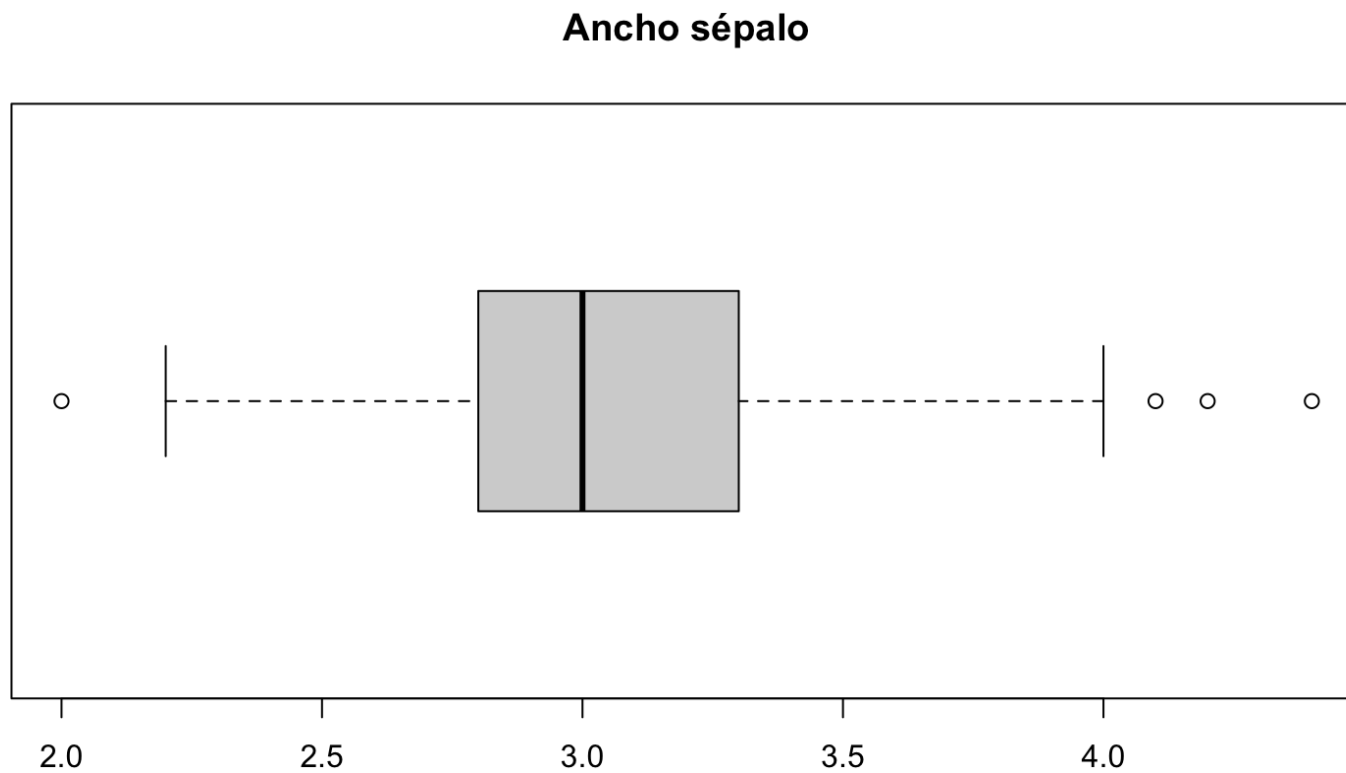




Boxplot

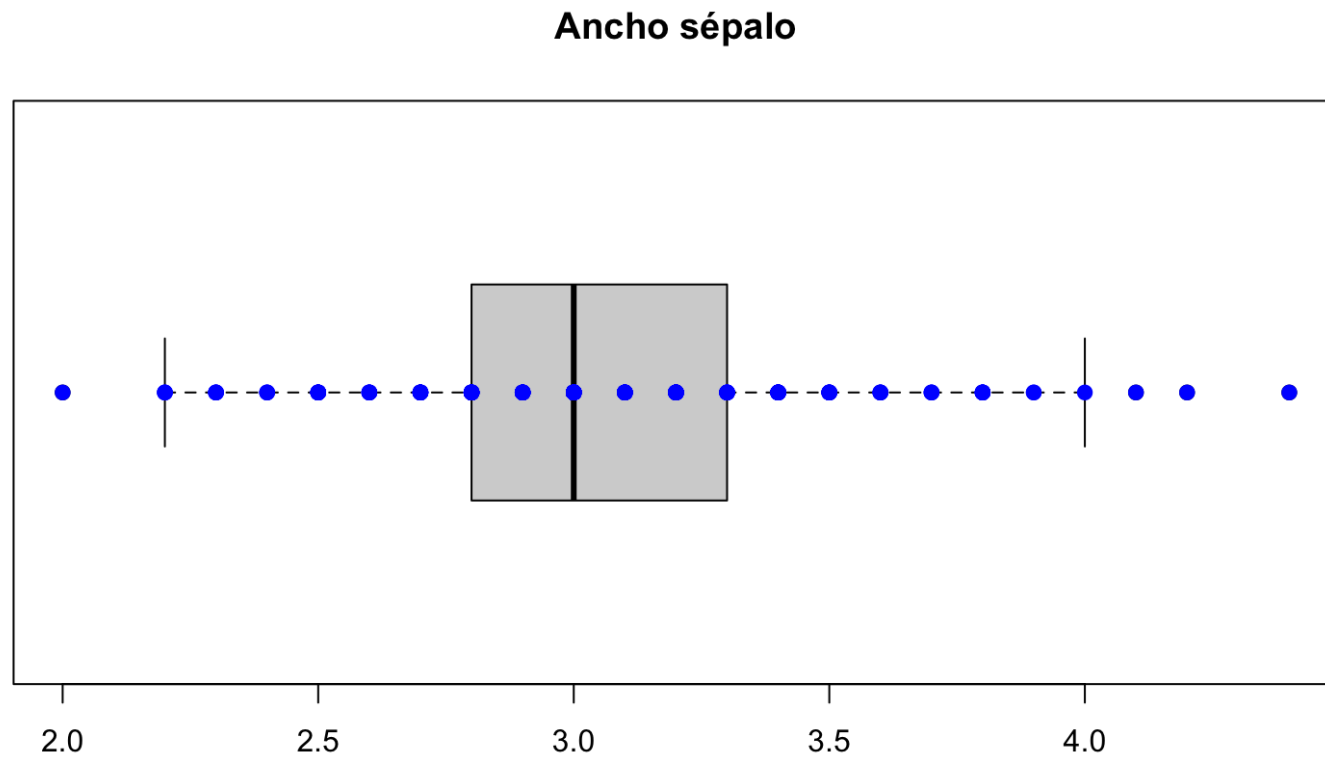
- Permiten visualizar los cuartiles en un conjunto de datos
- Muestran también los datos fuera de rango “outliers”

Boxplot...



```
outliers <- boxplot(iris$Sepal.Width,main="Ancho sépalo",horizontal = TRUE)
```

Boxplot...



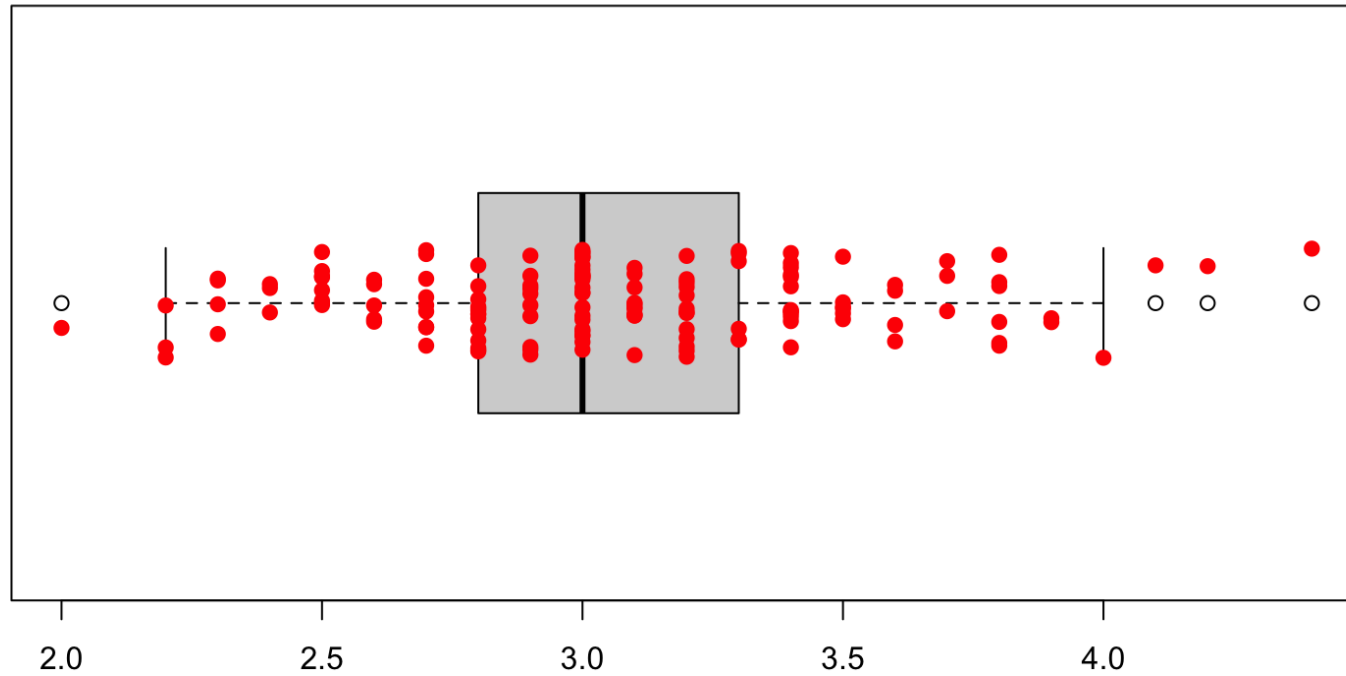
Lista con las posiciones
de los outliers

```
> outliers[["out"]]  
[1] 4.4 4.1 4.2 2.0
```

```
outliers <- boxplot(iris$Sepal.Width, main="Ancho sépalo", horizontal = TRUE)  
stripchart(iris$Sepal.Width, pch = 19, add = TRUE, col = "blue")
```

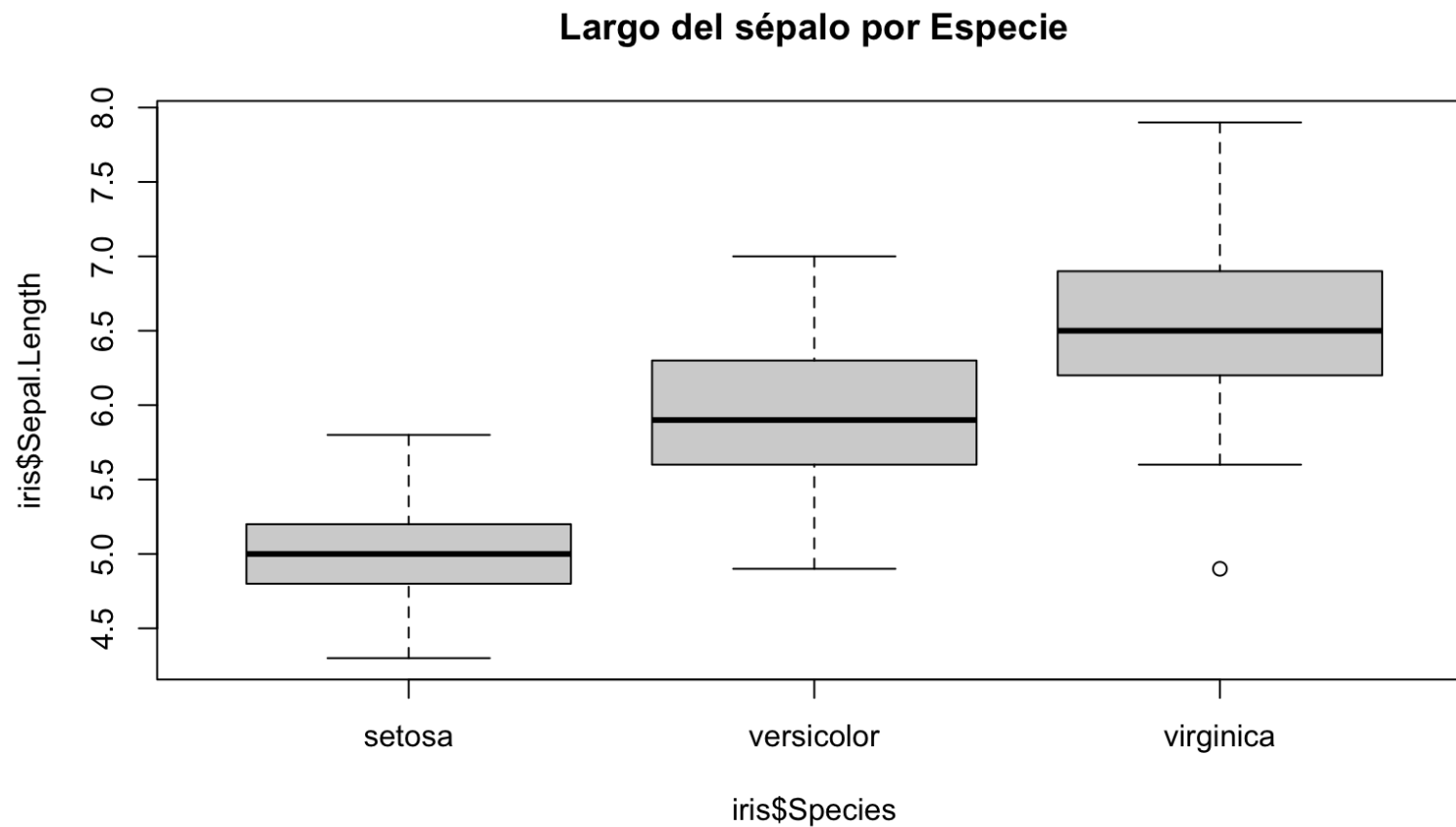
Boxplot...

Ancho sépalo



```
stripchart(iris$Sepal.Width, method="jitter",pch = 19, add = TRUE, col = "red")
```

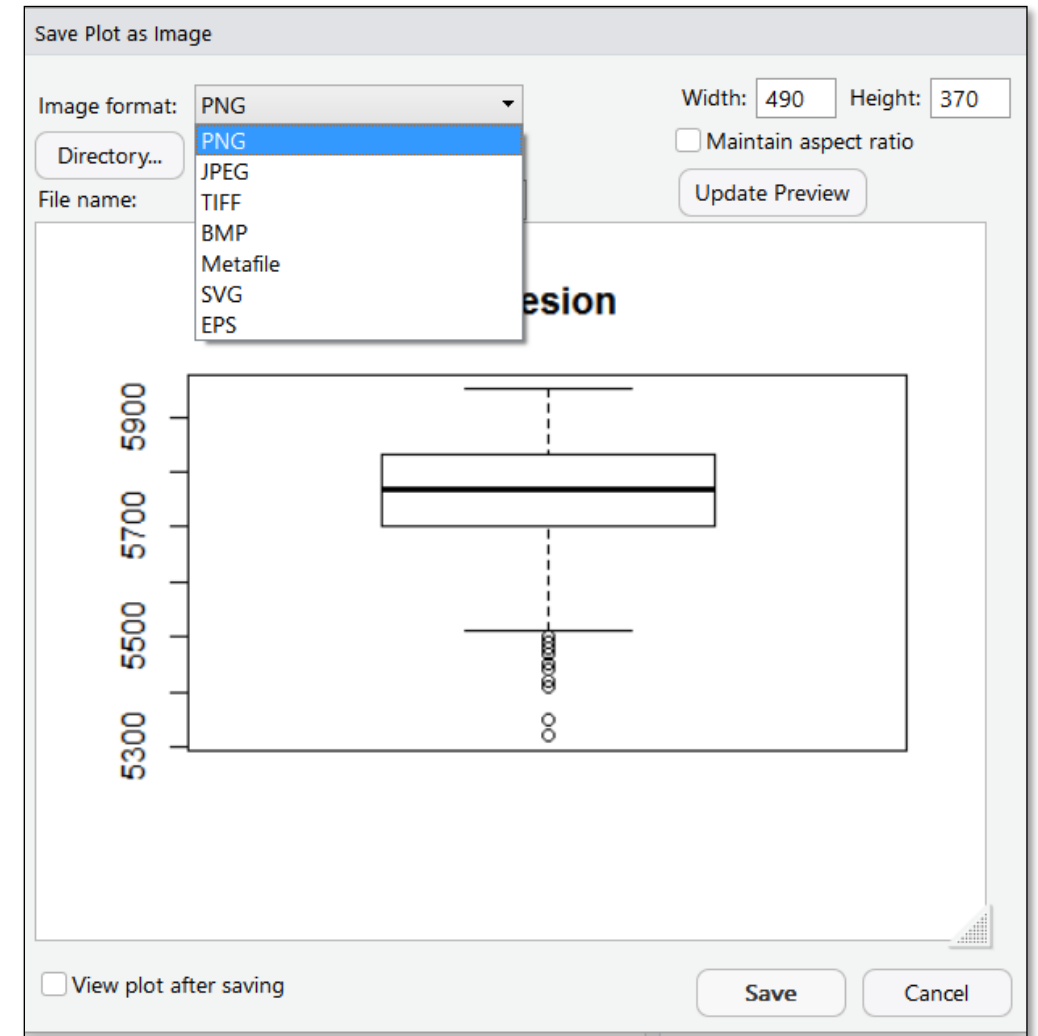
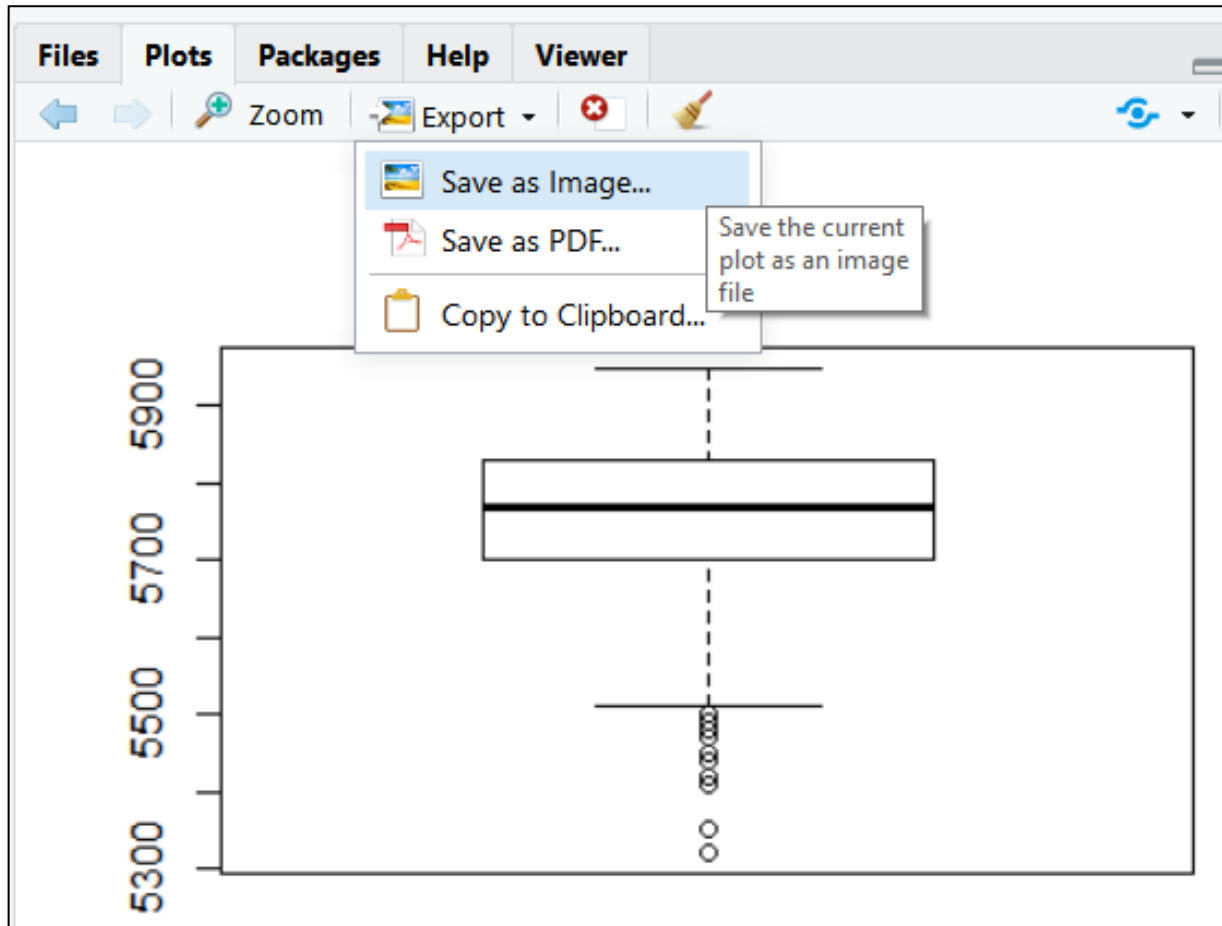
Boxplot...

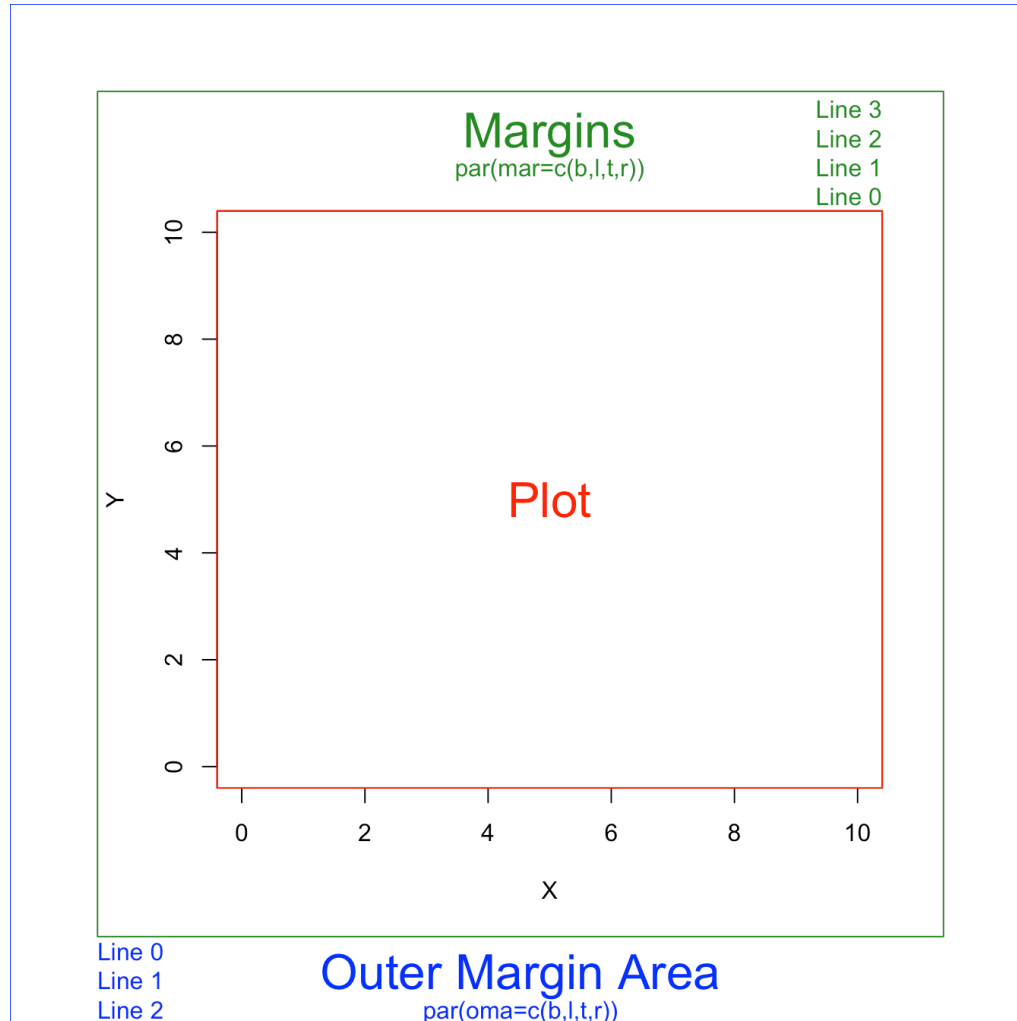


```
boxplot(iris$Sepal.Length ~ iris$Species, main = "Largo del sépalo por Especie")
```

Utilerías para gráficos

Cualquier imagen se puede almacenar, como PDF o formato PNG, JPG, etc.

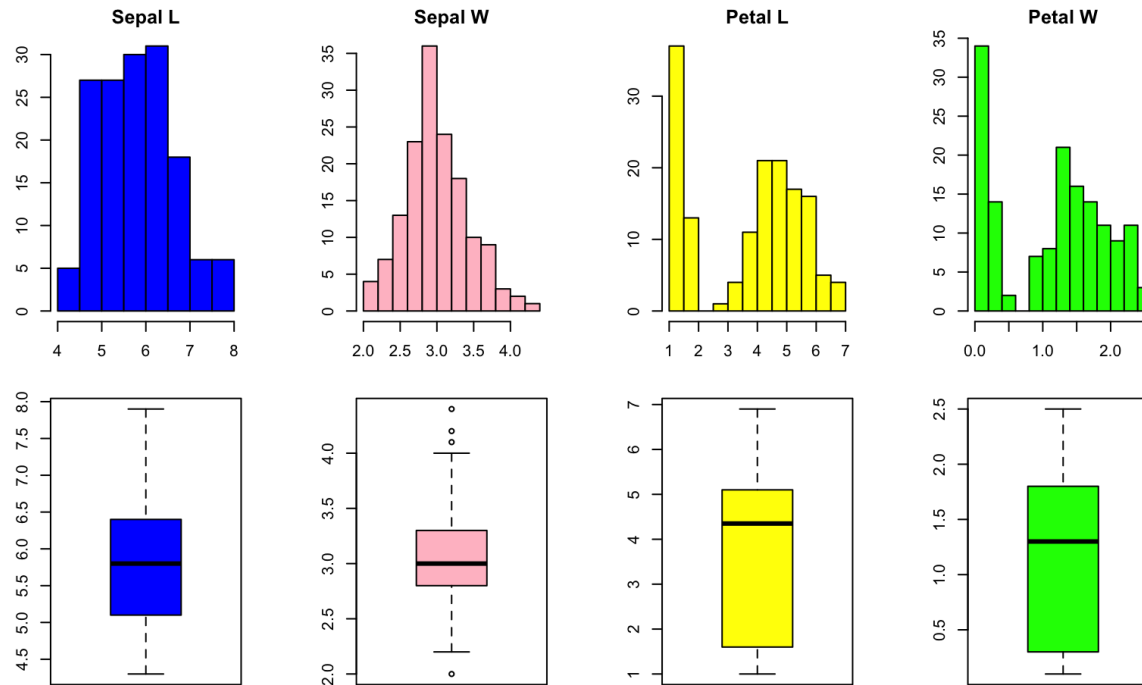




Márgenes de gráficos

- `mar()` es para margen
- `oma()` es para margen externo
- Orden es
 - base
 - left
 - top
 - right

Varios gráficos a la vez



```
# Varios gráficos en matriz -----  
  
par(mfrow=c(2,4),mar=c(2,3,2,3))  
hist(iris$Sepal.Length,col="blue",main="Sepal L")  
hist(iris$Sepal.Width,col="pink",main="Sepal W")  
hist(iris$Petal.Length,col="yellow",main="Petal L")  
hist(iris$Petal.Width,col="green",main="Petal W")  
  
boxplot(iris$Sepal.Length,col="blue")  
boxplot(iris$Sepal.Width,col="pink")  
boxplot(iris$Petal.Length,col="yellow")  
boxplot(iris$Petal.Width,col="green")
```