

Τα δεδομένα του φυτού ίριδα (στην R)

Ίρις (βοτανική)

Από τη Βικιπαίδεια, την ελεύθερη εγκυκλοπαίδεια

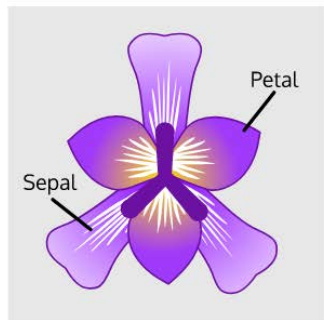
Η **ίρις** (επιστ. *Iris*) είναι γένος αγγειόσπερμων μονοκοτυλήδωνων φυτών, της τάξης των **Λειριωδών** (Liliales), της οικογένειας των **Ιριδοειδών** που περιλαμβάνει περί τα 100 είδη πολυετών **ποών** στις εύκρατες χώρες.

Είναι **φυτά** ριζωματικά, κονδυλόρριζα με μακρά και στενά **φύλλα** και **άνθη** πολύχρωμα και πολύσχημα μονομερή ή κατά **ταξιανθία** σε μακρά στελέχη.

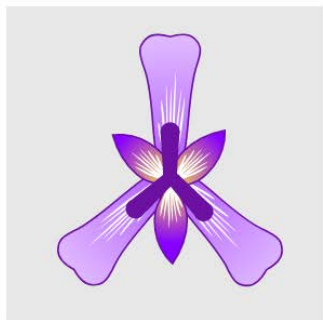
Τα σπέρματα, οι **ρίζες** και τα φύλλα των περισσότερων εξ αυτών περιέχουν μια τοξική ουσία στην οποία οφείλονται πολλές φαρμακευτικές ιδιότητες καθώς και μια πτητική κετόνη, την ιράνη, στην οποία οφείλονται οι αρωματικές τους ιδιότητες.



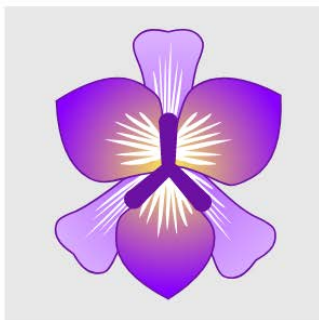
Iris Flower



Iris Versicolor



Iris Setosa



Iris Virginica

iris {datasets}

R Documentation

Edgar Anderson's Iris Data

Description

This famous (Fisher's or Anderson's) iris data set gives the measurements in centimeters of the variables sepal length and width and petal length and width, respectively, for 50 flowers from each of 3 species of iris. The species are *Iris setosa*, *versicolor*, and *virginica*.

Usage

```
iris  
iris3
```

Format

`iris` is a data frame with 150 cases (rows) and 5 variables (columns) named `Sepal.Length`, `Sepal.Width`, `Petal.Length`, `Petal.Width`, and `Species`.

`iris3` gives the same data arranged as a 3-dimensional array of size 50 by 4 by 3, as represented by S-PLUS. The first dimension gives the case number within the species subsample, the second the measurements with names `Sepal L.`, `Sepal W.`, `Petal L.`, and `Petal W.`, and the third the species.

Source

Fisher, R. A. (1936) The use of multiple measurements in taxonomic problems. *Annals of Eugenics*, **7**, Part II, 179–188.

The data were collected by Anderson, Edgar (1935). The irises of the Gaspé Peninsula, *Bulletin of the American Iris Society*, **59**, 2–5.

```

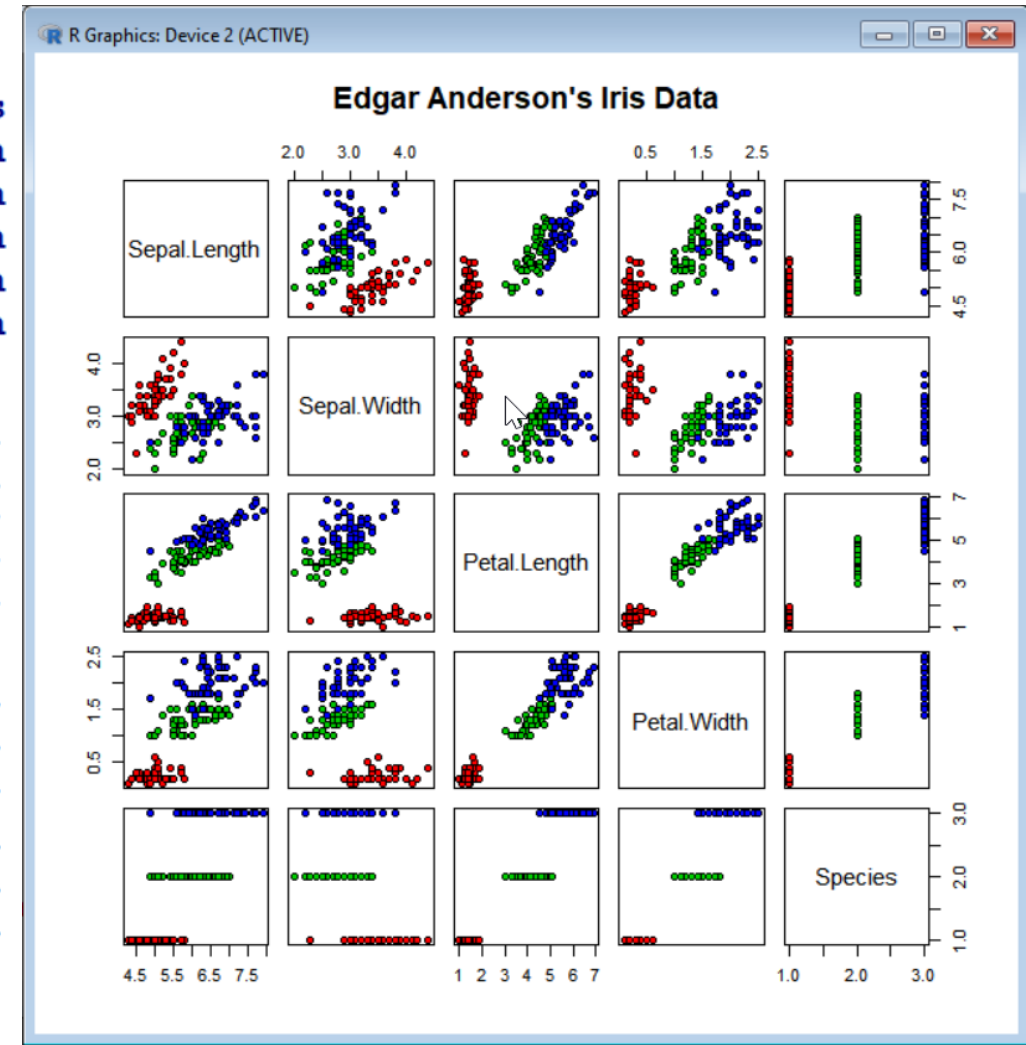
> iris
  Sepal.Length Sepal.Width Petal.Length Petal.Width Species
1           5.1          3.5          1.4          0.2    setosa
2           4.9          3.0          1.4          0.2    setosa
3           4.7          3.2          1.3          0.2    setosa
4           4.6          3.1          1.5          0.2    setosa
5           5.0          3.6          1.4          0.2    setosa

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

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

149         6.2          3.4          5.4          2.3  virginica
150         5.9          3.0          5.1          1.8  virginica

```



```

> pairs(iris, main="Edgar Anderson's Iris Data", pch=21, bg = c("red", "green3", "blue")[iris$Species])

```

```
> attach(iris)
```

The following objects are masked from iris (pos = 3):

Petal.Length, Petal.Width, Sepal.Length, Sepal.Width, Species

```
> iris$Sepal.Length
```

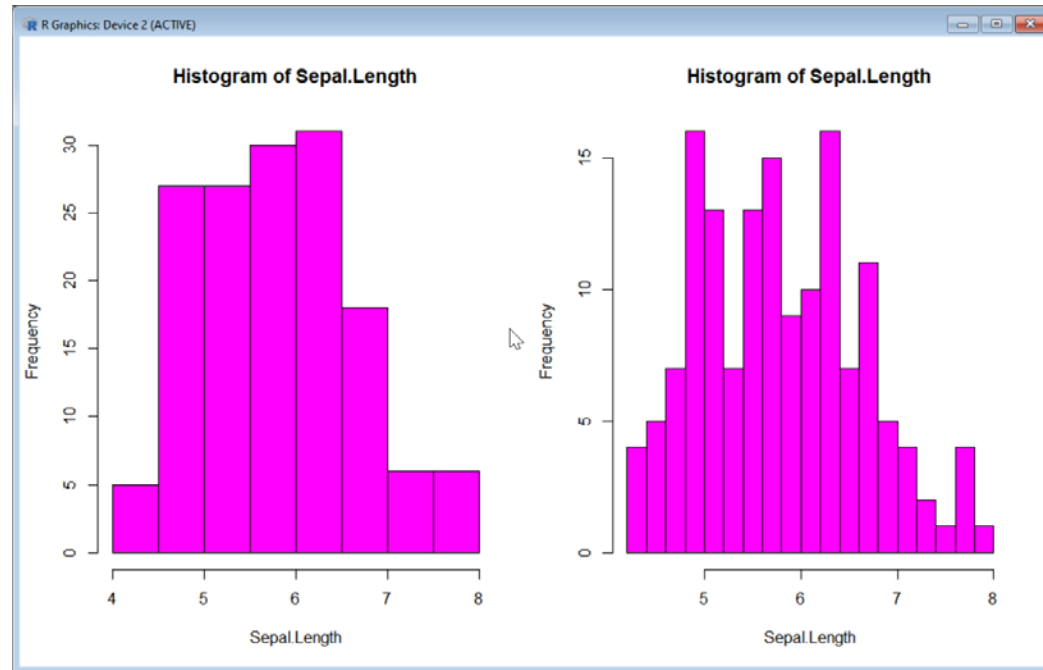
```
[1] 5.1 4.9 4.7 4.6 5.0 5.4 4.6 5.0 4.4 4.9 5.4 4.8 4.8 4.3 5.8 5.7 5.4 5.1  
[19] 5.7 5.1 5.4 5.1 4.6 5.1 4.8 5.0 5.0 5.2 5.2 4.7 4.8 5.4 5.2 5.5 4.9 5.0  
[37] 5.5 4.9 4.4 5.1 5.0 4.5 4.4 5.0 5.1 4.8 5.1 4.6 5.3 5.0 7.0 6.4 6.9 5.5  
[55] 6.5 5.7 6.3 4.9 6.6 5.2 5.0 5.9 6.0 6.1 5.6 6.7 5.6 5.8 6.2 5.6 5.9 6.1  
[73] 6.3 6.1 6.4 6.6 6.8 6.7 6.0 5.7 5.5 5.5 5.8 6.0 5.4 6.0 6.7 6.3 5.6 5.5  
[91] 5.5 6.1 5.8 5.0 5.6 5.7 5.7 6.2 5.1 5.7 6.3 5.8 7.1 6.3 6.5 7.6 4.9 7.3  
[109] 6.7 7.2 6.5 6.4 6.8 5.7 5.8 6.4 6.5 7.7 7.7 6.0 6.9 5.6 7.7 6.3 6.7 7.2  
[127] 6.2 6.1 6.4 7.2 7.4 7.9 6.4 6.3 6.1 7.7 6.3 6.4 6.0 6.9 6.7 6.9 5.8 6.8  
[145] 6.7 6.7 6.3 6.5 6.2 5.9
```

```
> Sepal.Length
```

```
[1] 5.1 4.9 4.7 4.6 5.0 5.4 4.6 5.0 4.4 4.9 5.4 4.8 4.8 4.3 5.8 5.7 5.4 5.1  
[19] 5.7 5.1 5.4 5.1 4.6 5.1 4.8 5.0 5.0 5.2 5.2 4.7 4.8 5.4 5.2 5.5 4.9 5.0  
[37] 5.5 4.9 4.4 5.1 5.0 4.5 4.4 5.0 5.1 4.8 5.1 4.6 5.3 5.0 7.0 6.4 6.9 5.5  
[55] 6.5 5.7 6.3 4.9 6.6 5.2 5.0 5.9 6.0 6.1 5.6 6.7 5.6 5.8 6.2 5.6 5.9 6.1  
[73] 6.3 6.1 6.4 6.6 6.8 6.7 6.0 5.7 5.5 5.5 5.8 6.0 5.4 6.0 6.7 6.3 5.6 5.5  
[91] 5.5 6.1 5.8 5.0 5.6 5.7 5.7 6.2 5.1 5.7 6.3 5.8 7.1 6.3 6.5 7.6 4.9 7.3  
[109] 6.7 7.2 6.5 6.4 6.8 5.7 5.8 6.4 6.5 7.7 7.7 6.0 6.9 5.6 7.7 6.3 6.7 7.2  
[127] 6.2 6.1 6.4 7.2 7.4 7.9 6.4 6.3 6.1 7.7 6.3 6.4 6.0 6.9 6.7 6.9 5.8 6.8  
[145] 6.7 6.7 6.3 6.5 6.2 5.9
```

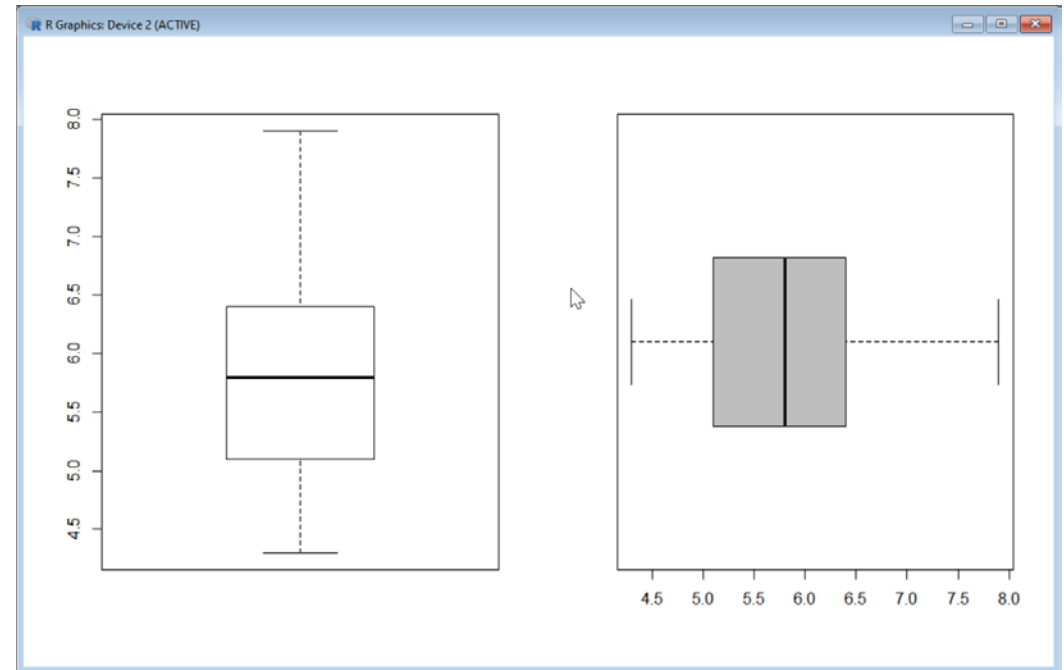
```
> hist(Sepal.Length, col=6)
```

```
> hist(Sepal.Length, col=6, nclass=20)
```



```
> boxplot(Sepal.Length)
```

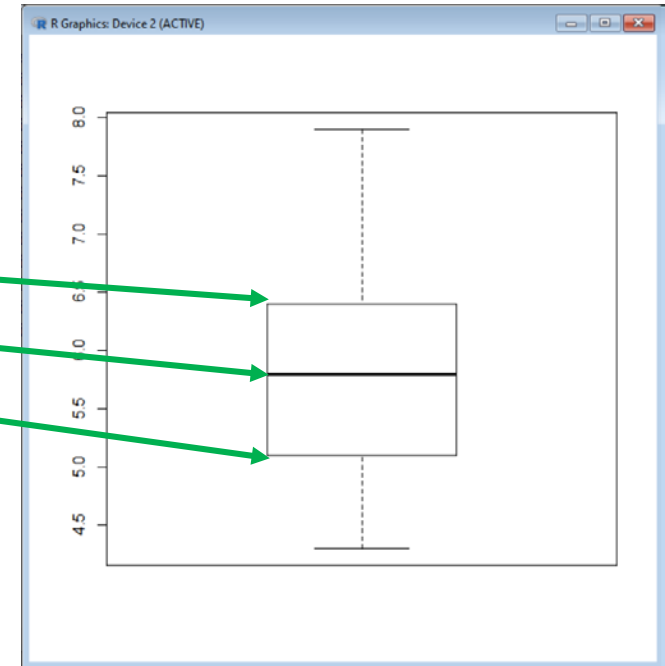
```
> boxplot(Sepal.Length, col="grey", horizontal=TRUE)
```



```
> summary(Sepal.Length)
```

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
4.300	5.100	5.800	5.843	6.400	7.900

```
> boxplot(Sepal.Length)
```



```
> summary(Sepal.Length[Species=="setosa"])
```

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
4.300	4.800	5.000	5.006	5.200	5.800

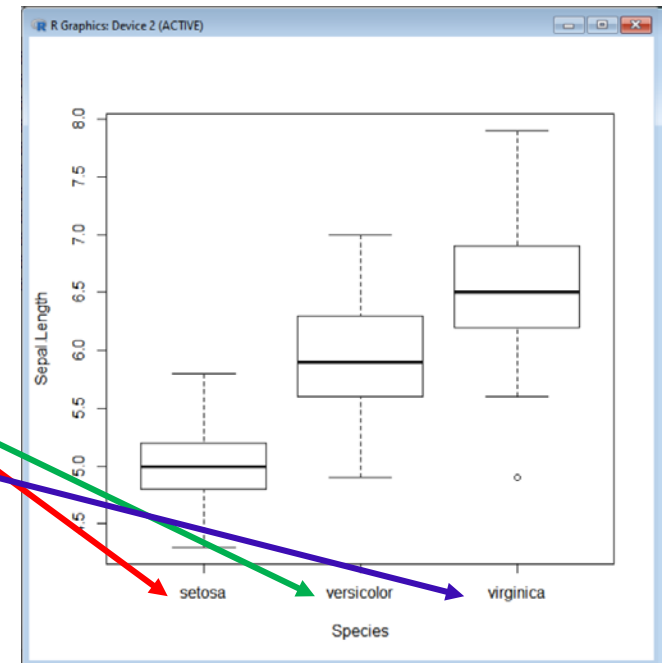
```
> summary(Sepal.Length[Species=="versicolor"])
```

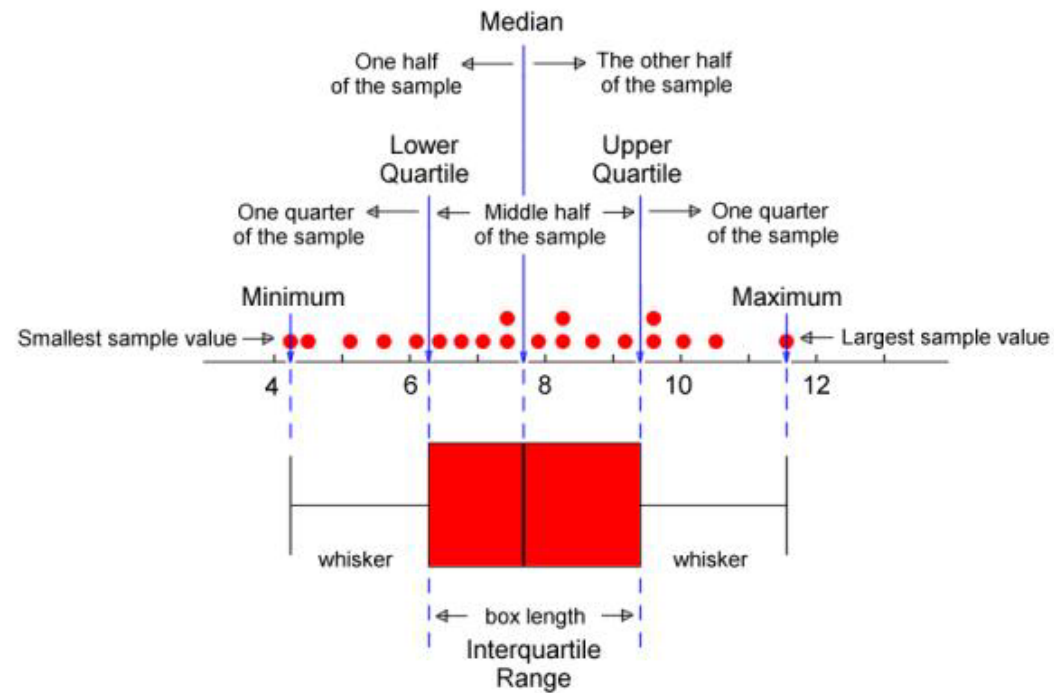
Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
4.900	5.600	5.900	5.936	6.300	7.000

```
> summary(Sepal.Length[Species=="virginica"])
```

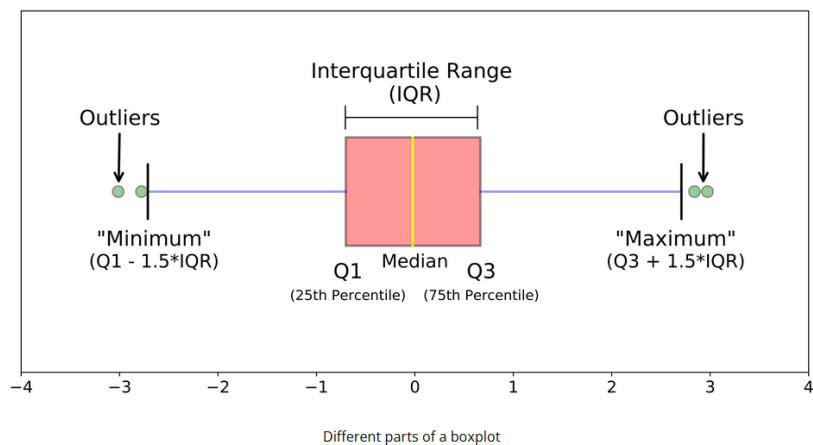
Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
4.900	6.225	6.500	6.588	6.900	7.900

```
> boxplot(Sepal.Length~Species)
```

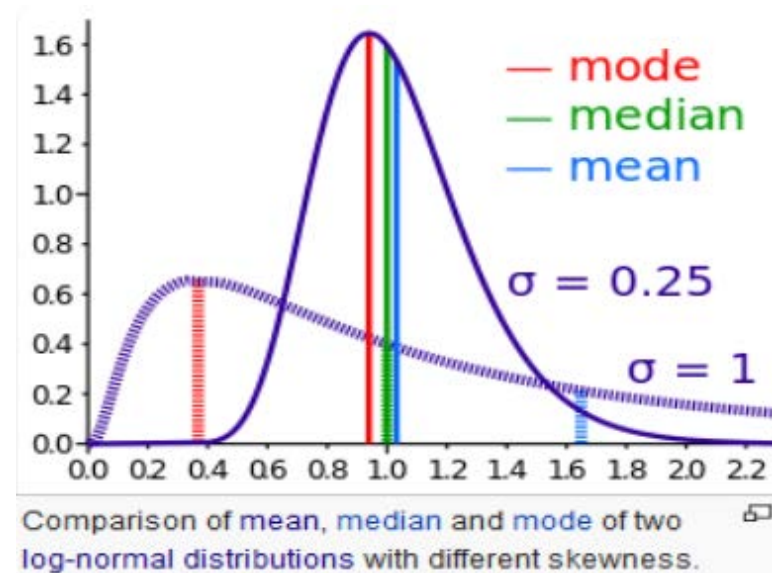
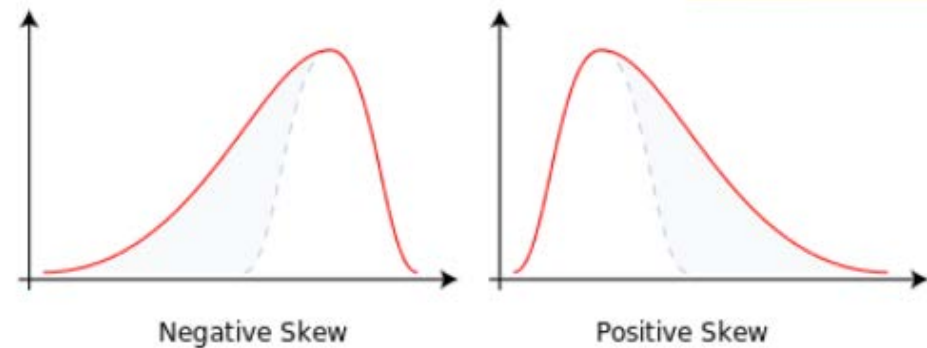




https://web.pdx.edu/~stipakb/download/PA551/boxplot_files/boxplot4.jpg



<https://www.kdnuggets.com/2019/11/understanding-boxplots.html>



<https://en.wikipedia.org/wiki/Skewness>

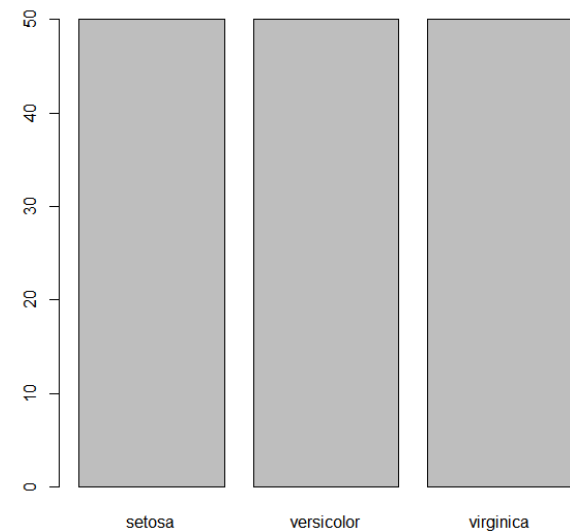
```

> iris$Species      # n metablntn pou afora to eidos tou futou
 [1] setosa      setosa      setosa      setosa      setosa      setosa      setosa      setosa      setosa
[10] setosa      setosa      setosa      setosa      setosa      setosa      setosa      setosa      setosa

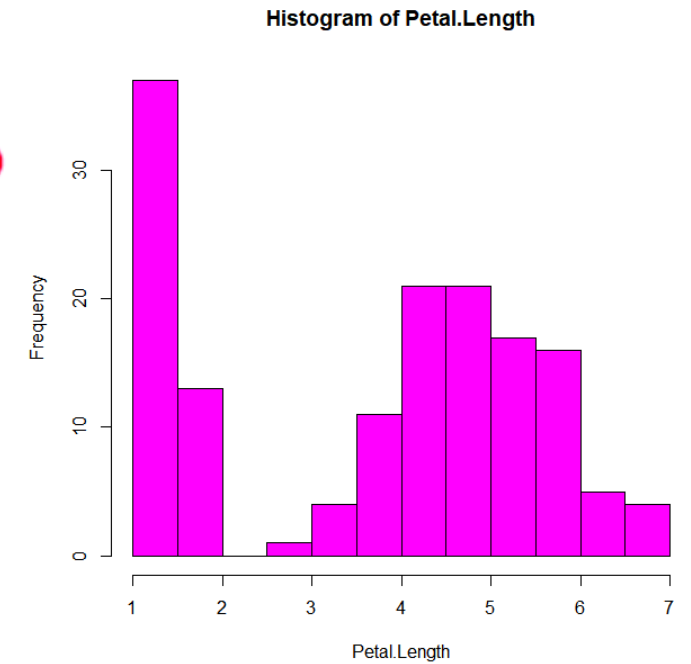
[136] virginica  virginica  virginica  virginica  virginica  virginica  virginica  virginica  virginica
[145] virginica  virginica  virginica  virginica  virginica  virginica
Levels: setosa versicolor virginica
> table(iris$Species)

  setosa versicolor  virginica
    50         50         50
> pie(table(iris$Species), col=c("red", "green3", "blue"))
> barplot(table(iris$Species))

```



```
> hist(Petal.Length,col=6,nclass=15)
Waiting to confirm page change...
> boxplot(Petal.Length~Species,col=c("red", "green3","blue"))
```



```
> summary(Petal.Length)
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
 1.000  1.600   4.350   3.758  5.100   6.900
> summary(Petal.Length[Species=="setosa"])
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
 1.000  1.400   1.500   1.462  1.575   1.900
> summary(Petal.Length[Species=="versicolor"])
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
 3.000  4.000   4.350   4.260  4.600   5.100
> summary(Petal.Length[Species=="virginica"])
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
 4.500  5.100   5.550   5.552  5.875   6.900
```

