We use histogram to observe the shape of the distribution.

The gaps of the data.

The outliers.

The symmetry.

Step 1 : get datasets

```
print("Load the datasets package")
library(datasets)
```

```
print("fetch and lean about the iris dataset")
?iris
```

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`.

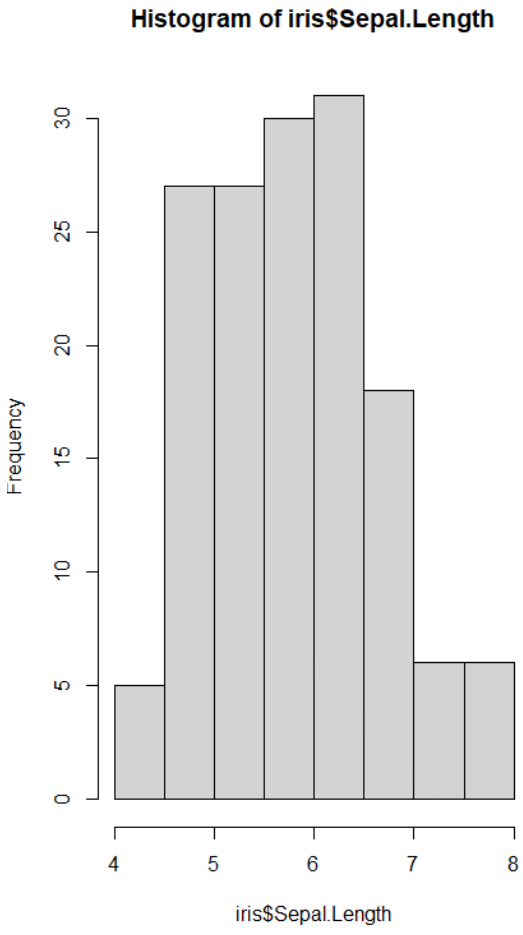
`iris3` gives the same data arranged as a 3-dimensional array of size 50 by 4 by 3, as represented by S-PLUS. The first dimension gives the case number within the species subsample, the second the measurements with names `Sepal L.`, `Sepal W.`, `Petal L.`, and `Petal W.`, and the third the species.

Source

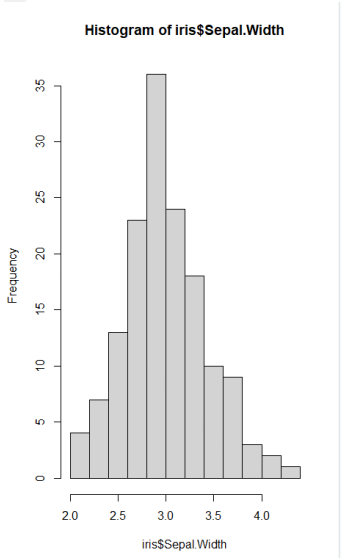
Fisher, R. A. (1936) The use of multiple measurements in taxonomic problems. *Annals of Eugenics*, **7**, Part II, 179–188.

```
7  head(iris)
8
> head(iris)
  Sepal.Length Sepal.Width Petal.Length Petal.Width
1          5.1         3.5          1.4         0.2
2          4.9         3.0          1.4         0.2
3          4.7         3.2          1.3         0.2
4          4.6         3.1          1.5         0.2
5          5.0         3.6          1.4         0.2
6          5.4         3.9          1.7         0.4
  Species
1  setosa
2  setosa
3  setosa
4  setosa
5  setosa
6  setosa
>
```

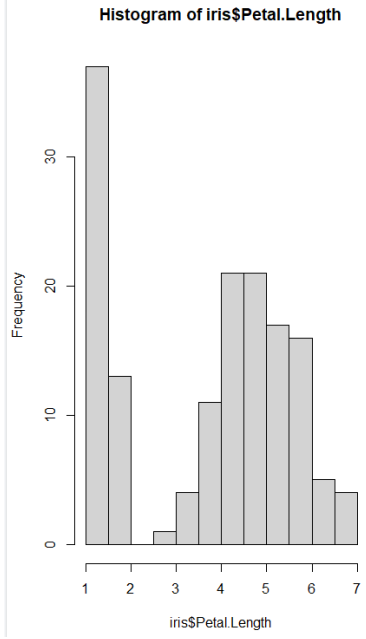
```
print("use histogram to visualize the sepal lenth")
hist(iris$Sepal.Length)
```



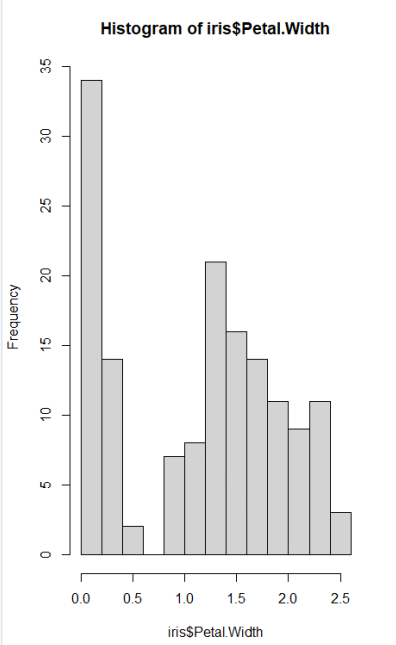
```
print("use histogram to visualize the sepal width")
hist(iris$Sepal.Width)
```




```
print("use histogram to visualize the petal length")
hist(iris$Petal.Length)
```



```r
print("use histogram to visualize the petal width")
hist(iris$Petal.Width)
```




```r
only_setosa_species = iris$Species == "setosa"
petal_width_col = iris$Petal.Width


print("Create partition so that can have multiple chart")
# Set up a layout with two rows and one column
# make it can have multiple graph plot side by side in grid like that
par(mfrow = c(3, 1))

hist(
  petal_width_col [only_setosa_species],
  xlim = c(0,3),
  breaks=9,
  main="Petal Width for Setosa",
  xlab="",
  col="red"
  )

only_versicolor_species = iris$Species == "versicolor"

hist(
  petal_width_col [only_versicolor_species],
  xlim = c(0,3),
  breaks=9,
  main="Petal Width for Setosa",
  xlab="",
  col="red"
```

```
)

only_virginica_species = iris$Species == "virginica"

hist(
  petal_width_col [only_virginica_species],
  xlim = c(0,3),
  breaks=9,
  main="Petal Width for Setosa",
  xlab="",
  col="red"
)
```