

## R resources

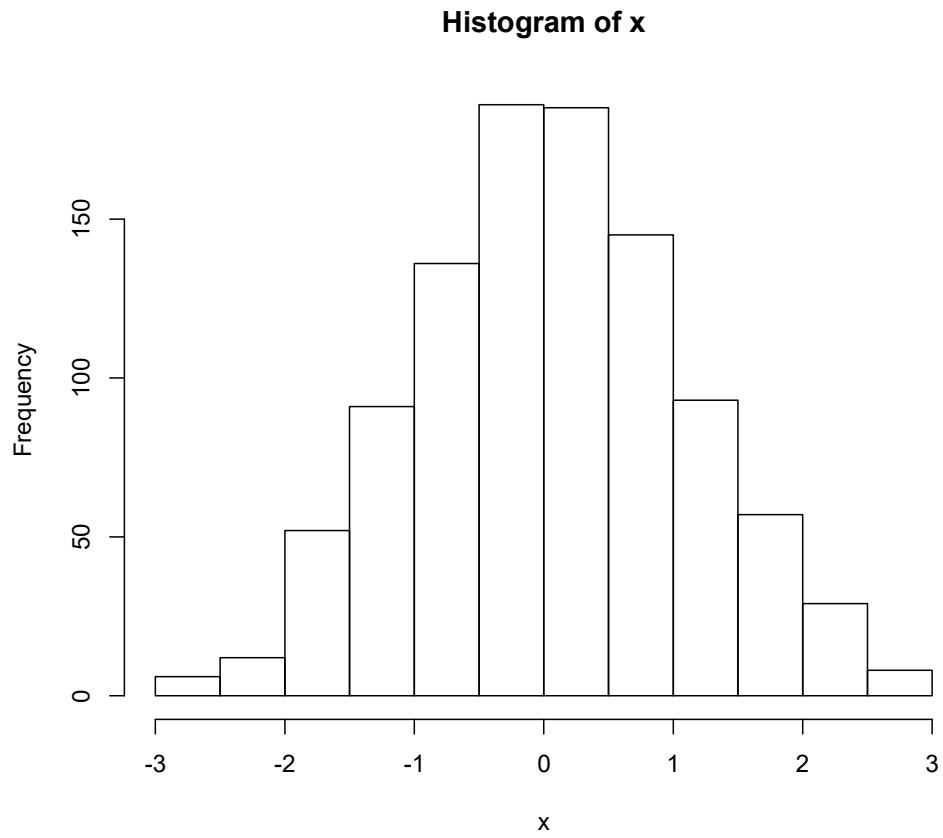
- Download R by typing "R download" in google.

## Using R to compute descriptive statistics

- To assign the specified numbers  $x_1, x_2, \dots, x_n$ , to a variable, say  $x$ , type  
`x<-c(x1, x2, ..., xn)`  
**Example:** `x<-c(1,4,6,5)` assigns the numbers 1, 4, 6 and 5 to the vector  $x$ .
- To generate a sequence of numbers starting from 1 and ending at  $n$  with a jump of size  $k$  try `seq(1, n, by=k)`  
**Example:** `seq(1, 10, by=1)` generates: 1 2 3 4 5 6 7 8 9 10.
- To compute sample mean for the data  $x$ , type `mean(x)`
- To compute sample variance for the data  $x$ , type `var(x)`
- To compute sample standard deviation for the data  $x$ , type `sd(x)`
- To compute the first quartile for the data  $x$ , type  
`quartile(x, 0.25)`
- To compute the second quartile for the data  $x$ , type  
`quartile(x, 0.50)`
- To compute the third quartile for the data  $x$ , type  
`quartile(x, 0.75)`
- To get summary for the data  $x$  try `summary(x)`

- To plot histogram for data  $x$  type `hist(X)`

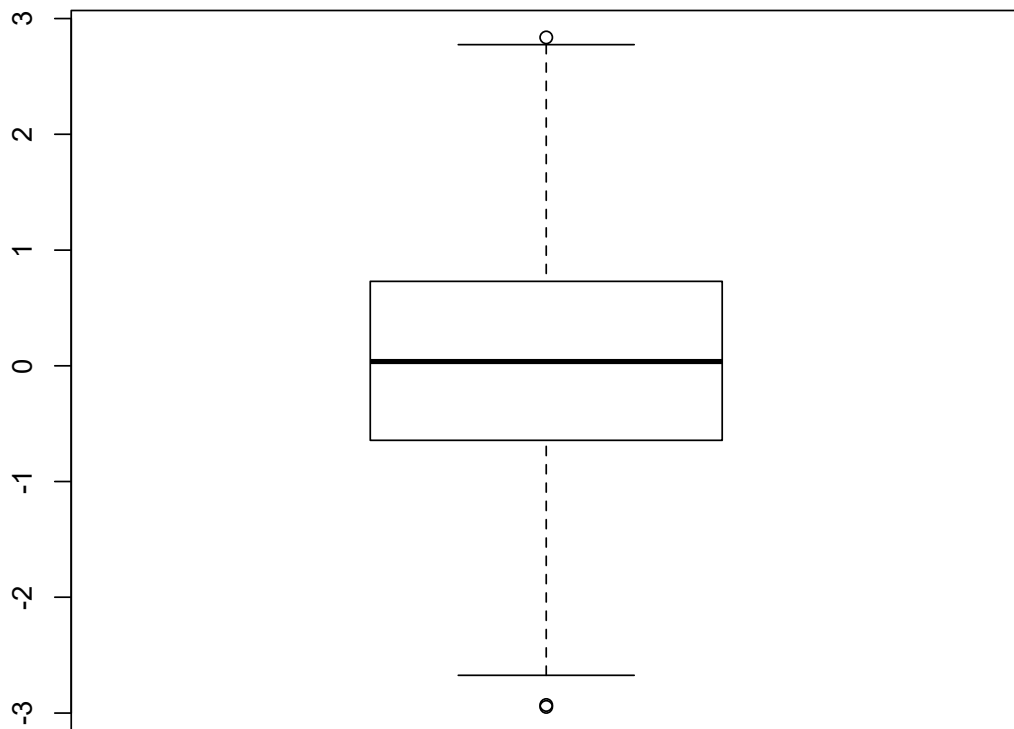
**Example:** The following histogram is based on 100 sample data.



- To plot boxplot (or box and whisker plot) for the data x type  
`boxplot(x)`

**Example:** The following histogram is based on 100 sample data.

`boxplot(x)`



- To make a stem and leaf plot for the data x type `stem(x)`

**Example:** The following histogram is based on 100 sample data.

`stem(x)`

The decimal point is at the |

```
-3 | 0
-2 | 40
-1 | 96333200
-0 | 99988888776665554443332222111
 0 | 000111112223333344455556666667777888999999
 1 | 012234446677889
 2 | 02
```

**Exercise:** For the following data sets

Table 4.2: Car Battery Life

2.2	4.1	3.5	4.5	3.2	3.7	3.0	2.6
3.4	1.6	3.1	3.3	3.8	3.1	4.7	3.7
2.5	4.3	3.4	3.6	2.9	3.3	3.9	3.1
3.3	3.1	3.7	4.4	3.2	4.1	1.9	3.4
4.7	3.8	3.2	2.6	3.9	3.0	4.2	3.5

- (a) Compute sample mean, variance, standard deviation and quartiles. Also try summary of  $x$ .
- (b) Construct a histogram.
- (c) Construct a boxplot.
- (d) Construct the corresponding stem and leaf plot.