paired-t-test.pdf

You run a paired t-test when you are interested in comparing similar observations between two groups. For example, comparing sepal length between two species (*setosa and versicolor)*. This is a parametric test so it is necessary to test for the basic assumptions.

The data that I am using is iris.txt

iris <- read.table("iris.txt")

I want to compare sepal length between *setosa* and *versicolor*.

setosa <- iris$Sepal.Length[iris$Species == "setosa"]

versicolor <- iris$Sepal.Length[iris$Species == "versicolor"]

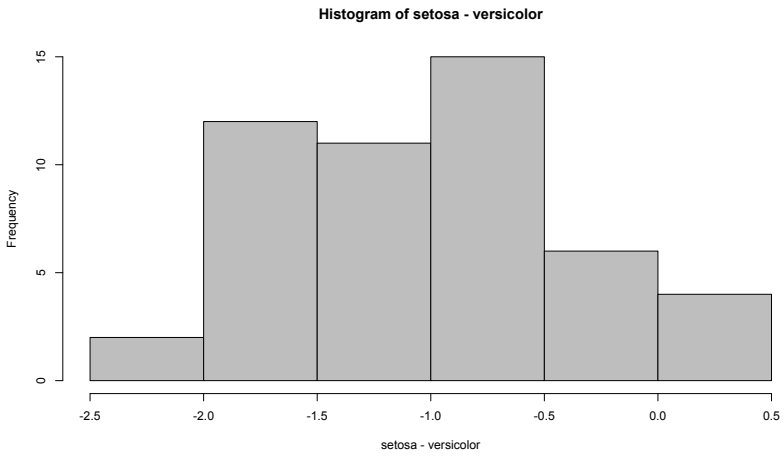
Testing the assumptions:

Make sure the data are the same length

length(setosa)
[1]50
length(versicolor)
[1]50

Ensure that the differences between the pairs are normally distributed

hist(setosa – versicolor)



Run the test using the build in function

t.test(setosa,versicolor,paired=TRUE, conf.level=0.95)

The output:

```
Paired t-test

data:  setosa and versicolor
t = -10.146, df = 49, p-value = 1.242e-13
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -1.114203 -0.745797
sample estimates:
mean of the differences
                 -0.93
```