https://intro2r.com/ Chapter 4

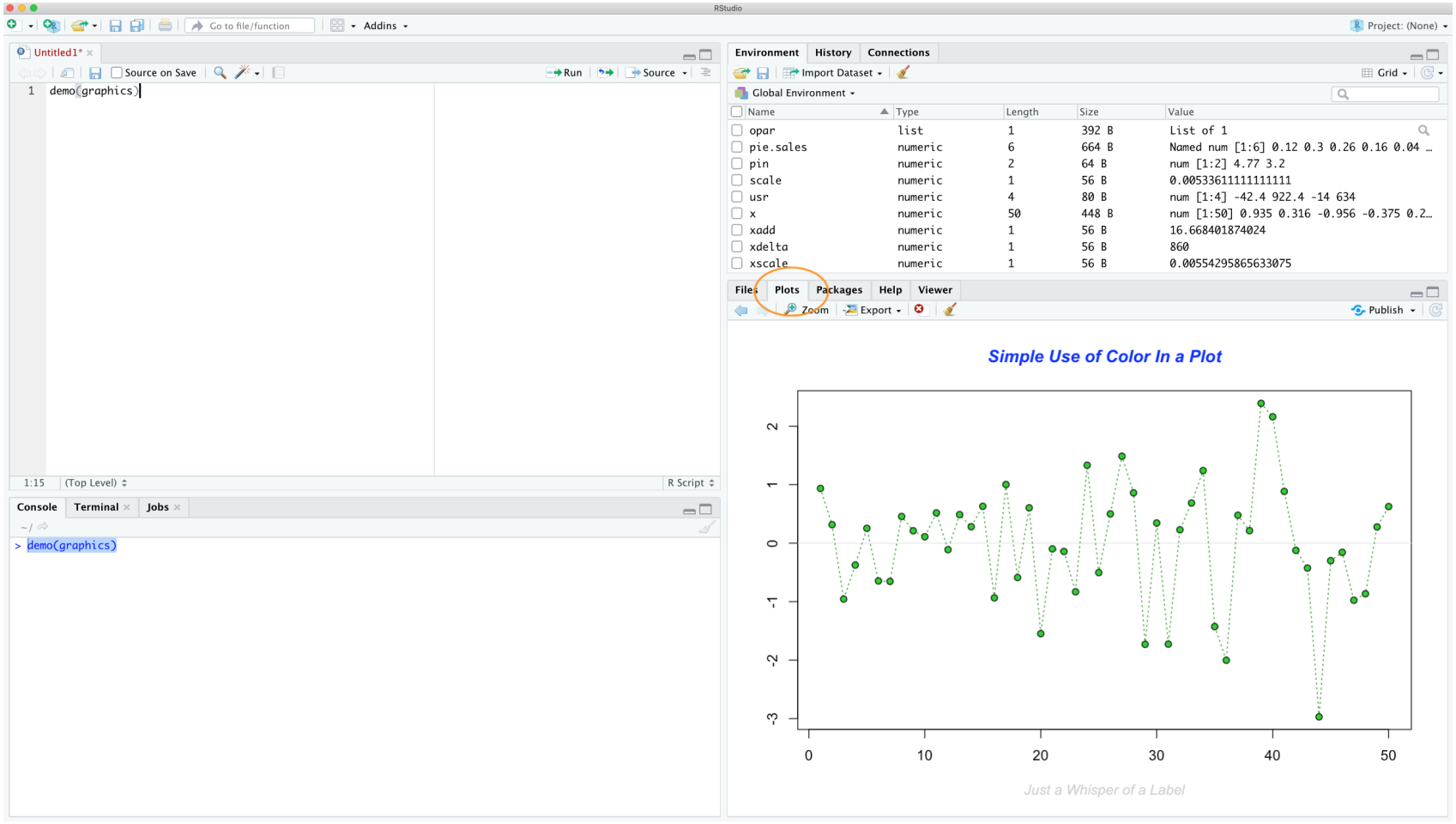
CSCI 297b, Spring 2023

April 23, 2023

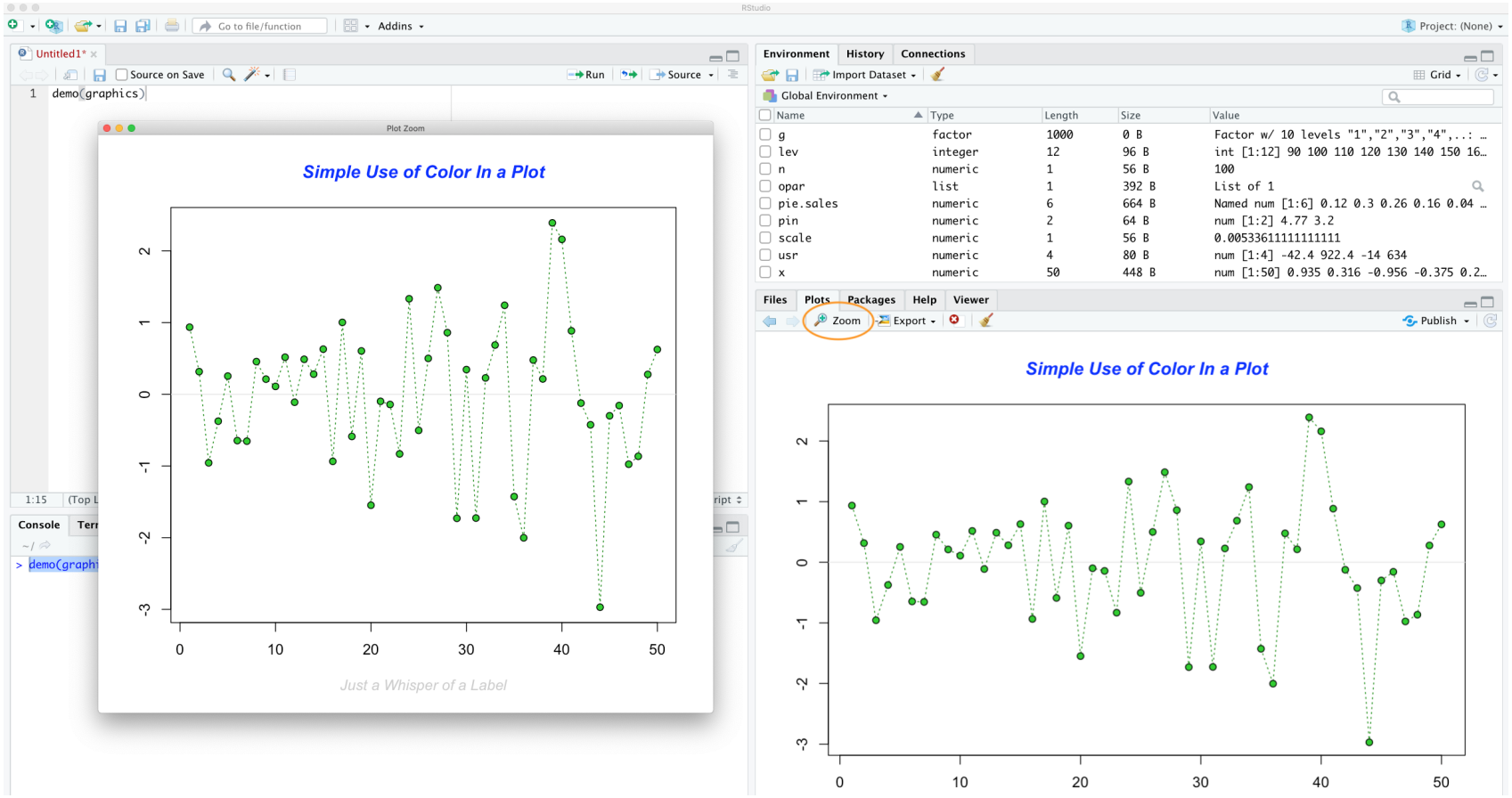
Base, lattice, and ggplot2 graphics

- Base graphics: easy, but good style takes work
- Lattice graphics: best with complex multi-dimensional data using panel plots
- Grammar of graphics: logical development, very good defaults

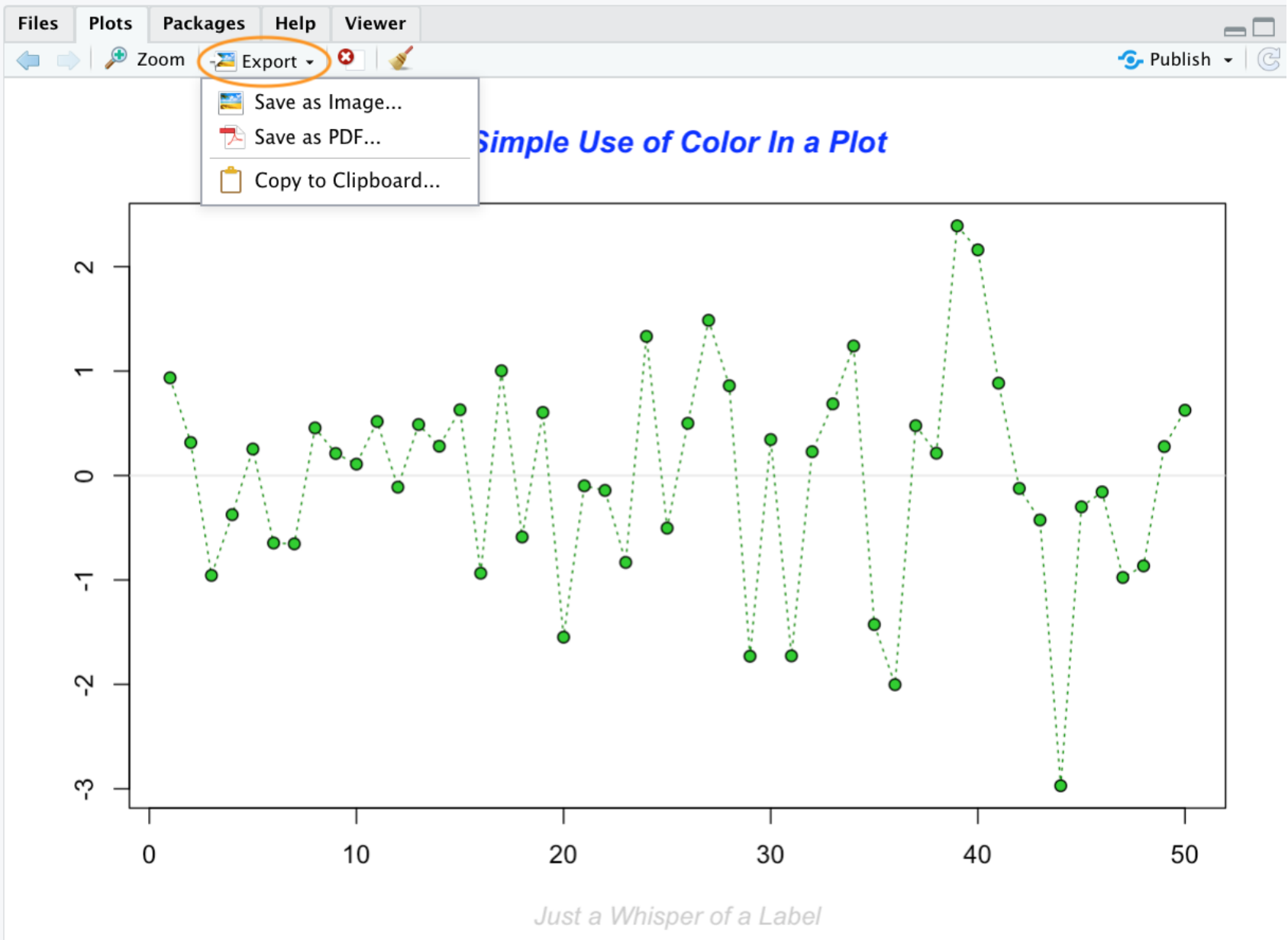
Plot panel in RStudio



Plot panel in RStudio, Zoom button

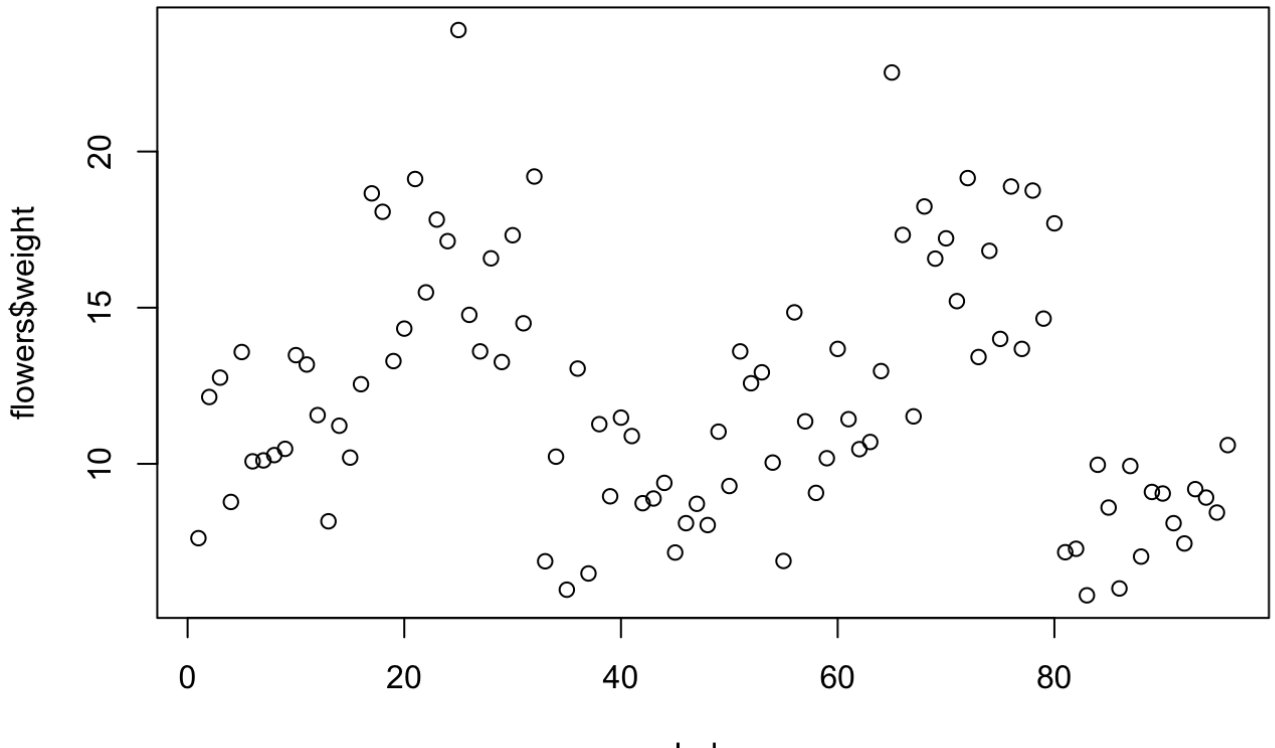


Plot panel in RStudio, save button



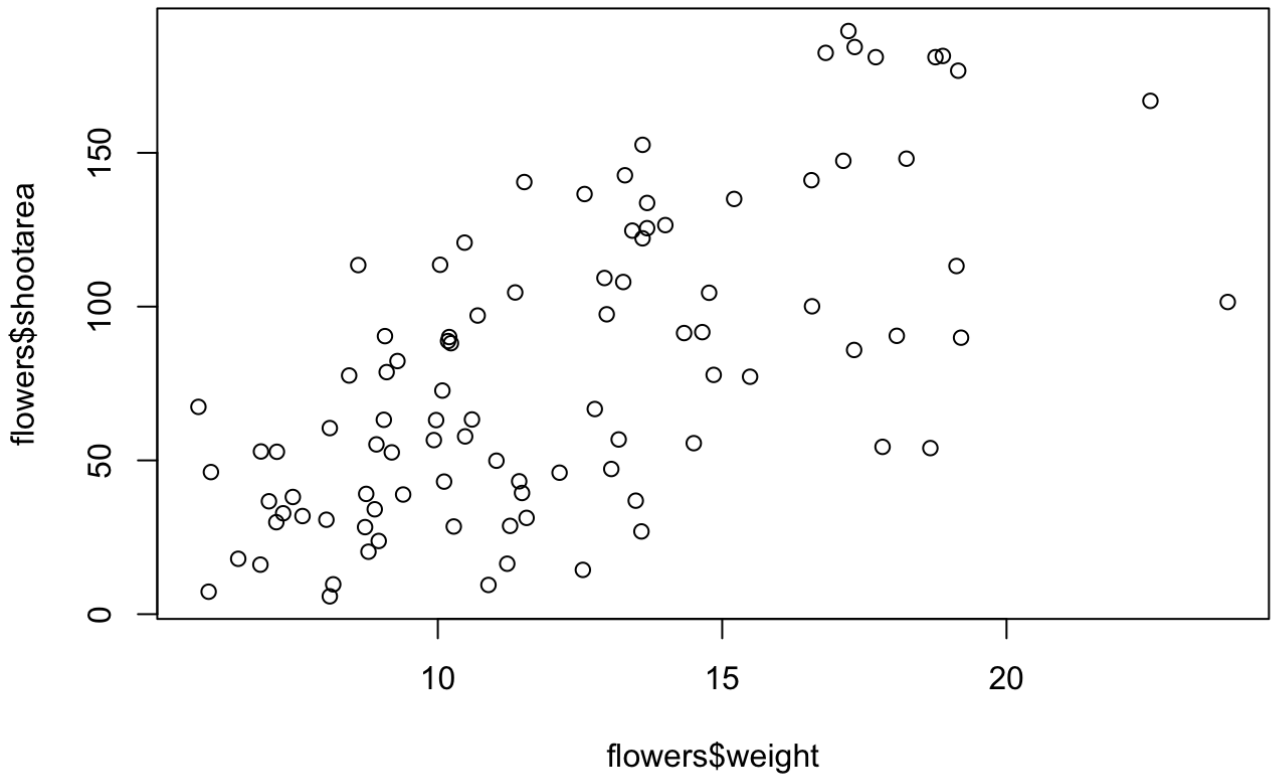
Scatterplots

```
flowers <- read.table(file = 'data/flower.txt',
                      header = TRUE, sep = "\t",
                      stringsAsFactors = TRUE)
plot(flowers$weight)
## or
## with(flowers, plot(weight))
```



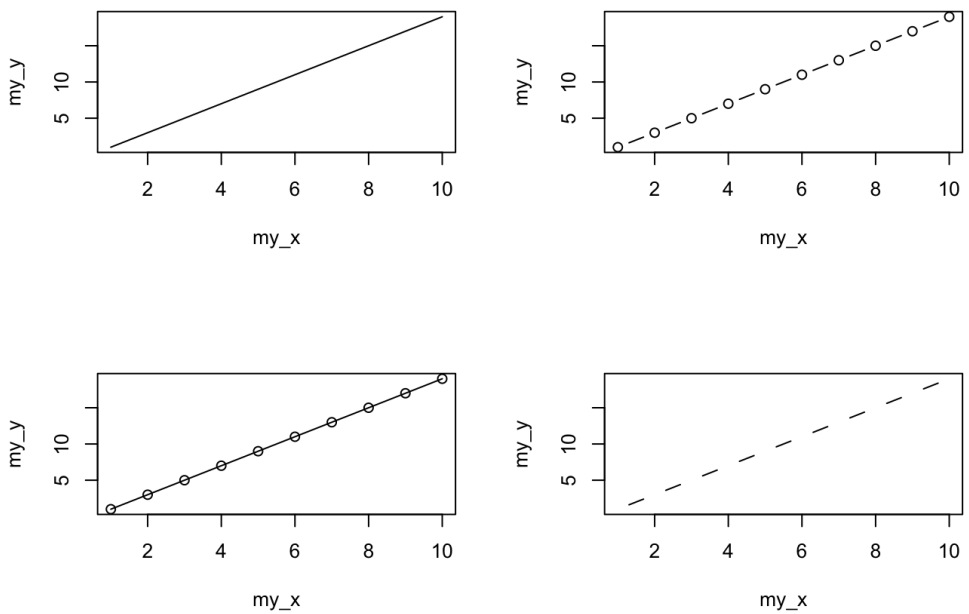
Scatterplots

```
plot(x = flowers$weight, y = flowers$shootarea)
## or
## plot(flowers$shootarea ~ flowers$weight)
```



Scatterplots

```
1 my_x <- 1:10
2 my_y <- seq(from = 1, to = 20, by = 2)
3 par(mfrow = c(2, 2))
4 plot(my_x, my_y, type = "l")
5 plot(my_x, my_y, type = "b")
6 plot(my_x, my_y, type = "o")
7 plot(my_x, my_y, type = "c")
```

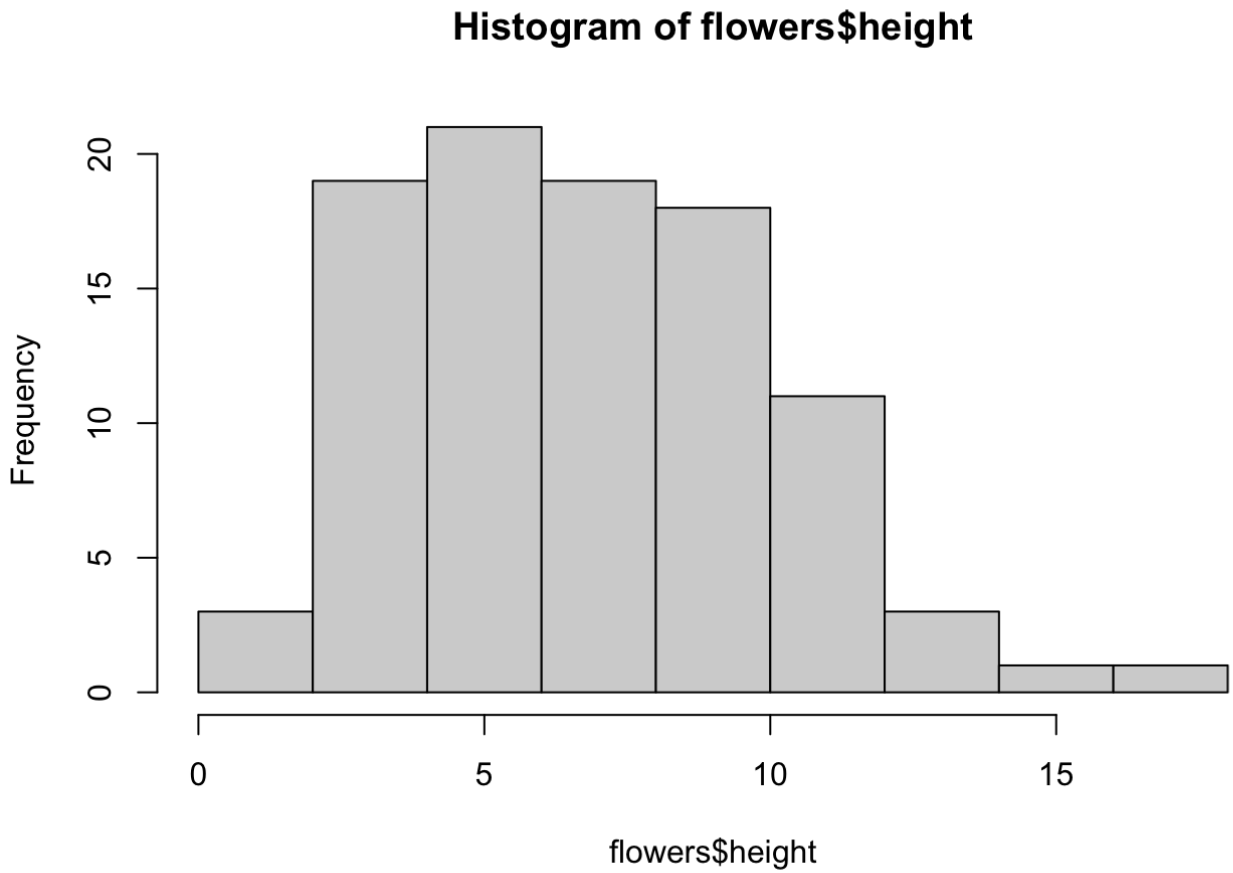


Plot

- `plot` has many options
- Can add more points, lines, text, *etc.*
- `plot` is a generic function: it can change its behavior based on what kind of object it is plotting

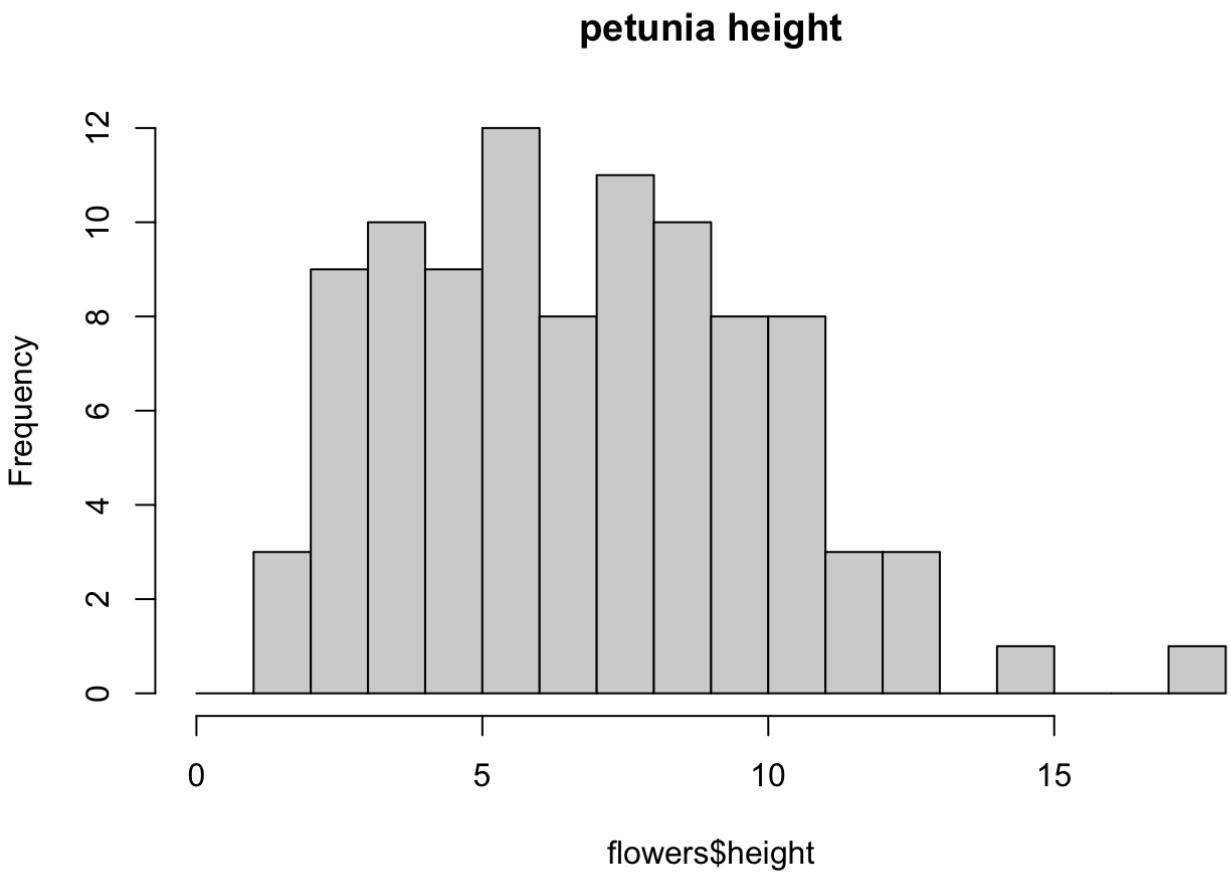
Histograms

```
1 hist(flowers$height)
```



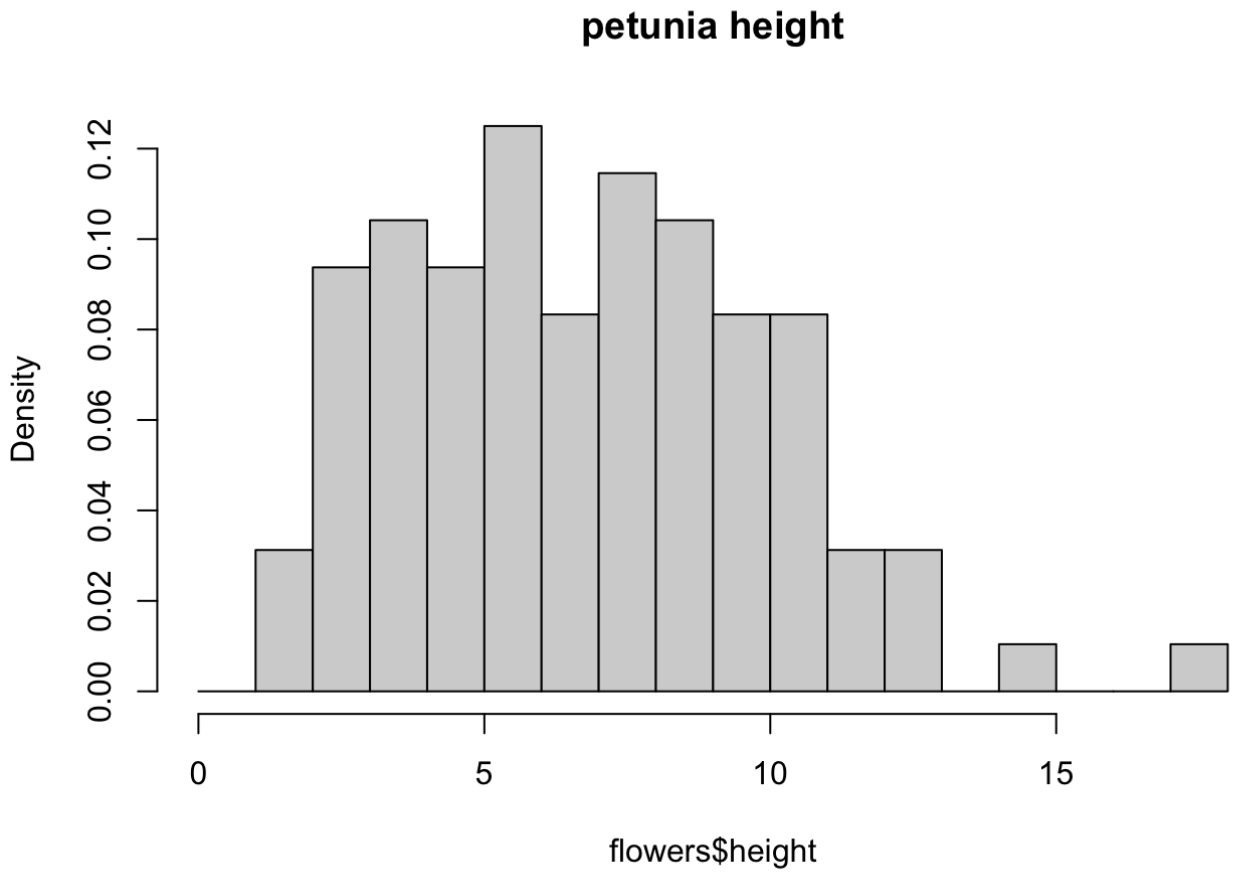
Histograms

```
1 brk <- seq(from = 0, to = 18, by = 1)
2 hist(flowers$height, breaks = brk, main = "petunia height")
```



Histograms

```
brk <- seq(from = 0, to = 18, by = 1)
hist(flowers$height, breaks = brk, main = "petunia height",
     freq = FALSE)
```



Histograms

```
dens <- density(flowers$height)
hist(flowers$height, breaks = brk, main = "petunia height",
     freq = FALSE)
lines(dens)
```