Setup and Install Software

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Install Packages

First we need to install the software packages that we will use. To install a single R package, we use the `install.packages` function and put the package name in quotes

```
install.packages("geomorph")
```

But to speed things up we can use the three lines of code below. Here we make a list of all the packages we want to have, check if they are installed or not, and then install all of the packages which are missing from our computer.

```
my_packages <- c("StereoMorph",
                 "Momocs",
                 "geomorph",
                 "Morpho",
                 "stringr",
                 "sfsmisc",
                 "pixmap",
                 "tiff",
                 "splancs",
                 "jpeg",
                 "mvMORPH",
                 "remotes", "Rvcg")
not_installed <- my_packages[!(my_packages %in%
                                 installed.packages()[ , "Package"])]
if(length(not_installed)) install.packages(not_installed)
```

Load Packages

Now that the software is loaded, we can load the packages into R so that they are read to use. You'll have to do this again each time you open R

```
library("StereoMorph")
library("Momocs")
library("geomorph")
library("Morpho")
```

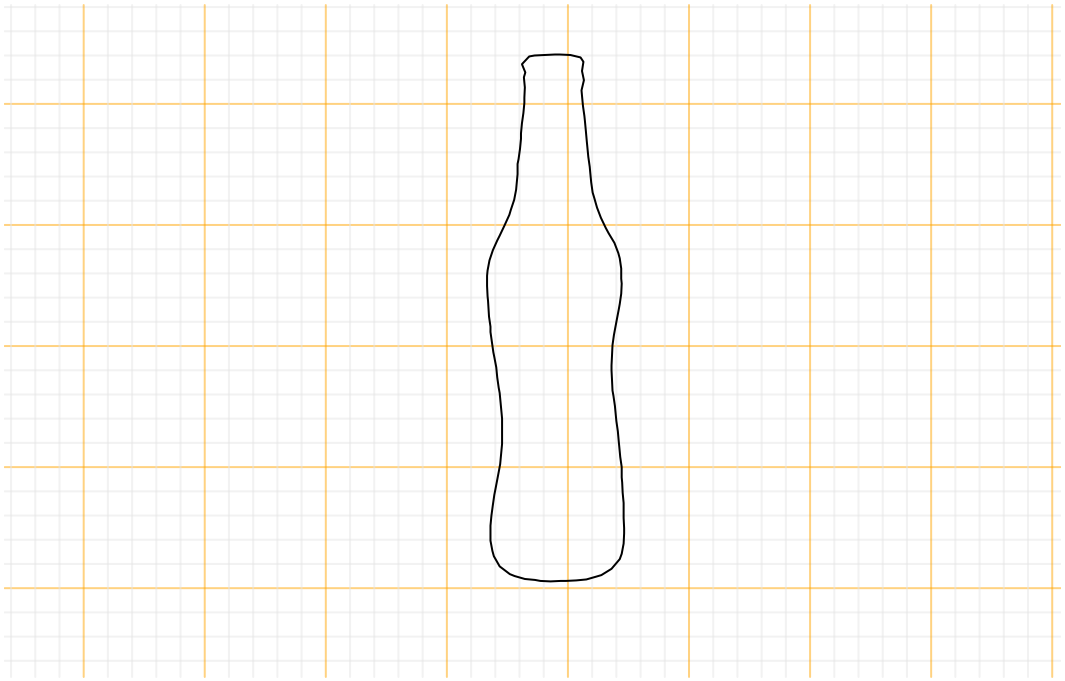
Loading built-in datasets

some of our R pacakges have example data built in. We can load in that data to our R environment with the `data` function

```
#from the Momocs package, outlines of whisky and beer bottles
data(bot)
bot
```

```
Out (outlines)
  - 40 outlines, 162 +/- 21 coords (in $coo)
  - 2 classifiers (in $fac):
# A tibble: 40 x 2
  type   fake
  <fct>  <fct>
1 whisky a
2 whisky a
3 whisky a
4 whisky a
5 whisky a
6 whisky a
# i 34 more rows
  - also: $ldk
```

```
#take a look one outline
bot[1] %>% paper_grid() %>% draw_outline()
```

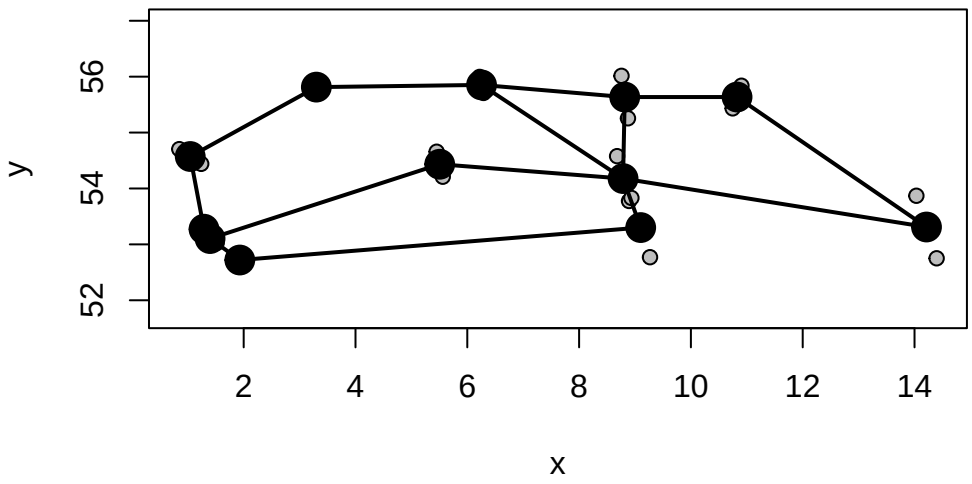


```
#from the geomorph package, a dataset of two-dimensional landmarks on salamander skulls
data(plethodon)
```

Try displaying the data

And try plotting a subset of the data

```
plotAllSpecimens(plethodon$land[,,1:2],links = plethodon$links)
```



Plot some 3D data. This will open a new window.

```
data(scallopPLY)
spheres3d(scallopPLY$coords,col="red")
```

Some other installations

Some of our analyses might require additional software packages that cannot be installed directly through R. Most folks will have these things installed already, but I will leave these links here just in case

XQuartz for Mac: https://www.xquartz.org

ImageMagik: https://imagemagick.org/script/download.php