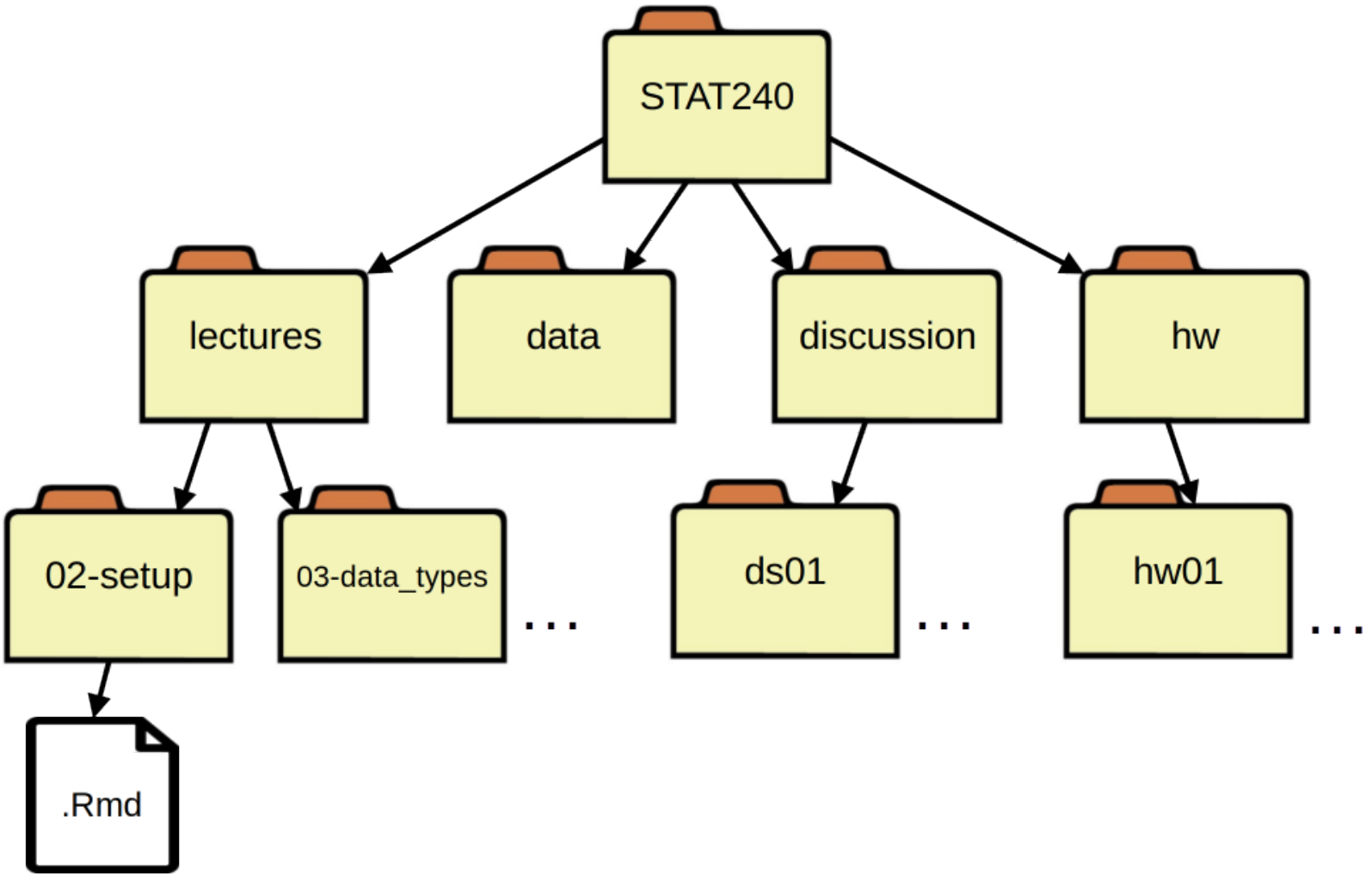
Class Setup

Organization + Intro to R

Let's set up the course directory.

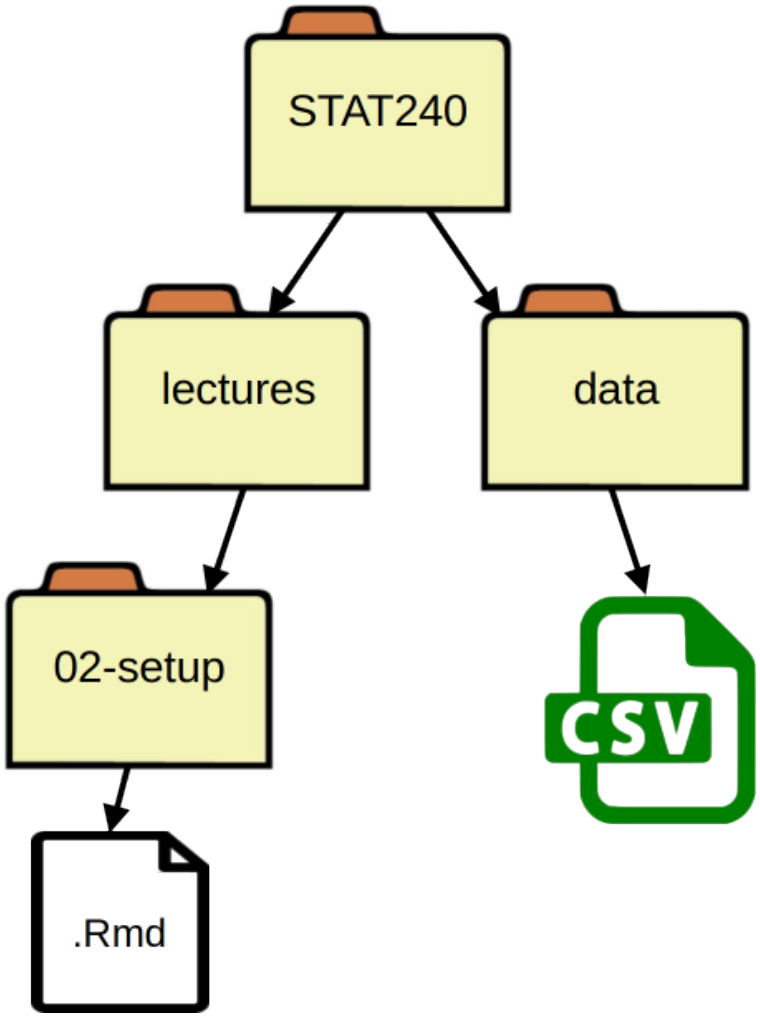
Everything will live in a base folder "`STAT240`" in your documents or desktop.


STAT240
lectures
data
discussion
hw
02-setup
03-data_types
...
ds01
...
hw01
...
.Rmd

Download the file `2_setup_handout.Rmd`.

Save it in the folder `STAT240/lectures/02-setup`.

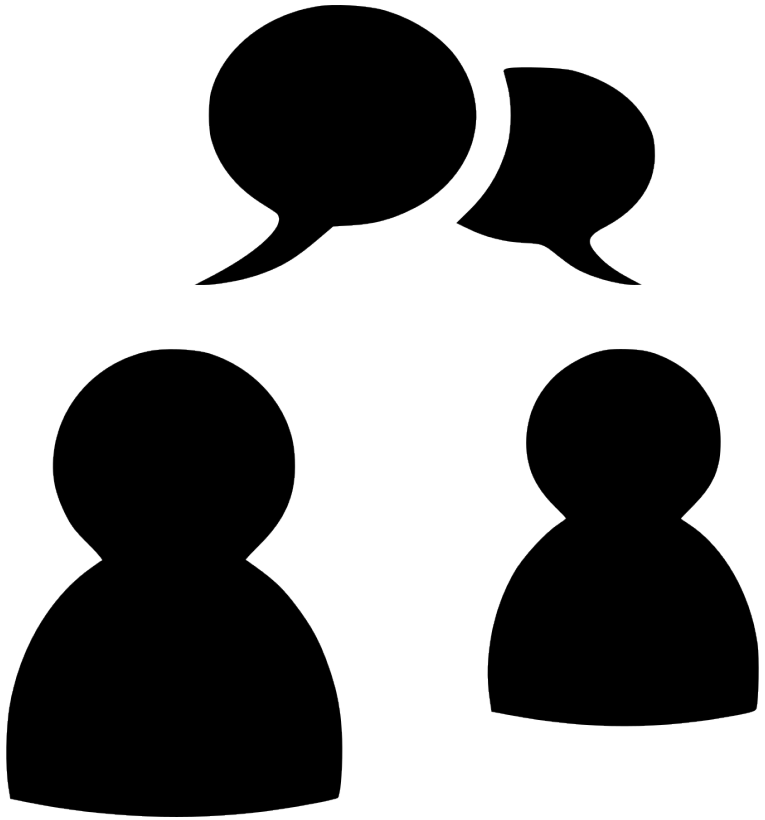
```
df <- read_csv("../../data/example.csv")
```



There are four main windows in Rstudio:

- Console
- Environment
- Viewer
- Editor

If you do not see any, use the View tab.



R code is run in the **console**.

- Do one thing at a time.

Keep track of variables in the **Environment** tab.

- Objects can be saved for later or deleted

The **Viewer** tab has many uses.

- Open R help with ?

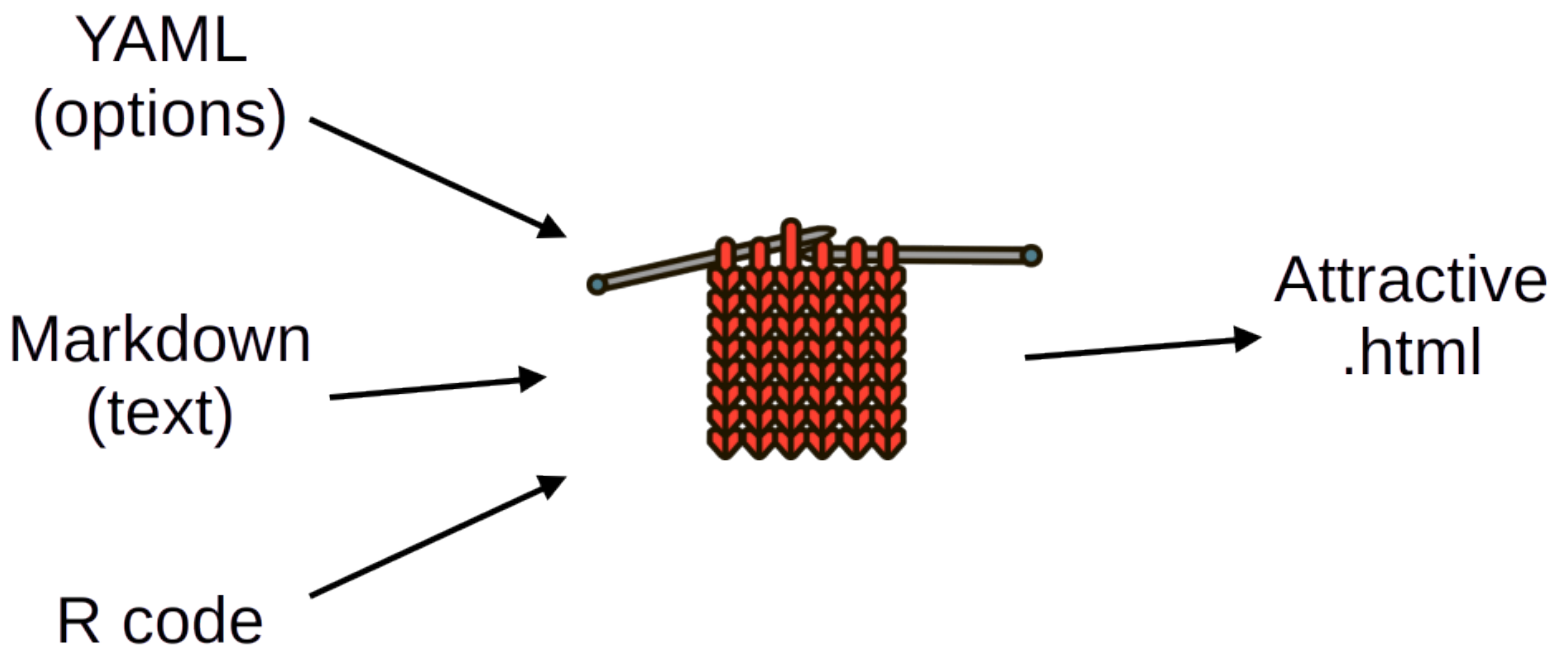
View and edit documents in **Editor/Source**.

- Code can be written and executed later

Try stuff out!

- Perform a mathematical operation with variables (not just numbers)
- Clear your console output - can you still get the old code back?
- Find the Apperance Options menu and change the color scheme
- Figure out how to find your R version (it's a pre-defined object)

R Markdown documents have three parts.



Write in the editor, then *knit* to a formatted file.

The YAML begins and ends with --- at the start of the document.

- Information on author, date, output type
- Most can be left the same

We will use .html output.

The .Rmd is primarily **Markdown**.

- Used to write text (as opposed to code)
- Lightweight

See the R Markdown Cheatsheet for details.

In the **code chunks**, we write R code.

- Insert with **Code** $\rightarrow$ **Insert Chunk**
- Or on Windows, **Ctrl+Alt+I**
- Or on Mac, **Command+Option+I**

Leave a space before/after chunks!

To run a single line of R code:

- **Ctrl/Command + Enter**

To run the whole chunk:

- Green "play" button
- Or **Ctrl/Command + Shift + Enter**

What is happening in Rstudio when you do this?

Knit a document with the blue yarn button.

- May need to follow prompts

Check that you have a new .html in the same place as the .Rmd.

Now, let's break it.

- Add the line "`months <- age * 12`"
- Try to knit. What error message do you see?
- How can we fix this?

Be careful with your Environment tab.

- Define a variable in your console
- Try to use it in the .Rmd

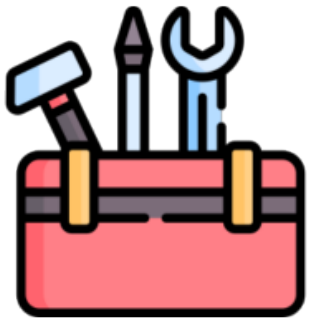
R is FOSS - anyone can contribute via **packages**.

- We will use the `tidyverse` package

`tidyverse` helps with data manipulation and visualization

A package is like a toolbox.

Installation is like
buying a toolbox



Loading is like
opening a toolbox

Run `install.packages("tidyverse")` in your R console.

- "use a personal library": pick yes
- "install from source": pick no, then yes if it fails
- "compile": pick no

Only need to do this once!