

Introduction To The Class Tools!

Outline

R and RStudio

RMarkdown / Quarto

Recap

R is the language used in this course!

RStudio is an Integrated Development Environment (IDE) for R

R: Engine



RStudio: Dashboard





R and RStudio



There are many different ways to “run” R!

- Interactively through the R GUI
- Interactively through the command line
- Batching through the command line
- Probably others!
- RStudio! (The best!)



R and RStudio



RStudio is not the only other editor! (Here's a list of what someone thinks are the 11 best...)

<https://www.dunebook.com/best-r-programming-ide/>

But it is by far the best!!!

It has many features that make it convenient to program in R! (It could take me the whole course to get through all the things RStudio can do!)

Important features I will take time to mention:

- Panes/Basics
- Projects
- Snippets
- Fancy Features



R and RStudio



Demo!

R Markdown is a product/package made from the people at RStudio.

You can read about R Markdown's full capabilities here:
<https://rmarkdown.rstudio.com/>

In previous semesters we used R Markdown for pretty much everything

R Markdown Features

- Markup language that is easy to learn!
- Weave text / code / graphics all in one document (no more copy and paste into a Word document)
- Fully reproducible reports
- Multiple output types (pdf, html, Word doc, website, etc..)



Quarto



The next generation of RMarkdown!

Quarto is very much like RMarkdown, but fixes some of the sticking points and offers some new features

Quarto makes a bigger deal of being multi-lingual (RMarkdown could as well, but the name hurts it.) Quarto supports Python, R, Julia, and Observable

Reproducible Research

The idea that data analyses, and more generally, scientific claims, are published with their data and software code so that others may verify the findings and build upon them (credit: Reproducible Research Coursera course)

Your work should be transparent:

- Should be able to recreate figures and graphics
- Code should be clear and concise
- Should be clear how and why decisions were made
- Ideally, code could be used for other data and other things



Quarto



Demo!

Recap

R and RStudio for programming!

Quarto for reproducible research!