

Introduction to Version Control with GitHub

Prof Wells

STA 295: Stat Learning

January 23rd, 2024

Outline

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- Explore the layout of Rstudio
- Discuss version control with GitHub
- Describe the typical GitHub workflow
- Practice cloning, pulling, committing, and pushing

Section 1

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 - Can be used after you graduate from Grinnell

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- RMarkdown can be used to create reports, assignments, journal articles, books, and presentations (like this one!)
- RMarkdown can output a variety of file types: .html, .pdf, .doc, and more

New RMarkdown Files

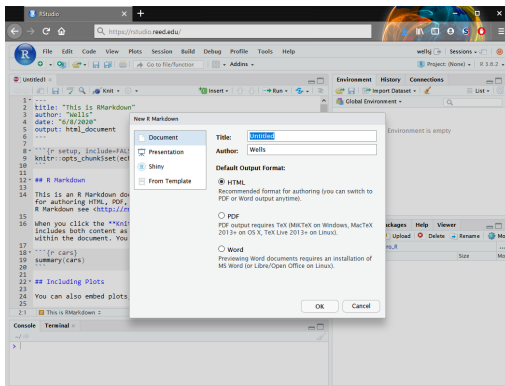
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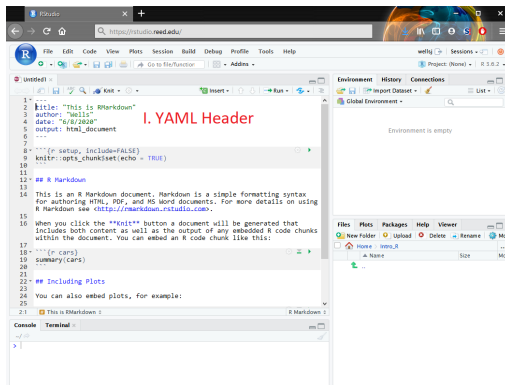
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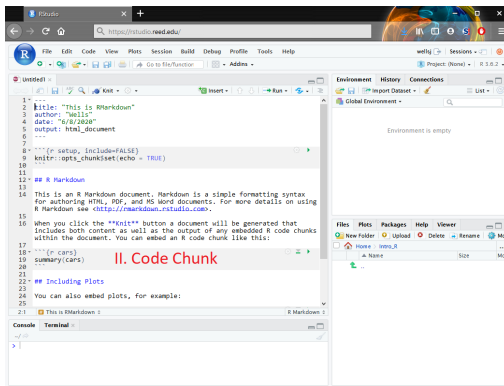
- 1 A YAML header surrounded by ---



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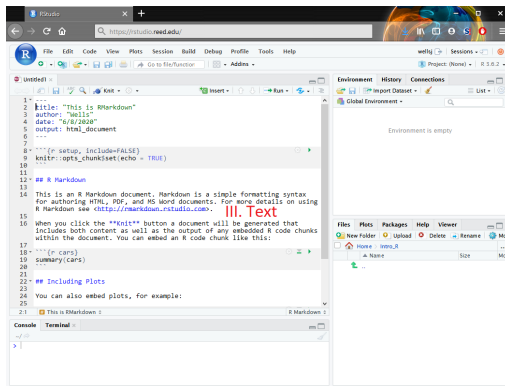
② Chunks of R code surrounded by `````



Anatomy of RMarkdown

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- 3 Text formatted with simple markdown syntax like **italics** or ****bold****

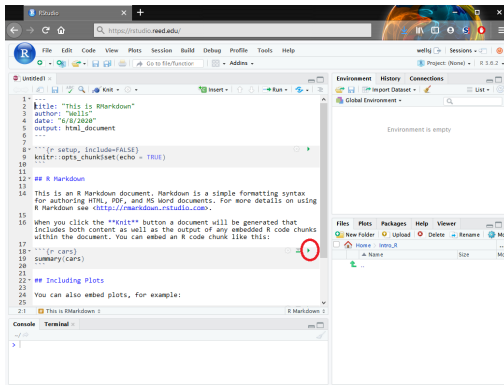


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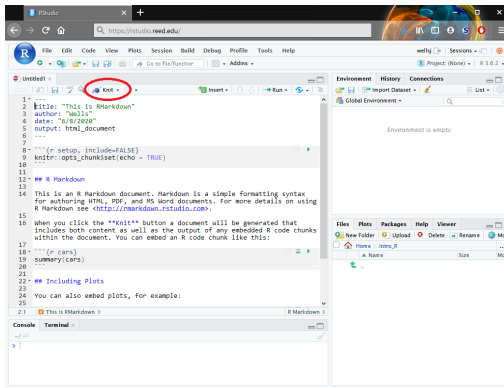


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Section 2

Version Control

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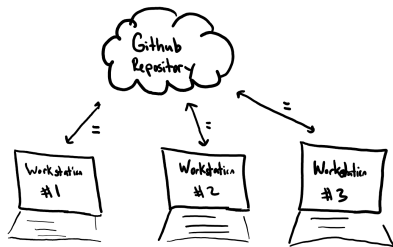
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- Git tracks the evolution of a document (and its file system) through a series snapshots (called **commits**)
- These commits make it easier to save and compare different versions of a document, as well as to restore a previous version
- Collaborators work independently on their version of the document, and then sync regularly to a common version

Why version control?

There two main reasons you may want to use version control:

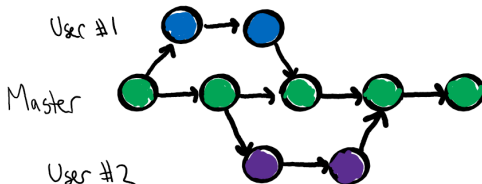
- 1 **Individual Use.** You have a document you will iterate on frequently, that references several other images and/or data sets, or that you want available on multiple devices



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- 2 **Group Use.** You are collaborating with several other people on a common document, need to synthesize several versions of the document, and comment on changes.



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 - Use the GitHub Desktop App (easiest, but requires separate install)

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- ④ Occasionally, the user makes a **commit** of their work.
- ⑤ After making several commits (and especially when done working for the session), the user will **push** the commits to the GitHub repository.

Section 3

Practice

Working Solo

Follow the instructions on the Working Solo document found under today's class (Tues 1-23) on the schedule page of the course website.

Section 4

Homework

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- ➏ You will receive feedback on the assignment via Pull Request (to be discussed later)