

# Getting Started with STAT 9610

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August 20, 2022

In addition to learning statistical methodology, in STAT 9610 you will be exposed to a suite of tools for modern statistics and data science: LaTeX, Git, GitHub, R, and RStudio. You will need to use all of these tools to complete each homework assignment and exam in this class. This document will help you learn about and get set up with these tools.

## 1 The tools

**Programming.** We will be using R for programming, using the RStudio development environment. We will rely on [tidyverse](#) packages for data visualization (`ggplot2`) and manipulation (`dplyr`). To learn about and set up these tools, work through Chapters 1-8 of [R for Data Science](#). In particular, Chapter 1.4 will walk you through installing R, RStudio, and the `tidyverse`.

**Managing files.** We will be using Git and GitHub to manage and share files. Read [this article](#) to get acquainted with Git and GitHub, then set up these tools by working through chapters 4, A, 6, 7, {9 or 10}, 11 of [Happy Git and GitHub for the user](#).

**Typesetting.** We will be using LaTeX for typesetting. Install a LaTeX distribution and editor, e.g. [TeX Live and Visual Studio Code](#) (you can skip all but the first part of Step 3). Then, work through [this guide](#) to get acquainted with LaTeX.

## 2 Using the tools to complete an assignment

1. Click the assignment link and accept the invitation. This will create a GitHub repository for you containing the homework assignment, which you may access by clicking on the link to the repository that will appear.
2. From your shell, [clone](#) the above repository to your computer via `git clone <repository-url>`.
3. Add your solutions to the provided LaTeX and R files using your LaTeX editor and RStudio, respectively. Any tables and figures to be included in your report should be saved in R and imported into LaTeX.
4. From your shell, [add](#) and [commit](#) your files regularly via `git add --all` and `git commit -m <note about what you changed>`, respectively.
5. When you are done, compile your LaTeX report to a PDF and commit your work. Then, from your shell, [push](#) your work to GitHub via `git push`. Finally, submit your GitHub repository to [Gradescope](#).

The workflow is similar to [this one](#). An example of a completed assignment repository is given [here](#).