R projects and linking to GitHub – 10 Feb 2023, Philip Dixon

Pre-meeting preparation

This week’s topics are:

Using R projects, and

Using Git though RStudio to access lunchinators material

R projects are a very useful thing to know about, even if you never access lunchinators material

Installing and configuring git will give you access to lunchinators files.  Many (not all) discussions include R code and data.   You can run this code as the speaker is demonstrating on screen, if you have linked git and Rstudio.

(The git ecosystem is a very powerful file sharing and version control system.  It’s worth learning about for its own merits, but that is beyond what you need for lunchinators).

I want to focus on two things during our meeting:

The general concept of R projects

The trickier aspects of linking Git and Rstudio.

It will help if you have done some preparation ahead of time.  Below are short “ISU” directions, focusing on ISU-owned computers where you (probably) don’t have permission to install software except for those available through Software Center (windows) or Self Service (Mac).  I have Windows machines, so I can write instructions for Software Center.  I believe Self Service (for Macs) is similar.  To use either you must be on the campus network, either by your computer being physically on campus or being virtually there via a VPN connection.  Here is a web site illustrating how to use either: <https://www.biology-it.iastate.edu/self-service-and-software-center>

A very good tutorial on getting started with R, RStudio and git is from the NCEAS/LTER network center:

<https://nceas.github.io/scicomp-workshop-collaborative-coding/>

A huge thanks to Nick Lyon (a EEB grad) for putting this together (and for reminding me that he’d done that).

That page has links that provide more details about each step below.  Some steps include both command line and RStudio operations.  I suggest you ignore the command line and focus on the RStudio versions.

1) Download and install R and Rstudio, if these aren’t already installed.

On ISU owned computers, you will probably need to get these from Software Center (Windows) or Self Service (Mac).  Both R and RStudio usually show up near the top of the default applications screen.  If not, search for R.  You want “R for <your operating system>”.  You don’t want the versions with Bioconductor or All Packages – they have additional material we (for lunchinators) don’t need.  Install R then search for RStudio.  You want RStudio Desktop.

2) Download and install git (most will not have this already installed).

There are various versions that include different choices of default editor.  We won’t need the editor unless something goes wrong.  My preference is Notepad ++ on my Windows PCs.  So I install the “git for Windows (Notepad ++)” download.

3) Create a GitHub account.

GitHub is the web interface to git.  Set up an account.  Instructions are in <https://nceas.github.io/scicomp-workshop-collaborative-coding/> just below Accounts to Create / Connect //  GitHub.

The github homepage (If you’re not already logged into git) will have a box for your e-mail and a purple “Sign up for GitHub” button

Note: As a group, we will start at the next activity in the NCEAS instructions: Connect git to your GitHub profile.  To speed this up, install the necessary R packages (next step here)

4) Install the usethis and gitcreds packages into R.

Start RStudio, navigate to the console window and type:

Install.packages(“usethis”)

Install.packages(“gitcreds”)

(or do both at once as illustrated in the NCEAS document).