Intro to GitHub

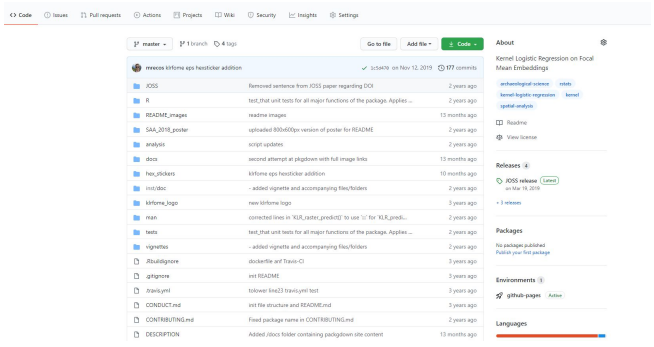
Collaborating with code

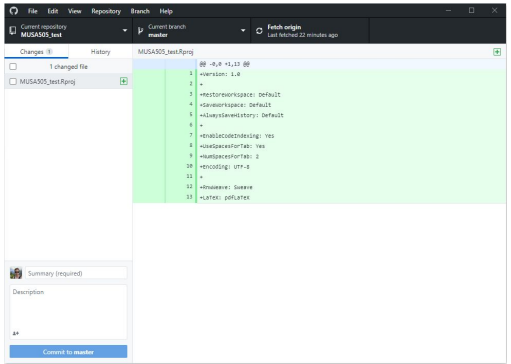
What is GitHub?

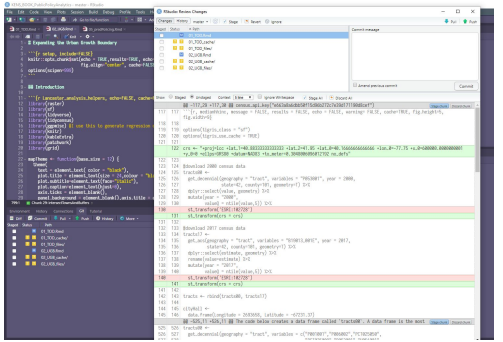
- www.github.com
- text/code source control
- Uses the ‘git’ protocol to version code
- Social media like interaction around code
- Collaboration tools for working together on code
- Advanced tools for code integration and deployment

Working with GitHub

github.com ⟷ Github desktop ⟷ Rstudio

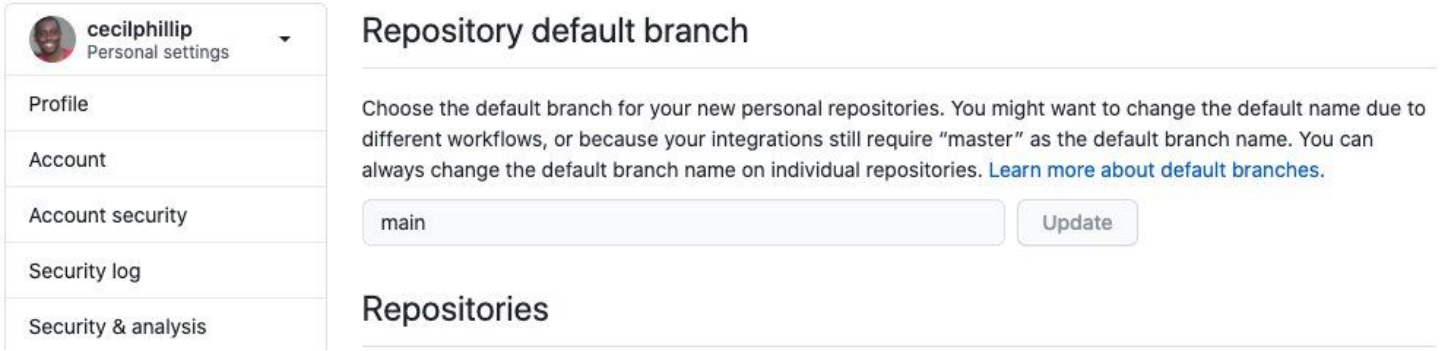






Live view of Github Tools

Git terminology - main vs. master



Git terminology

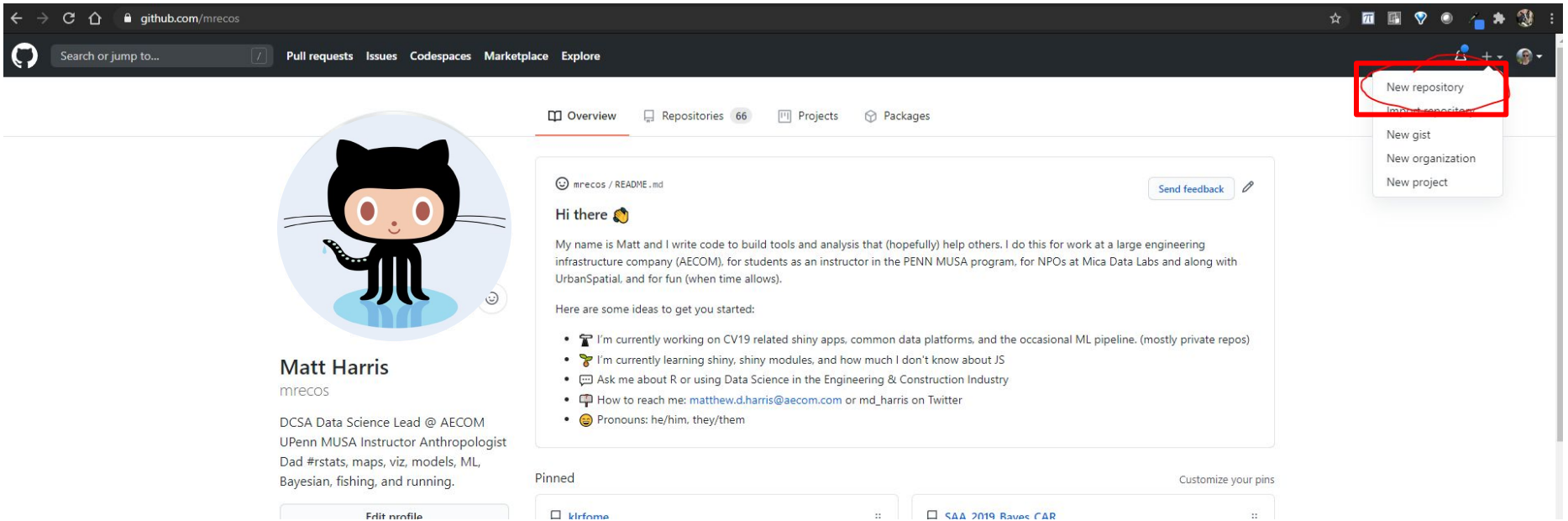
- Git - A command line program for versioning documents
- Repo - A repository where the code is kept, usually on GitHub in our case
- Fork - Copy a repo to your GitHub.com
- Clone - copy a repo from GitHub to your computer
- Pull - Sync new code/changes from the repo to your computer after you cloned a repo
- Commit - save the changes you made to your *local* git database
- Push - Send your new code/commits to the main repo
- Diff - A way of looking at files to see what has changed between them
- Branch - separate channel for working on code within a repo
- Pull Request - A way to offer your code to be added into another repo
- Merge - combining commits, branches, and pull requests into the main branch

Walk-through for simple github project

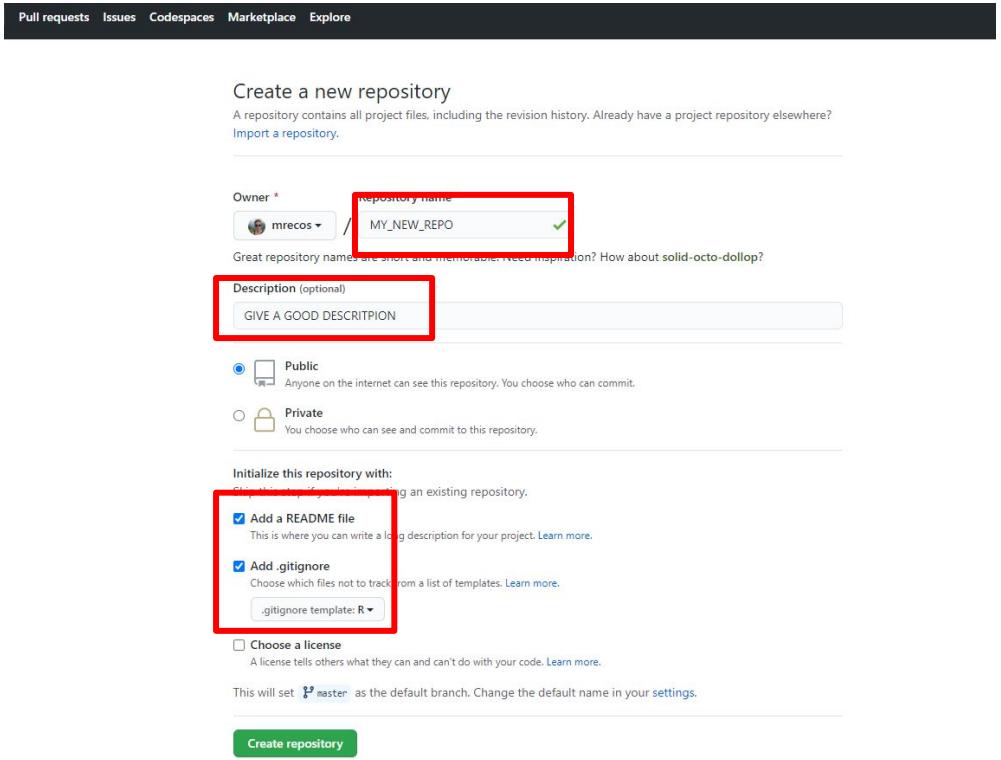
Prerequisites

1. An account on www.github.com
2. Download and install Github Desktop
3. From Github Desktop, install git.exe (see examples here and here)
4. Have R and RStudio installed (directions on Piazza)
5. Configure RStudio to use git (see here, specifically under *Getting Started*)

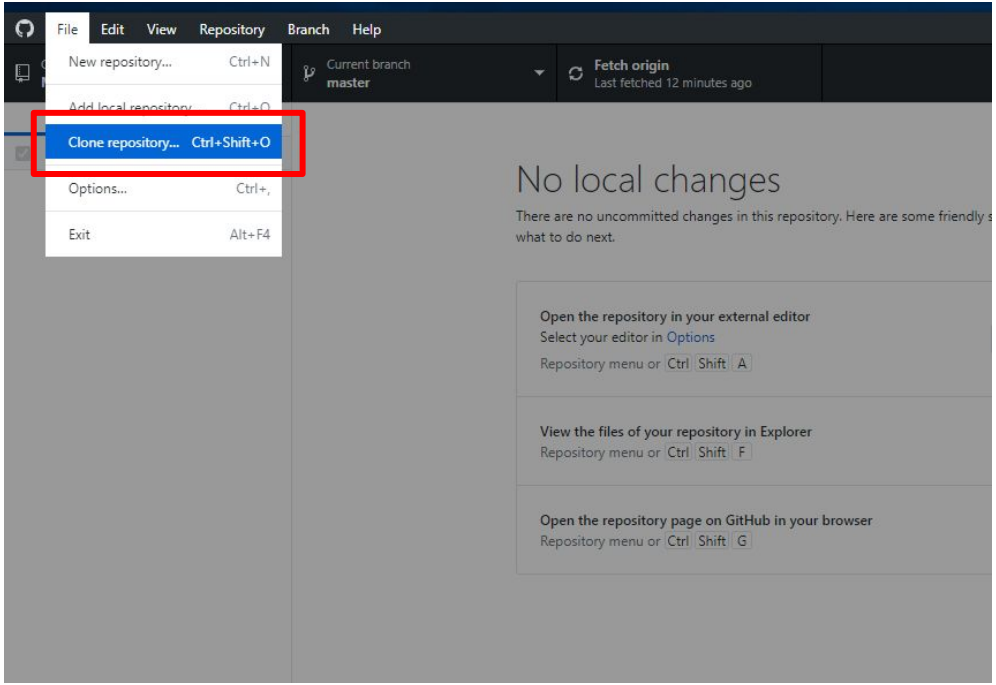
Create a new repository on github.com



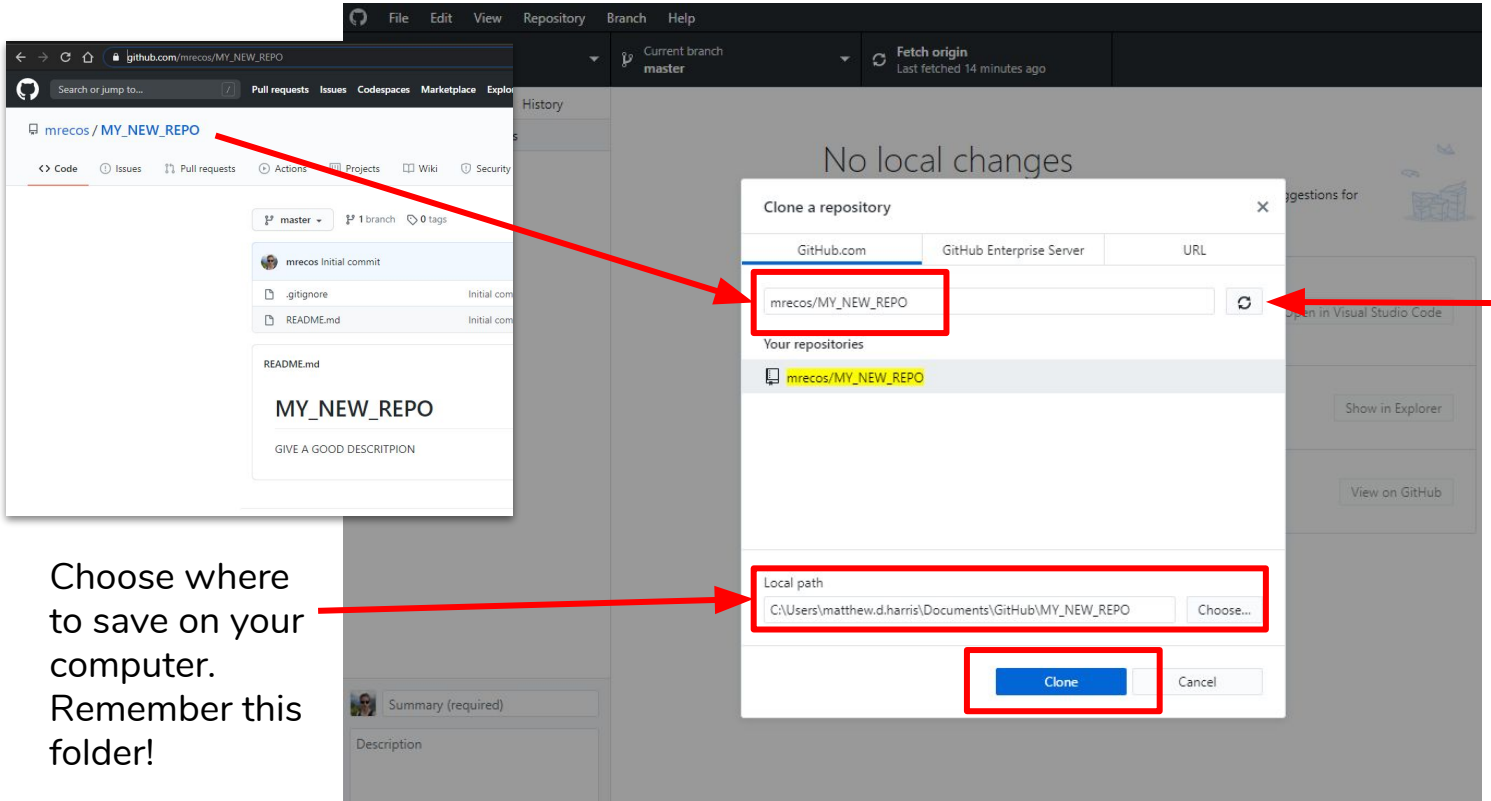
Give the repo a name, desc, and README



In GitHub Desktop, Clone you new repo



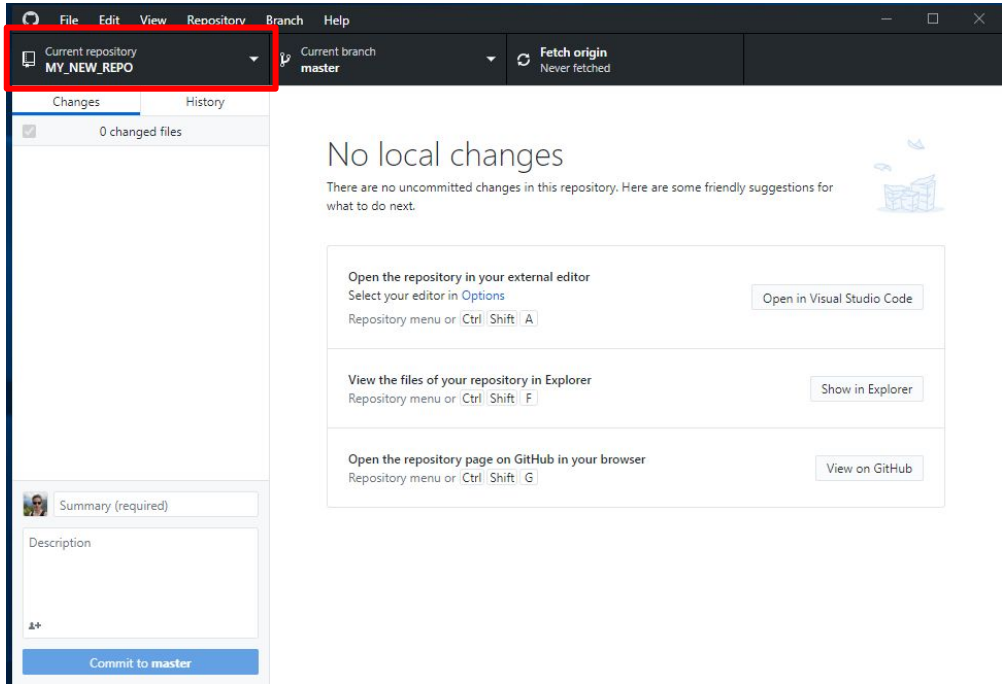
Type in the Github.com repo as the username/reponame



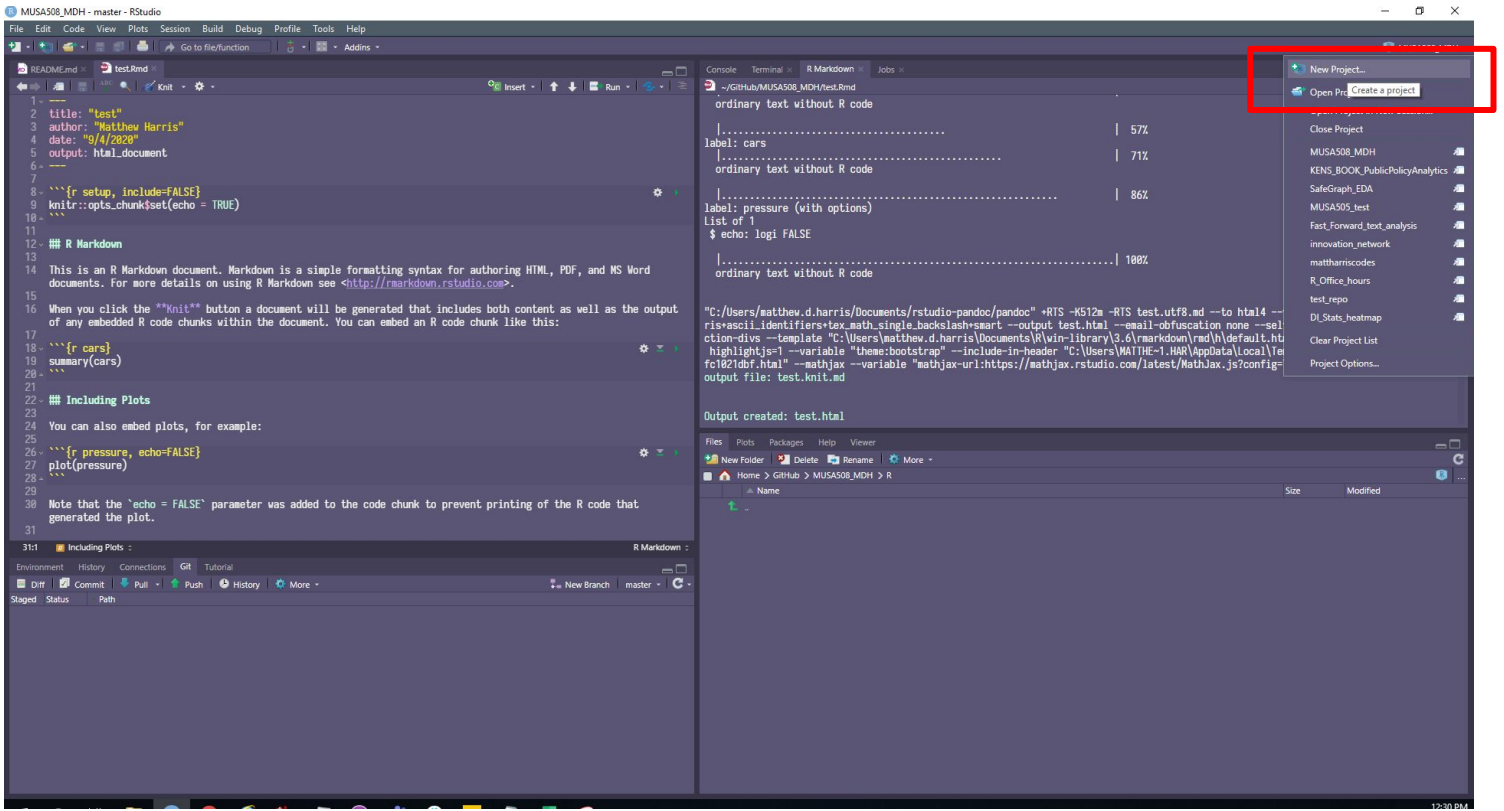
Choose where to save on your computer. Remember this folder!

May have to hit ‘refresh’ and/or wait a few moments

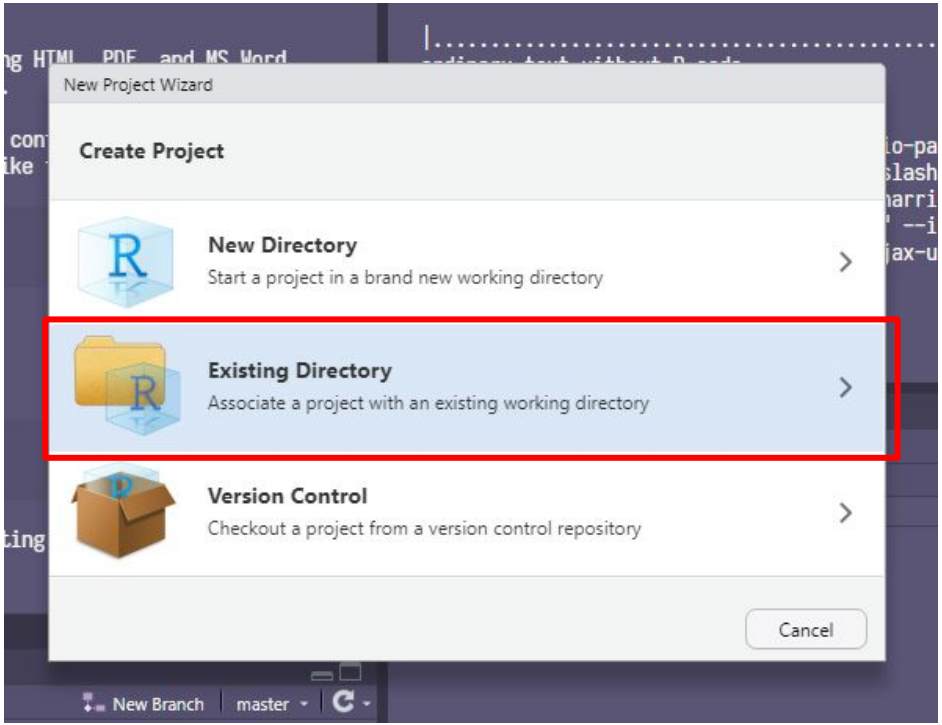
If you see this with your repo name, it worked



In RStudio, create a new project

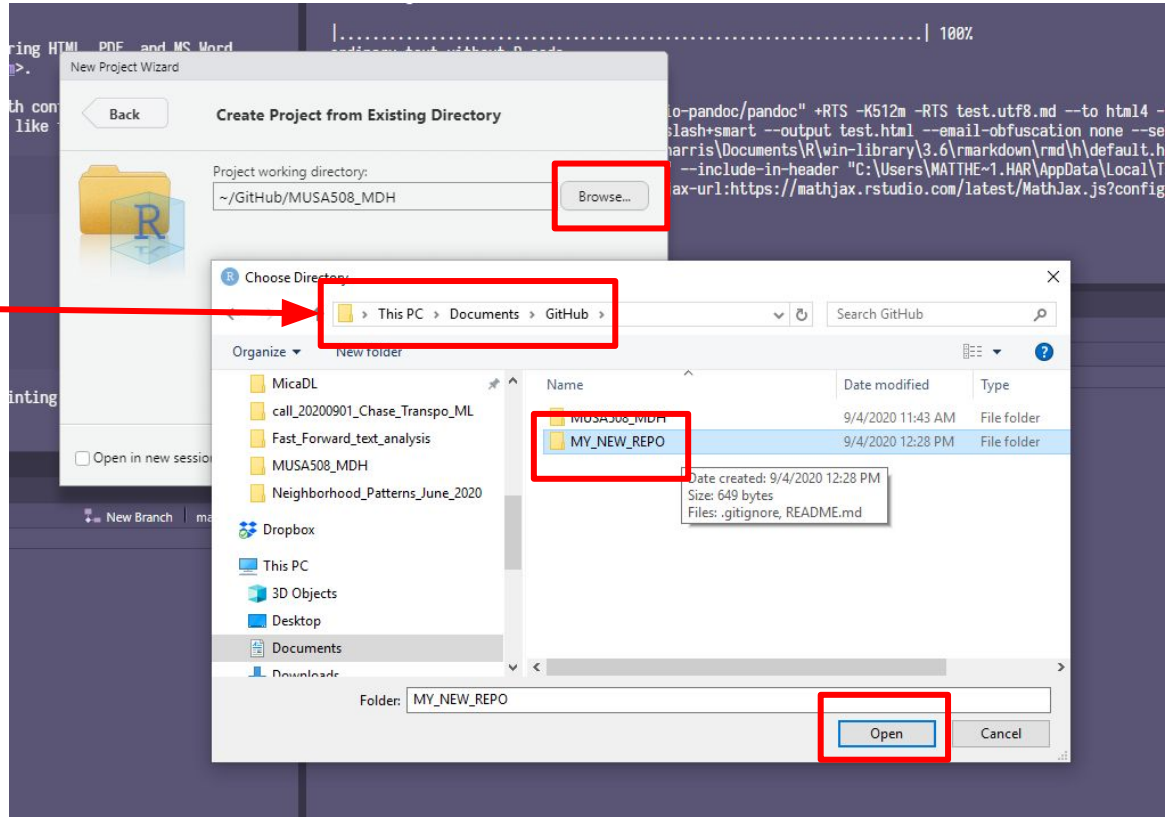


Choose “Existing Directory” in RStudio

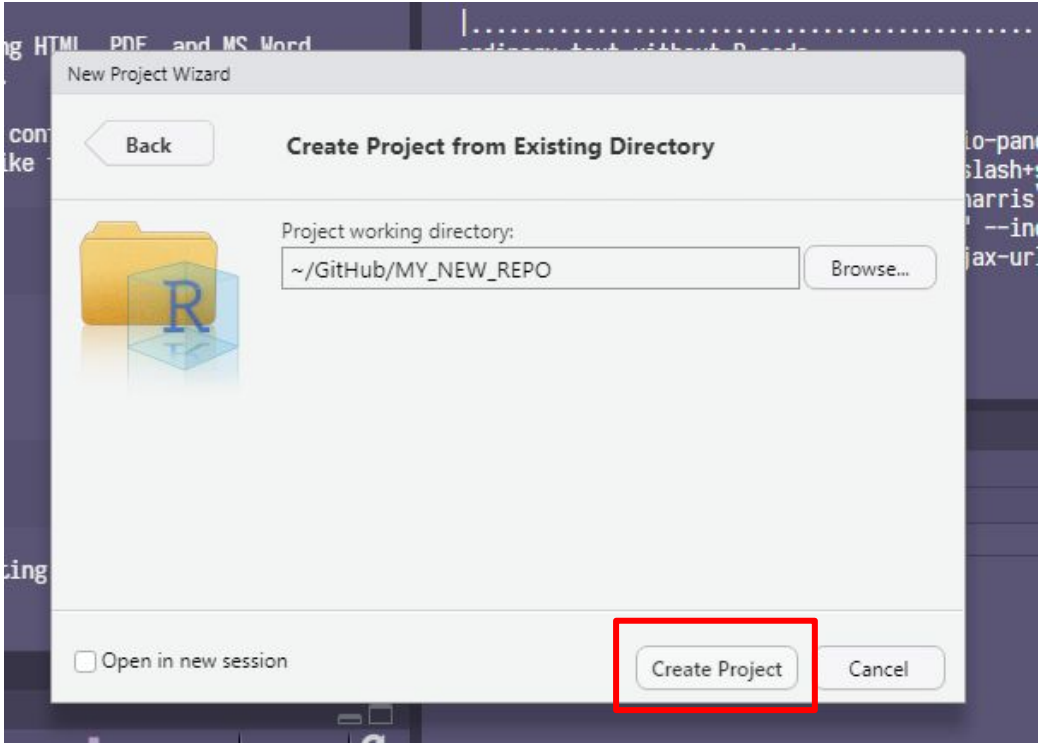


Find directory where you cloned the repo to (from 4 slides ago)

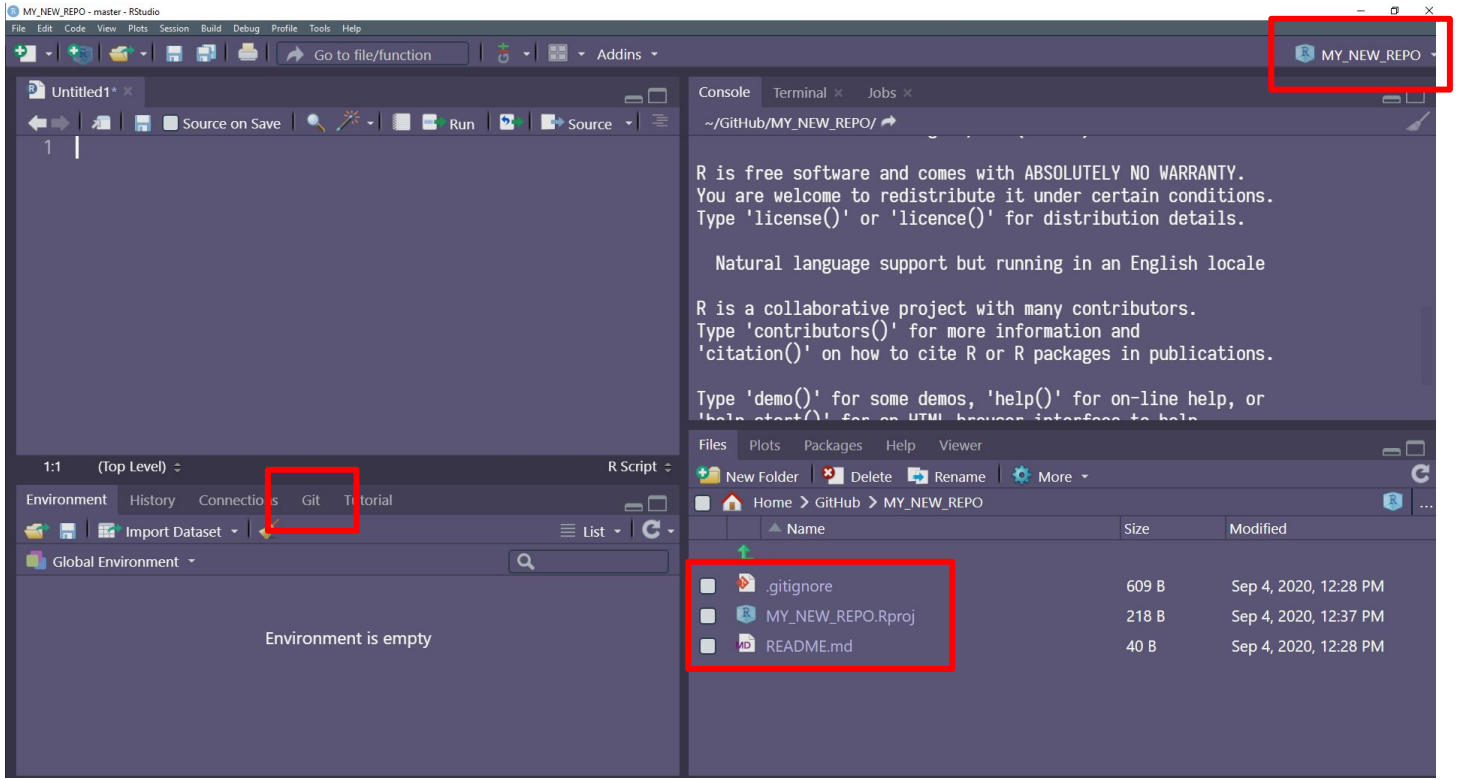
You were told to remember this folder earlier. Try to keep all your cloned repos in a standard place on your computer



Click “Create Project”

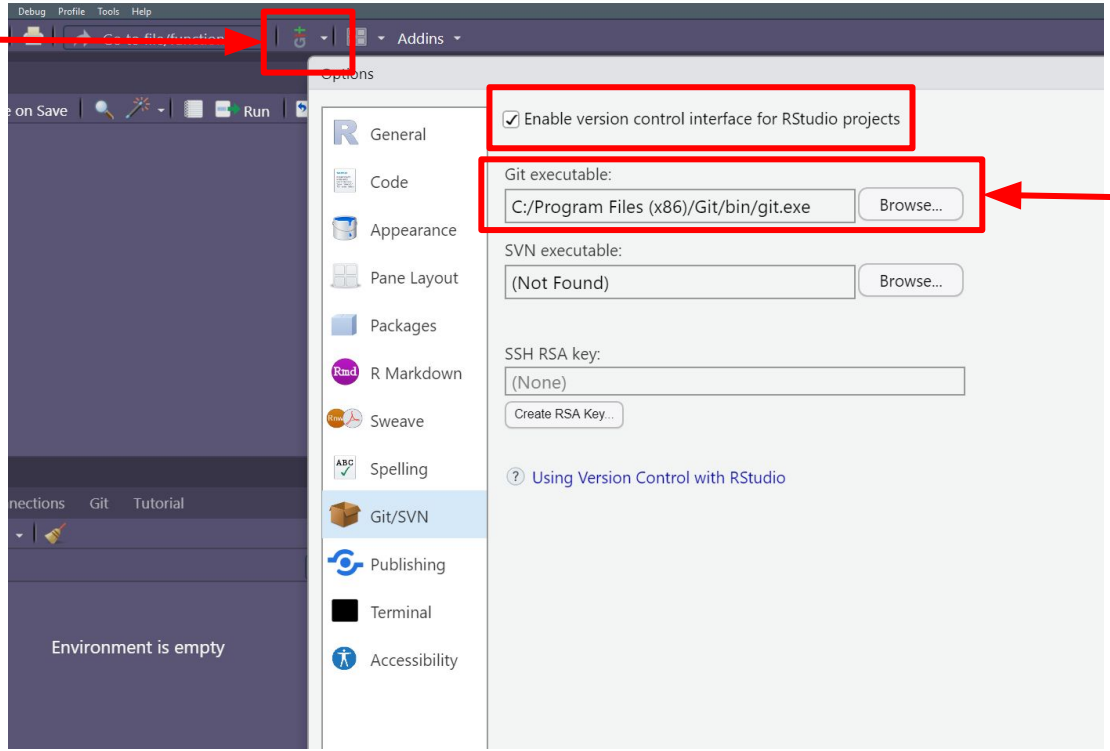


If you see your repo is this, it worked...



If not, make sure Tool >> Global Settings knows where to find git

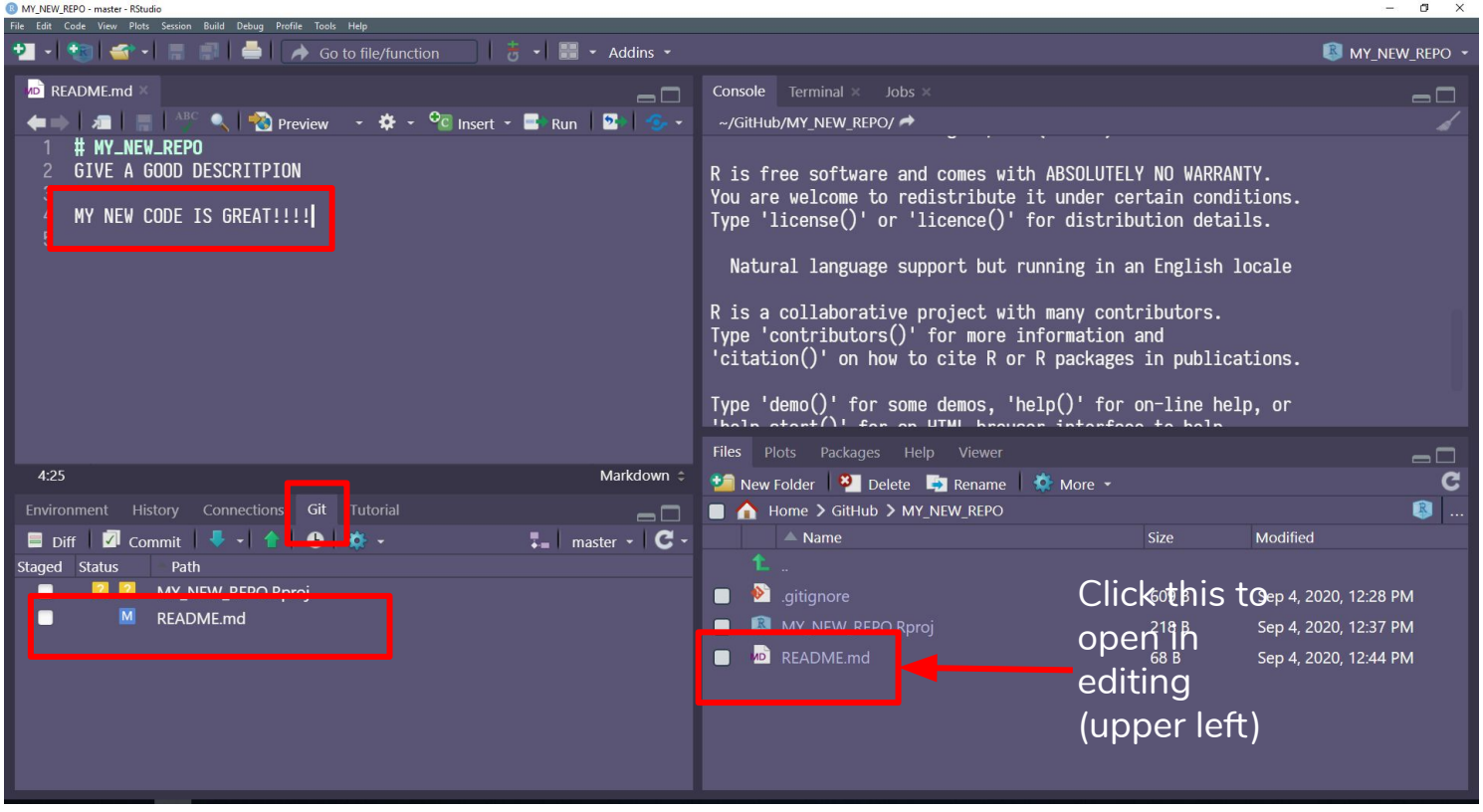
This icon will be there when things are connected correctly



This location is where you originally installed git.exe either before or after GitHub desktop. See “Prerequisites” slide

Make edits to README.md (or code) and save

Type in something new

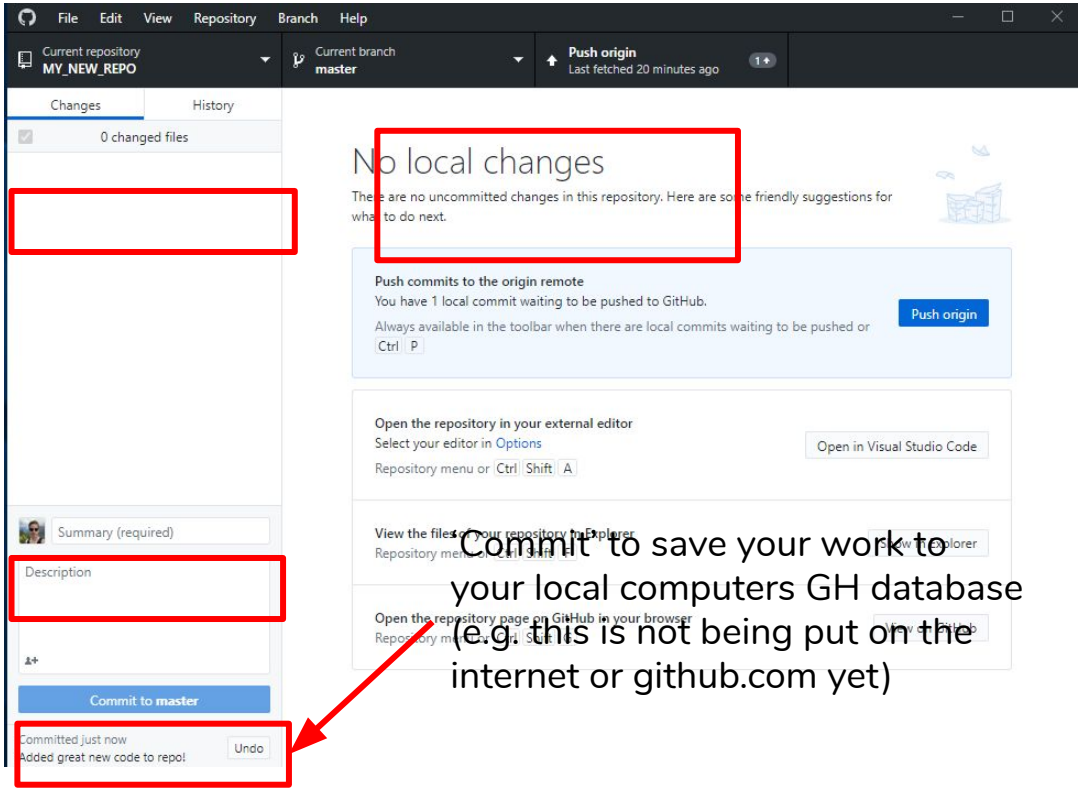


Once edits are saved, the file will pop here in the Git tab

Click this to open in editing (upper left)

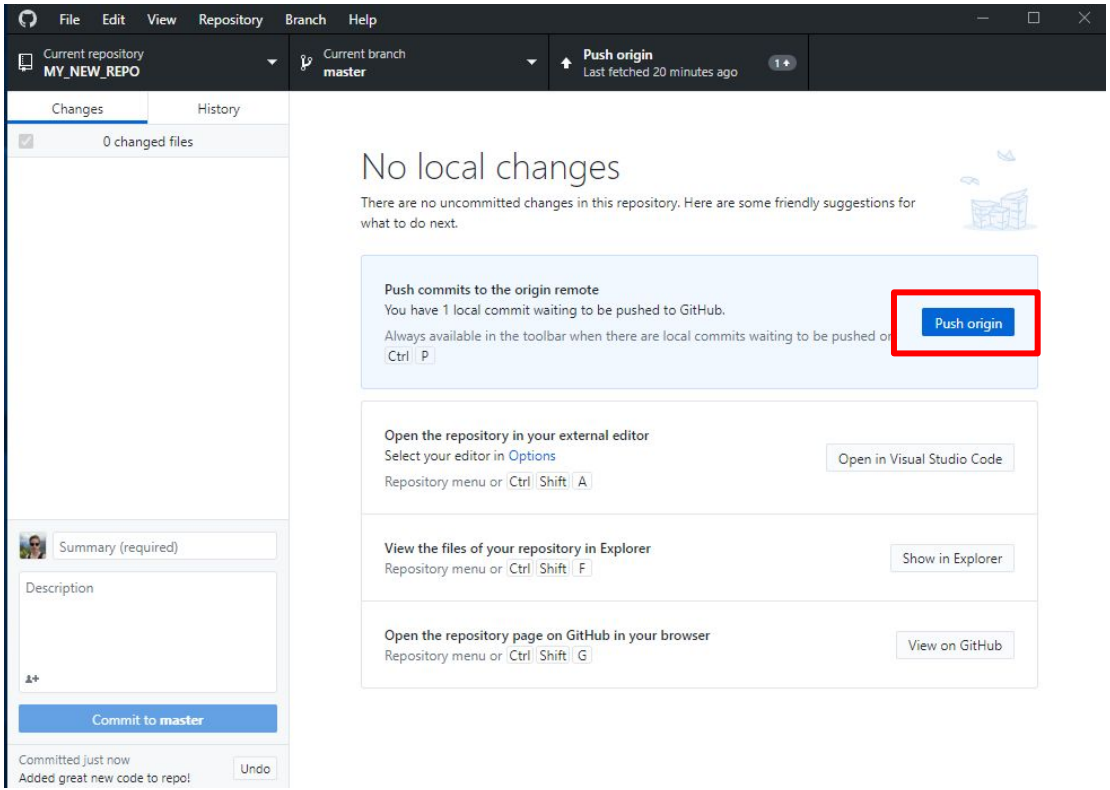
Edits show up as a “Diff” in GH Desktop, time to ‘Commit”

Add a message explaining what you did



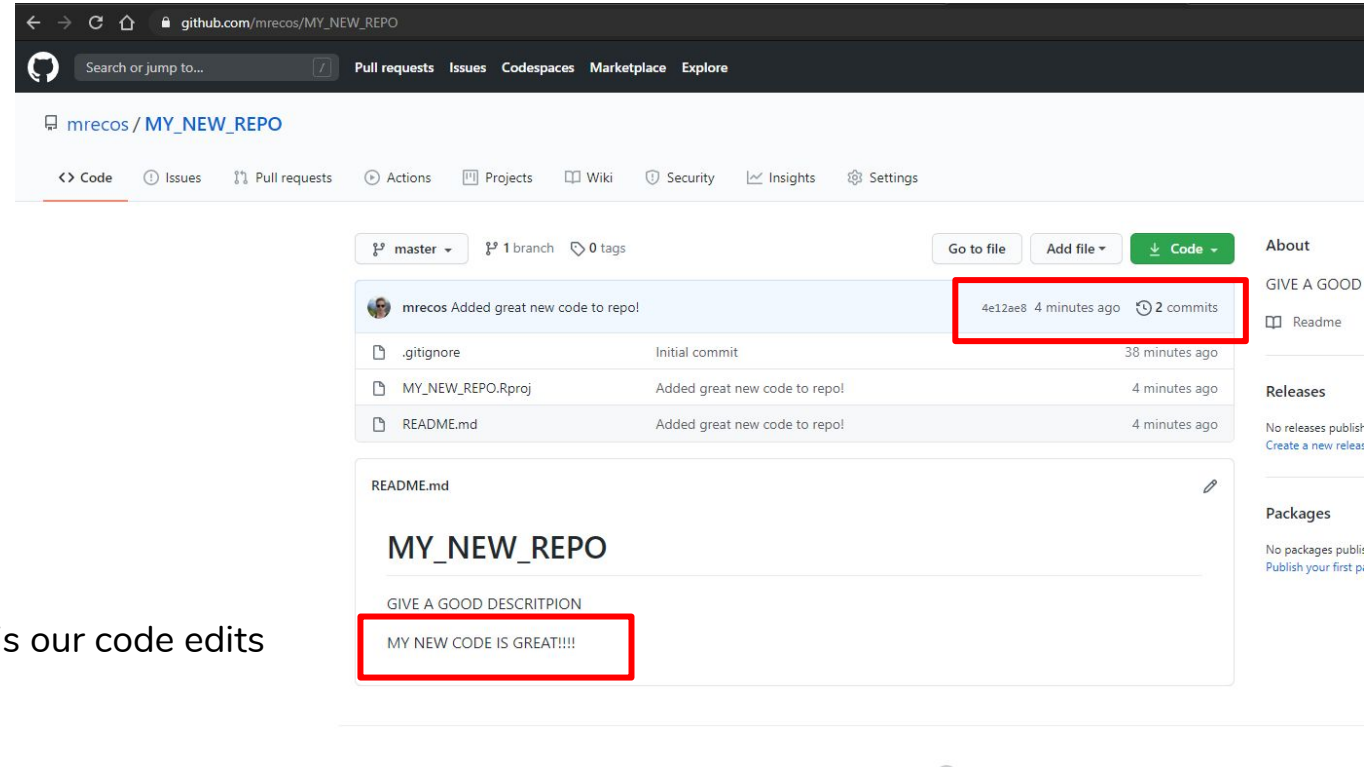
‘Commit’ to save your work to your local computers GH database (e.g. this is not being put on the internet or github.com yet)

Push Commits to main repo on Github.com



‘Push’ sends all of your local commits (your files version history) to the main repository on github.com

Github.com repo now shows changes you made in Rstudio



Here is our code edits

Here is the commit history to explore

Follow that cycle and develop your code repo!