Git/GitHub Workflows

a.k.a. "Git with Joyce"

RLadies meetup, January 9, 2019

Part 1

Joyce Robbins
Dept. of Statistics
Columbia University

jtr13@columbia.edu
Twitter: @jtrnyc
GitHub: @jtr13

Git/GitHub Workflows that will be covered here

1. GitHub only
2. GitHub + local master branch
3. GitHub + local master plus additional branches on your repo
4. Contribute to someone else's repo

The Workflows (in brief)

1. GitHub only: **work, upload**
2. GitHub + local master branch:
   pull, work, commit/push
3. GitHub + local master plus feature additional branches on your repo:
   clone (once), pull, branch, work, commit/push, submit pull request, [merge pull request], delete branch on GitHub, delete locally

The Workflows (in brief)

4. Contribute to someone else's repo:
   fork (once), clone (once), pull, branch, work, commit/push, submit pull request, [merge pull request], [delete branch on GitHub], delete local branch, update (sync) your fork locally, push change to GitHub

Git/GitHub Workflows

1. **GitHub only**
2. GitHub + local master branch
3. GitHub + local master plus additional branches on your repo
4. Contribute to someone else's repo

1. GitHub only

GitHub only

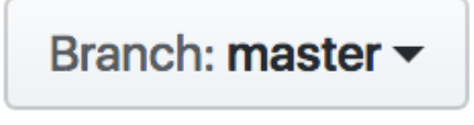
- It's very simple.
- You just create an account on GitHub.
- If you want to share files, create a repository and give it a name.
- You can then upload whatever you'd like to the repository.

GitHub only

- It's an easy way to share files.
- Other people can copy (fork) the repository, submit pull requests, and/or create issues.
- If you want them to be able to read material on GitHub without downloading, write in **markdown** or share **pdfs.**

GitHub only

Notes:

- The repository has one branch and it is called "master": 

- If you don't provide a commit message when you upload the file, you will get the default "Add files via upload"
- You can even create files right on GitHub. The default commit message in this case is: "Create <filename>"

GitHub only

Examples:

https://github.com/jtr13/codehelp/blob/master/R/reorder.md

https://github.com/jtr13/codehelp/blob/master/GitHubWorkflow.pdf

Git/GitHub Workflows

1. GitHub only
2. **GitHub + local master branch**
3. GitHub + local master plus additional branches on your repo
4. Contribute to someone else's repo

2. Create a local clone of our GitHub repository

Why?

- It's hard to write code on GitHub since you can't run it.
- The GitHub version serves as a backup--with code that works--while I experiment locally.

The Setup

- There are a few things you need to do to get setup, including downloading Git. A great resource is:

http://happygitwithr.com

Part I Installation

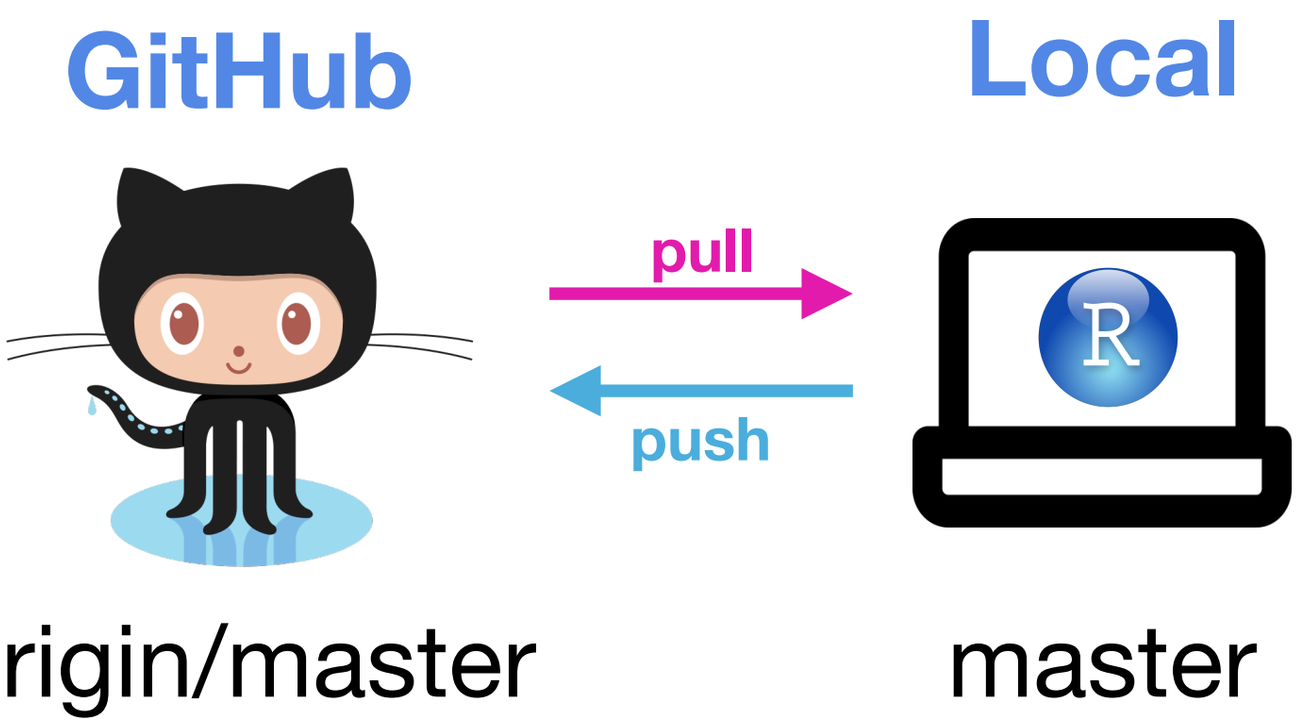
Part II Connect Git, GitHub, RStudio

by Jenny Bryan, the STAT 545 TAs, Jim Hester

The Setup

- Do not be intimidated by the number of chapters in these two parts. Why?
- Some of it you've already done.
- Some of the chapters are very short.
- A lot of the material deals with Other Operating Systems.
- A lot of the material is designed to help you troubleshoot and may not apply.

Our new model



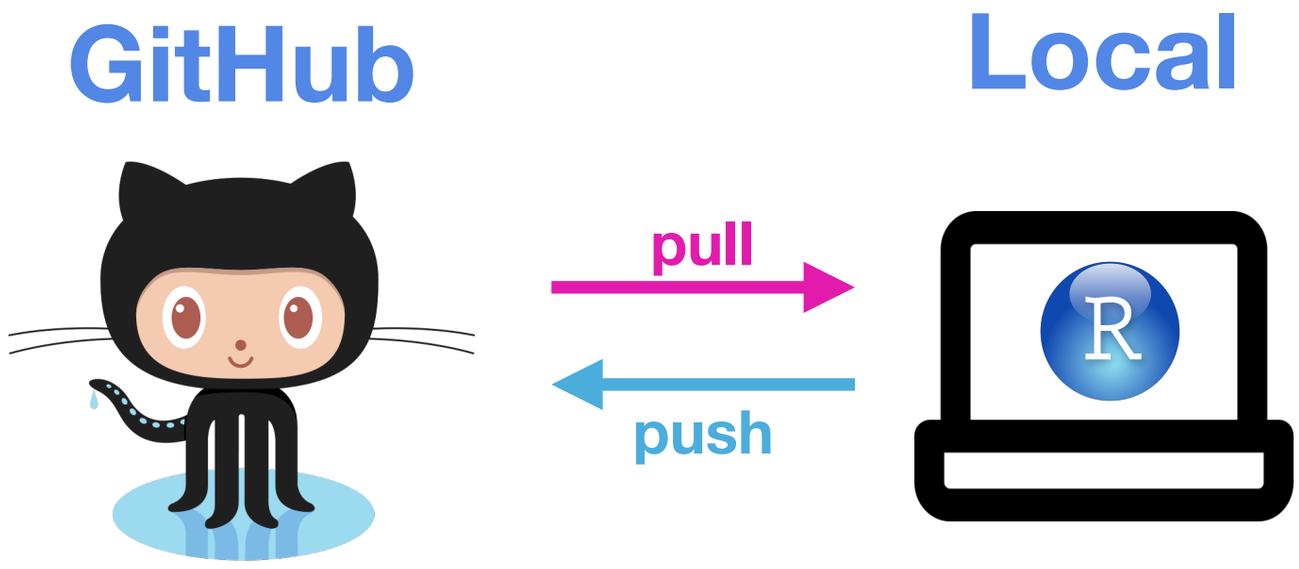
- This workflow is described in more detail in *Happy Git with R,* Chapter 16 "New project, GitHub first"

To begin: clone the repo

- This only needs to be done once.
- Click this on GitHub: 

- Copy the link.
- Switch to RStudio.
- Click: "File" "New Project..."
 "Version Control"  "Git"
- Paste the URL from GitHub, click "Create Project" and we're ready to go.

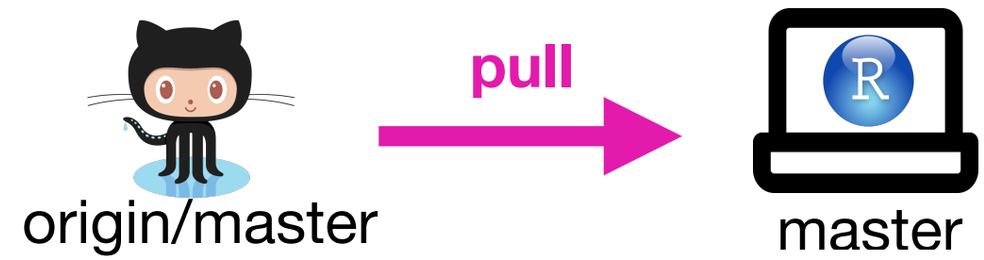
Now we're ready to start.



origin/master master

The workflow is: **pull, work, commit/push.**
Since we just cloned the repo, we don't really need to start with pull, but we will do so anyway so we start the pattern on step 1.

Step 1. Pull

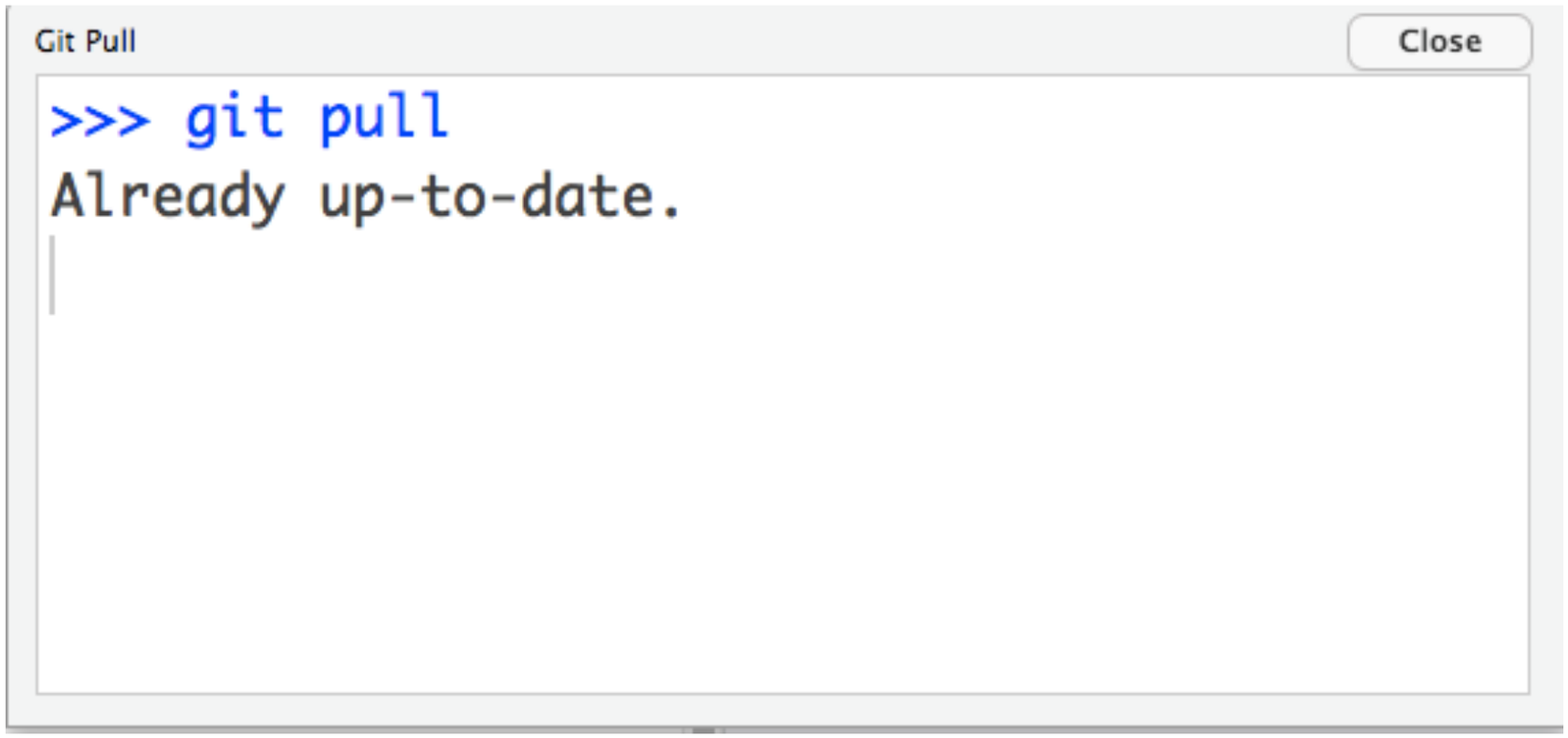


- We want to make sure that we begin working locally, we're up-to-date with the remote.

- Since nothing has changed we will get a message that we're already up to date.

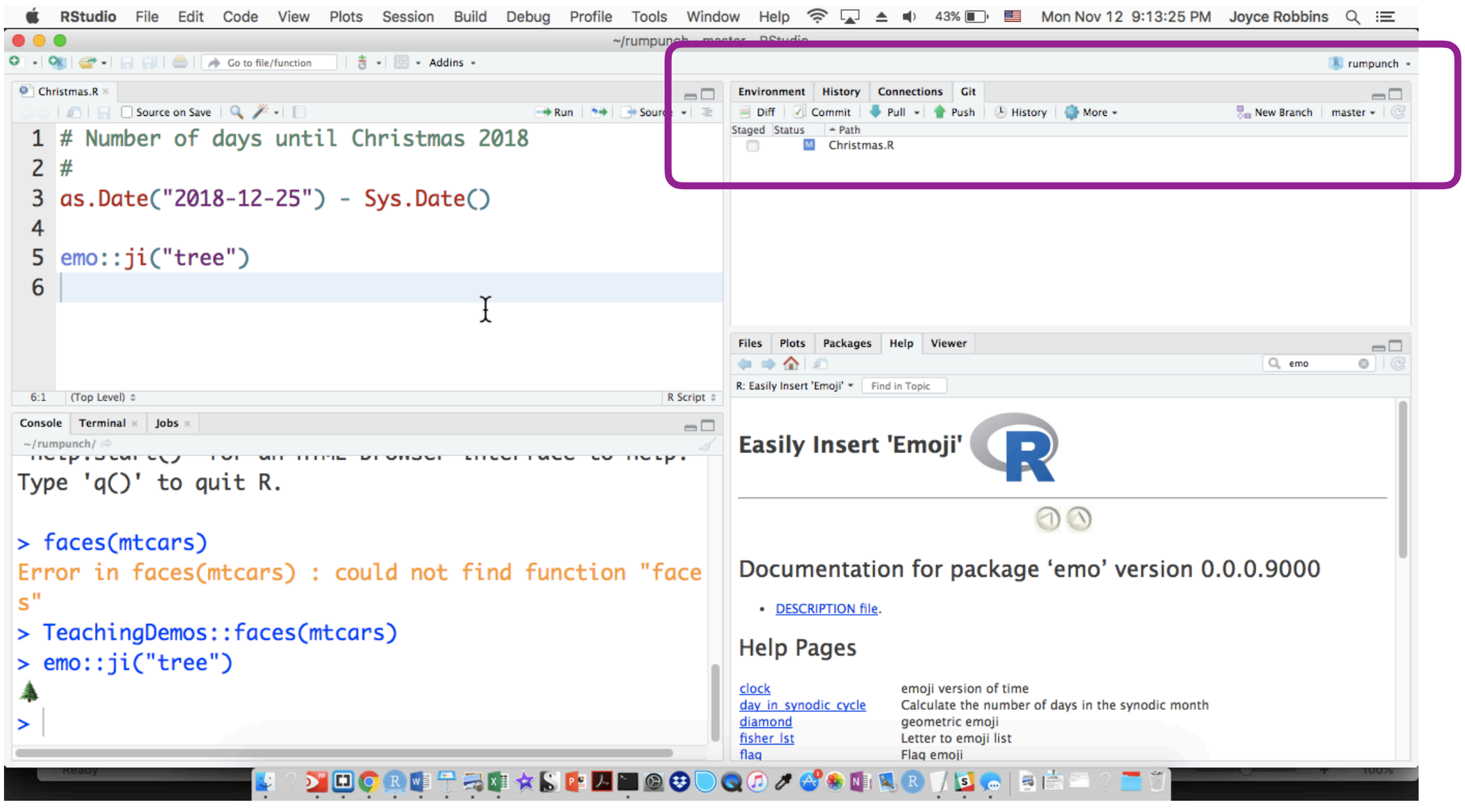
Step 1. Pull

- After clicking the pull button (down arrow) in the Git pane, we see:



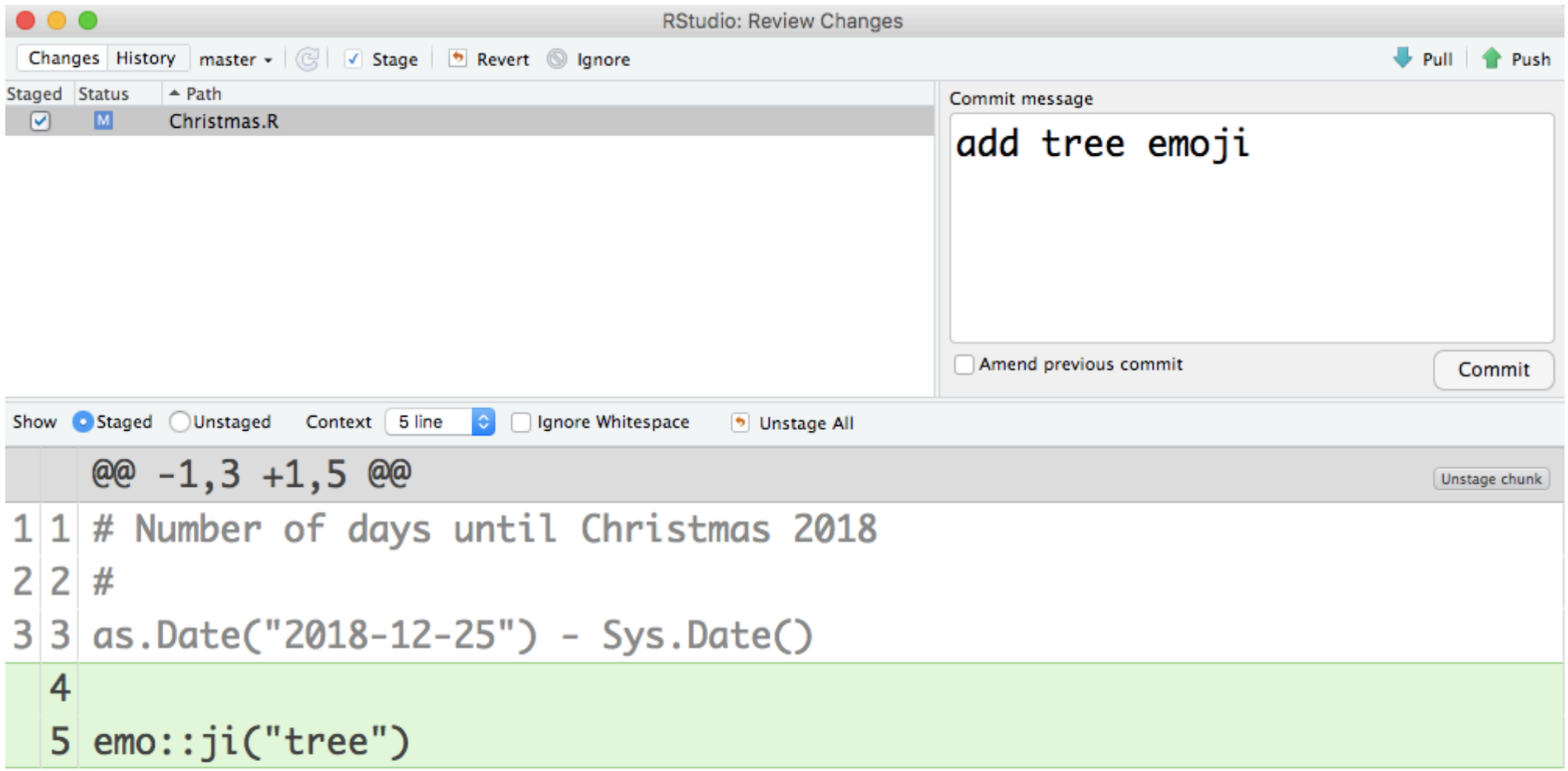
Step 2. Work

(demo in RStudio)

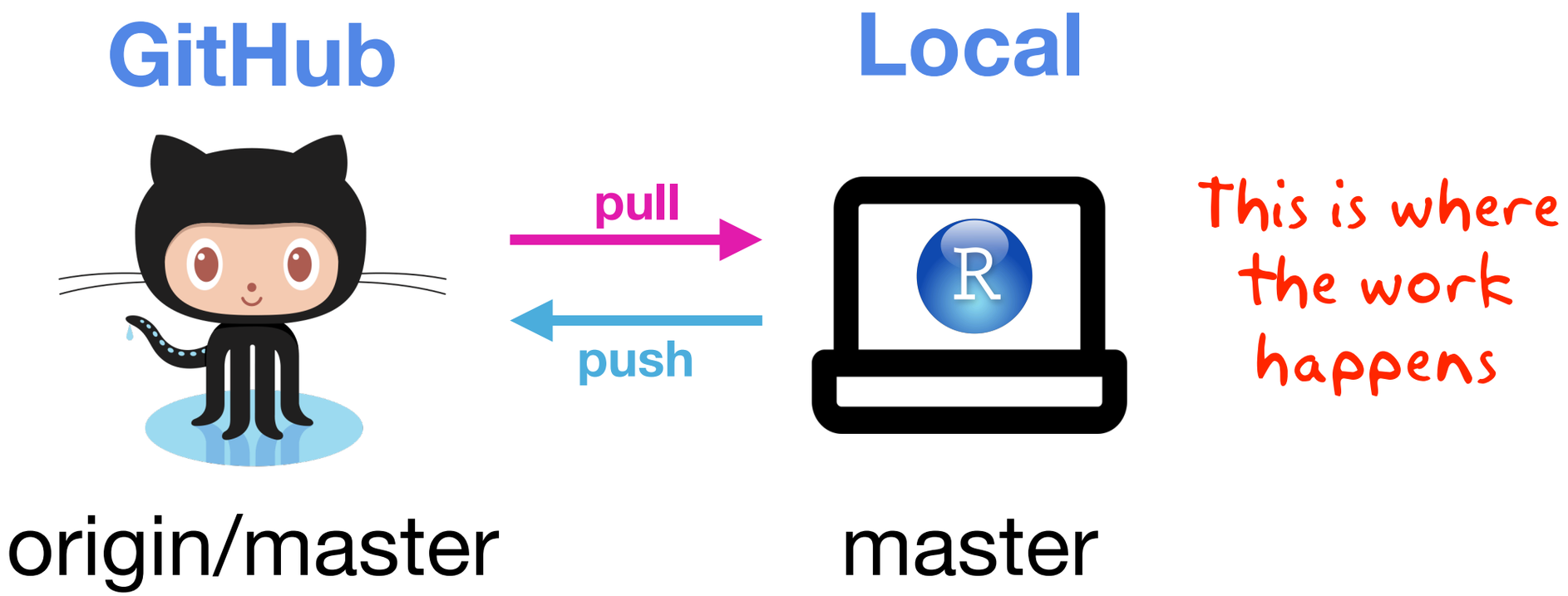


Step 3. Commit/Push

(demo in RStudio / GitHub)



Our new model (summary)



Continued in Part 2