

# Git & GitHub Basics

Hunter Glanz  
California Polytechnic State University

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JSM Virtual Conference

## Disclaimer About the Basics

- Simplified, low-resolution definitions of terms
- GitHub (and many other VC systems) are capable of much more than *the basics*
- The terminal is popular vehicle for carrying out git commands, but it's not the only tool

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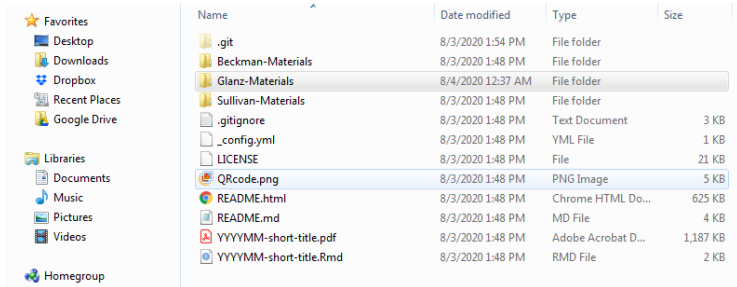
- **Repository**
- **Cloning** a repository
- **Committing** changes to files within a repository
- **Pushing** to a repository
- **Pulling** from a repository

# Repository

- **Repository:** A directory or storage space where your projects can live.
- Often shortened to “repo”
- Can contain many different types of files, but is more useful for certain types over others



# Local Repository



| Name                   | Date modified     | Type               | Size     |
|------------------------|-------------------|--------------------|----------|
| .git                   | 8/3/2020 1:54 PM  | File folder        |          |
| Beckman-Materials      | 8/3/2020 1:48 PM  | File folder        |          |
| Glanz-Materials        | 8/4/2020 12:37 AM | File folder        |          |
| Sullivan-Materials     | 8/3/2020 1:48 PM  | File folder        |          |
| .gitignore             | 8/3/2020 1:48 PM  | Text Document      | 3 KB     |
| _config.yml            | 8/3/2020 1:48 PM  | YML File           | 1 KB     |
| LICENSE                | 8/3/2020 1:48 PM  | File               | 21 KB    |
| QRcode.png             | 8/3/2020 1:48 PM  | PNG Image          | 5 KB     |
| README.html            | 8/3/2020 1:48 PM  | Chrome HTML Do...  | 625 KB   |
| README.md              | 8/3/2020 1:48 PM  | MD File            | 4 KB     |
| YYYYMM-short-title.pdf | 8/3/2020 1:48 PM  | Adobe Acrobat D... | 1,187 KB |
| YYYYMM-short-title.Rmd | 8/3/2020 1:48 PM  | RMD File           | 2 KB     |

Figure 1: Local Repo

# GitHub Repository

mdbeckman / JSM2020-Virtual

<> Code ⓘ Issues 🔀 Pull requests ⚙️ Actions 📁 Projects 📖 Wiki 🛡️ Security 📄 Insights

📁 master 1 branch 0 tags

Go to file Add file Code

mdbeckman add to Q&A ✓ #214ec1 11 hours ago 31 commits

|                        |   |              |
|------------------------|---|--------------|
| Beckman-Materials      | some notes to supplement MB segment & Jo's question | 16 hours ago |
| Sullivan-Materials     | add adam pdf  | 11 hours ago |
| .gitignore             | ignore MB notes doc                                 | 4 days ago   |
| LICENSE                | Initial commit                                      | 5 days ago   |
| QRcode.png             | fix QR code & MB slide link                         | 4 days ago   |
| README.html            | add to Q&A  | 11 hours ago |
| README.md              | add to Q&A  | 11 hours ago |
| YYYYMM-short-title.Rmd | Initial commit                                      | 5 days ago   |
| YYYYMM-short-title.pdf | Initial commit                                      | 5 days ago   |
| _config.yml            | Set theme jekyll-theme-tactile                      | 4 days ago   |

README.md

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Figure 2: GitHub Repo

## Cloning a Repository

- *Cloning* is the process of creating an identical copy of a Git Remote Repository (e.g. GitHub repo) to your local machine
- Often the first step joining a project with an existing repo!

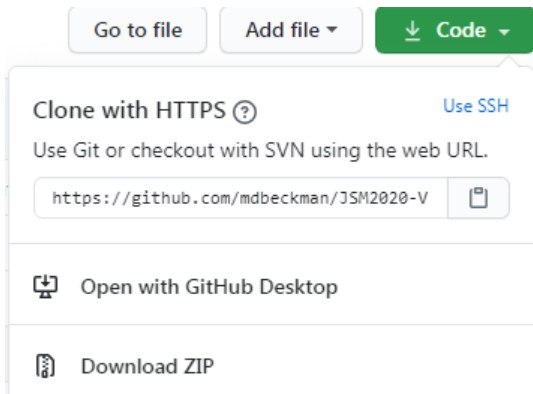


Figure 3: GitHub Clone

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- Saving changes to the files in your project on your local machine is just that... local!
- For your git repository to store and track these changes, they must be **committed**
- However, the “commit command” only captures a snapshot of the project’s currently staged changes
- These snapshots can be thought of as “safe” versions of the project



# Pushing to and Pulling from a Repository

- *Pushing* is used to upload local repository content (e.g. files on your local machine) to a remote repository (e.g. GitHub repo)

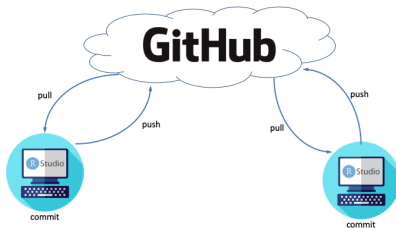


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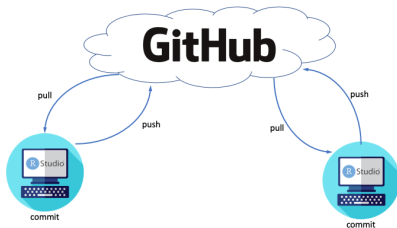


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- *Pulling* is used to fetch and download content from a remote repository and immediately update the local repository to match that content

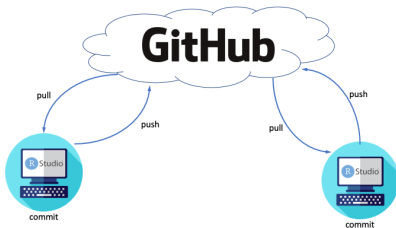


Figure 4: Push and Pull

Thank You

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<https://mdbeckman.github.io/JSM2020-Virtual/>