

Introduction to Git & GitHub

Terminal, RStudio

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AG Landscape Ecology

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Why Git?

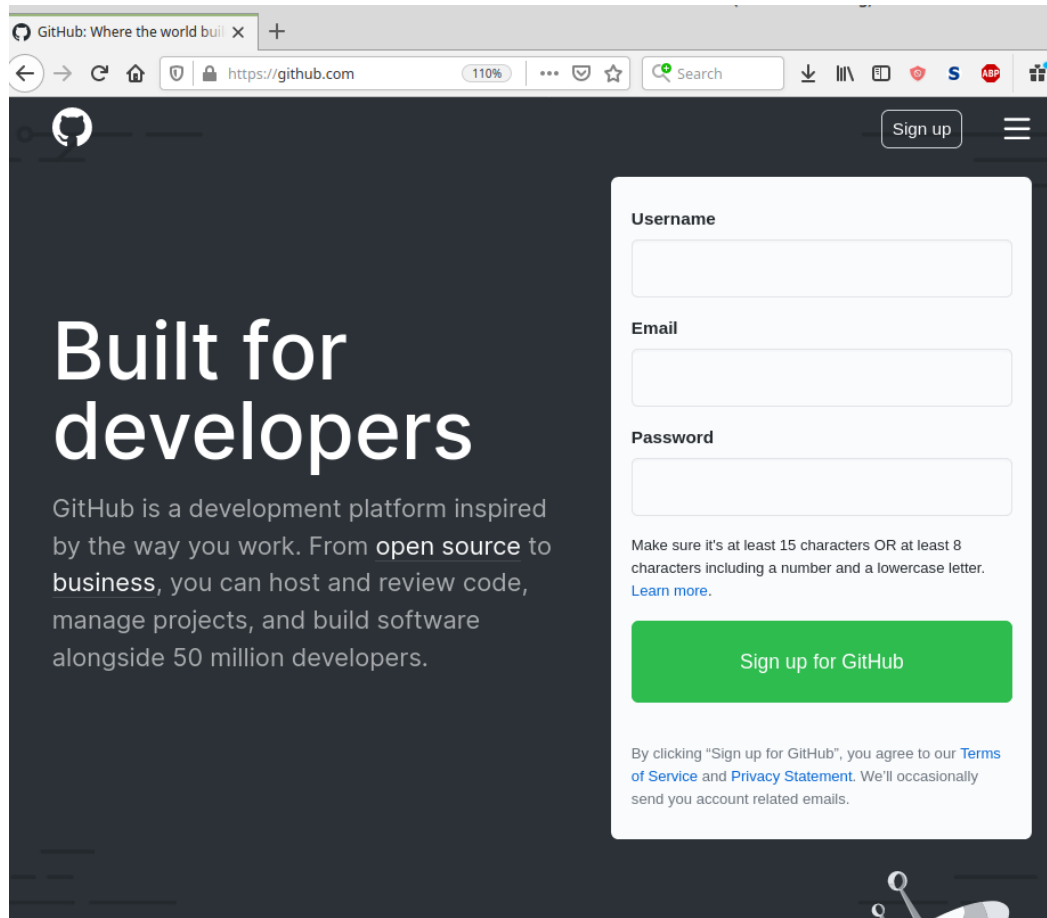
- Modern software development
 - most R-packages
- Version control
- Git is the **software**
- GitHub is the **platform**



Other Platforms

- GitLab: <https://about.gitlab.com>
- BitBucket: <https://bitbucket.org>

Create a GitHub account



The image is a screenshot of the GitHub website's sign-up page. The browser's address bar shows 'https://github.com' with a search icon and a 'Search' button. The GitHub logo is in the top left, and a 'Sign up' button is in the top right. The main heading 'Built for developers' is in large white text on a dark background. Below it, a paragraph describes GitHub as a development platform. To the right, there is a sign-up form with fields for 'Username', 'Email', and 'Password'. The password field has a note about character requirements and a 'Learn more' link. A green 'Sign up for GitHub' button is below the form. At the bottom of the form, there is a disclaimer about agreeing to the Terms of Service and Privacy Statement.

GitHub: Where the world builds software

Sign up

Built for developers

GitHub is a development platform inspired by the way you work. From **open source** to **business**, you can host and review code, manage projects, and build software alongside 50 million developers.

Username

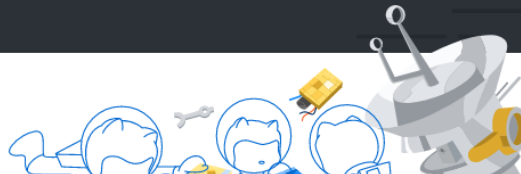
Email

Password

Make sure it's at least 15 characters OR at least 8 characters including a number and a lowercase letter. [Learn more.](#)

Sign up for GitHub

By clicking "Sign up for GitHub", you agree to our [Terms of Service](#) and [Privacy Statement](#). We'll occasionally send you account related emails.

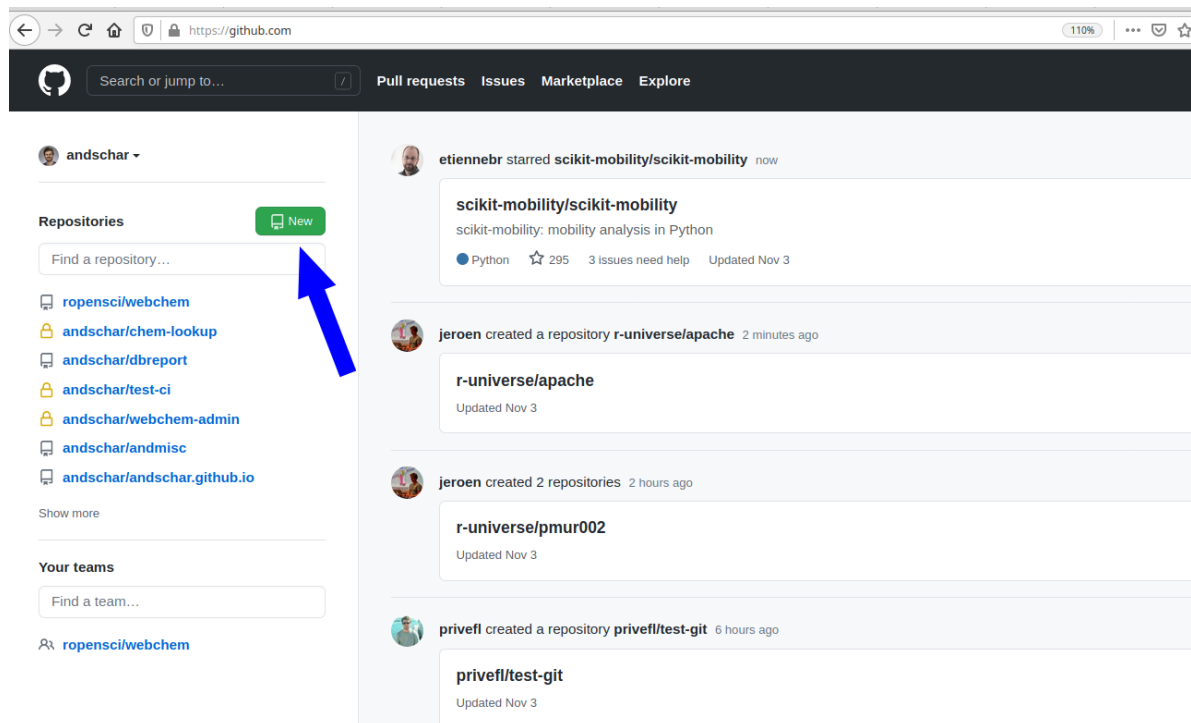


Create (initialize) repository

Locally

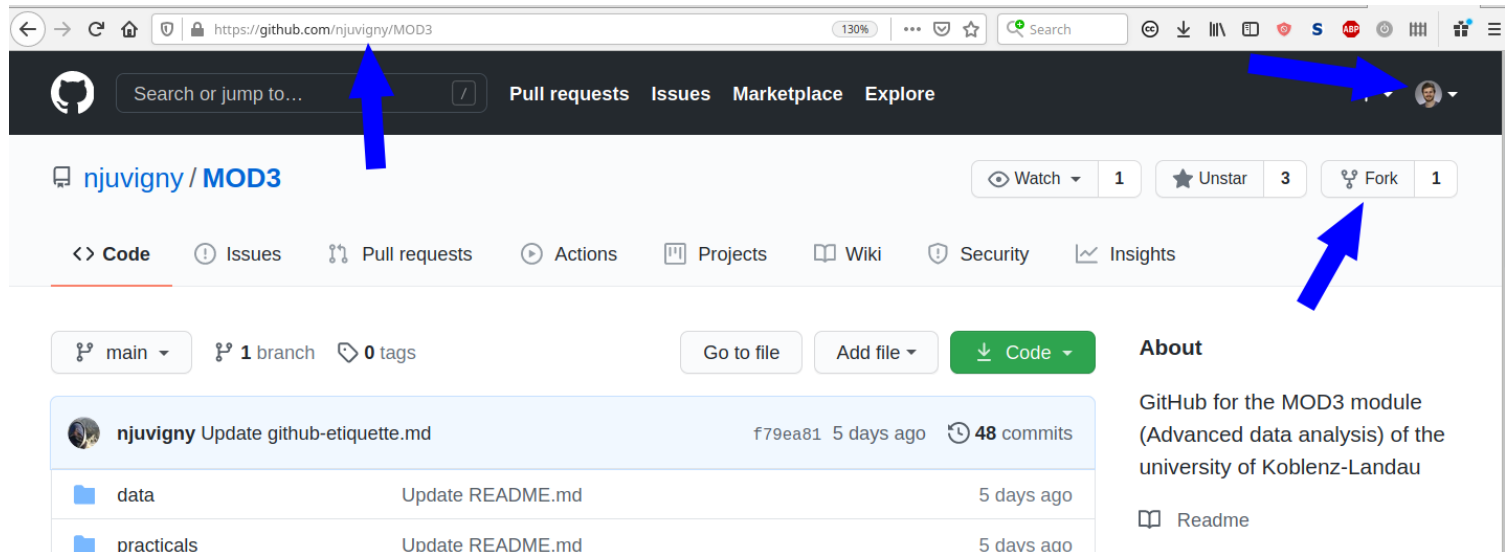
```
git init
```

Remote



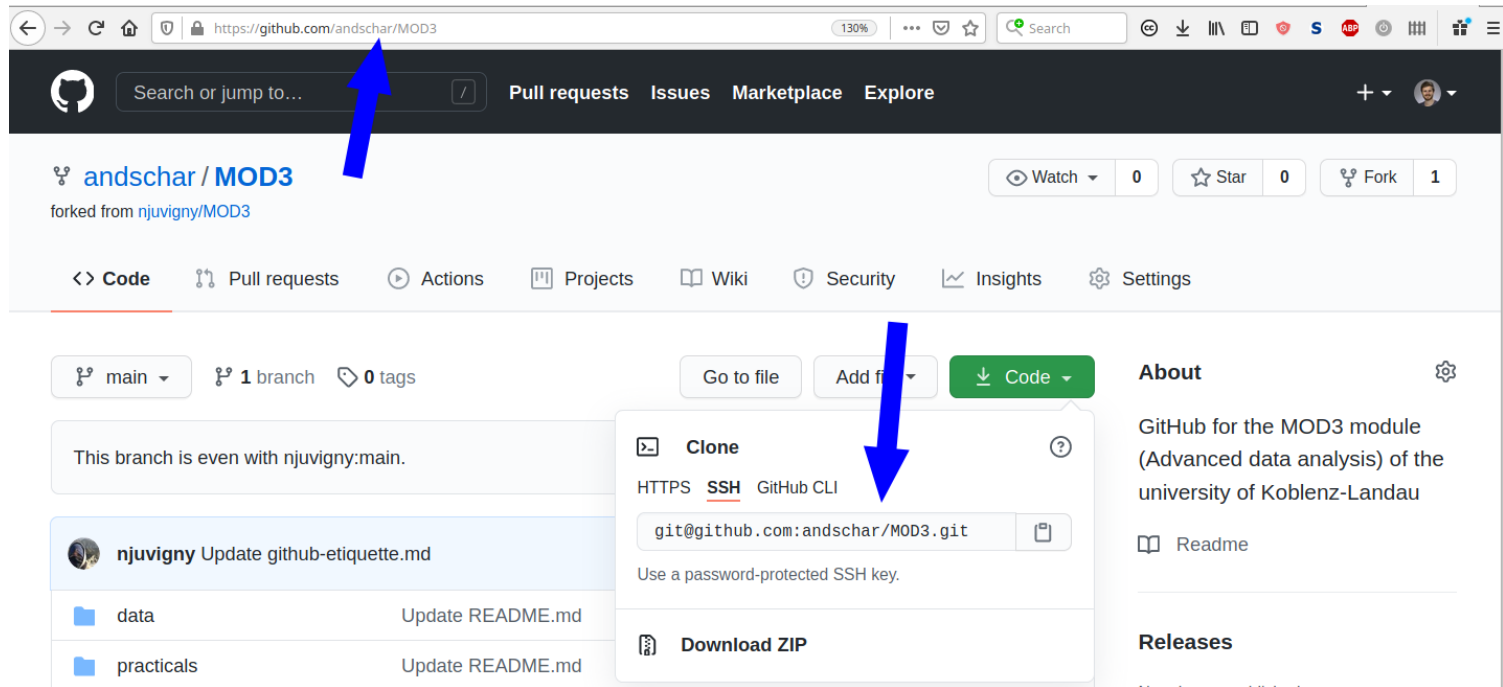
Fork a repository

- Fork someone's repo to your GitHub account



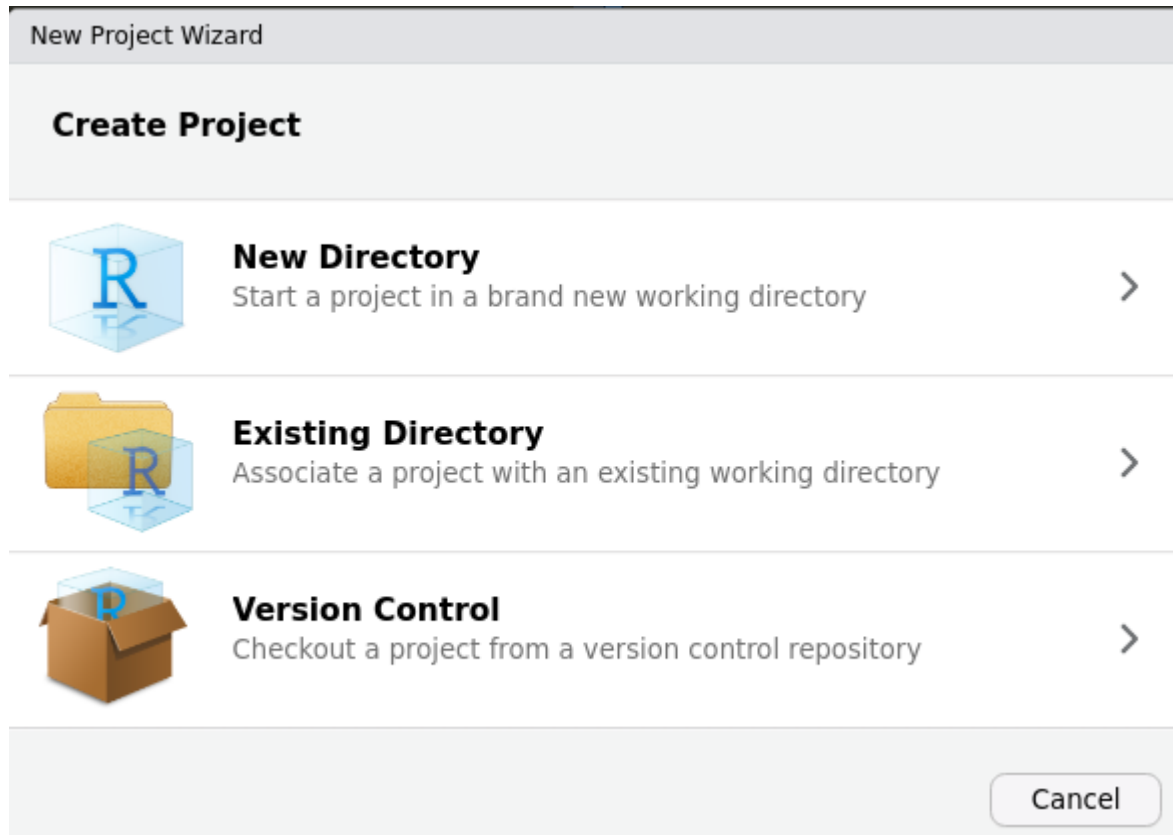
Clone a repository

- Clone **your** fork (i.e. version) to your local machine



Clone a repository

```
cd Projects  
git clone git@github.com:njuvigny/MOD3.git
```



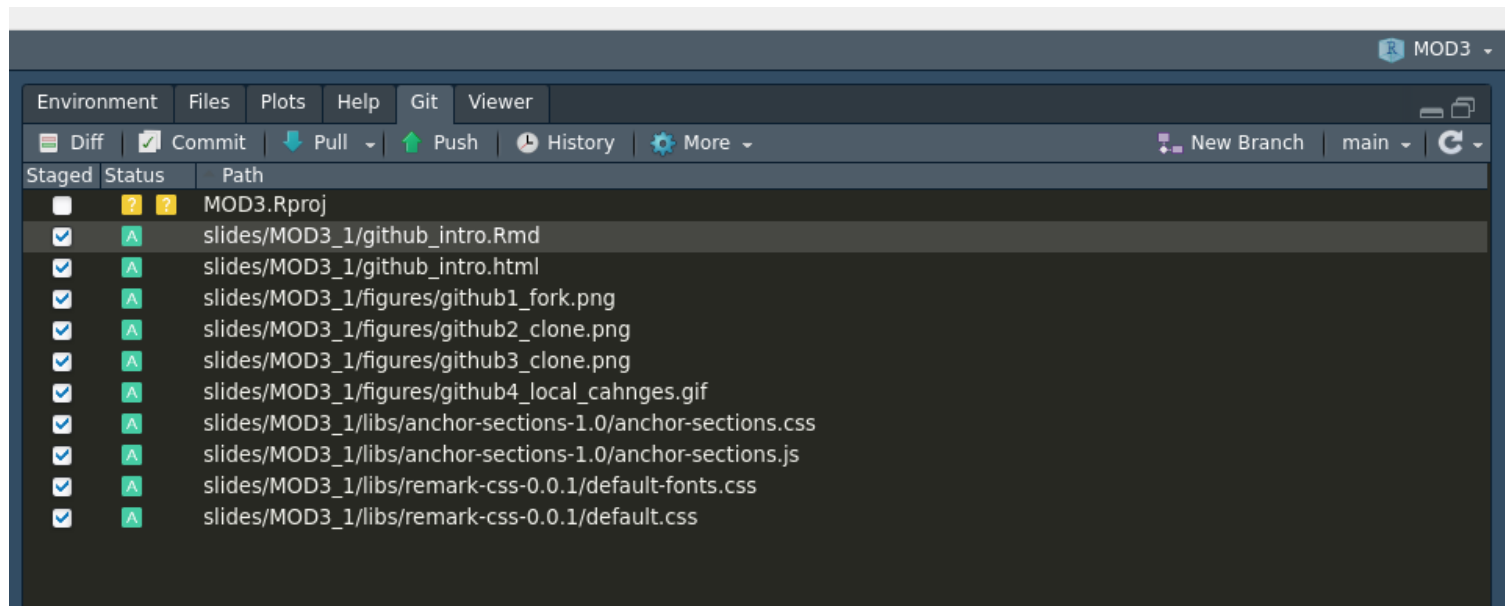
Local changes

- Make changes to the .txt, .R, .python or to whatever file



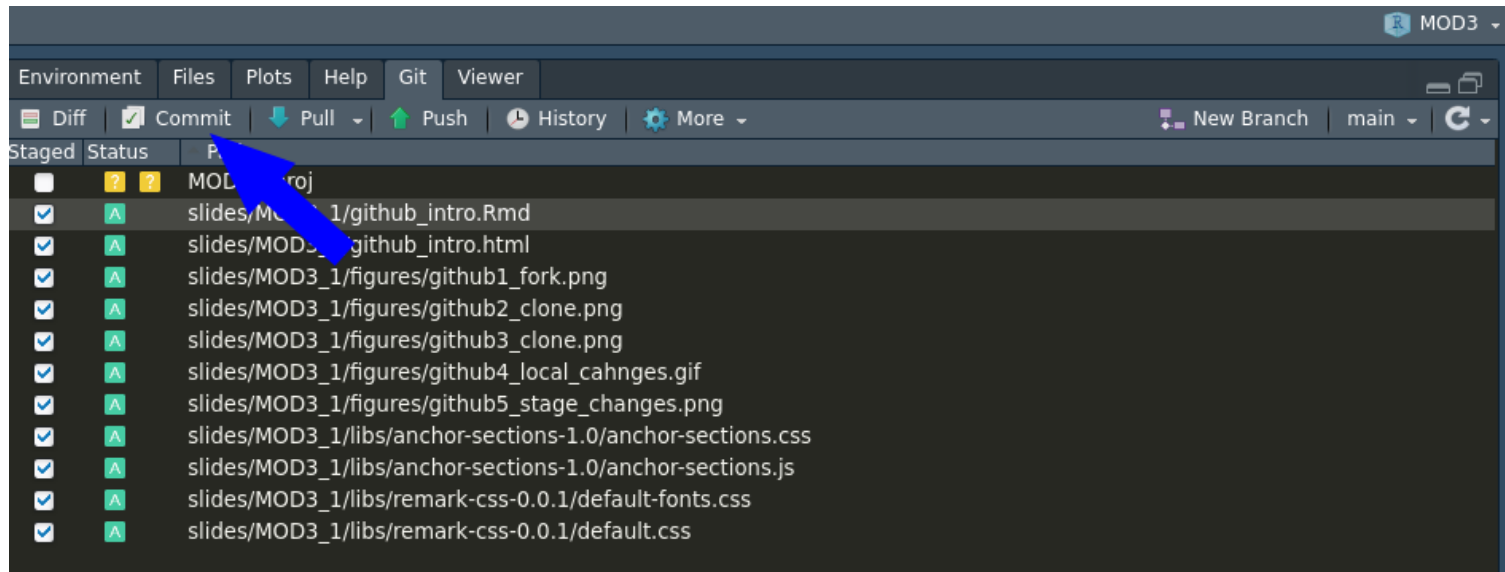
Stage your changes

```
git add file.txt  
git add *.txt  
git add -A
```



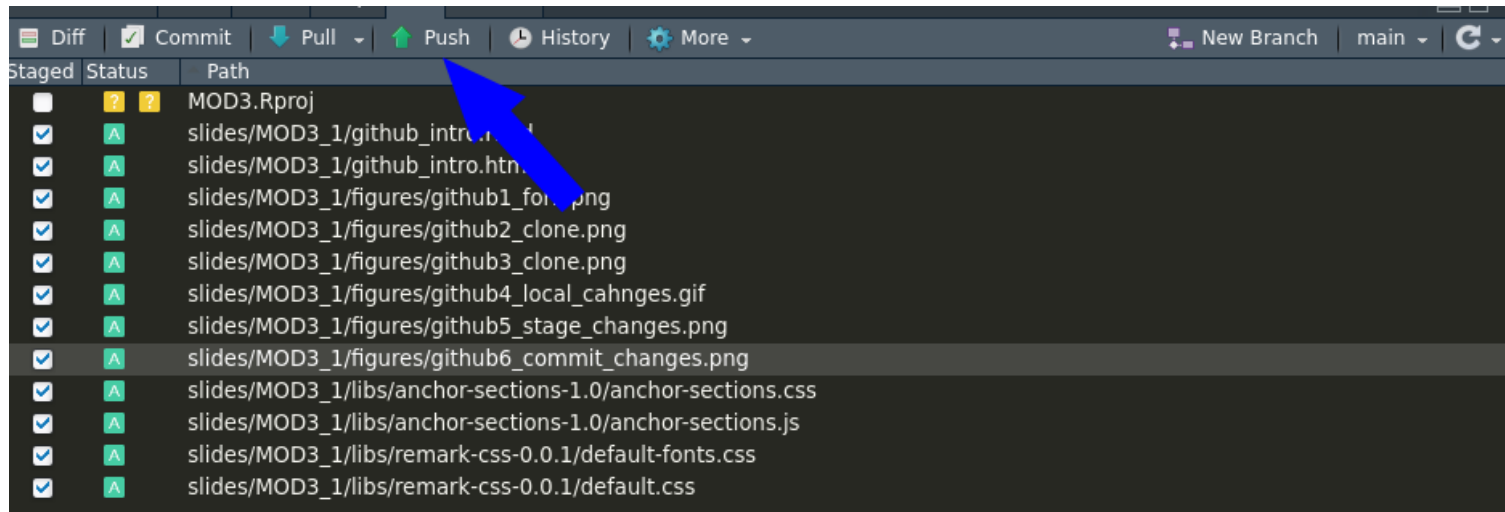
Commit changes

```
git commit -m 'test'
```



Push to your repo (origin)

```
git push origin master  
git push origin main
```



Pull Request

From your main branch to the remote main branch

The screenshot shows the GitHub interface for the repository 'andschar / MOD3', which is a fork of 'njuvigny/MOD3'. The repository has a 'main' branch selected, indicated by a blue circle around the 'main' dropdown menu. The status bar shows 'This branch is 1 commit ahead, 9 commits behind njuvigny:main.' and a 'Pull request' link with a blue arrow pointing to it. The repository also has 0 tags and 49 commits, with the latest commit being '603fb05' from 6 days ago.

andschar / MOD3
forked from njuvigny/MOD3

Code Pull requests Actions Projects Wiki Security Insights Settings

main branch 0 tags

Go to file Add file Code

This branch is 1 commit ahead, 9 commits behind njuvigny:main. Pull request Compare

andschar test 603fb05 6 days ago 49 commits

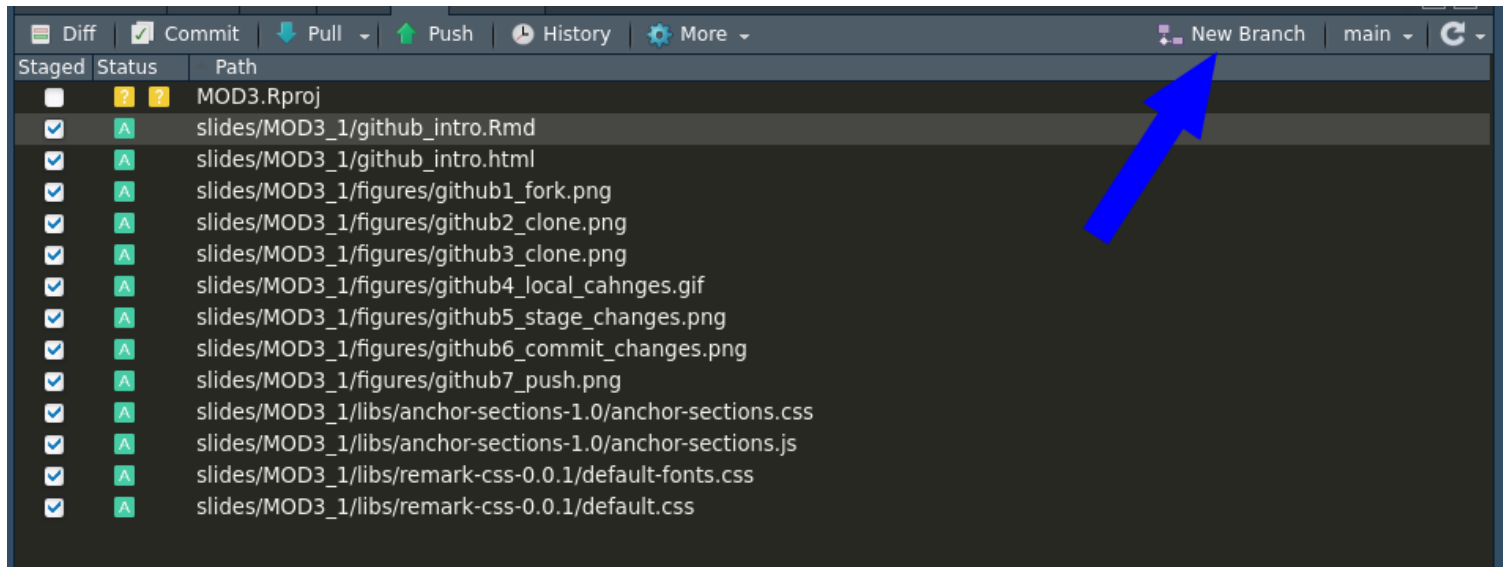
Branches



Branch

Create/Switch Branch

```
git checkout -b dev_scharmuel  
git checkout main  
git status  
git branch
```




Branch

Merge Branch

```
git checkout master  
git merge dev_scharmueLLer
```


Pull Request


From your dev_XXX branch to a new remote dev_XXX branch

 **andschar / MOD3** Watch

forked from [njuvigny/MOD3](#)


[Code](#) [Pull requests](#) [Actions](#) [Projects](#) [Wiki](#) [Security](#) [Insights](#) [Settings](#)

 **dev_scharm Mueller** had recent pushes 2 minutes ago [Compare & pull request](#)

 dev_scharm uell... [2 branches](#) [0 tags](#) [Go to file](#) [Add file](#) [Code](#)

This branch is 2 commits ahead, 9 commits behind njuvigny:main.

[Pull request](#) [Compare](#)

 **andschar** updated feature fc54e9e 3 minutes ago [50 commits](#)

Branch

First 8 commits of my R-package repo

```
git log --all --decorate --oneline --graph
```

```
* 190eed7 changed ggplot2 dependancy
* 1d4d97f Merge branch 'master' of github.com:andschar/dbreport
| \
| * 86dfc87 test
| * | 39fd318 exists check
| /
* 1ccf212 handling integer64 + minor changes
* 571795b documentation
* 86052cf DESCRIPTION
* 7dd5646 1st commit
```



Task

- Fork Noel's repo: <https://github.com/njuvigny/MOD3>
- Clone it to local machine
- Create a new branch named dev_YOURSURNAME
- Change the file XXX
- Commit the change (+ commit message) (in the new branch!)
- Push local changes to your repo
- Create a Pull Request against Noel's repo

Material

- OpenOlat
- StackOverflow
- YouTube
- <https://guides.github.com/activities/hello-world>
- <https://support.rstudio.com/hc/en-us/articles/200532077-Version-Control-with-Git-and-SVN>

Made with

- <https://github.com/rstudio/rmarkdown>
- <https://github.com/yihui/knitr>
- <https://github.com/yihui/xaringan>

Other things

- <https://github.com/rstudio/blogdown>
- <https://github.com/r-lib/pkgdown>

Thank you for your attention!