

git and GitHub

by Nick Murphy, Erik T. Everson, and Will DeShazer
2022 Plasma Hack Week

We acknowledge
support from



Adapted from Software Carpentry's Programming with Python
tutorial under the terms of the CC BY 4.0 license.

What is git?

A free and open source version control system.

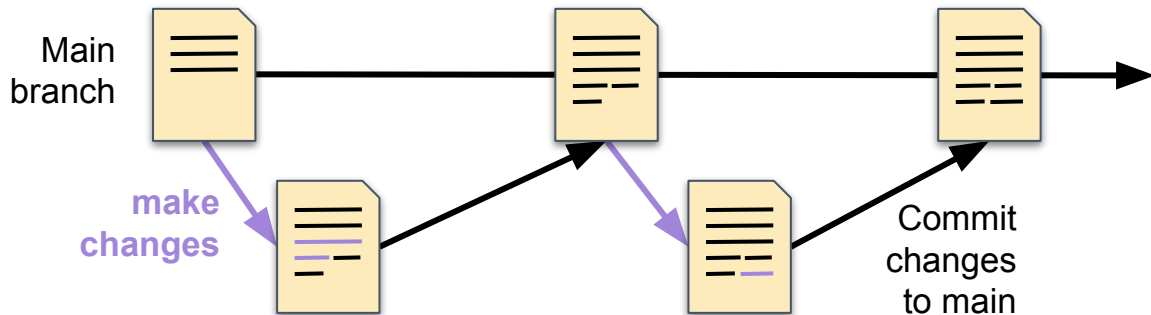
- <https://git-scm.com/>

Version control is process of tracking and recording changes made to a work (software, written document, etc.).

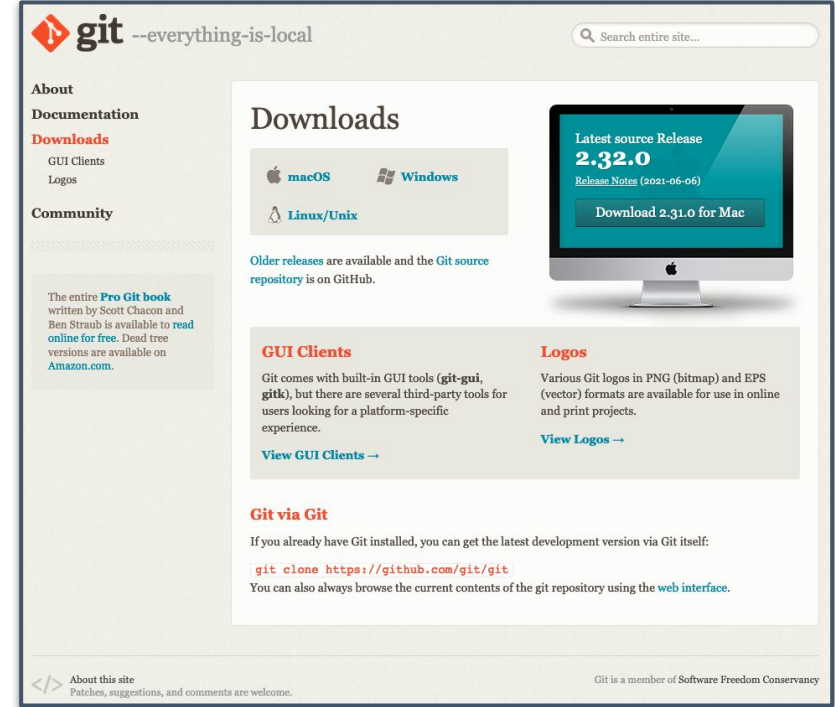
- Unsophisticated method: copying and renaming files 🤖
<http://phdcomics.com/comics/archive.php?comicid=1531>
- Sophisticated method: git 🧐👏
- History of changes is recorded and preserved
- Aids asynchronous collaboration
- Try ideas before adding them

Common alternatives to git:

- Subversion (SVN)
- Mercurial
- Concurrent Version System (CVS)



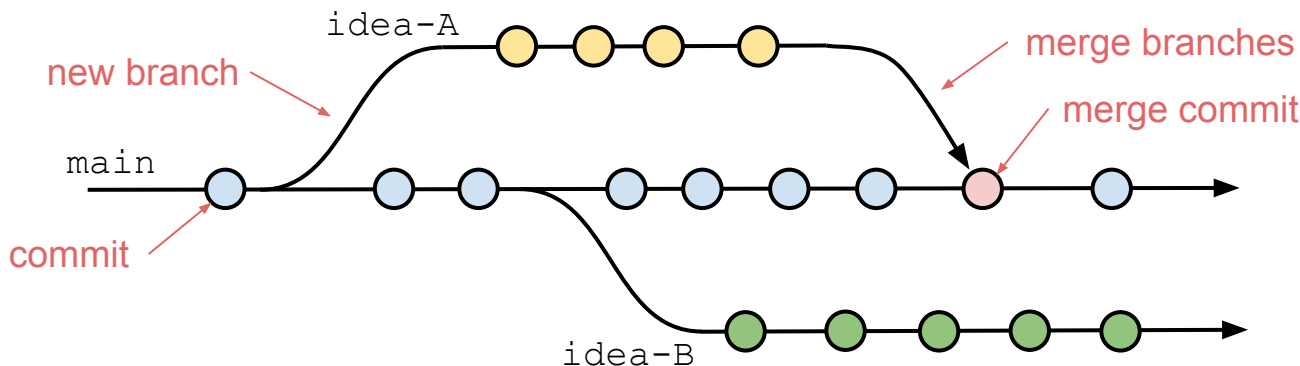
- <https://git-scm.com/book/en/v2/Getting-Started-Installing-Git>
- <https://git-scm.com/downloads>
- Available on all major operating systems



Version Control Terminology & Workflow:

Local setup only

- **Repository “repo”**: directory containing your project files and `git`'s configuration and tracking files
- **Branch**: A line of development. A project can have multiple branches.
- **Main/Master**: The default development branch.
- **Commit**: A single recorded point in the branch history.
- **Merge**: To bring together two branches.

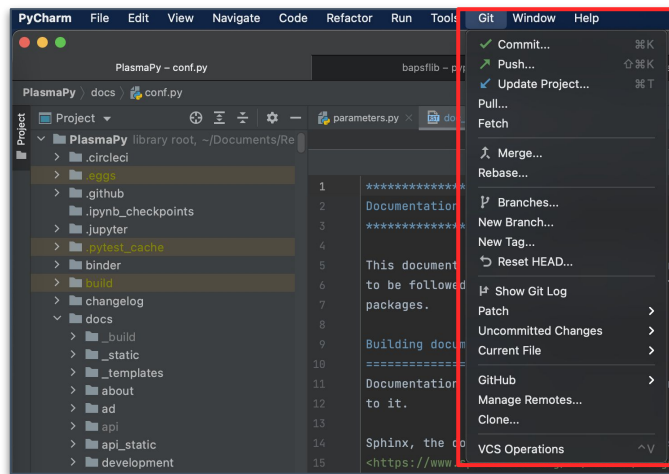


- git is design to be used through the command line interface (CLI)

```
$ git init  
$ git branch  
$ git commit  
...
```

- Many Interactive Development Environments (IDEs) have git integrated into them.

- PyCharm
- VS Code
- Spyder
- ...

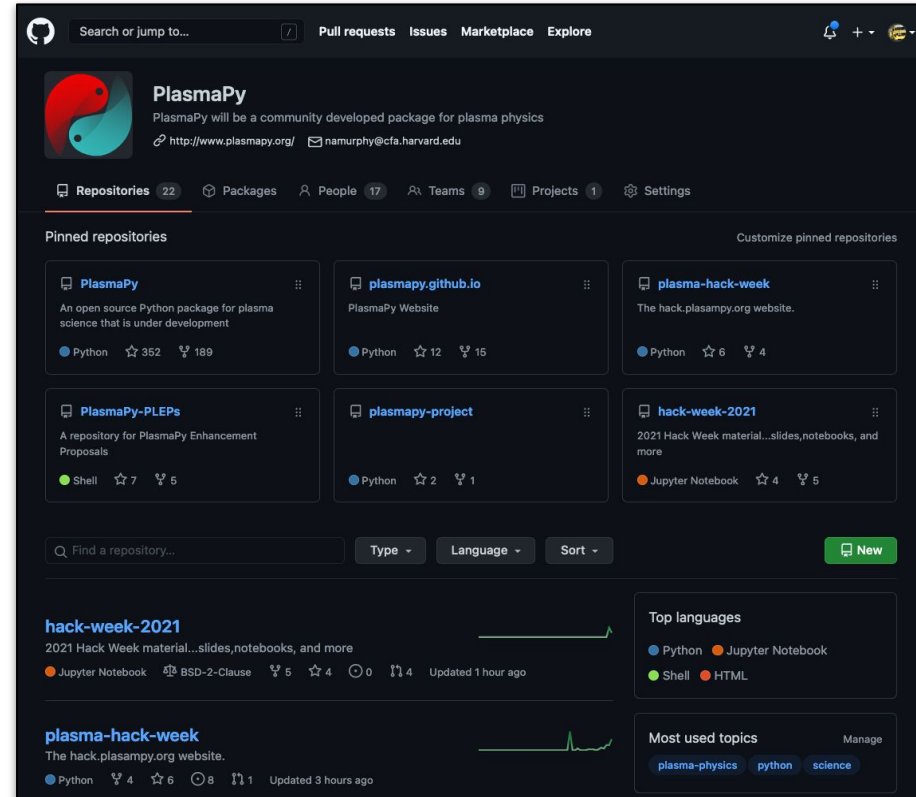


Intro to GitHub

What is GitHub?

GitHub is a code hosting platform for version control and collaboration.

- Gives us a location where we can bring our local work out of isolation.
- Gives us tools for reviewing work and merging.
- Creates exposure for our work
 - Brings in new contributors
 - Allows for more robust reviews/testing
 - Brings excitement for a project



Cartoon: local git and GitHub

