Week 3: Introduction to Git and Github

Computational Tools and Techniques in STEM

Feb 12-14, 2019

Outline

Learning Goals

- **L1**: Introduction to version control.
- **L2**: Introduction to Git.
- **L3**: Setting up a Github account.
- **L4**: Basic Git functionality using Github.
- **L4**: Creating and customizing a webpage on Github.
- **L7**: Adding a collaborator on Github.

Installation

How to install?
Go to `https://git-scm.com/book/en/v2/Getting-Started-Installing-Git`.
and follow directions.

Window users: Using the default installation options is recommended.
While installing, choose "Use git bash only", unless you want to use
the git desktop app.

You can test the installation by looking for "git bash" in search. If a
command window shows up that means that it has been installed
correctly.

Version Control

What is version control system and why we need it?

- Keeps a record of different versions of your code.
- Provides support for enabling multiple people to work on the same project. Each person has access to their own copy that they work on and can share.
- Edits to different files and even within the same file can be combined.
- If two people work on the same part of the code, merge conflicts may arise.

Git and Github

What is Git?
Git is a type of version control system. It is a software that we can install on our local system.

What is Github?
A website that runs Git in the background.

What will be using?
We will be using both and at times combining them!

Terminology

Edits: Changes you make to your project.

Commits: Edits that you commit.

Working copy: It is your personal copy of all the files in the project.

Repository: A repository is a database of all the edits and versions of your project.

Local Repository: The repo on your local computer.

Remote Repository: Typically not on your computer, contains acodebase that everyone commits to. It can be hosted on github or it can be someone else's local repo. You need to be either an owner or a collaborator to push your changes to it.

Exercise

- Create a webpage on Github.

- Give a custom domain name to your webpage.

- The webpage should have the following info about you:
  - Name
  - Department name
  - A link to sample repo that you committed on git.

- Put the particle plot on your webpage.