

GitHub Information Sheet

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This document has some information about GitHub and how to get started using GitHub. It also connects you to information that you might also find useful.

What is version control?

Version control is a systematic way of keeping track of the changes in a text file (or group of files). Its main purpose is to aid people when working on projects in groups where for instance, they would have to update code or files periodically. Version control also documents the changes made in the files and a very popular and powerful set of tools. Git is the most common implementation of version control, which we will be using this summer through GitHub.

What is Git?

Git is the free and open-source distributed version control system that's responsible for everything GitHub-related that happens locally on your computer. Rather than have only one single place for the full version history of the software as is common in once-popular version control systems like CVS or Subversion (also known as SVN), in Git, every contributor's working copy of the code is also a repository that can contain the full history of all changes.

What is GitHub?

GitHub is an online software development platform that offers a cloud-based Git repository hosting service. Essentially, it makes it a lot easier for individuals and teams to use Git for version control and collaboration. Moreover, it's used for storing, tracking, and collaborating on software projects. It makes it easy for people to share code files and collaborate with fellow team members on open-source projects. GitHub also serves as a social networking site where developers can openly network, collaborate, and pitch their work.

How to make an account?

1. If you don't have one already, you can create an account here: <https://github.com/join>
2. After following the prompts, establish a secure password you will remember
3. Next you will be asked to choose your GitHub product: it is probably enough to use GitHub Free this summer.
4. Verifying your email address
5. Configuring two-factor authentication (if you want)
6. You are all set! You can start viewing your GitHub profile and contribution graph

How to get GitHub on your machine?

If you are interested in getting GitHub on your desktop here are the steps you can take:

1. Go to this site (<https://desktop.github.com/>) and click "Download"
2. In your computer's Downloads folder, double-click the GitHub Desktop zip file
3. After the file has been unzipped, double-click the GitHub Desktop application file
4. Once GitHub Desktop is launched, the installation is complete!

Depending on what software you are using this installing guide might also be helpful.

Quick Start Guide

A quick start guide to GitHub is here. In this guide, you will learn about all the basic functions in GitHub such as:

- Setting up Git
- What is a README.md
- Creating a repository, branches, and pull requests
- Forking a repository
- What a GitHub flow is

Command Cheat Sheet and Other Links

Memorizing all the commands for using GitHub is probably not the best use of time during a short summer program. In general, the most used ones are below. Keep in mind, that this cheat sheet and the ones linked below are meant to complement the quick start guide above.

- `git init` (initialize an existing directory as a Git repository)
- `git clone [url]` retrieve an entire repository from a hosted location via URL
- `git log` (show all commits in the current branch's history)
- `git merge [alias]/[branch]` (merge a remote branch into your current branch to bring it up to date)
- `git push [alias] [branch]` (transmit local branch commits to the remote repository branch)
- `git pull` (fetch and merge any commits from the tracking remote branch)
- `git stash` (save modified and staged changes)

In the links below you will find lists of other common commands:

- <https://www.atlassian.com/git/tutorials/atlassian-git-cheatsheet>
- <https://about.gitlab.com/images/press/git-cheat-sheet.pdf>