

Introduction to GitHub

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1 What Is GitHub

From Wikipedia: “GitHub is a web-based Git repository hosting service, which offers all of the distributed revision control and source code management (SCM) functionality of Git as well as adding its own features. Unlike Git, which is strictly a command-line tool, GitHub provides a web-based graphical interface and desktop as well as mobile integration. It also provides access control and several collaboration features such as wikis, task management, and bug tracking and feature requests for every project.

GitHub offers both plans for private repositories and free accounts, which are usually used to host open-source software projects. As of 2015, GitHub reports having over 9 million users and over 21.1 million repositories, making it the largest code hoster in the world.”

Austin’s summary: GitHub allows users from all over the world to collaborate on projects. Lets say you start a large project with 10 people from 10 different states. How does everyone contribute if the duties are overlapping? What if two people are working on the same script at the same time?

GitHub allows collaboration and is becoming the heart and soul behind the open-source world. We believe in collaboration and freely sharing ideas and projects. It has build some of the best software in the world. I will state this simply, open-source ensures that *only* the very best survive. Ideas can be taken, “stolen”, modified, and advanced for the good of everyone. If you begin a project and it’s good, but not great, someone else can easily swoop in, take your source code and make it better. This is makes open-source projects possible.

2 Color guide

Git commands are in magenta

Linux commands are in darker blue

URL hyperlinks are in blue

3 Who can use it?

Anyone!... Now that there are graphical user interfaces (GUI’s) for GitHub. For those of you terrified of the command line or think it’s outdated. The tools developed by GitHub allow users with any OS to collaborate.

Windows: [GitHub for Windows](#)

Mac: [GitHub for Mac](#)

Linux: Unknown for GUI’s, but install command line tools with `sudo apt-get install git` on debian systems.

4 Steps

4.1 Steps to start with GitHub:

1. Sign-up for GitHub [here](#). You need a user account.

2. You can easily create a new repository by clicking the plus sign in the top left corner of the website.

Note: Make sure to click Initialize this repository with a README.

It's also important to add a licence that removes your liability (Linus believes in GPLv2 and I agree, please watch this [YouTube video](#))

3. Install the GUI from the links above (if you don't need a GUI you probably don't need to read this)

Note: GitHub desktop clients automatically configure SSH keys for you.

4.2 What if I want to do it on the command line?

Begin by adding ssh keys [ssh keys for github](#)

1. `ssh-keygen -t rsa -b 4096 -C "your_email@example.com"`
2. Enter name of ssh key and a good passphrase
3. Make sure ssh-agent is enabled
4. `eval "$(ssh-agent -s)"`
5. Add public key to your account through the website
6. Go to settings and click SSH keys and then add SSH key
7. Carefully name and copy and paste the exact public key into the box
8. CAREFUL: make sure there are no extra spaces or anything
9. Authenticate with `ssh -T git@github.com`

4.3 How to start using GitHub for collaboration (command line):

1. Make a directory for GitHub, probably call it GitHub (this is for Mac or Linux)
`mkdir GitHub`
2. Go to the website and click on the repository. You will a note on the right sidebar that says, "SSH clone URL", click on the icon that will copy to your clipboard (hover over if confused)
3. Go to your terminal and move into the directory you created.
4. Use the following command to pull the repository onto your computer.
`git clone [copy and paste URL here]`
5. The repository should now be there on your computer.
6. You can make any changes you want!

4.4 How do I get updates from the website on my computer?:

1. Use the following command while *you are in* the repository

`git pull`

4.5 How do I update the website with my changes?:

1. Use the follow commands (last 3 in order)

Check for any updates you made to a repository: `git status`

Add changes: `git add -A` for all or `git add name_of_file`

Commit to them: `git commit -m "made this change etc"`

Send to website: `git push`

5 Keys

Tips for being successful:

1. Sometimes I've had problems unless I'm signed into my account on the Website. If someone understands this better, I'd like to update this help file.

6 Where do I go for help?

Here are some links:

1. Set Up Git Help File: [Set Up](#)
2. YouTube Video: [YouTube for Beginners](#)

7 Suggestions?

Please contact me at `putz[dot]austin[at]gmail[dot]com`