Learning GitHub and Git

Useful Reading:

https://readwrite.com/2013/09/30/understanding-github-a-journey-for-beginners-part-1

Tutorial:

1. **What is GitHub?**

It could best be described as a Cloud. With it we are given unlimited space to store data; however, the catch is all the data is open to the public.

Along with storage, GitHub is also used for version-control. This means that any past states of the files or codes on GitHub are saved, and can be accessed at any time. This allows multiple people to work on the same code, and each of their own versions are saved.

What is Git?

Git is a set command line functions that allow us to quickly and easily download files from GitHub, and after editing them, upload new versions from our computer back to GitHub.

2. **How do we get GitHub and Git?**

The online version of Git can be found at:

https://github.com/

For Windows users, Git can be downloaded at:

https://git-scm.com/downloads

3. Once you have Git downloaded we can create an account on GitHub. From there we can create an online repository that can store files. This requires no command line or terminal action to get going.

4. Now this maybe okay, but we want to fully utilize the powerful language Git, so the further steps are to help you understand what Git can do on the Command line or Terminal.

5a. Start by creating an empty folder. It can be anywhere on your computer, but for ease of access it is best to put it on the desktop.

5b. Open the Command Line. On Windows this would be the same as opening Command Prompt. On Mac this would be called Terminal.

5c. Use the following command line functions to navigate to the empty folder you just created.

ls or **dir** – use to look at which directories (folders) you can change to

cd directoryname – use to move between directories

cd .. – use to go back one directory

5d. To first setup Git inside the empty folder type:

git init

This turns the folder into a repository (GitHub's name for storage spaces – somewhat like a folder)

5e. Next we will download the UTSARobotics GitHub-Workshop repository

git pull https://github.com/utsarobotics/github-workshop

Now you should see the files from the online repository in your local repository

6. Now lets write a .txt file in our local git repository

Inside the folder: right-click -> new -> text document

Feel free name the document whatever you'd like and to type something inside the document. (This will be posted online though!)

**At this point make sure you've confirmed your GitHub account via email and accepted the invitation to be a collaborator **

7. Once we are done writing the .txt file we will use the command:

git status

This command will show us that .txt file is “untracked”

8. Now let us use the command:

git add filename.txt

This command will add the specified file into a “queue” until our next commit.

9. Now that we have added our file to the queue, we will track the queue using git commit:

git commit -m “your message here”

We have now saved a snapshot of our file.

10a. So far, we have only been working in our own local git repository so let us look at transferring files from our local repository to our online GitHub repository.

10b. We’ll start off by associating your GitHub account with your computer. Type:

git config --global user.email youremail

Whenever you use git commands they should now be connected to your GitHub account

11. We will use the git add command in a new way:

git remote add origin https://github.com/utsarobotics/github-workshop

This command queues our local repository, so it can be pushed to our online repository.

12. Now we use this command:

git push origin master

This command is like the commit command used in the local repository, only this time it commits it to the online repository.

Now you should see your text document in the online repository. Good Job!!