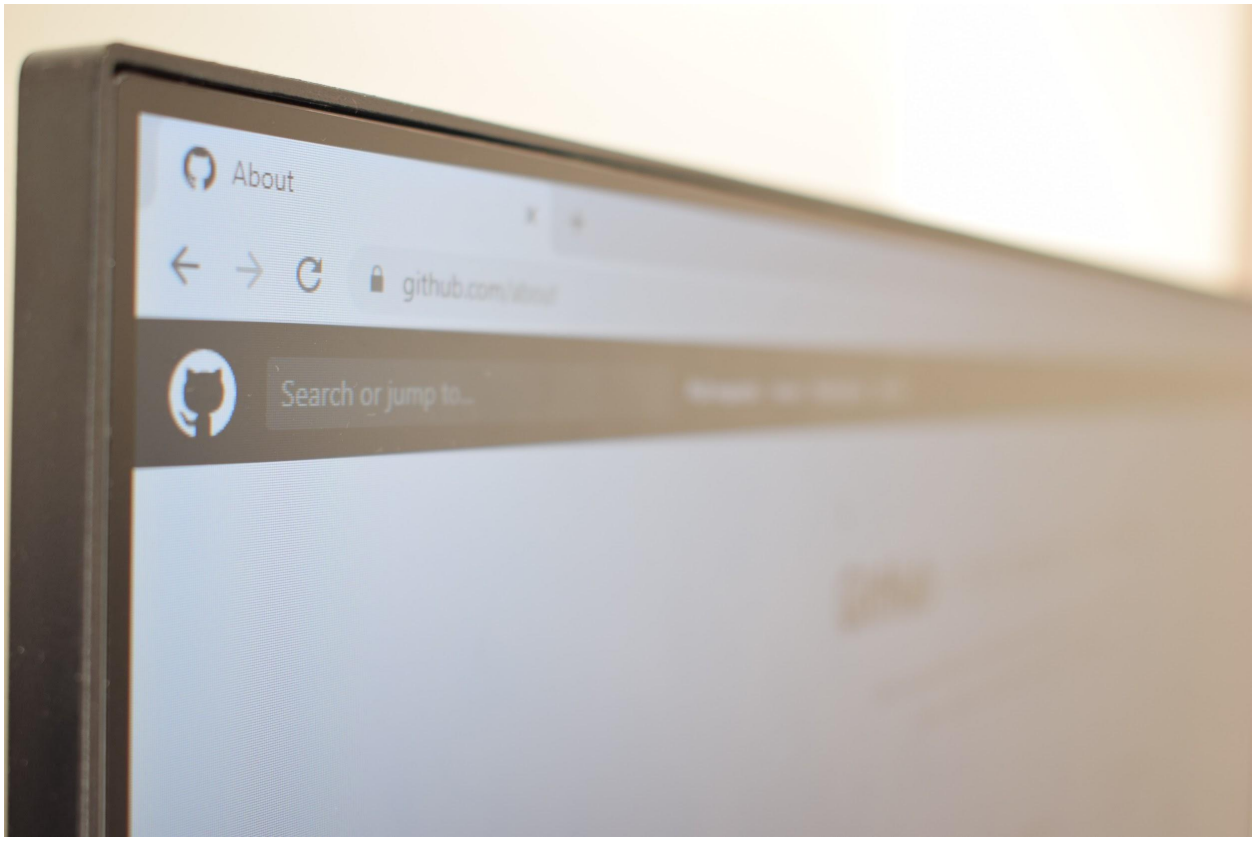
PORTLAND STATE UNIVERSITY

ECE 373 – Linux Device Drivers



Getting Started with Github & Github Classroom

Introduction

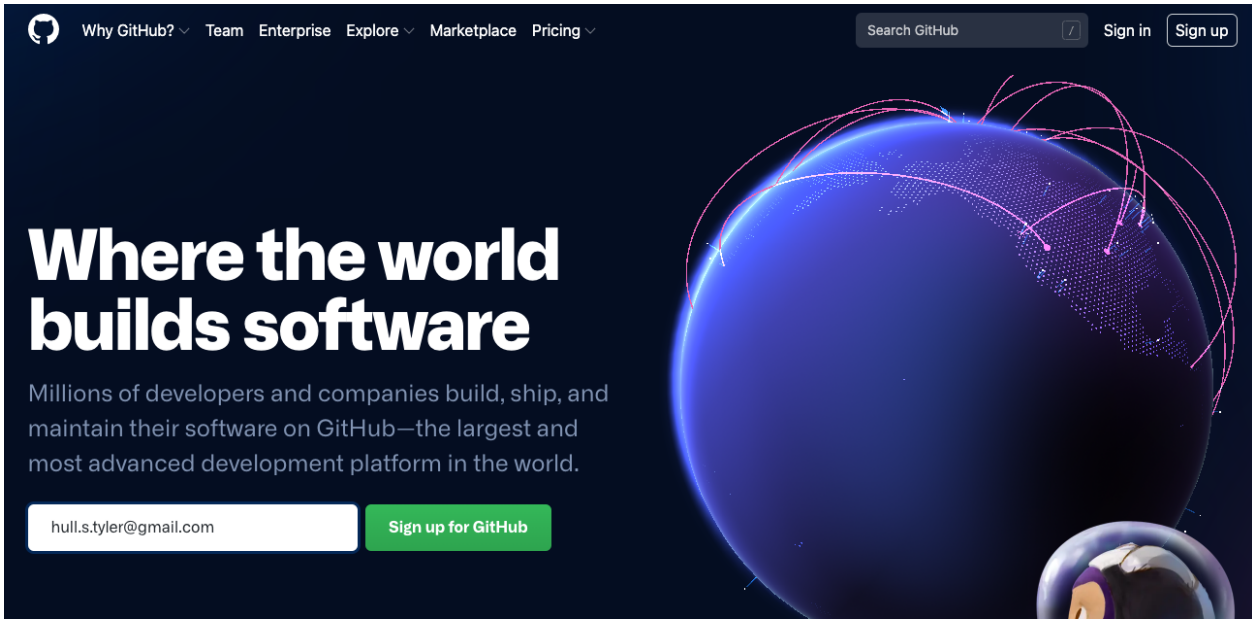
Git is software used for tracking the changes made to a set of files. Created by Linus Torvalds in 2005 for use in developing the linux kernel, Git is heavily used in the tech industry to coordinate work between programmers and allow for version control of a project. While Git is free and open source, there are many platforms that build on top of it and allow you to manage your git repositories. Gitlab Inc's Gitlab, Microsoft's Github, and Atlassian's Bitbucket are a few examples of tools you are likely to use out in the workforce.

In this class we will be using Github Classroom to make a repository for and track versions of our homework. This tutorial will show you how to sign up for Github, create your first repository, setup Github's text editor (Atom), then make your first commit in a practice assignment!

Signing up for Github

If you already have a Github account and a favorite text editor, feel free to skip ahead to the Github Classroom portion of the document.

1. **Visit www.github.com. Type in your email address and click the sign up for Github button to get started.**



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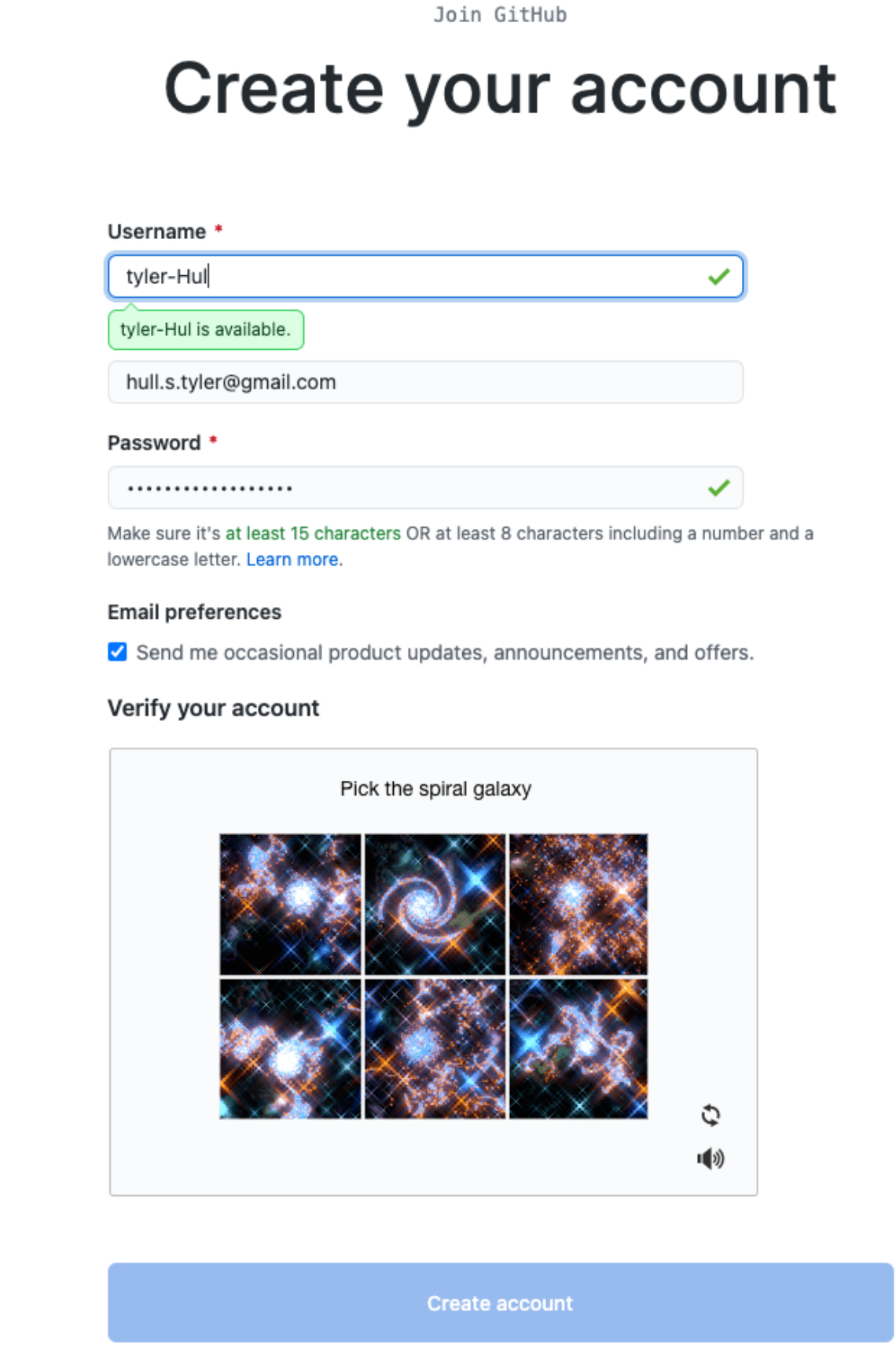
2. **Next, select a username and password, solve the puzzle, and agree to the terms of service to create your account.**



3. Select your information and then go verify your email address by clicking on the link that we sent to the email address you entered on the signup page.

Welcome to GitHub

Woohoo! You've joined millions of developers who are doing their best work on GitHub. Tell us what you're interested in. We'll help you get there.

What kind of work do you do, mainly?

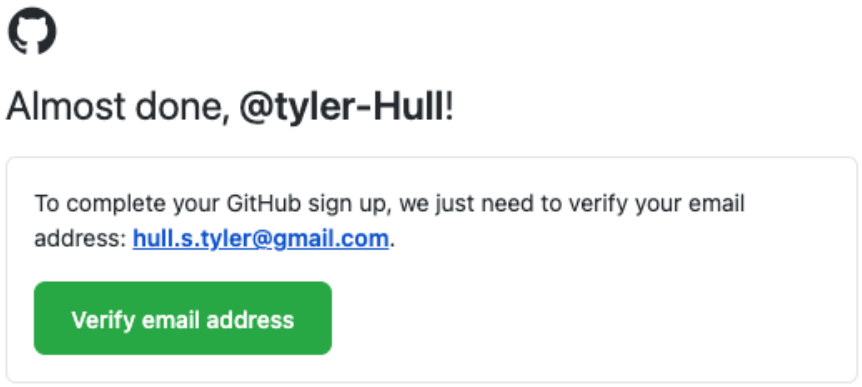
Software Engineer I write code	Student I go to school
Product Manager I write specs	UX & Design I draw interfaces
Data & Analytics I write queries	Marketing & Sales I look at charts
Teacher I educate people	Other I do my own thing

Please verify your email address

Before you can contribute on GitHub, we need you to verify your email address.

An email containing verification instructions was sent to **hull.s.tyler@gmail.com**.

Resend verification email | Change your email settings



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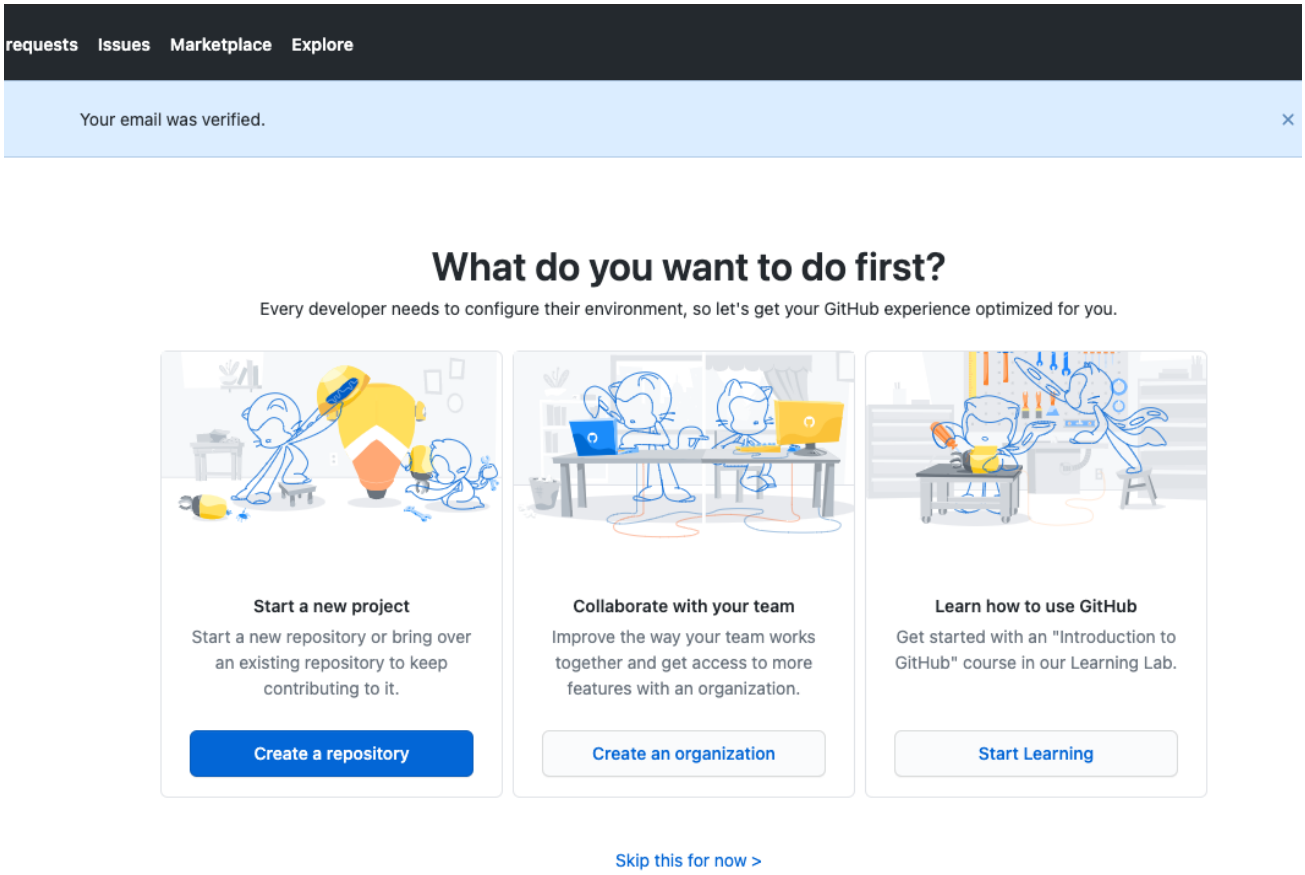
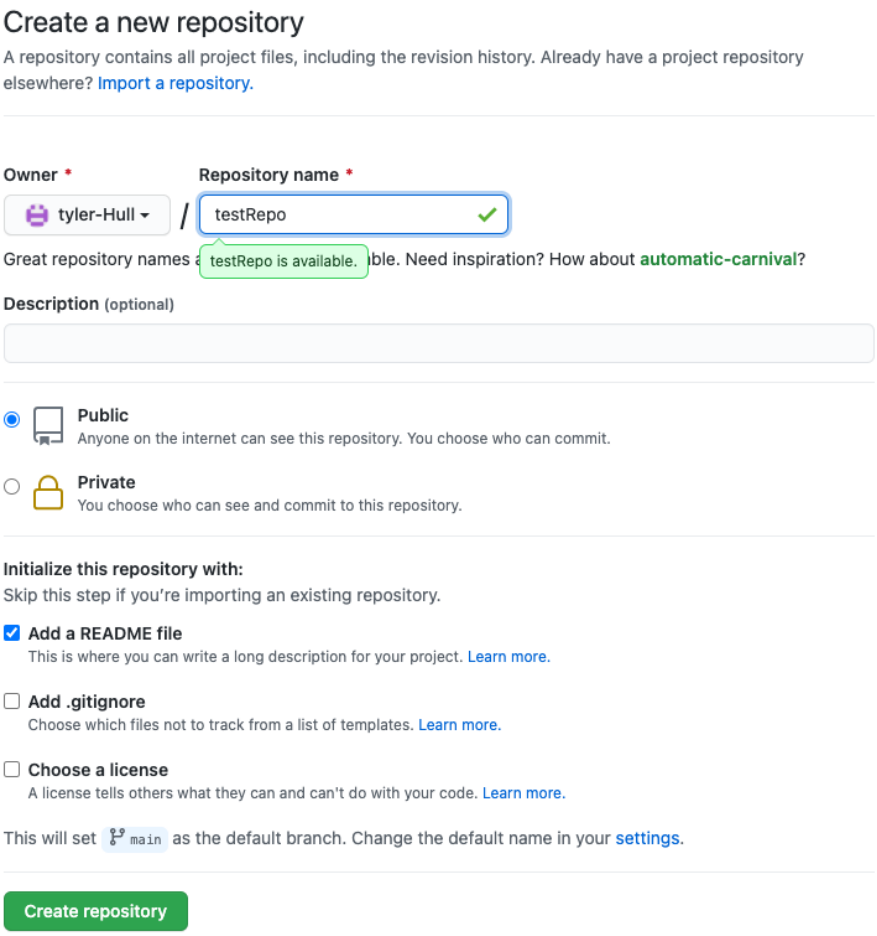
4. **After clicking on the link in the email you were sent, you can login and create your first repository!**

    - **Click on the create a repository button to make your first repo.**
    - **Make sure you click on the checkbox to add a README file!**





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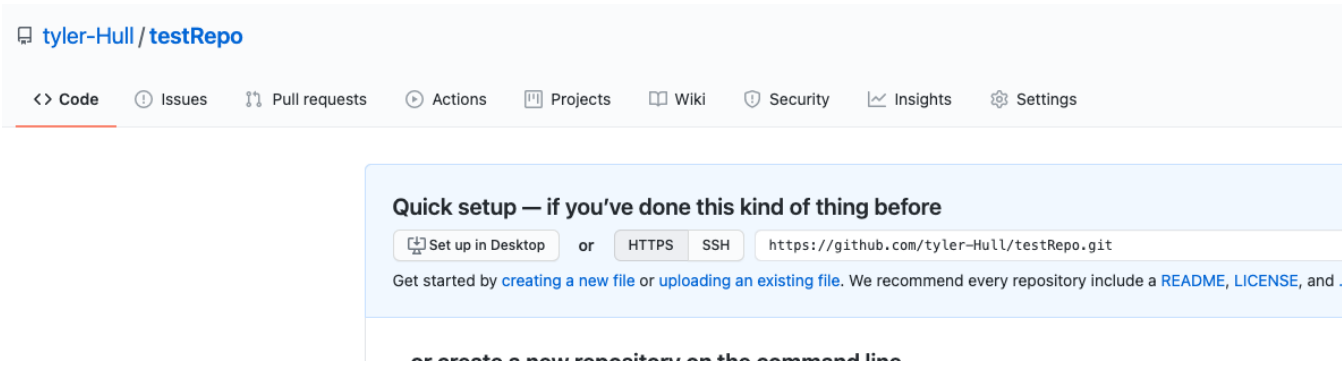
5. **Now that we have a new repository, let's add a file to our repository that we can keep track of!**
   Click the "creating a new file" link at the top of your new repository page, under Quick setup.



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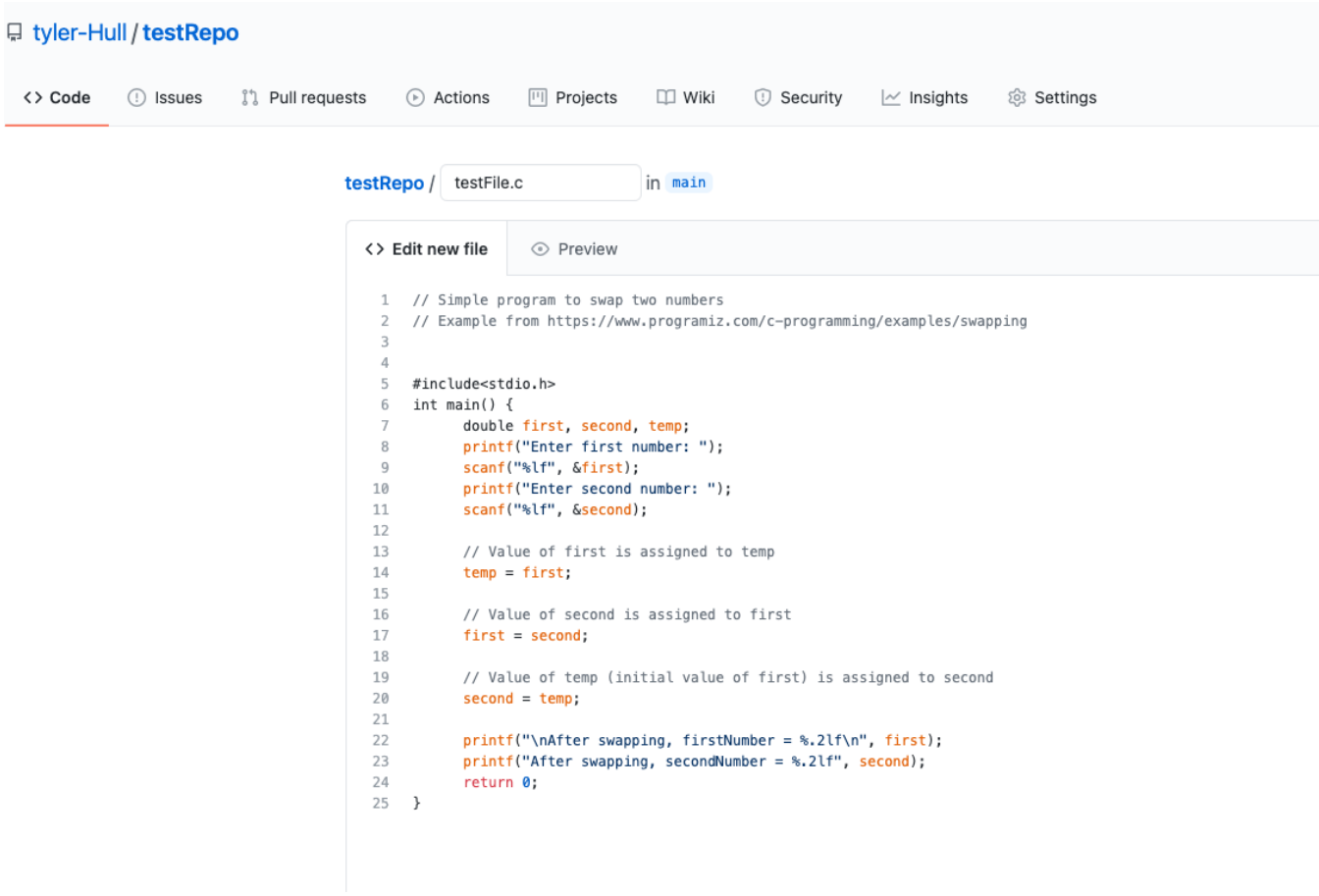
6. **Give your new file a name and type in some text. For this example, I've copied the simple number swap program from this website: https://www.programiz.com/c-programming/examples/swapping**



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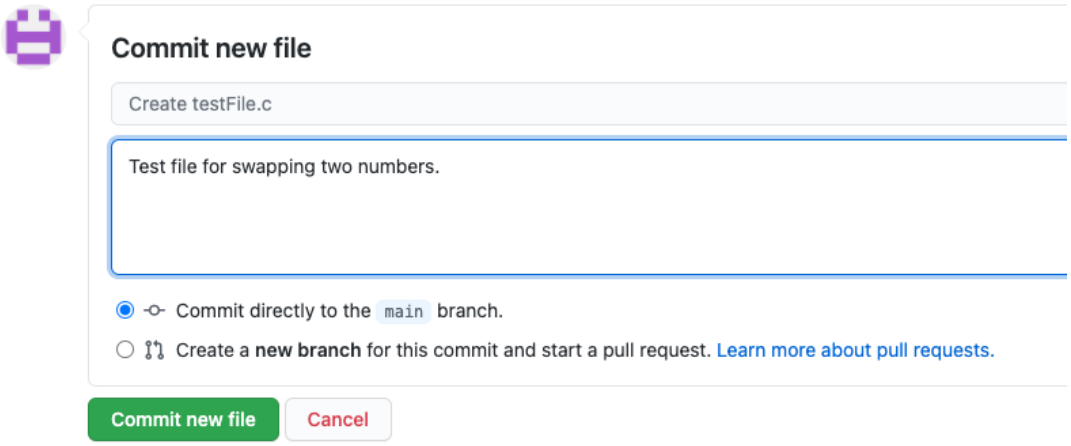
7. **Scroll down, give your file a description and "commit" the new file to your repository.**



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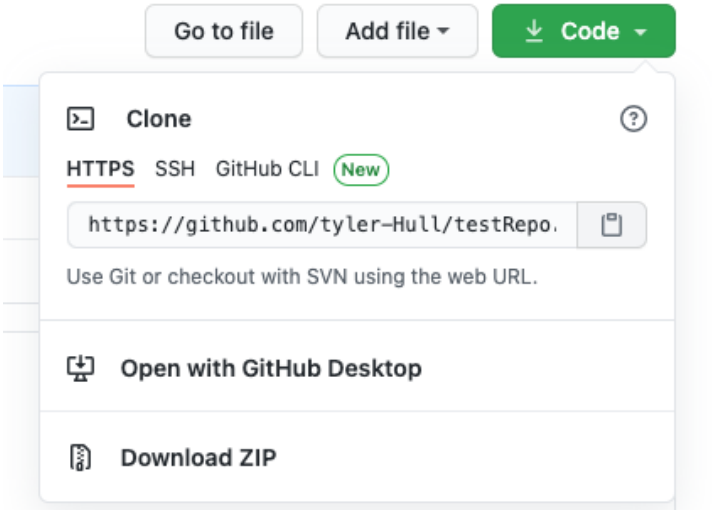
8. **Now your file has been added to your repository! If you click on the green "Code" button, you can copy the link for this file to your clipboard. Then we can add it to our computer to keep track of our changes to the file.**



Setting up Github's Atom text editor

You can easily manage a Git repository from the command line and edit your files using Vim, Emacs, or nano. These tools often make it very fast to make changes and you should do your best to get familiar with them. However, there are also many text editors that have additional features for dealing with Git repositories.

Github's text editor (Atom) isn't the most fully featured editor out there, but it is free, and you may find it useful as a tool in your toolkit. Feel free to explore other tools or use the tool that is best for you in this class.

1. **Visit www.atom.io to get started and download the atom editor for your operating system.**

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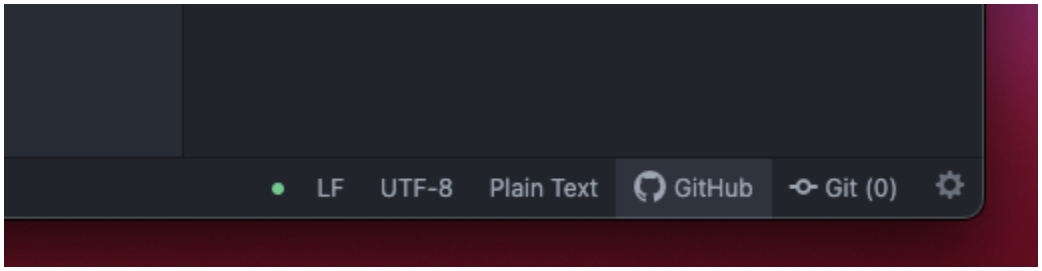
2. **Open the installer for your operating system and install atom or add it to your applications. Then open the Atom editor and click on the Github button on the bottom right corner to open the Github tab.**



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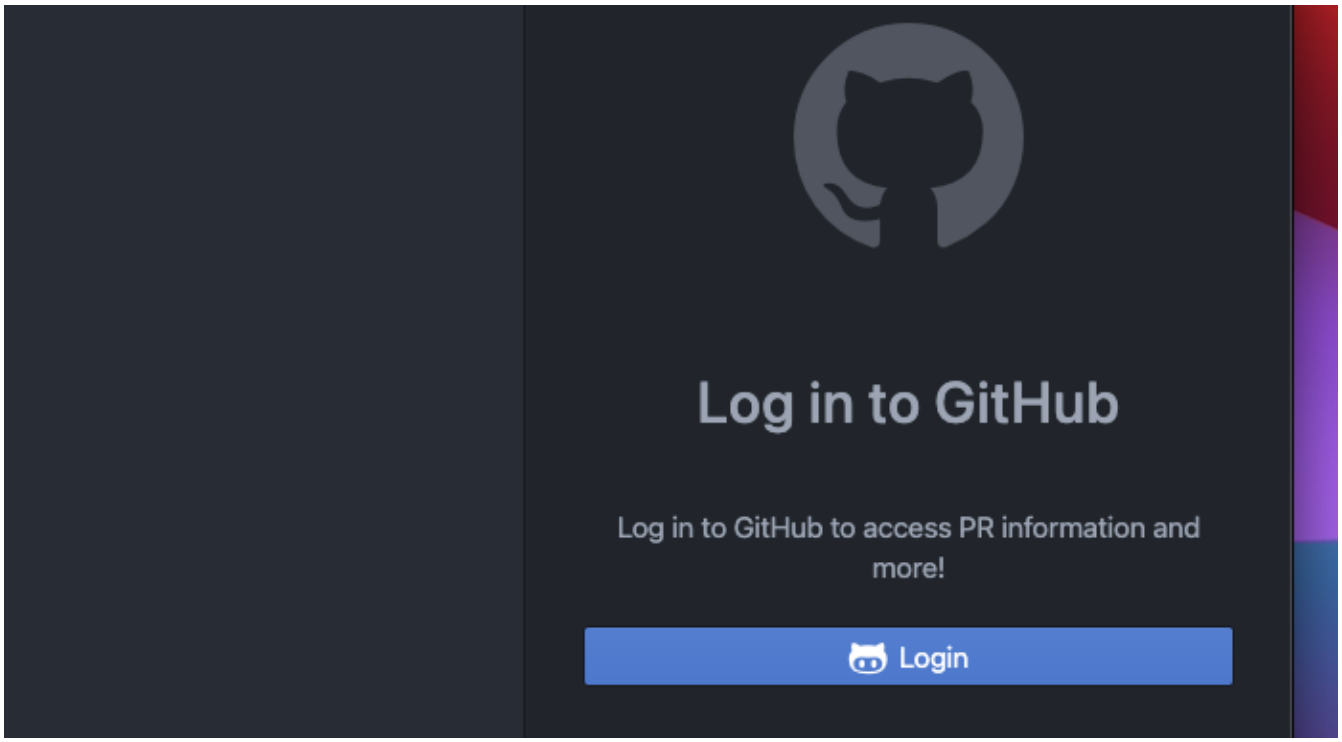
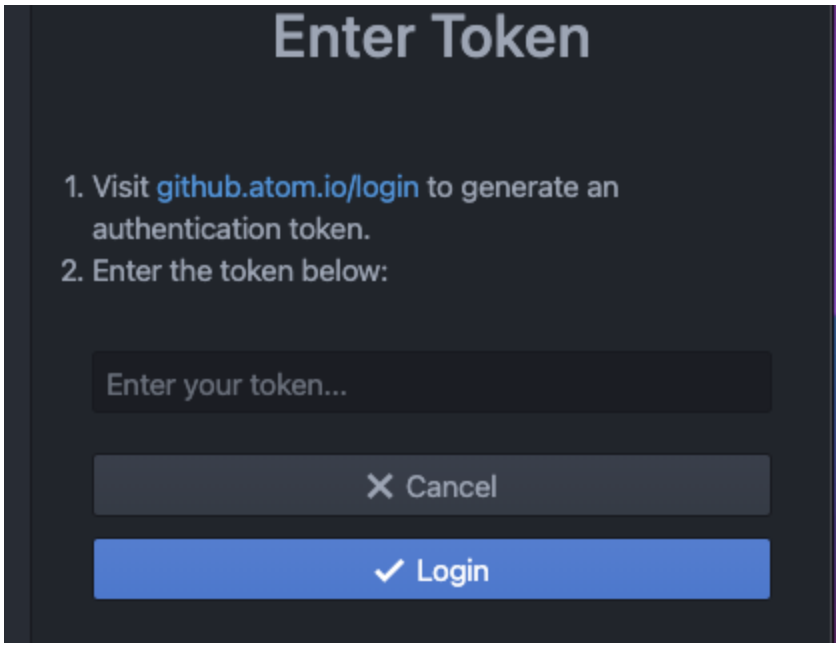
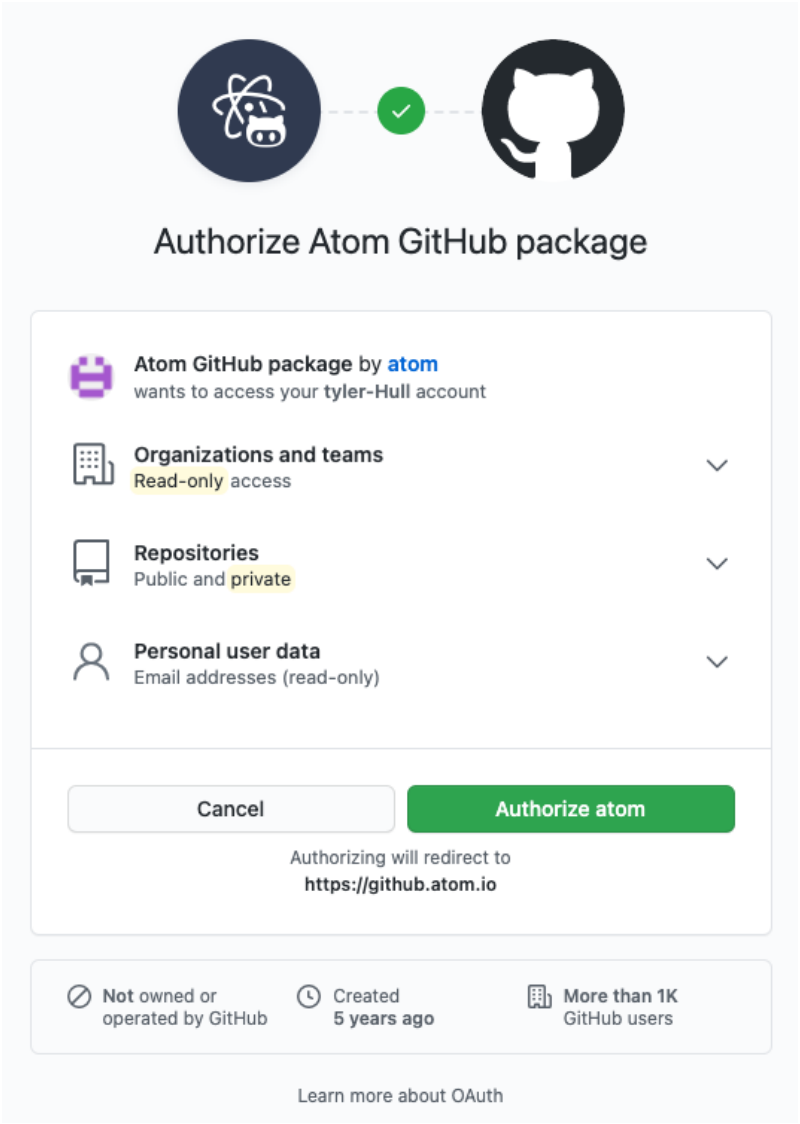
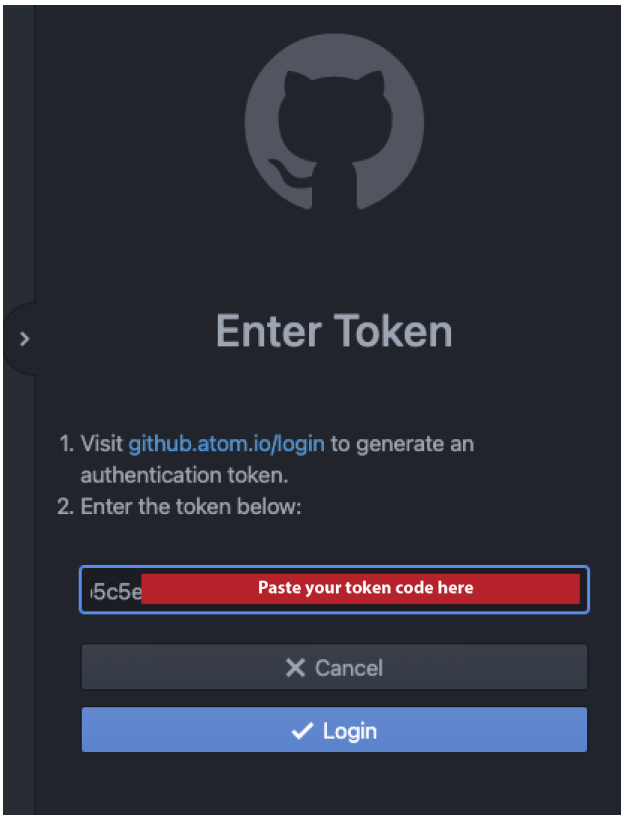
3. **Click the login button, and follow the instructions to authorize the Atom editor on your account. When a security token is generated, copy and paste it into the field and click the login button again.**




Enter Token
1. Visit github.atom.io/login to generate an authentication token.
2. Enter the token below:
Enter your token...
Cancel
Login


Authorize Atom GitHub package
Atom GitHub package by atom
wants to access your tyler-Hull account
Organizations and teams
Read-only access
Repositories
Public and private
Personal user data
Email addresses (read-only)
Cancel
Authorize atom
Authorizing will redirect to
https://github.atom.io
Not owned or operated by GitHub
Created 5 years ago
More than 1K GitHub users
Learn more about OAuth



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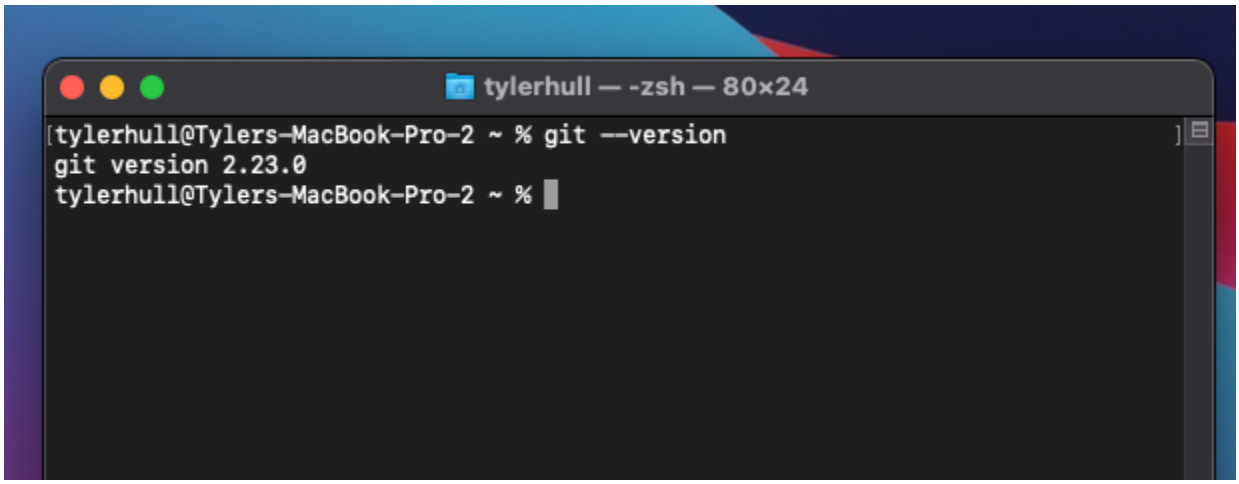
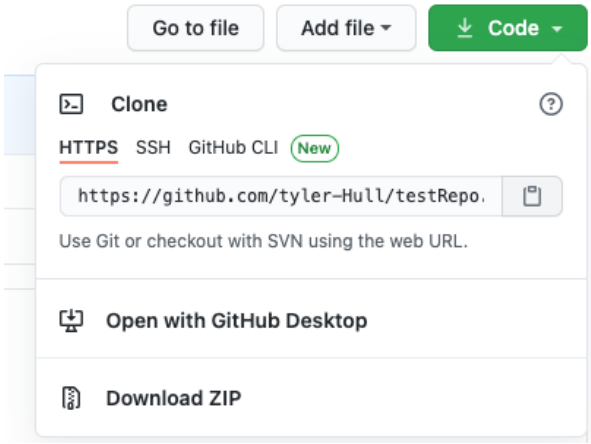
4. **We could add our test repository right from atom, but let's add it from the command line instead. Open up a terminal on your system and let's make sure that Git is installed.**

You can test to see if you have git installed by typing *git --version* **into the terminal.**

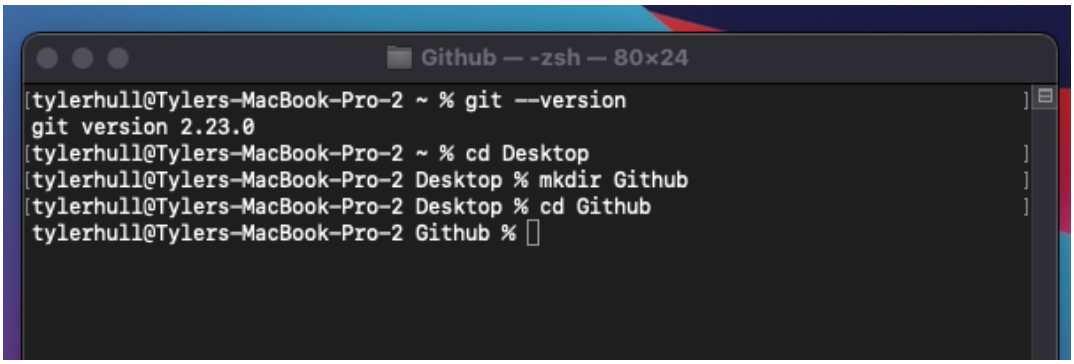
If you don't have Git installed, then follow the instructions at the link below to get it installed for your operating system.



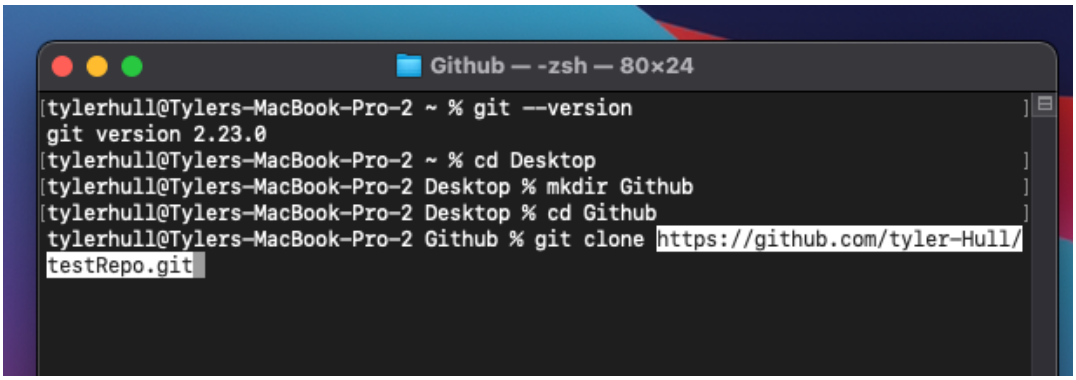
Now let's go back to the repository we made, and copy the URL link to our repository by clicking on the "Code" button and copying the link to our clipboard.



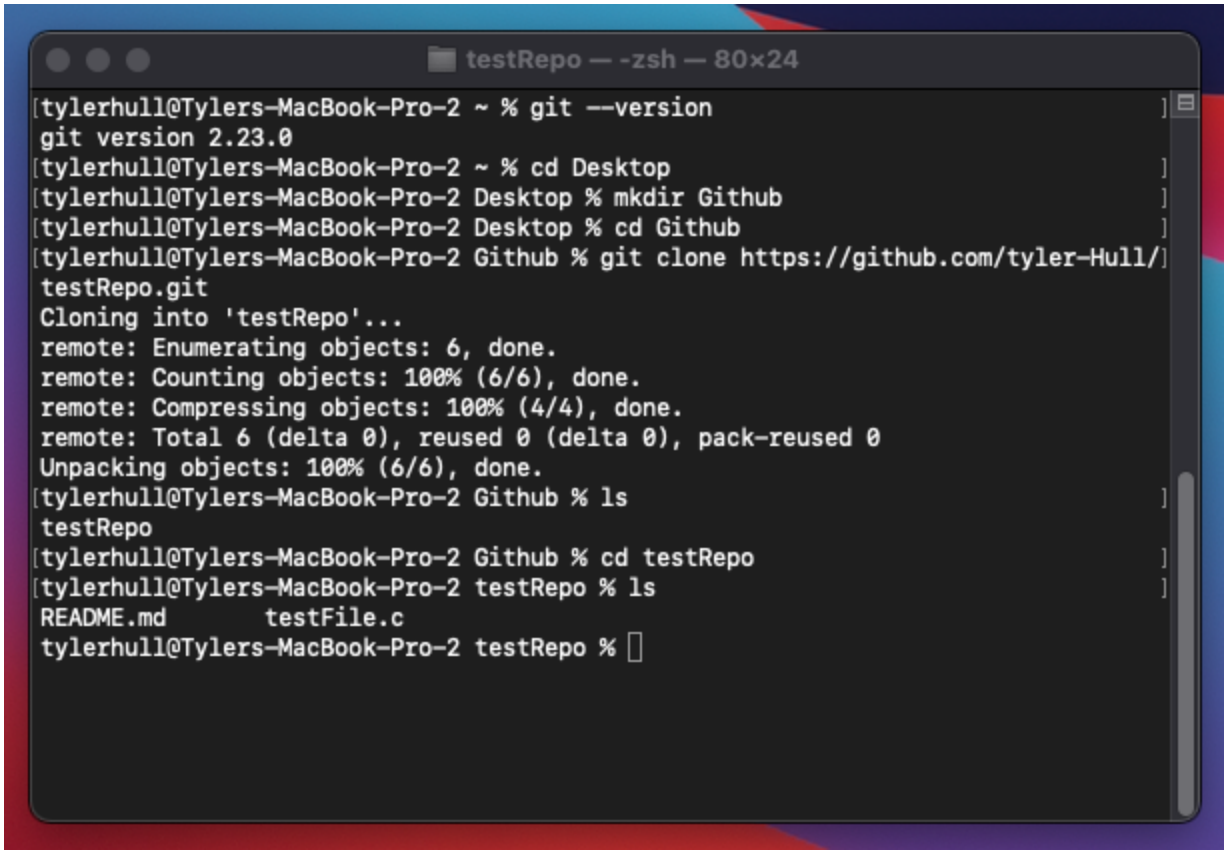
Next, let's create a folder where we can store our github repositories. I've made a new folder on my Desktop called Github where I will keep my repository using the following commands. You can create this folder anywhere that works for you, then change to that directory using the terminal.



Once you have the link you can type *git clone <link to your repository>* **into the terminal to copy the repository to your computer.**



You should now see your test repository with the files we created earlier inside it saved on your computer!



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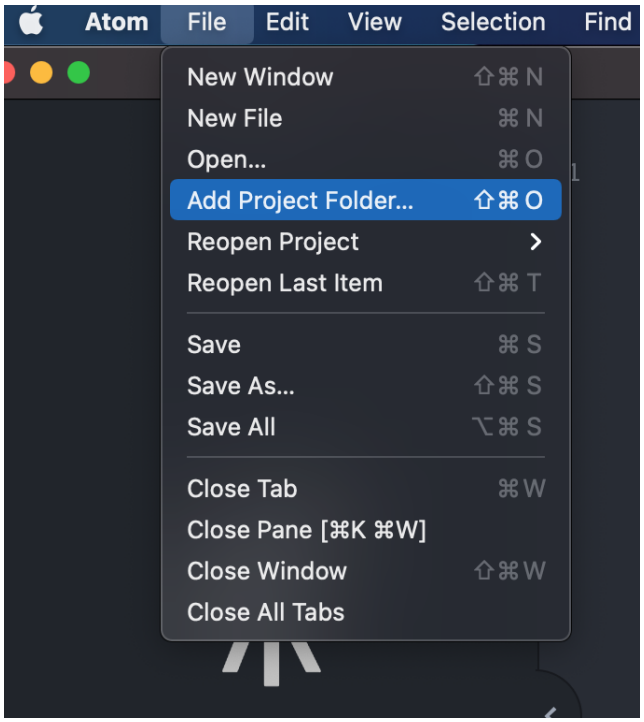
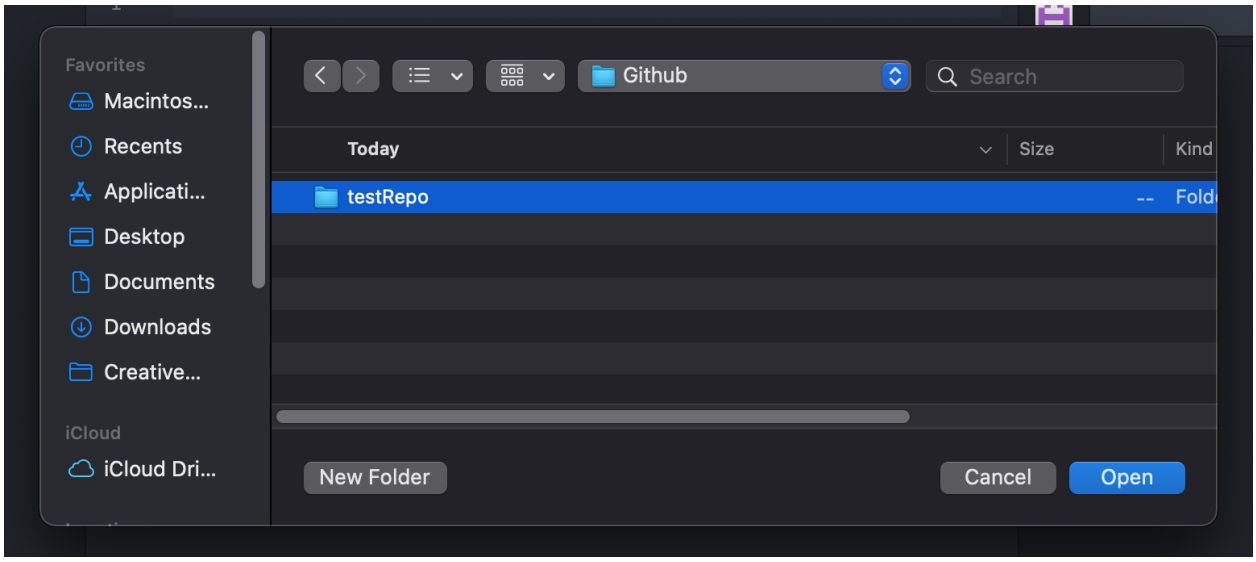
5. **Now let's open that repository in Atom. Open Atom, then click "File" and "Add Project Folder". Then navigate to where you have saved your repository and select the folder.**





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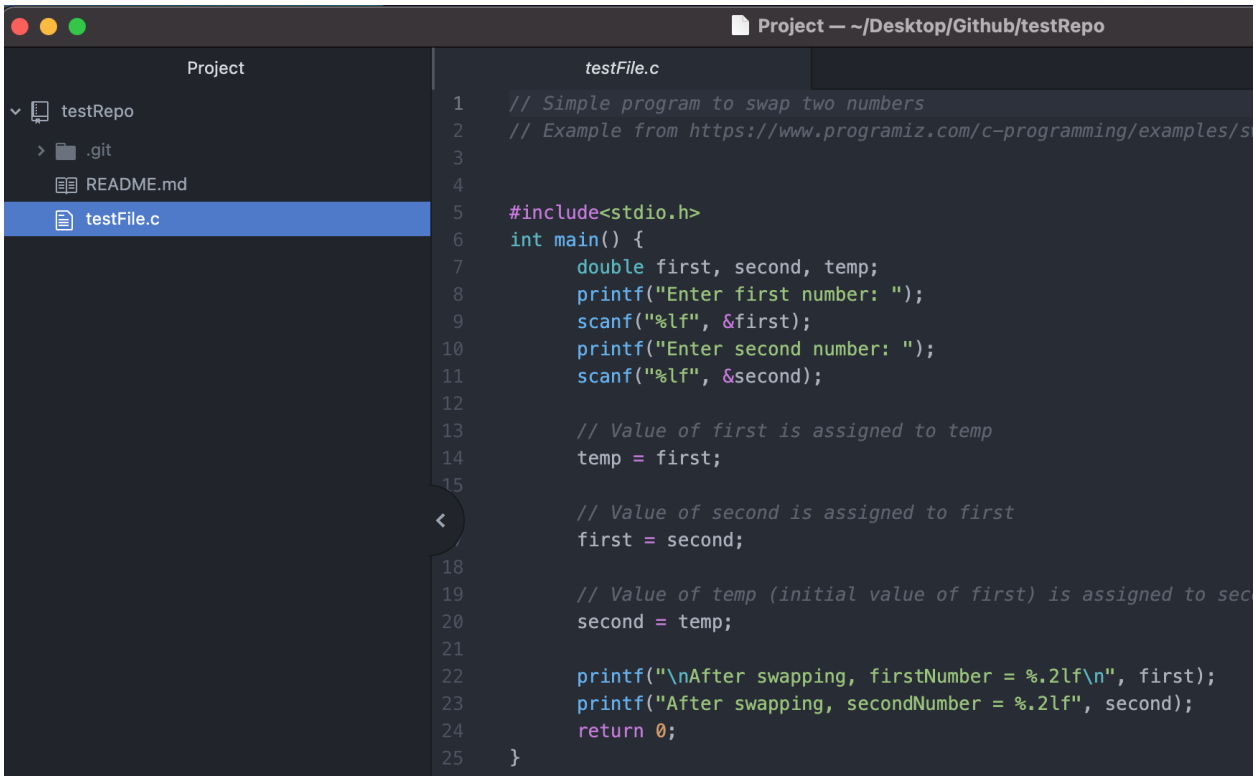
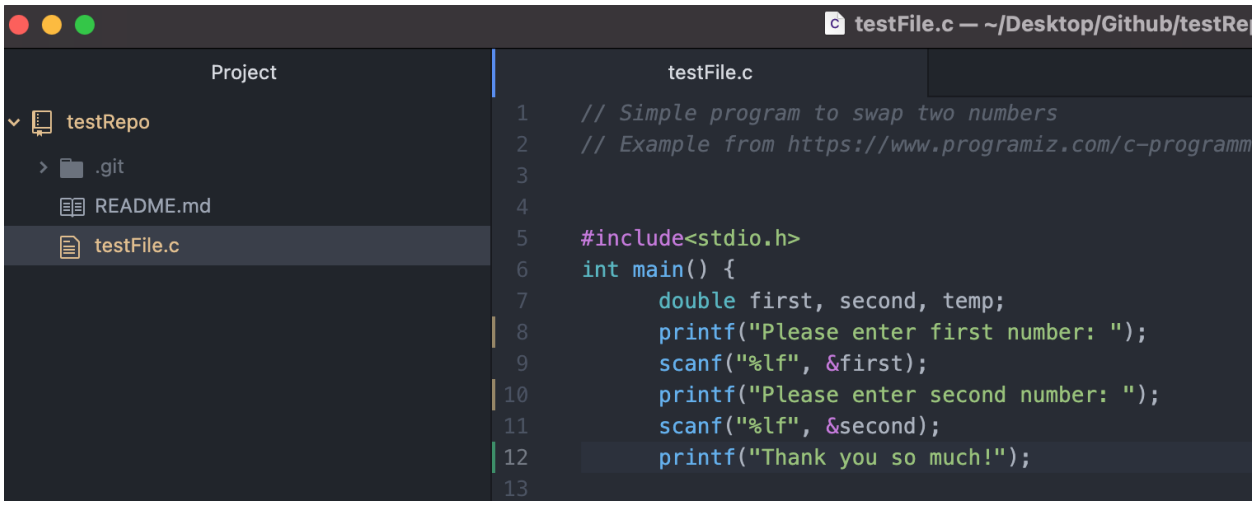
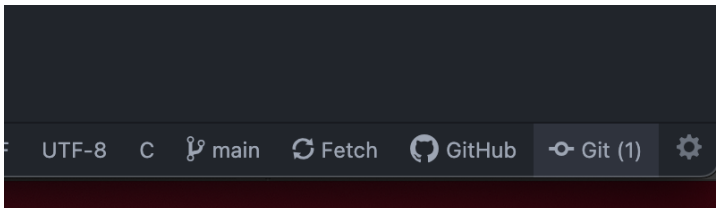
6. **Now you can see your repo in the Project pane on the left, and you can open your test file! Let's make a change to the file and make our first commit.**

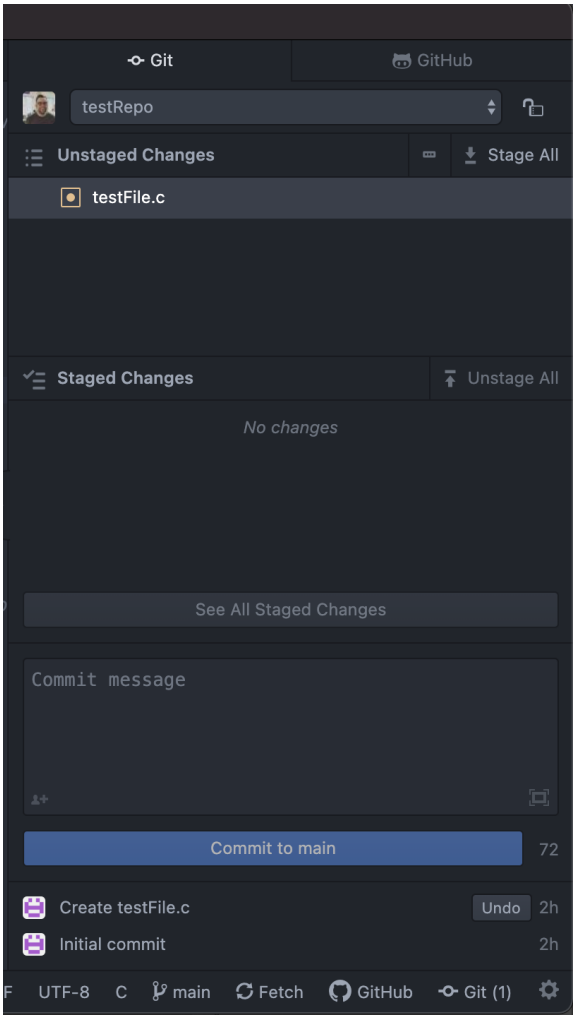


I've edited my file to make the user interface more polite, and saved the file. Now my file is highlighted in orange in the project panel.

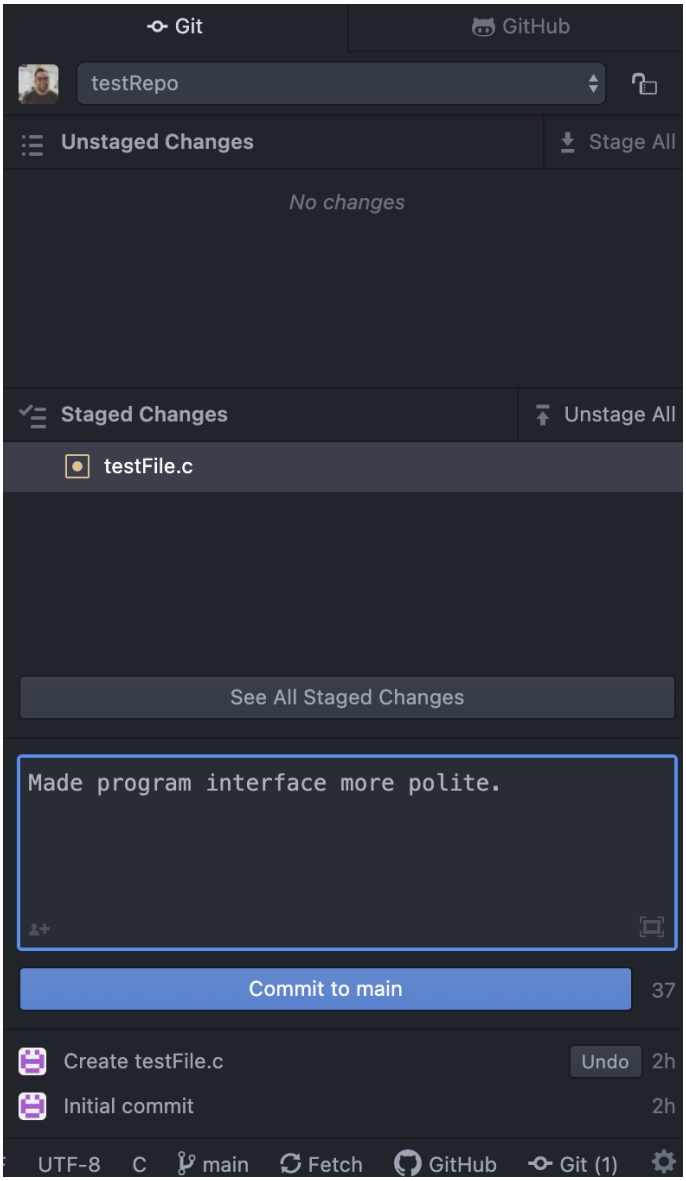


Now click on the "Git" tab in the bottom right corner of the Atom window. We can commit this change directly from Atom.

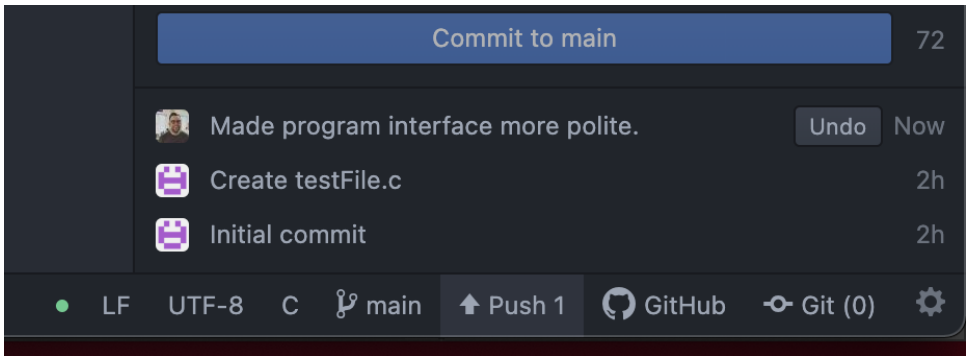




First click the “Stage All” button to put your change in the “Staged Changes” area. Then type in a short commit message about what was changed and you can commit the change to the repository.

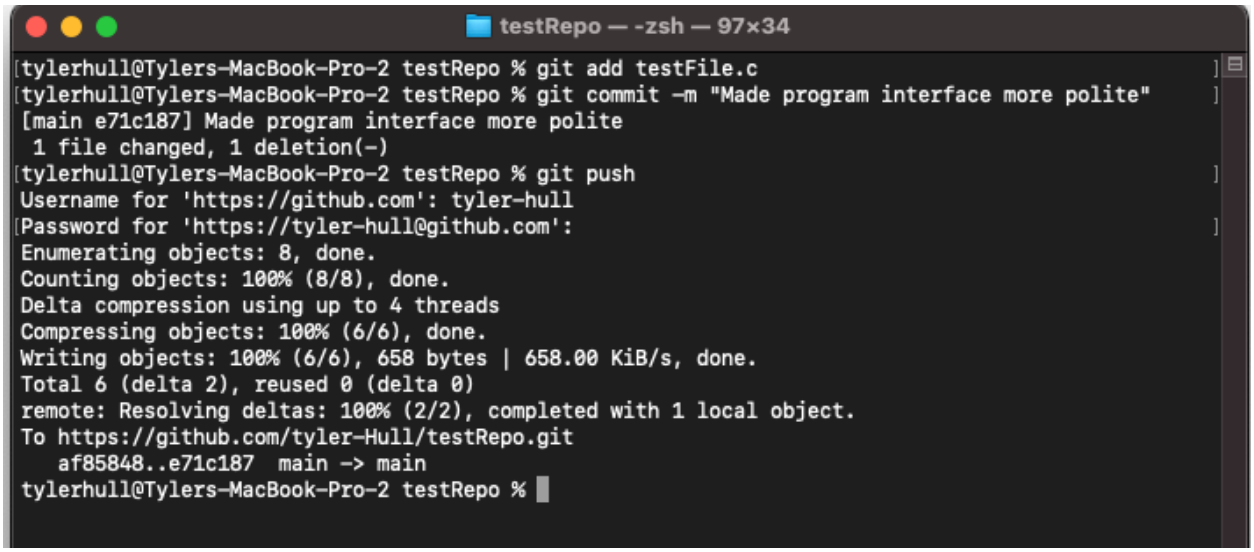


Now “Push” your changes to the main branch of the repository!



7. **We can also commit our changes using the command line. We can use the following git commands to do the same thing from the command line.**

git add <name of file or . to add (stage) all changed files>
git commit -m " <commit message you want to include> "
git push



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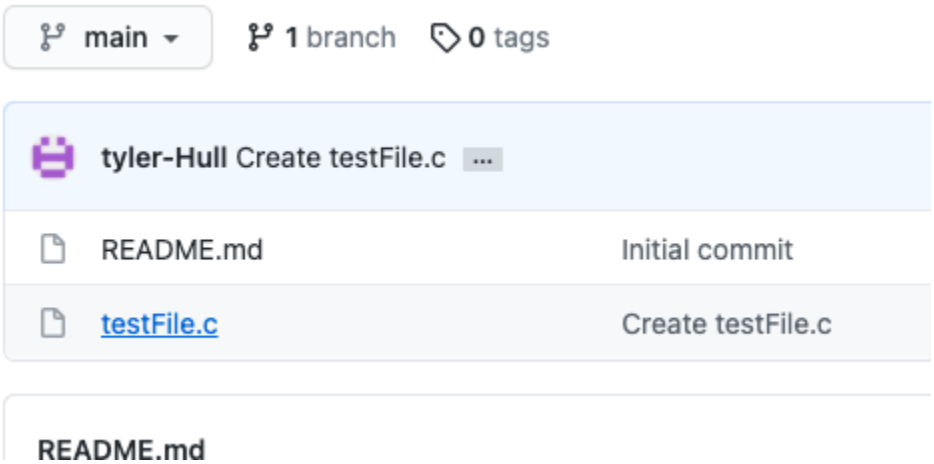
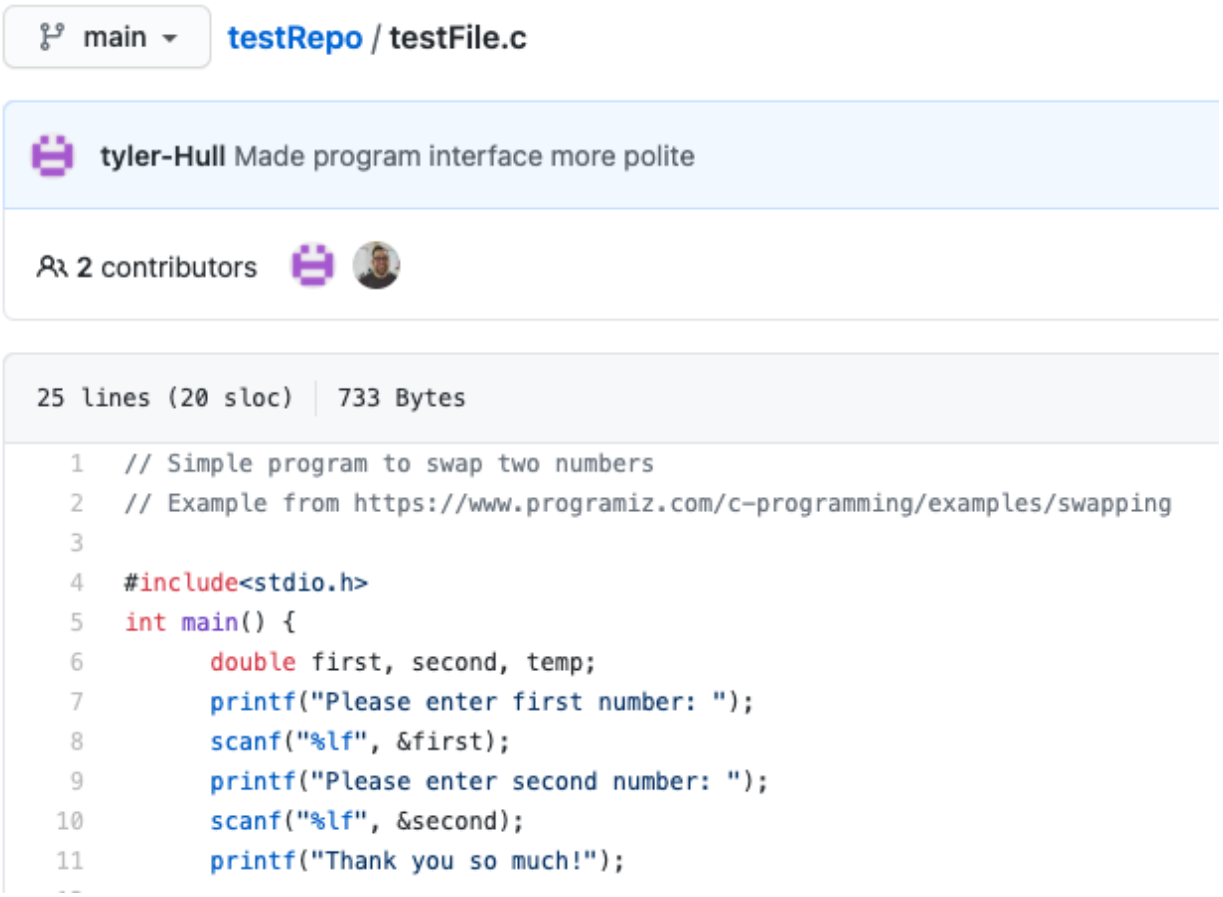
8. **Now if we open our test repo on Github, we can see that the file includes our changes!**





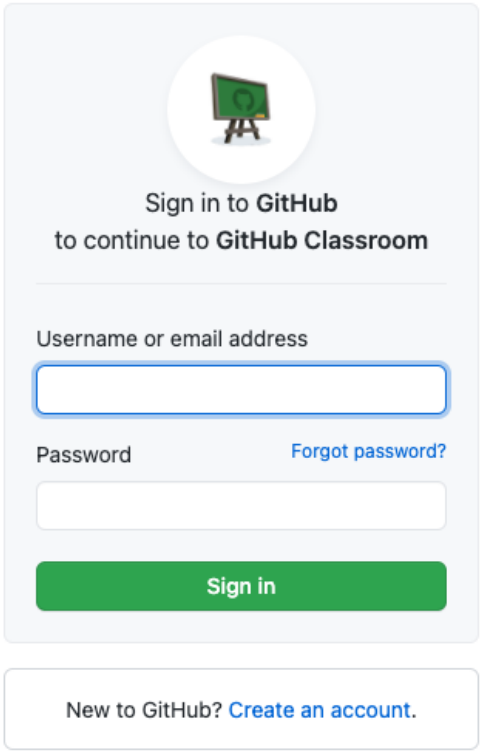
First Github Classroom Assignment

Now that you know how to clone a repository and edit files in Atom, let's take a look at how to access an assignment in Github Classroom. Then we'll edit a file and make our first commit for a github classroom assignment!

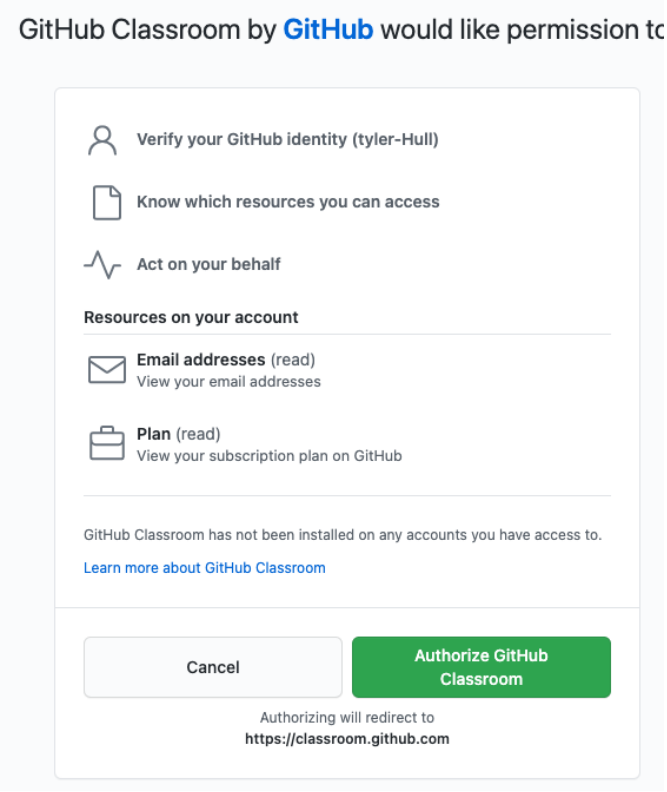
1. **When a new assignment is ready, you can find the instructions as well as the link for the Github classroom assignment on D2L. For this tutorial, the link for the assignment is below.**

   https://classroom.github.com/a/j2AvYfIC

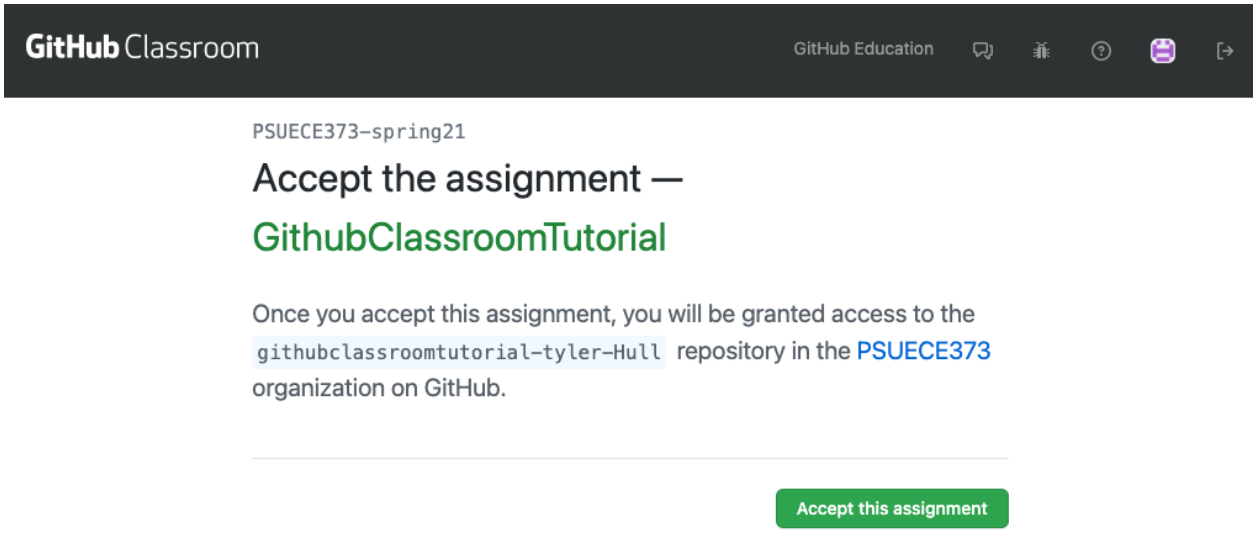
   Click on the link, then sign in to your account to continue to Github Classroom.



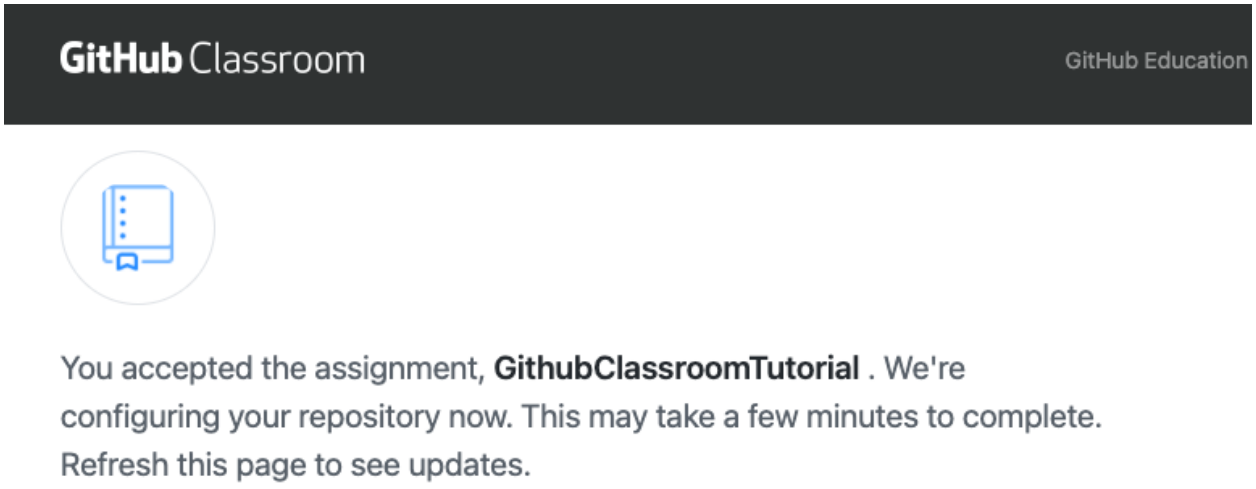
Next, authorize Github Classroom on your Github account to get access to the assignment.



Now you need to accept the assignment. Click on the green “Accept this assignment” button to continue.



Your repository is now being created by Github, but you might see a message telling you that it’s being configured. Try refreshing the webpage if you see a message like shown below.



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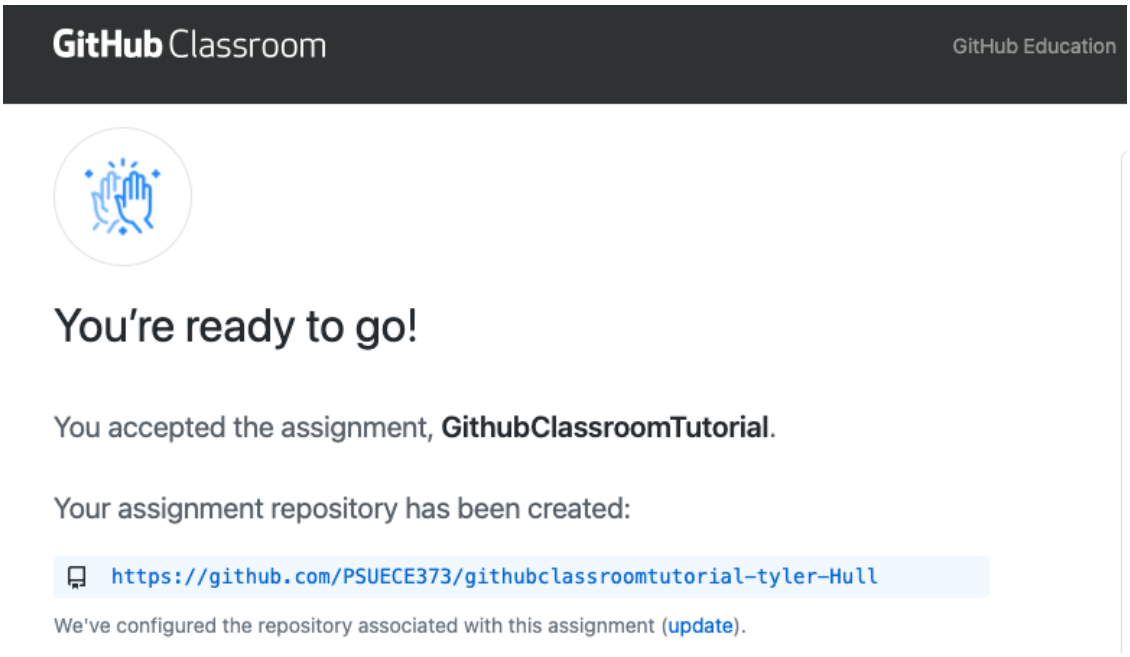
2. **When your repository is ready to go, the webpage will display it’s URL link for you. Click this link to be taken to the repository that is setup just for you. Each student will have a different repository that is created for them.**



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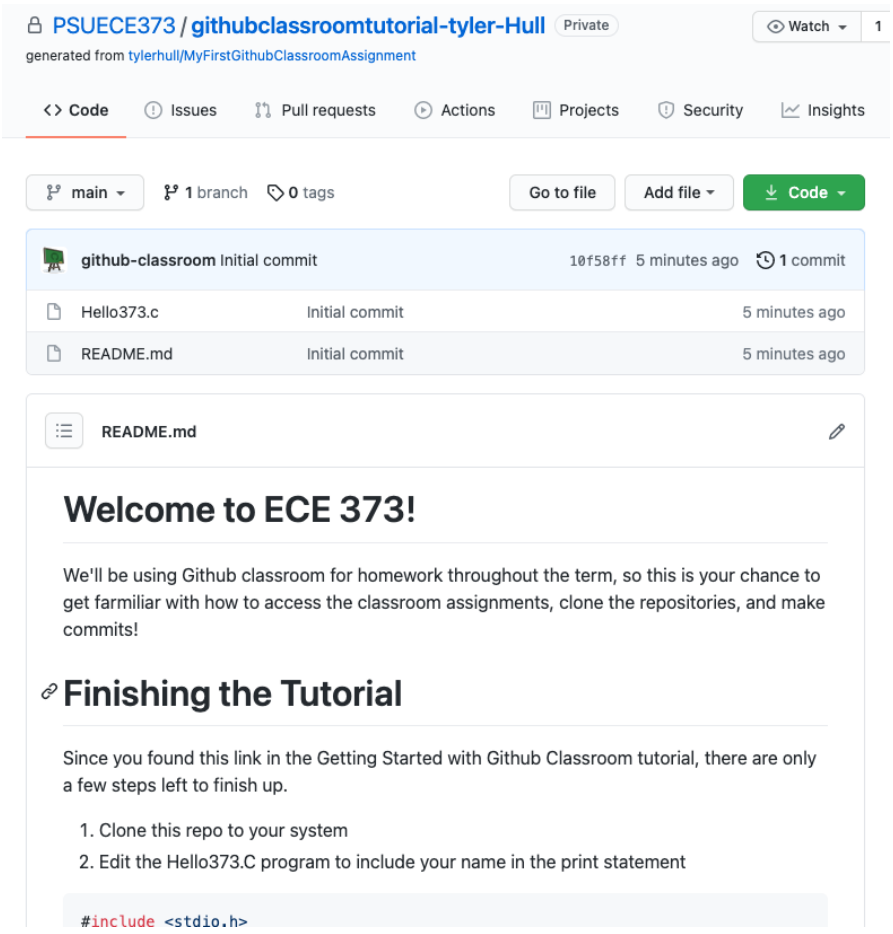
3. **When you click the link, you will be taken to your repository. Some instructions have been added to the README file to tell us what we need to do next.**



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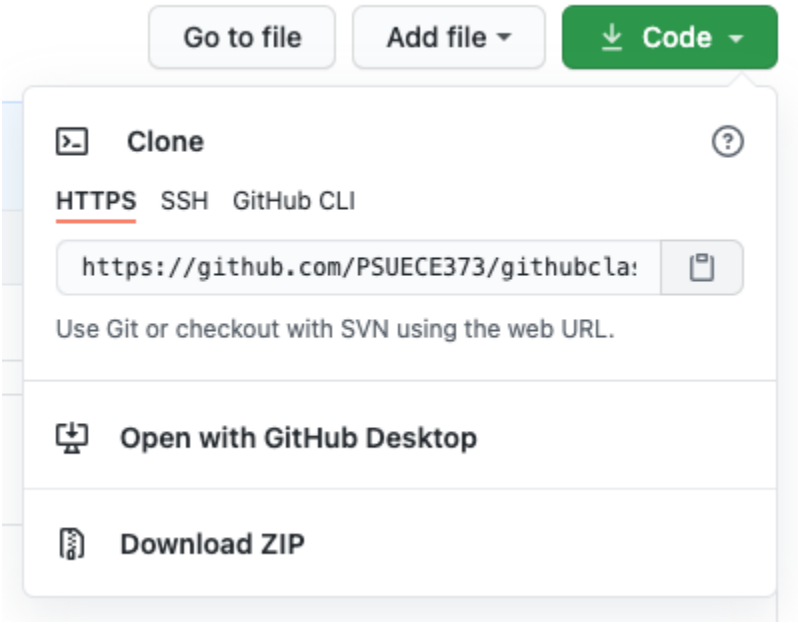
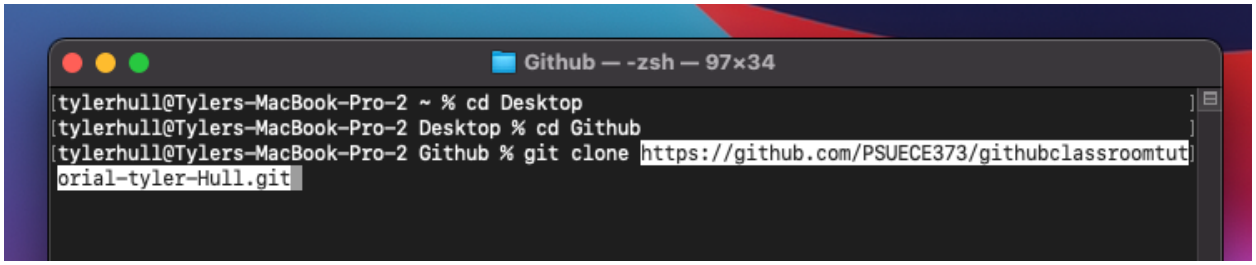
4. **First, let's clone the repository. Click on the green "Code" button and copy the URL. Then clone the repository to the folder where you cloned your test repository.**





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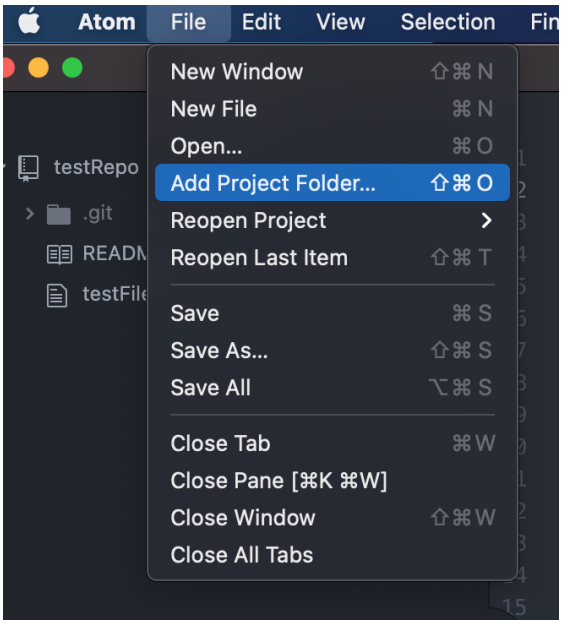
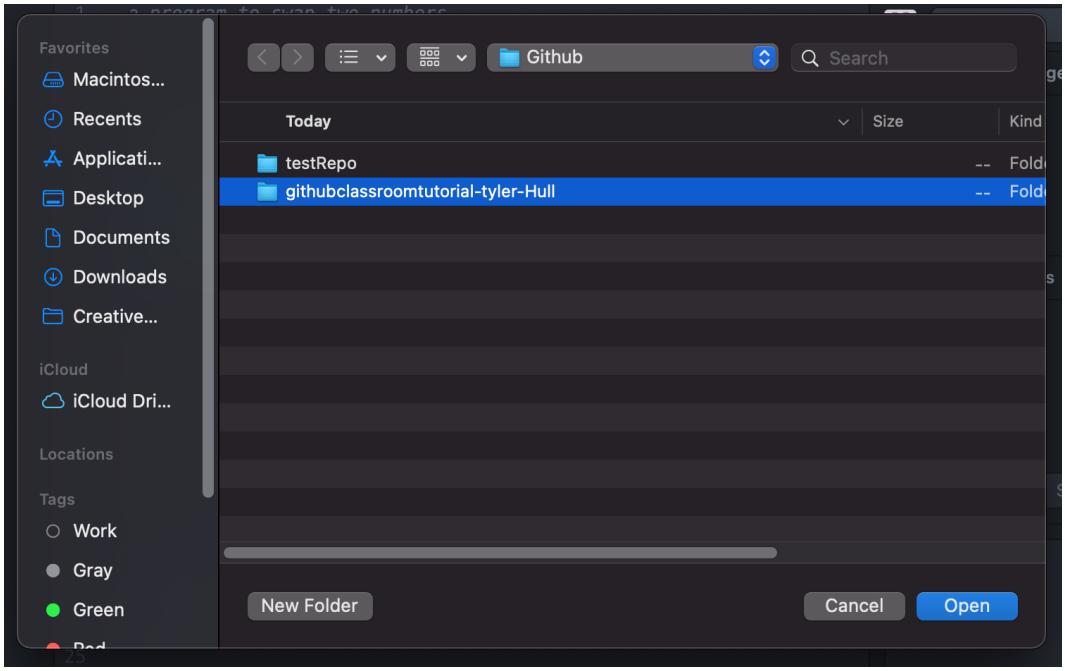
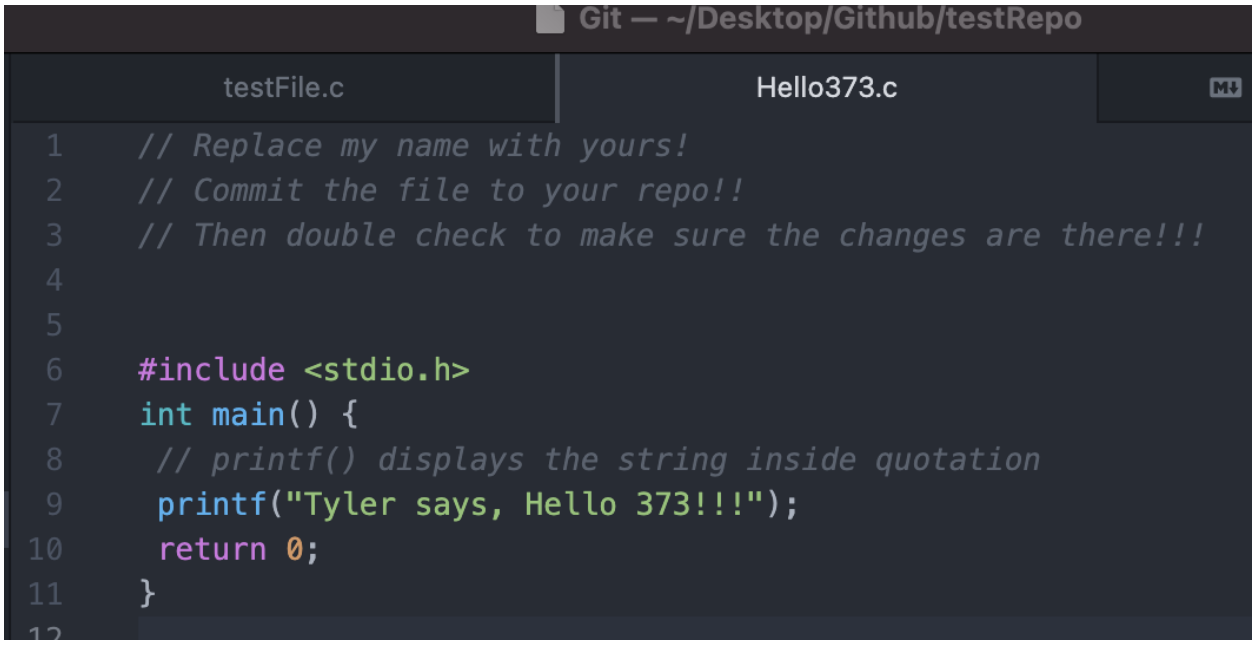
5. **Now add the repository folder to Atom, and make changes to the file following the instructions in the README.**



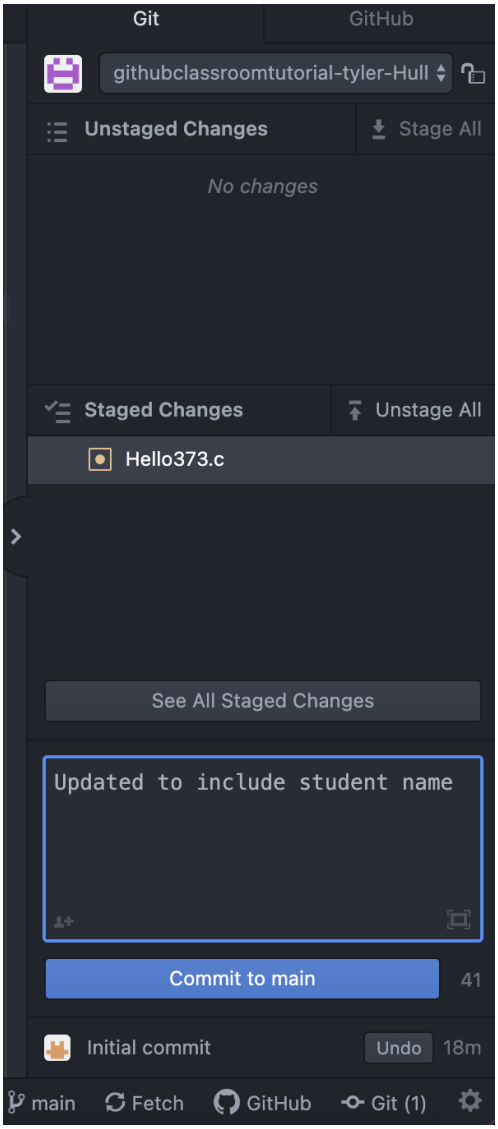
Choose your repository and add it to the Atom editor's project pane.



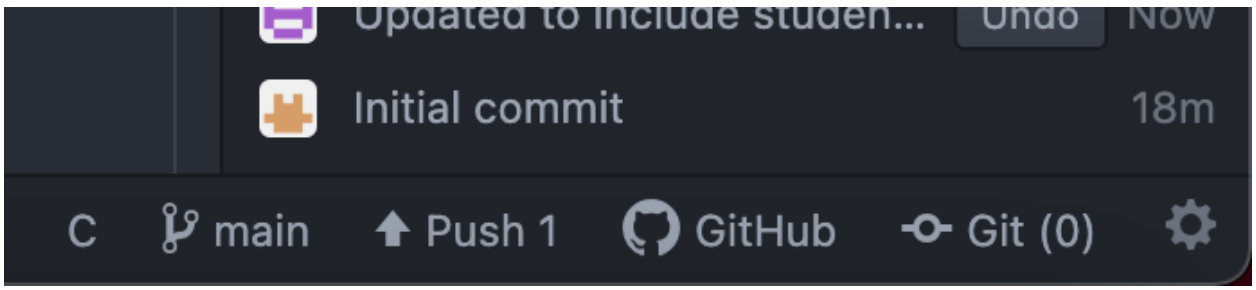
Following the instructions, open the *Hello373.c* file and edit the file to include your name in the print statement.



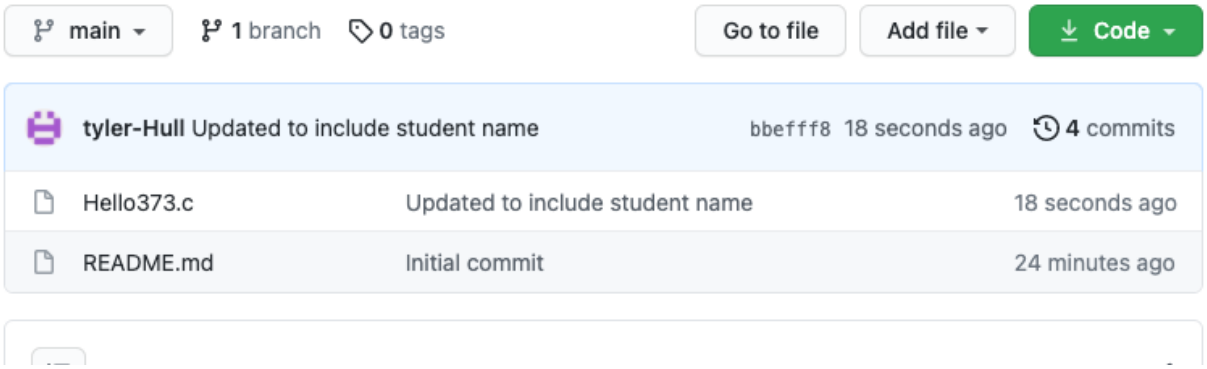
Save your changes and then stage and commit your changes either using Atom or the command line.



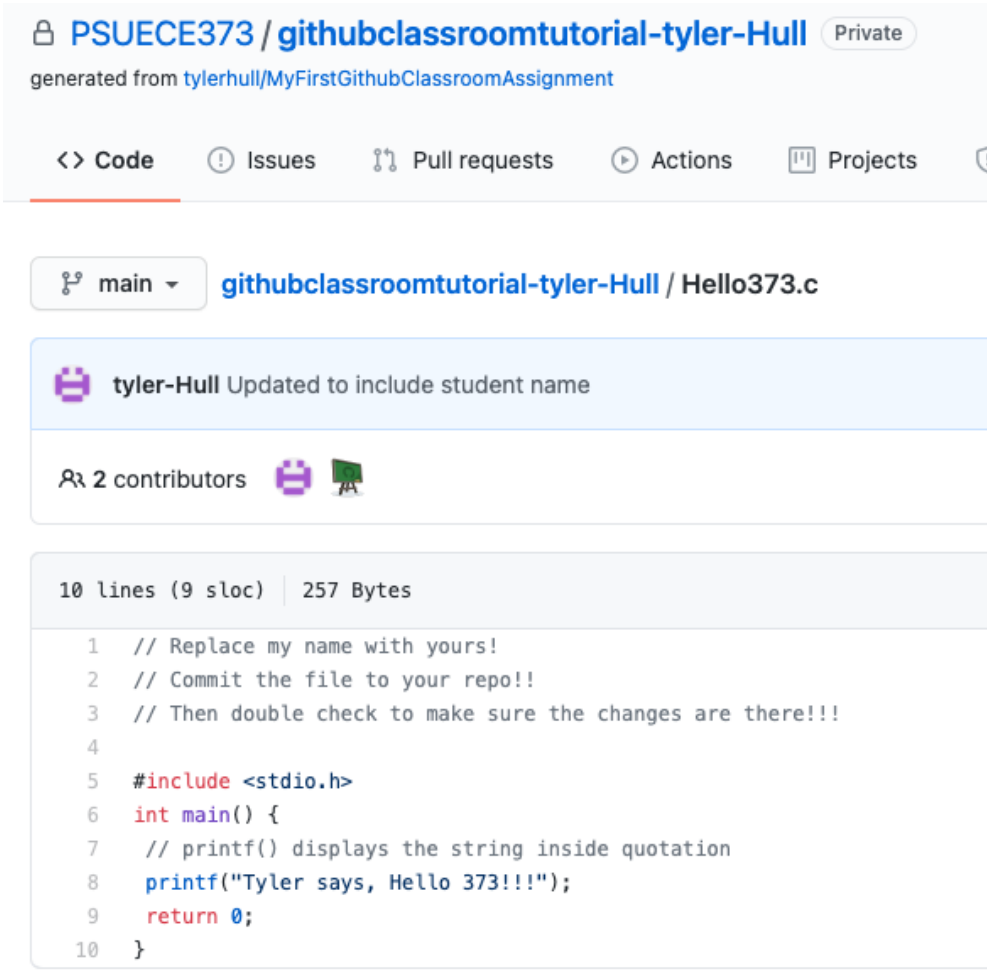
Push your changes to the main branch of the repository.



You should now see your commit message next to the file in the repository on Github. Click on the file name to open the file and make sure your changes are updated.



Now our changes to the file are made!



Nice work!!! Now you've gotten some practice cloning repositories, making commits and pushing changes, and you completed your first assignment in Github Classroom!

More Information

For more information on how to use Github, check out the guide and Github's Youtube tutorial series!

https://guides.github.com/activities/hello-world/

https://www.youtube.com/channel/UCP7RrmoueENv9TZts3HXXtw