

## What is GitHub?

GitHub is a version control system that is built on [Git](#). It allows one to store code and make changes to an online repository. This allows one to easily change and update code as well as collaborate with others by sharing a common repository. We will be using GitHub Classroom to distribute all of the stencil code for assignments using a link on the course website, but let's learn a little more about GitHub and Git.

## Why GitHub?

- Store your code and files on an online repository so you won't lose your code.
- If you commit (save) and push your code often:
  - If your computer crashes or you make a mistake, you can revert to an earlier version of your code and keep working
  - You can create a record of changes and always check out a previous version
- Allows for easy collaboration. People can work on the same repository and update/change code on separate machines.
- You can sign up for an account [here](#) and get the [GitHub Student Pack](#) with your Brown Email for more tools and features

## Some Essential Commands of Git

[Git](#) is the basis of GitHub and is a version control system you can use right from the command line, you can learn more about it on their website!

- Download the latest version of Git [here](#)
- Check out the installation guide [here](#).
- There is also a great cheat sheet of git commands that GitHub provides [here](#).

Below are some common git commands to get you started!

git clone [URL-or-path-to-repo]	retrieve an entire repository from a hosted location via URL to your local machine
git add [file]	Add the given file to the repository. Use this when you create a new file and want to include it in a commit. Alternatively, include [-a] to add all files from your local repo

git commit -m "[some message]"	Commit your code to finalize and save changes to your current branch and repo on your local machine.  Include [-a] to automatically add changed files that git is already tracking and [-m "[some message]"] to include a message about the commit (otherwise you will be kicked to an editor in which to type out your message).
git push	Push whatever commits you have made locally to the repository you cloned from to save your changes to the online repo. (You might have to pull first to sync with the remote repository)
git pull	Pull any changes from the remote repository you cloned from.

## Github Desktop

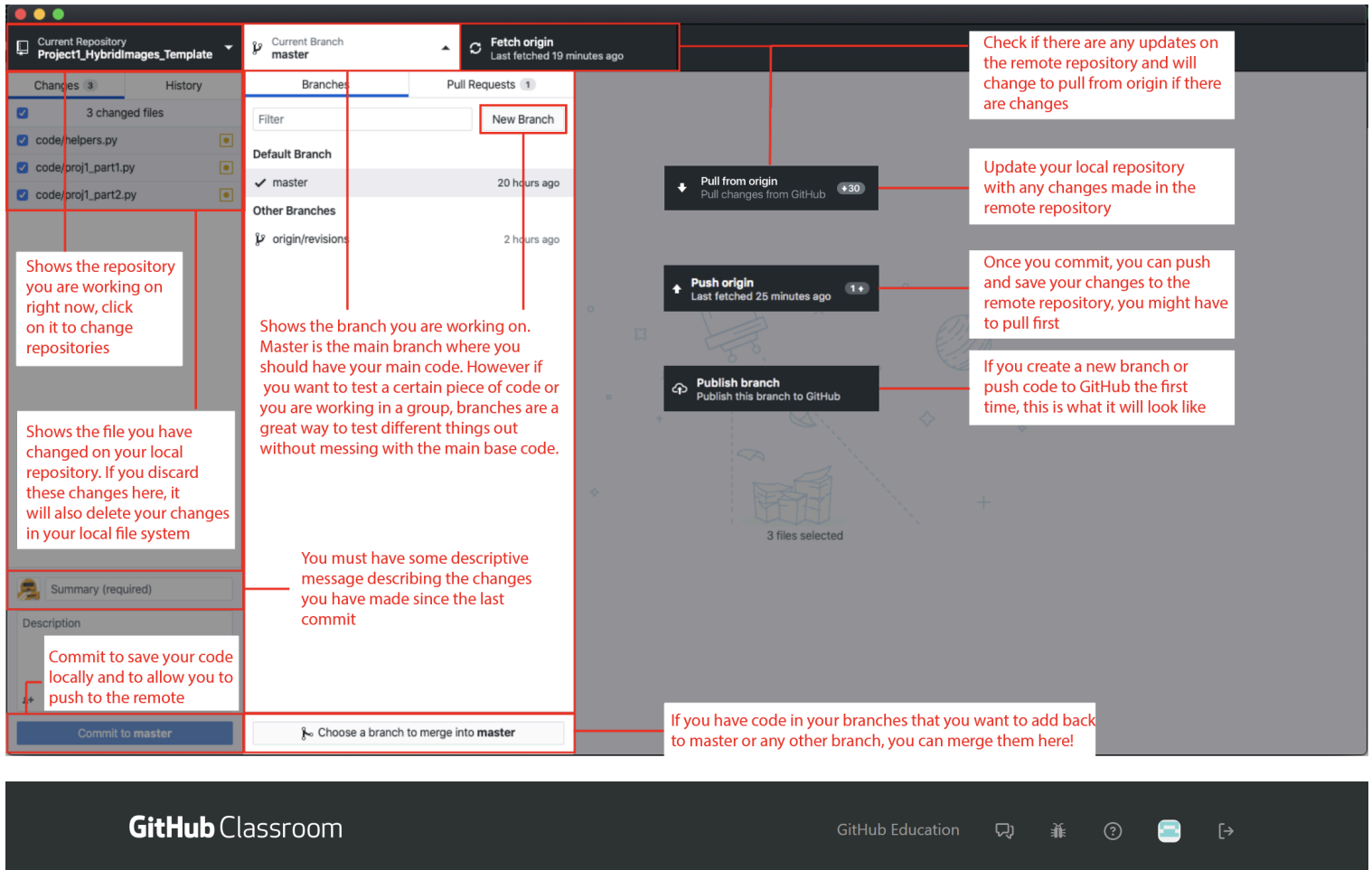
If you prefer GUIs we recommend using GitHub Desktop, this gives you a great visual way of interacting with GitHub.

Download [GitHub Desktop](#)  
Step by step [Guide](#)

Figure 1: General display of the features provided by GitHub Desktop

## GitHub Classroom

We are using GitHub classroom in this course. All assignments and stencil code will be available through a link. Once you click on the link this is what you should see:



CS1951A Spring 2021 Classroom

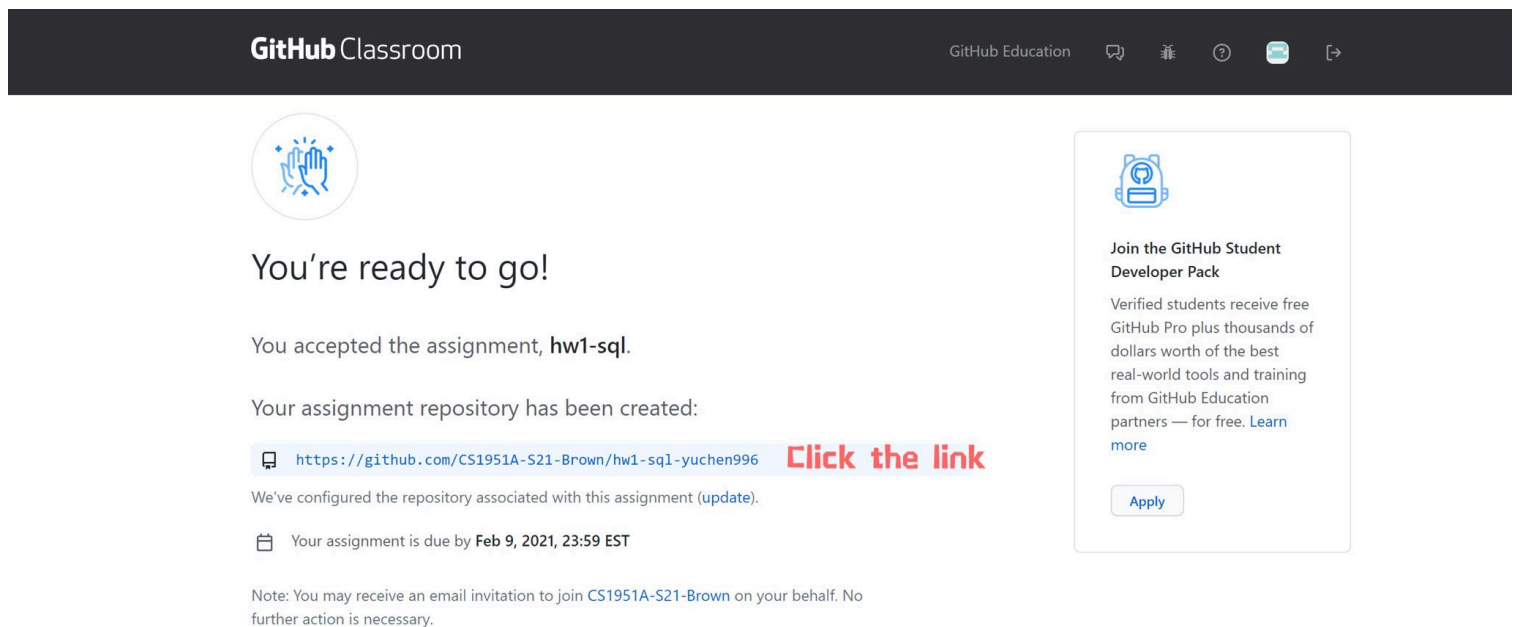
## Accept the assignment — hw1-sql

Once you accept this assignment, you will be granted access to the `hw1-sql-yuchen996` repository in the [CS1951A-S21-Brown](#) organization on GitHub.

Accept this assignment

Figure 2: This is what you should see after clicking on the assignment link

After Accepting the button, GitHub will create a repository unique to you and after everything loads, you should see this page:



The screenshot shows the GitHub Classroom interface. At the top is a dark header with the 'GitHub Classroom' logo on the left and 'GitHub Education' with several icons on the right. The main content area has a light gray background. On the left, there is a circular icon with a blue hand and stars. Below it, the text reads: 'You're ready to go!', 'You accepted the assignment, hw1-sql.', 'Your assignment repository has been created:', and a link 'https://github.com/CS1951A-S21-Brown/hw1-sql-yuchen996' with a red 'Click the link' button next to it. Below the link, it says 'We've configured the repository associated with this assignment (update).' and 'Your assignment is due by Feb 9, 2021, 23:59 EST'. A note at the bottom states: 'Note: You may receive an email invitation to join CS1951A-S21-Brown on your behalf. No further action is necessary.' On the right, there is a white box with a blue icon of a person with a gear. The text inside says: 'Join the GitHub Student Developer Pack', 'Verified students receive free GitHub Pro plus thousands of dollars worth of the best real-world tools and training from GitHub Education partners — for free. Learn more', and an 'Apply' button.

GitHub Classroom

GitHub Education

You're ready to go!

You accepted the assignment, **hw1-sql**.

Your assignment repository has been created:

<https://github.com/CS1951A-S21-Brown/hw1-sql-yuchen996> **Click the link**

We've configured the repository associated with this assignment ([update](#)).

Your assignment is due by **Feb 9, 2021, 23:59 EST**

Note: You may receive an email invitation to join [CS1951A-S21-Brown](#) on your behalf. No further action is necessary.

Join the GitHub Student Developer Pack

Verified students receive free GitHub Pro plus thousands of dollars worth of the best real-world tools and training from GitHub Education partners — for free. [Learn more](#)

[Apply](#)

Figure 3: After accepting the assignment, a new GitHub repository will be created!

After clicking on the link, it will navigate you directly to your own private repository with the stencil code already in the repository.

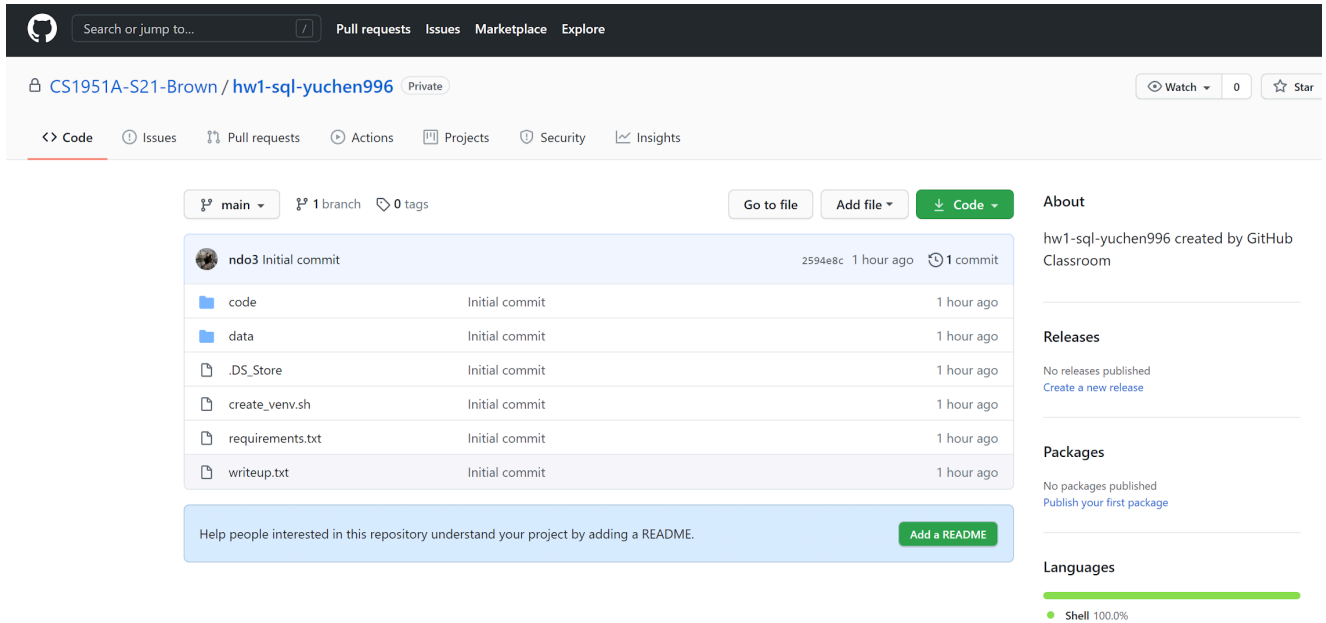


Figure 4: This is your own private GitHub repository containing the files for the assignment

Now you have your own repository! You are welcome to look at the files by clicking on them in the browser, but in order to change the files and actually work on the assignment, you might want to actually download the file and simply update them using Git. Click on the Clone or Download button and you will see:

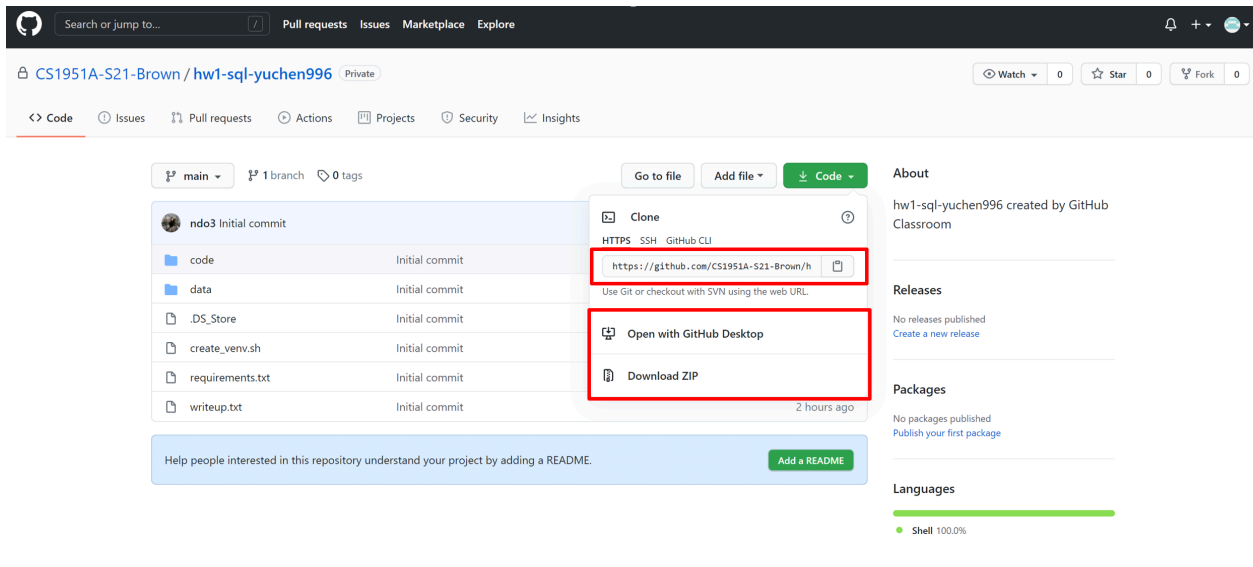


Figure 5: download options

Here you see three options to download the files.

- The first option is copying the URL and using the Git command `git clone <GIT URL>` in the folder where you want to clone your homework assignment to.
- The other option is “Download ZIP” and that will download the files as a zipped folder. This will download the files without version control and will prevent you from doing the traditional git commands that would allow you to save your work in your repository and to ask for asynchronous help from TAs on Piazza.
- The option we will focus on is the “Open in Desktop” one. If you have downloaded GitHub Desktop and you click on this option, you should see:

After specifying the file path you want the repository to be and click clone, everything should download to that folder! Then you can start to work on it!

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