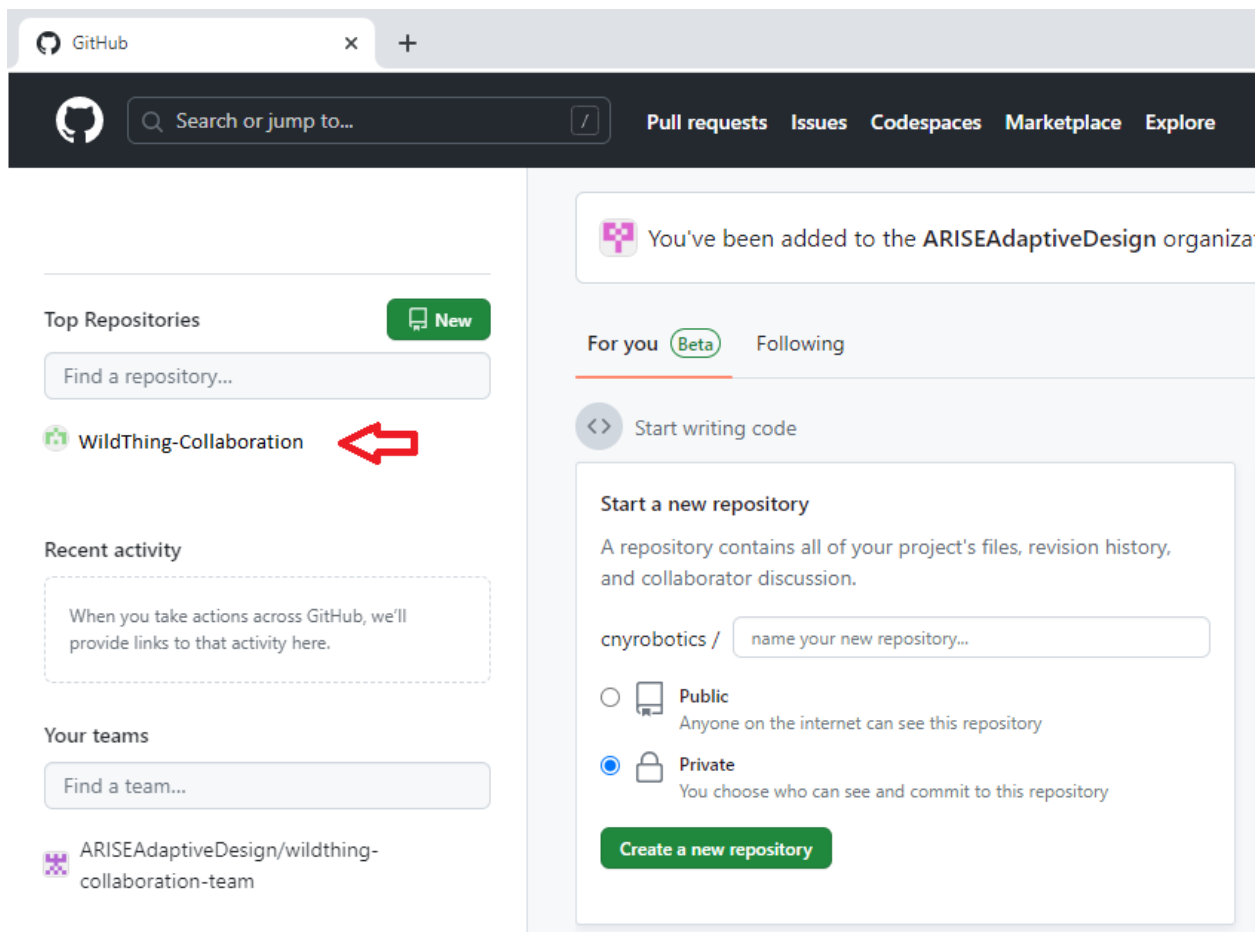


Using GitHub

Navigate to your GitHub account by going to github.com and clicking on “Sign in”.

Enter your *Username or email address*, followed by your *Password*, and click on “Sign in”.

Your “Main Page” will appear. This page looks different for almost every user, but what you are mainly interested in should appear at the very left – either under “Top Repositories” as shown below, under “Popular Repositories”, or just under a label “Repositories”. (The label depends on your personal settings and your activity.)

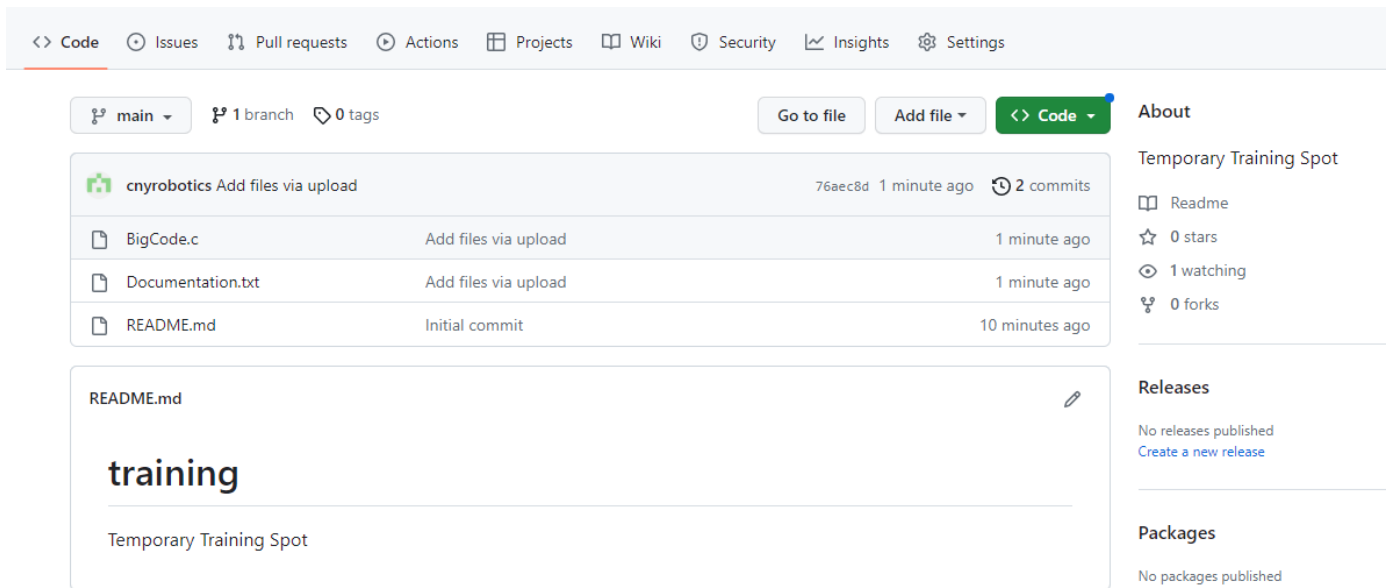


Click on the Repository you are interested in (as an example, WildThing-Collaboration is pointed out above).

A Repository is essentially a “project” that is being worked on, with all of its files and its revision history.

For our examples, we will use a Repository called “training”.

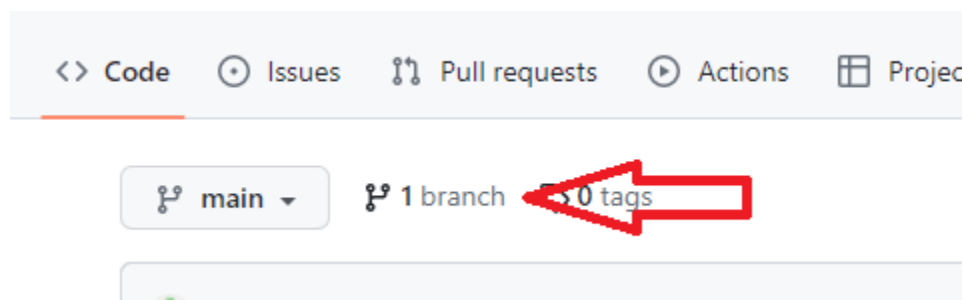
When first selecting a Repository, you will typically be brought directly to the Top Branch of the Repository – the primary, and most recent “production” version of the files. This Top Branch is generally named “main” by default.



In the Repository illustrated above, a file called README.md was created when the Repository was first created. This file is a critical file to communicate information about the Project and Repository to anyone using Repository.

Two other files have also been placed in the Repository: Documentation.txt and BigCode.c which were added later and can also be seen listed.

On the top left, above the list of files, is the name of the Branch, “main”. Next to the name of the Branch you can see that there is only “1 branch” – only the “main” Branch exists right now.



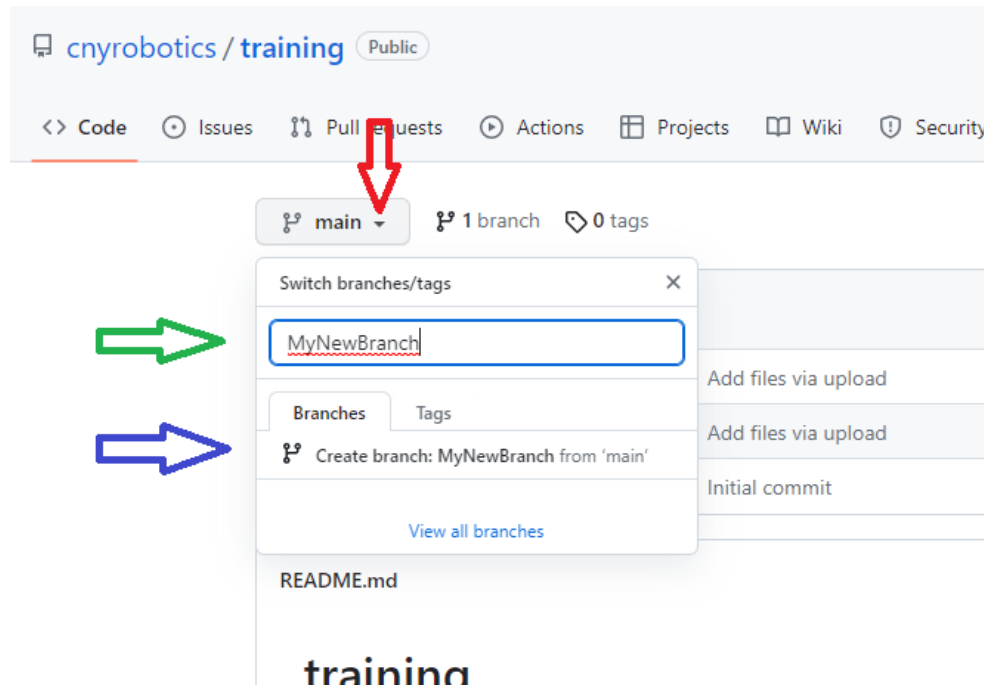
Changes are not made directly in this Repository (typically). Changes are made in working copies of it – other Branches. Those changes are then updated to “main”. First you “commit” your changes to your own Branch, then you update the “main” Branch with the latest changes.

The first step is to make your own copy of the “main” Branch so as to not corrupt the “production” or working versions.

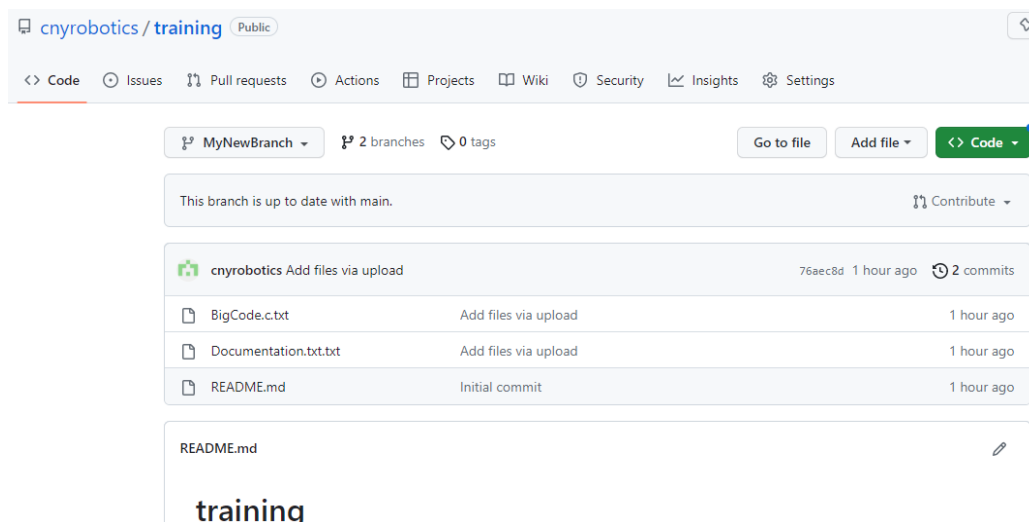
To make your own copy of the Repository in order to make modifications, click on the drop-down next to “main”. (Red arrow below)

The following screen will appear, where you can type in the name of your personal Branch – in this case it is “MyNewBranch”. (Green arrow below)

You will notice that the default is listed just below it to “Create branch: MyNewBranch from ‘main’”. (Blue arrow below) Click here to build the new Branch.

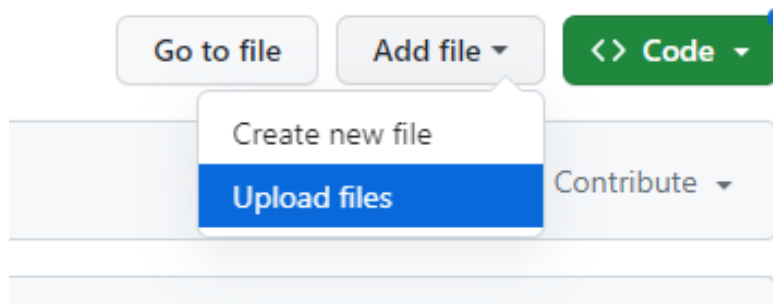


Once you have clicked on the “Create branch”, the new Branch will be displayed. It should look identical to “main”, have its name at the top left, and should say “This branch is up to date with main.”

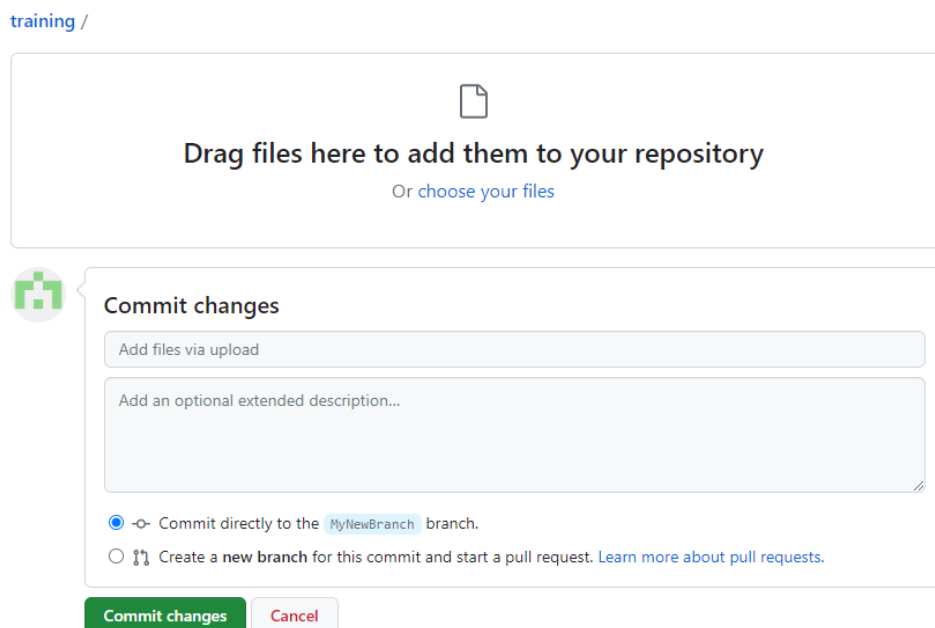


The files in your own Branch can be modified and updated. Updates to each file will be tracked separately from anything in “main” or any other Branch.

After you have completed making modifications to your files locally (e.g., on your PC), you can upload them into your Branch by clicking on the “Add file” button at the top right.



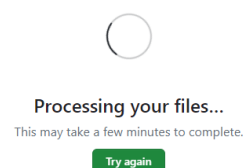
Next click on “Upload files”.




You can select your files by clicking “choose your files” or you can drag the changed files onto the noted area at the top of the screen.




Verify that your Branch is named at the bottom (“Commit directly to the MyNewBranch branch”).

Click on “Commit changes” to update your Branch with the changes that you have made. You may have to wait for the following screen:








Soon your updated Branch should be displayed.


 MyNewBranch had recent pushes less than a minute ago [Compare & pull request](#)

 MyNewBranch ▾  2 branches  0 tags [Go to file](#) [Add file ▾](#) [Code ▾](#)

This branch is **3 commits ahead** of main. [Contribute ▾](#)

 cnyrobotics Add files via upload 7ac6578 3 minutes ago  5 commits




| | | |
|---|----------------------|----------------|
|  BigCode.c.txt | Add files via upload | 5 minutes ago |
|  Documentation.txt.txt | Add files via upload | 11 minutes ago |
|  README.md | Initial commit | 1 hour ago |


README.md 

training

Notice that at the top it shows that there were recent “pushes” – or updates to it. Below that it states that “*This branch is 3 commits ahead of main*” because changes were made only in this Branch, not in “main” Branch.

Note that you can always switch from one Branch to another Branch by selecting them with the same drop down next to the Branch name.

 main ▾  2 branches  0 tags

Switch branches/tags 

Find or create a branch...

Branches

Tags

✓ main

MyNewBranch

default

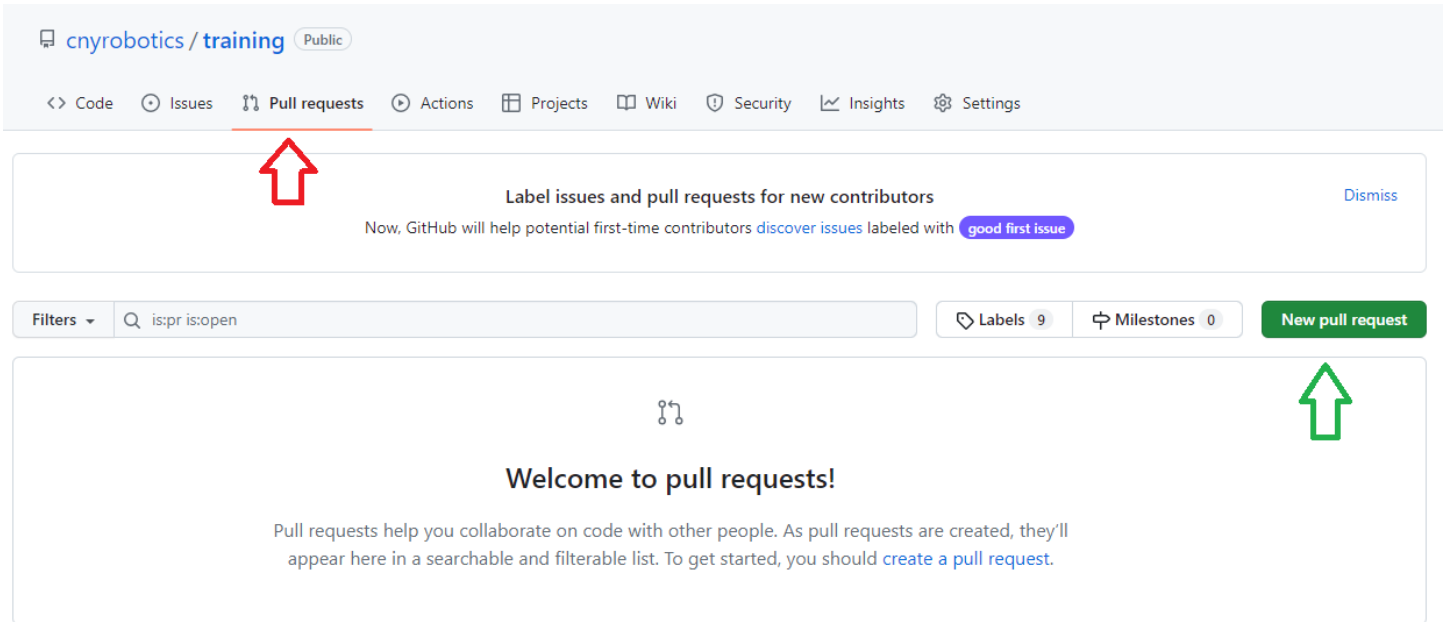
[View all branches](#)

README.md

Remember that you need to keep your Branch up to date. If others are making changes in their Branches, you need to update your Branch to reflect these changes.

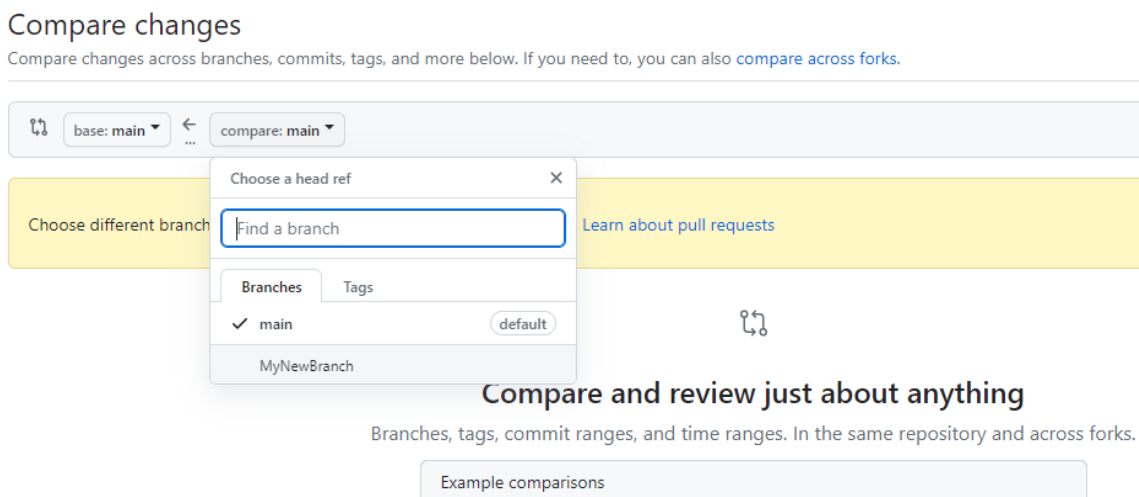
Updating your Branch may result in conflicts (both of you have updated the same file), and these conflicts need to be resolved before the update can complete.

To update the “main” Branch with your changes, you can create a “Pull Request”. To do so, click on “Pull requests” at the top left of the screen. (Red arrow below)



Next click on “New pull request”. (Green arrow above)

A new screen will appear, and will say “Compare changes” – defaulting to “*base:main* ← *compare: main*” as shown below.



Click on the “*compare: main*” and select your Branch – the one with the changes you would like to update “main” with. In this case “MyNewBranch” is highlighted.

A screen will now appear, conveniently displaying many of the differences from your Branch to the “main” Branch. If there are no conflicts, then “Able to merge.” will appear at the top of the screen. (Red arrow below)

Comparing changes

Choose two branches to see what's changed or to start a new pull request. If you need to, you can also [compare across forks](#).

base: main ← compare: MyNewBranch ✓ Able to merge. These branches can be automatically merged. ←

Discuss and review the changes in this comparison with others. [Learn about pull requests](#) → Create pull request

3 commits 2 files changed 1 contributor

Commits on May 22, 2023

- Add files via upload cnyrobotics committed Verified ecf3827 <>
- Add files via upload cnyrobotics committed Verified bae382c <>
- Add files via upload cnyrobotics committed Verified 7ac6578 <>

Showing 2 changed files with 2 additions and 1 deletion. Split Unified

1 BigCode.c

```
... @@ -1,2 @@
1 + 1.1 This is an update
1 2 1.0 This is the original Code
```

2 Documentation.txt

```
... @@ -1,1 @@
1 - This is just documentation
1 + This is updated documentation
```

The file “BigCode.c” had only one update to it – a new line (Orange arrow above), while the Documentation.txt file had a deletion (in red) of a line and the addition of a line (in green) – or in this case a line updated. (Blue arrow above).

If everything looks good, click on the “Create pull request” button at the top right. (Green arrow)

This will now open a Pull Request. You will now have the opportunity to put details of the changes you are looking to make with this update, or communicate to those approving your merge what it is that you are looking to update.

Open a pull request

Create a new pull request by comparing changes across two branches. If you need to, you can also [compare across forks](#).

base: main ← compare: MyNewBranch ✓ Able to merge. These branches can be automatically merged.

My new branch has all the new changes in it

Write Preview H B I ≡ <> 🔗 ≡ ≡ ≡ @ 📎 ↶ 📄

Ready to go

Attach files by dragging & dropping, selecting or pasting them. 📎

Create pull request

- ✓ Create pull request
Open a pull request that is ready for review
- Create draft pull request
Cannot be merged until marked ready for review

Remember, contributions to this repository should follow our [GitHub Community Guidelines](#).

You will notice that there is an option to “*Create draft pull request*” – which adds one more layer of review before creating a Pull Request.

Once you click on the “Create pull request” button (if “*Create pull request*” is selected) it is posted and will appear under “Pull requests” at the very top of the screen. You may be taken to the Pull Request directly, depending on your authority.

The Pull Request will show all the details that you included, your title, and your description. “Merge pull request” will be selected to move all of your updates into the “main” Branch.

Once the Merge is complete, you will be notified that you can delete your Branch – because it is now identical to the “main” Branch, but officially “1 commit” behind.

At this point, you would start all over again from the beginning with a new Branch when you are ready to start making changes again.