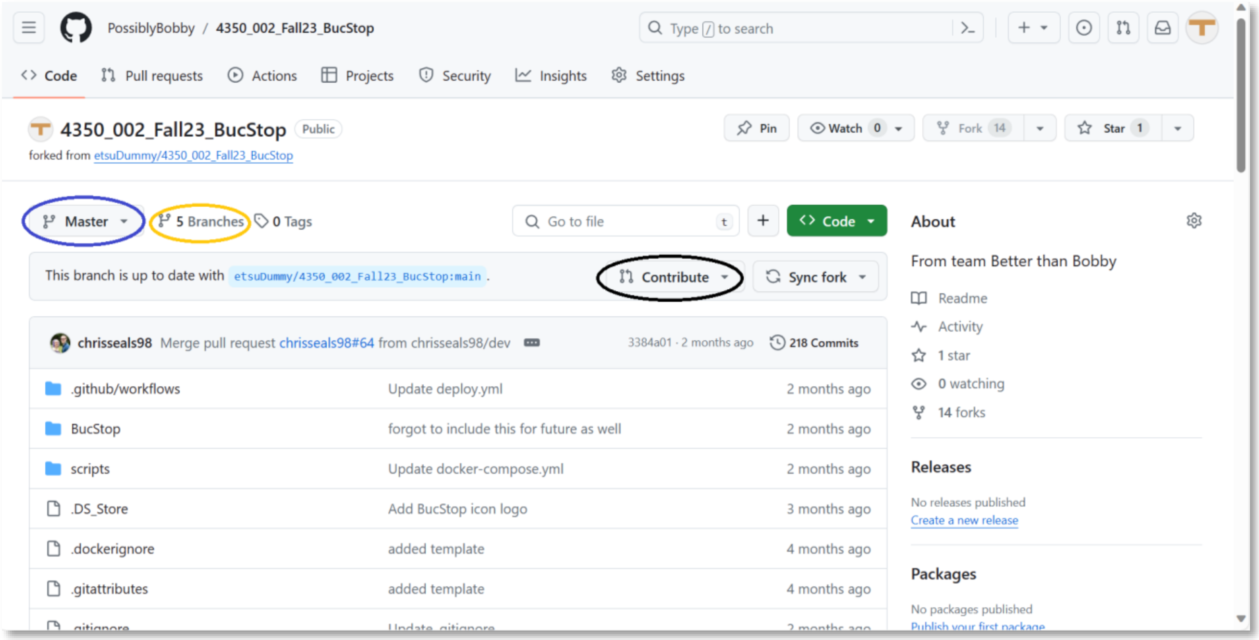
GitHub Made Simple

Tyson Bailey

This document is intended to teach those unfamiliar with GitHub the basics of source control.

GitHub Introduction

Within each repository on GitHub there are branches that contain project files. Typically, each branch will have a unique version of the project, to simplify this it is important to have a branch for production, a branch for testing, a branch for development, and individual branches for each small addition. These branches are all connected in an almost linear fashion, the small additions will all be pushed into the testing branch, the testing branch will then be pushed into development, and then the development branch will be pushed into production.



forked from etsuDummy/4350_002_Fall23_BucStop

This branch is up to date with etsuDummy/4350_002_Fall23_BucStop:main .

From team Better than Bobby

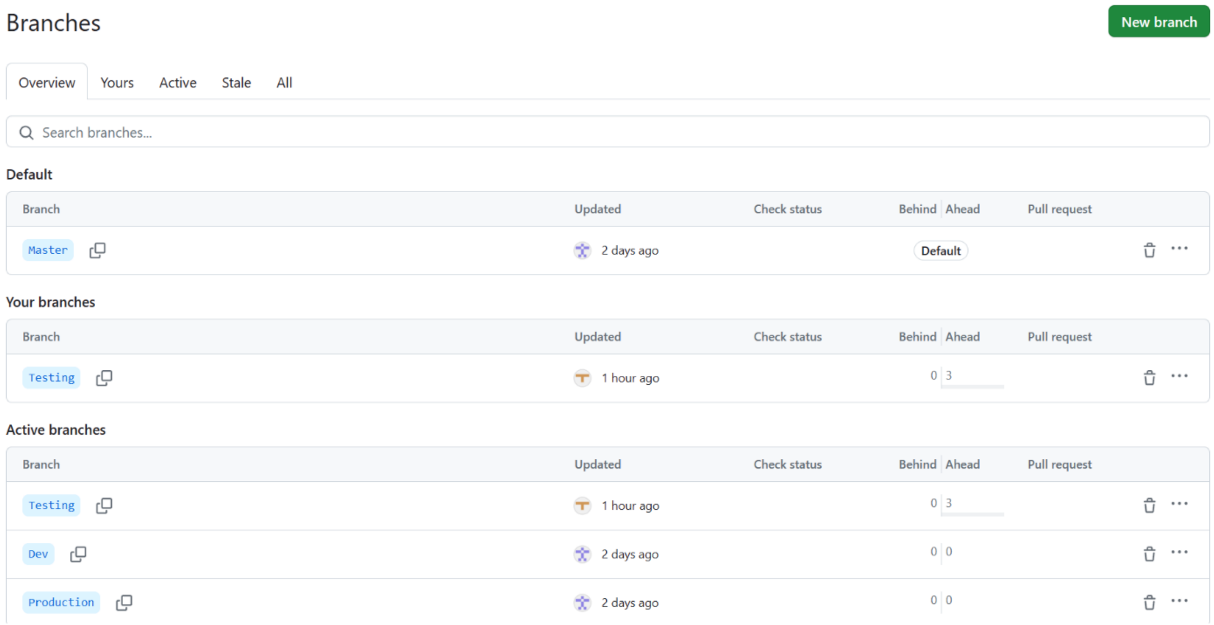
chrisseals98 Merge pull request chrisseals98#64 from chrisseals98/dev 3384a01 · 2 months ago 218 Commits

.github/workflows	Update deploy.yml	2 months ago
BucStop	forgot to include this for future as well	2 months ago
scripts	Update docker-compose.yml	2 months ago
.DS_Store	Add BucStop icon logo	3 months ago
.dockerignore	added template	4 months ago
.gitattributes	added template	4 months ago
.gitignore	Update .gitignore	2 months ago

Figure 1 - Project Homepage

In this image we see a project home page. When you fork a repository from another source or create one yourself you will more than likely be taken to a page that looks just like this, notable buttons are circled; The blue circled button will allow you to see branches associated with the project, the yellow circled button will take you to the branches page, and the black circled button will allow you to create a pull request to contribute your new edits back up to the original project.

Major Branch Creation



Default

Branch	Updated	Check status	Behind | Ahead	Pull request
Master	2 days ago		Default	

Your branches

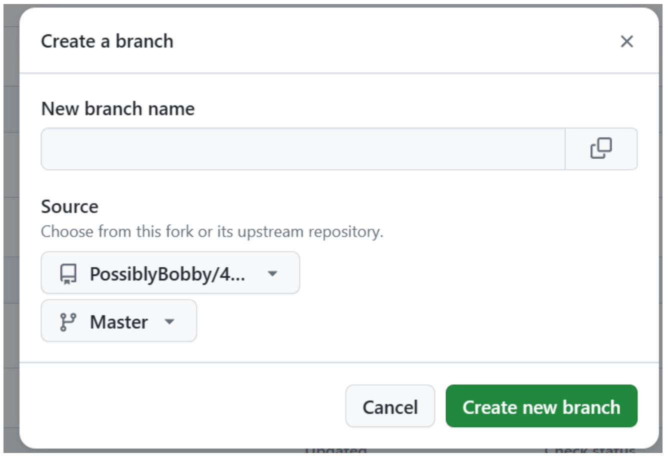
Branch	Updated	Check status	Behind | Ahead	Pull request
Testing	1 hour ago		0 | 3	

Active branches

Branch	Updated	Check status	Behind | Ahead	Pull request
Testing	1 hour ago		0 | 3	
Dev	2 days ago		0 | 0	
Production	2 days ago		0 | 0	

Figure 2 - Branch Page

Let’s discuss the branch page that you reach from the yellow circle, it will look just like this here, if the project has just been created you should only have one branch available by the name of “main”. This is where we really get into the source control part of GitHub. As you can see in my project, I have created a few branches. As stated prior, each branch stems from another branch, for example, testing stems from dev, which means the testing branch contains all code from the dev branch, but for the dev branch to have all of the code from the testing branch a pull request must be made to update the branch, before we get into pull requests I will show you the process to create a new branch.



Create a branch

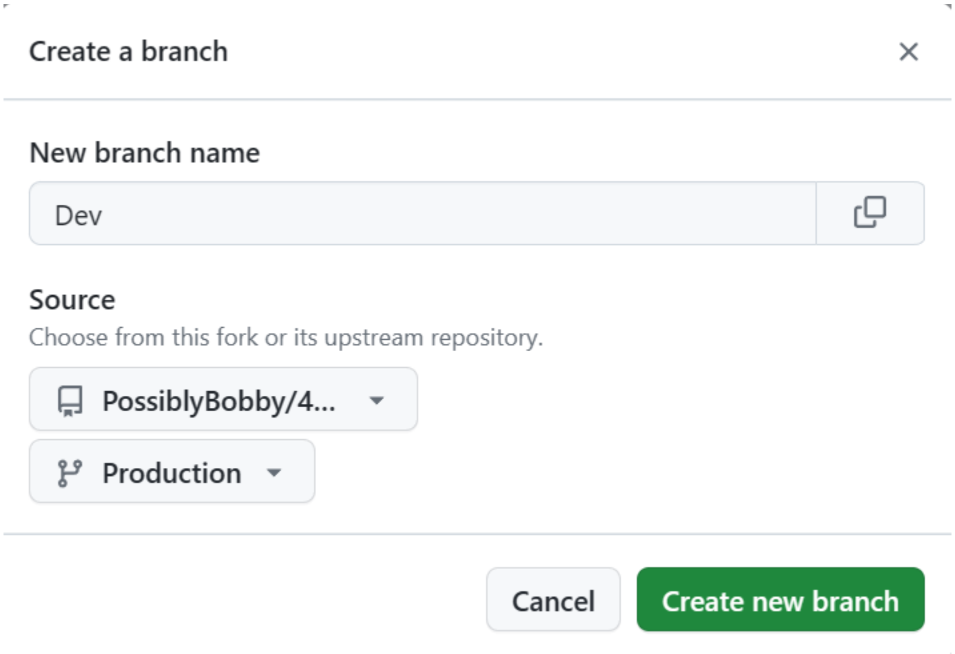
New branch name

Source

Choose from this fork or its upstream repository.

Figure 3 - Create new branch pop-up

This pop-up will appear after selecting the green button, as you can see you can name your branch and have a couple of interesting options towards the bottom. The source options allow you to choose which branch you intend to take the code of, if your project is new this will only have one option for each box, your repository name is in the top box and your main branch will be in the bottom box. If you forked your repository your main branch should still be the default option, if not then select your repository name and your main branch in the respective dropdown boxes.



Create a branch

New branch name

Dev

Source

Choose from this fork or its upstream repository.

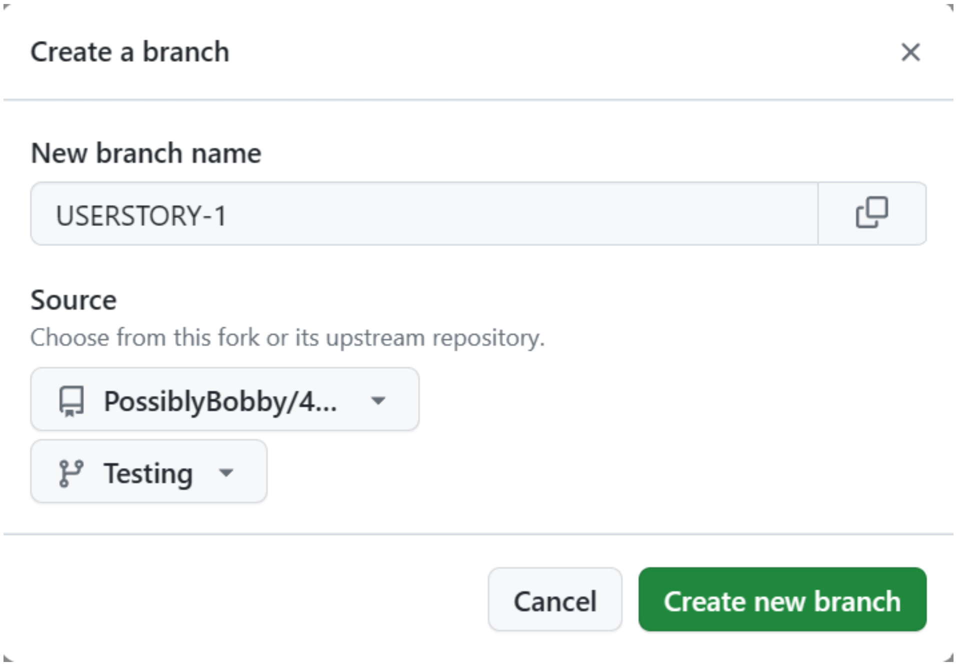
PossiblyBobby/4...

Production

Figure 4 - Creation of a dev branch

These are the options I use when creating a dev branch, I select my repository and my production branch as a source, the way I use a dev branch is by bringing in all pushes to testing, allowing a product owner (or myself) to look through the project for errors and then finally push it into the production branch for release. The testing branch would work fine for this, but I argue it is more organized in this fashion.

Minor Branch Creation and Contribution



Create a branch

New branch name

USERSTORY-1

Source

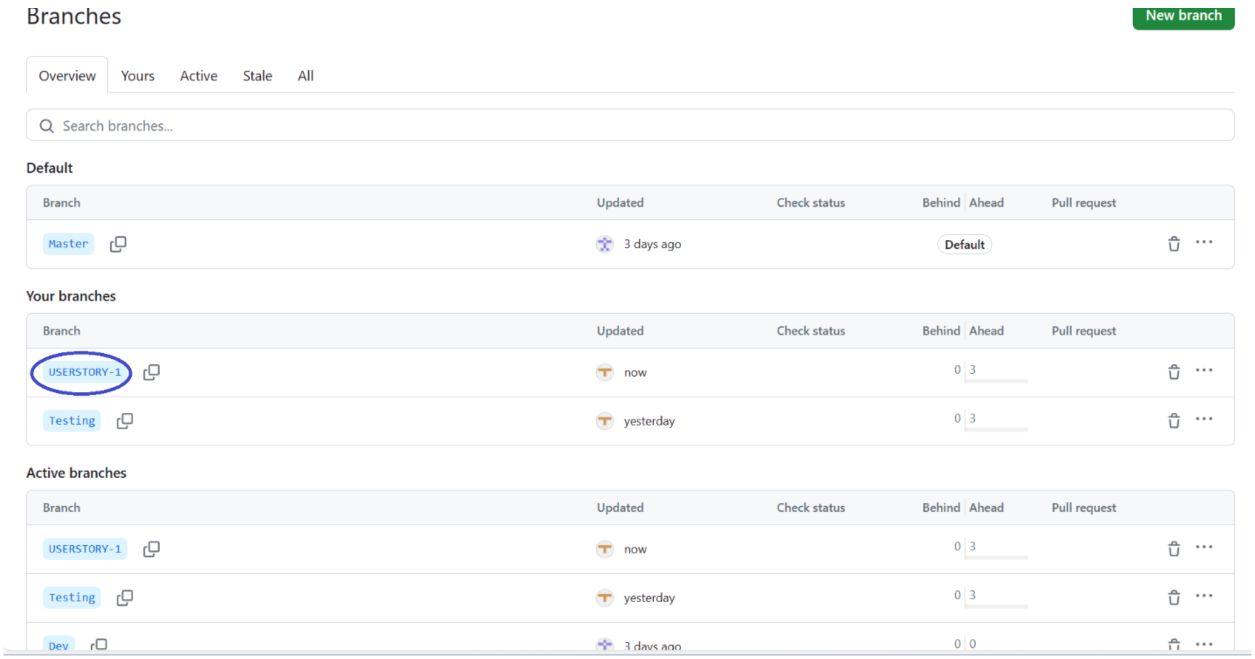
Choose from this fork or its upstream repository.

PossiblyBobby/4...

Testing

Figure 5 - Minor branch creation

Now this is one of the most important parts of the source control process, creating minor branches relating to just one or a small number of user stories. After you have updated the project with new functionality relating to a user story it is time to create a branch and push it to testing. In this screenshot you can see the create branch box from earlier, the branch I am creating contains new code from a user story I worked on and will need to be added to the testing branch, so I select my repository in the top dropdown box and the testing branch in the bottom to ensure the source has the latest code. As stated earlier, testing is the end of the major branches. The branch is meant to have the latest code being prepared for the dev branch and later the production branch.



Branches

Default

Branch	Updated	Check status	Behind	Ahead	Pull request
Master	3 days ago		Default		

Your branches

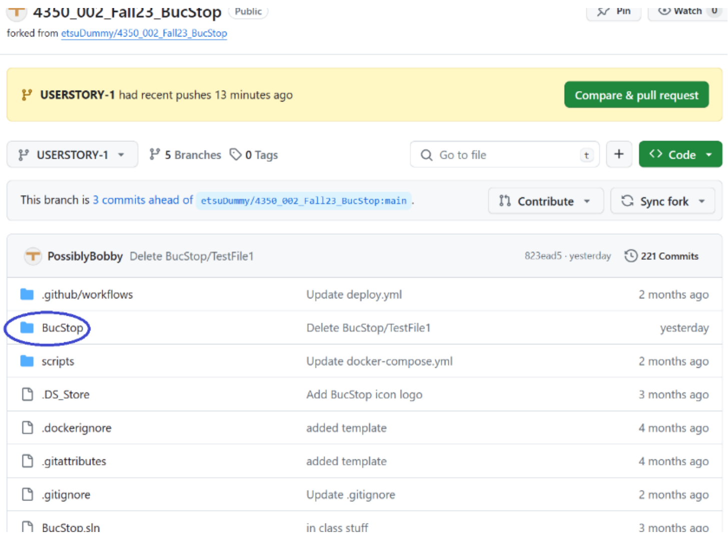
Branch	Updated	Check status	Behind	Ahead	Pull request
USERSTORY-1	now		0	3	
Testing	yesterday		0	3	

Active branches

Branch	Updated	Check status	Behind	Ahead	Pull request
USERSTORY-1	now		0	3	
Testing	yesterday		0	3	
Dev	3 days ago		0	0	

Figure 6 - Minor branch has been made

As you can see, my branch from the previous screenshot has been created, now I will demonstrate how to add your new code to the branch. Go ahead and click the name of your new branch and you will be redirected to the code page.



4350_002_Fall23_BucStop Public

forked from etsuDummy/4350_002_Fall23_BucStop

USERSTORY-1 had recent pushes 13 minutes ago

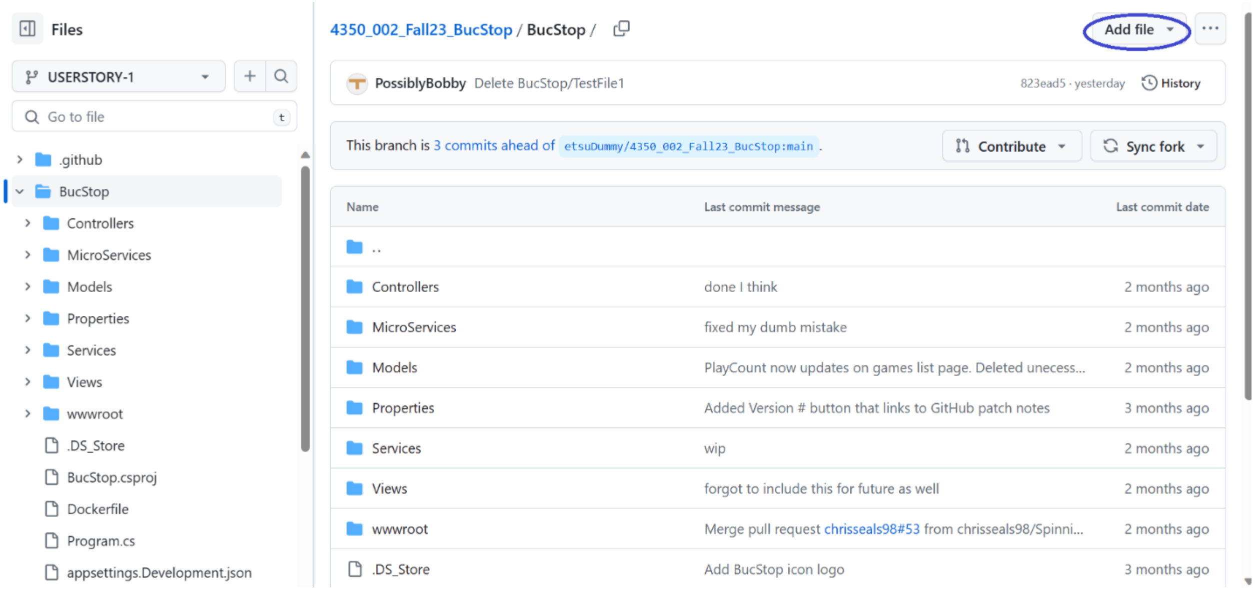
This branch is 3 commits ahead of etsuDummy/4350_002_Fall23_BucStop:main .

PossiblyBobby Delete BucStop/TestFile1 823ead5 · yesterday 221 Commits

.github/workflows	Update deploy.yml	2 months ago
BucStop	Delete BucStop/TestFile1	yesterday
scripts	Update docker-compose.yml	2 months ago
.DS_Store	Add BucStop icon logo	3 months ago
.dockerignore	added template	4 months ago
.gitattributes	added template	4 months ago
.gitignore	Update .gitignore	2 months ago
BucStop.sln	in class stuff	3 months ago

Figure 7 - Navigate project page

This is my new branch on the project page, ensure the branch dropdown box says your branch name, it is best practice to only update testing, dev, production, and other major branches through pushes and not by adding files. Now, navigate to the folder your new or updated files are contained in, if your files are not in a folder or you are uploading a folder, add them by dragging and dropping them on the project page, in my case my new file is in the BucStop folder.



Files

USERSTORY-1

Go to file

- .github
- BucStop
  - Controllers
  - MicroServices
  - Models
  - Properties
  - Services
  - Views
  - wwwroot
  - .DS_Store
  - BucStop.csproj
  - Dockerfile
  - Program.cs
  - appsettings.Development.json

4350_002_Fall23_BucStop / BucStop /

Add file ▾

PossiblyBobby Delete BucStop/TestFile1 823ead5 · yesterday History

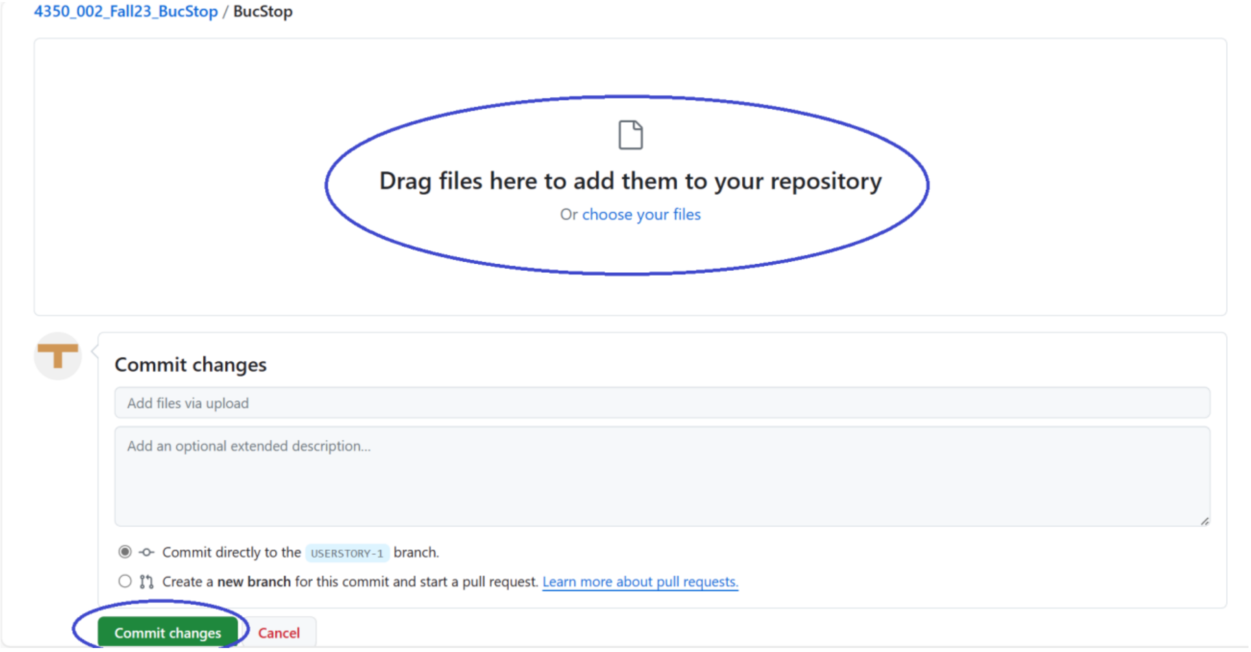
This branch is 3 commits ahead of etsuDummy/4350_002_Fall23_BucStop:main .

Contribute ▾ Sync fork ▾

Name	Last commit message	Last commit date
..		
Controllers	done I think	2 months ago
MicroServices	fixed my dumb mistake	2 months ago
Models	PlayCount now updates on games list page. Deleted unecess...	2 months ago
Properties	Added Version # button that links to GitHub patch notes	3 months ago
Services	wip	2 months ago
Views	forgot to include this for future as well	2 months ago
wwwroot	Merge pull request chrisseals98#53 from chrisseals98/Spinni...	2 months ago
.DS_Store	Add BucStop icon logo	3 months ago

Figure 8 - Adding Files

After navigating into the BucStop folder we see a new page, this is where I will add my new file, go ahead and click the “Add file” dropdown button once you have navigated to the respective folder your new/updated files are contained in.



4350_002_Fall23_BucStop / BucStop

Drag files here to add them to your repository

Or choose your files

Commit changes

Add files via upload

Add an optional extended description...

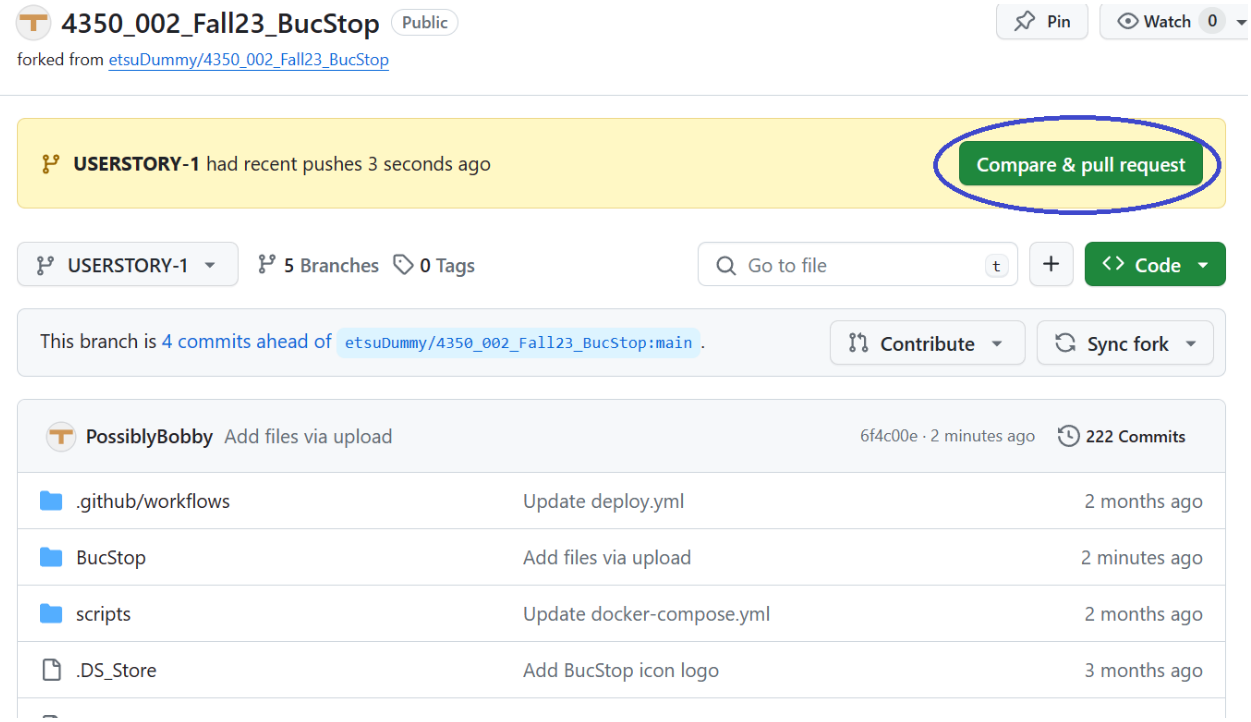
● Commit directly to the USERSTORY-1 branch.

○ Create a **new branch** for this commit and start a pull request. Learn more about pull requests.

Commit changes Cancel

Figure 9 - Commit Changes

You will then be brought to a page that looks like this, ensure your repository and folder are correct in the top left, then drag or choose your files from the matching folder on your local device, after uploading the files go ahead and commit the changes, as long as you are in the correct repository and branch this should go smoothly, otherwise it would be important to check if you are in the correct repository.


4350_002_Fall23_BucStop Public

forked from etsuDummy/4350_002_Fall23_BucStop

USERSTORY-1 had recent pushes 3 seconds ago

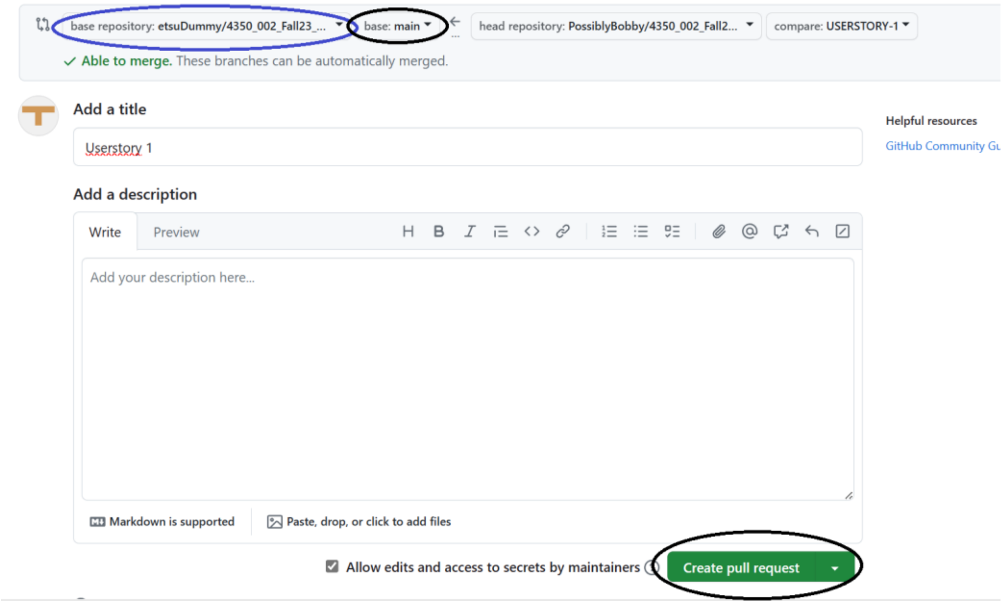
This branch is 4 commits ahead of etsuDummy/4350_002_Fall23_BucStop:main .

PossiblyBobby Add files via upload 6f4c00e · 2 minutes ago 222 Commits

.github/workflows	Update deploy.yml	2 months ago
BucStop	Add files via upload	2 minutes ago
scripts	Update docker-compose.yml	2 months ago
.DS_Store	Add BucStop icon logo	3 months ago

Figure 10 - Pull Request

Once brought back to this page after uploading your files, you will notice this yellow box stating that you have made the update. To update the testing branch go ahead and click the circled green button.


base repository: etsuDummy/4350_002_Fall23_... base: main ← head repository: PossiblyBobby/4350_002_Fall2... compare: USERSTORY-1

✓ Able to merge. These branches can be automatically merged.

Add a title

Userstory 1

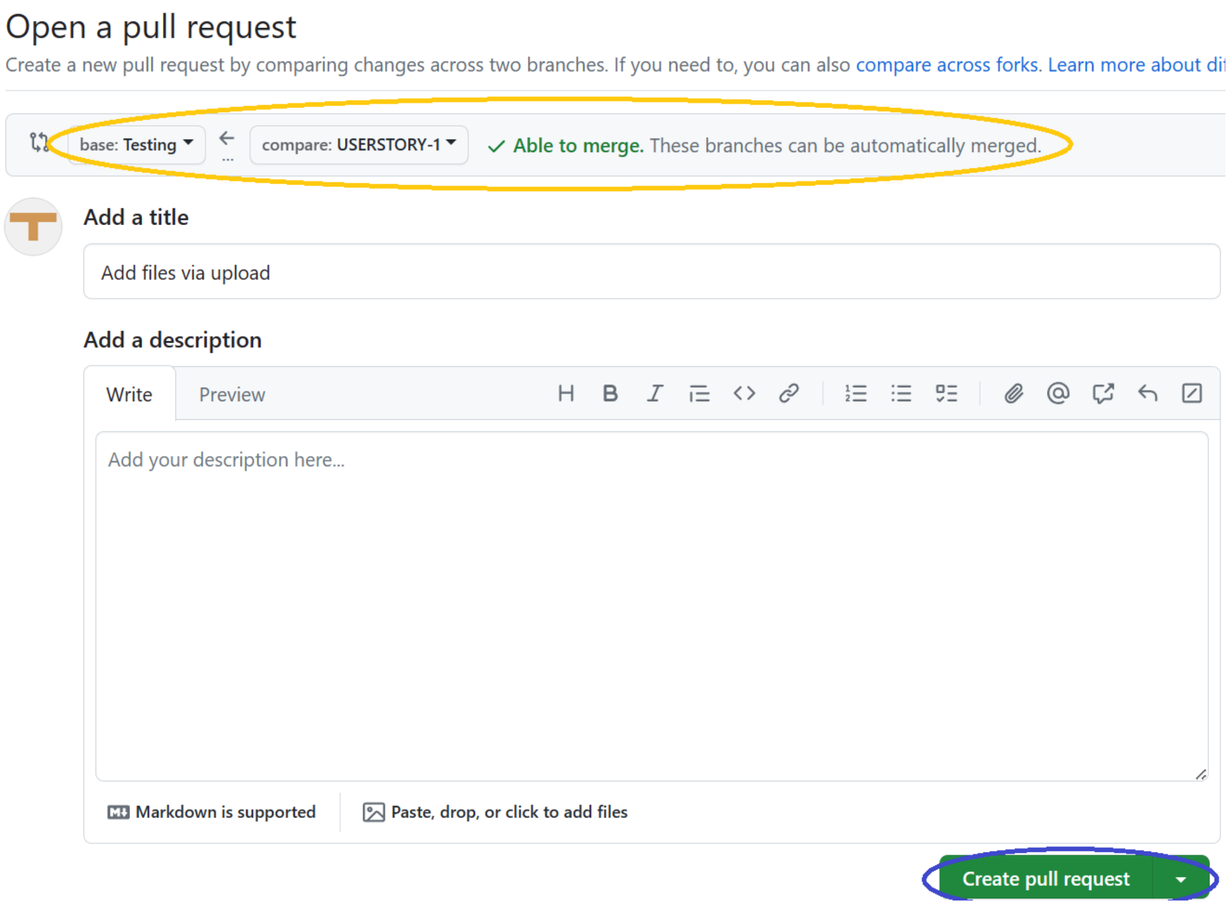
Add a description

Add your description here...

☑ Allow edits and access to secrets by maintainers

Figure 11 - Create proper pull request

This step is very important and must be completed properly. As you will see in the blue circled box a repository that is NOT mine is shown, if you have the permission of the owner of a repository that you have forked from to update their repository, then this is fine, in my case I must change this. To accomplish this I will select that dropdown box and select my repository, if you have selected a repository that matches the branch you are updating that box will disappear and you will be left with just the branch options.



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. Learn more about di

base: Testing ← compare: USERSTORY-1 ✓ Able to merge. These branches can be automatically merged.

Add a title

Add files via upload

Add a description

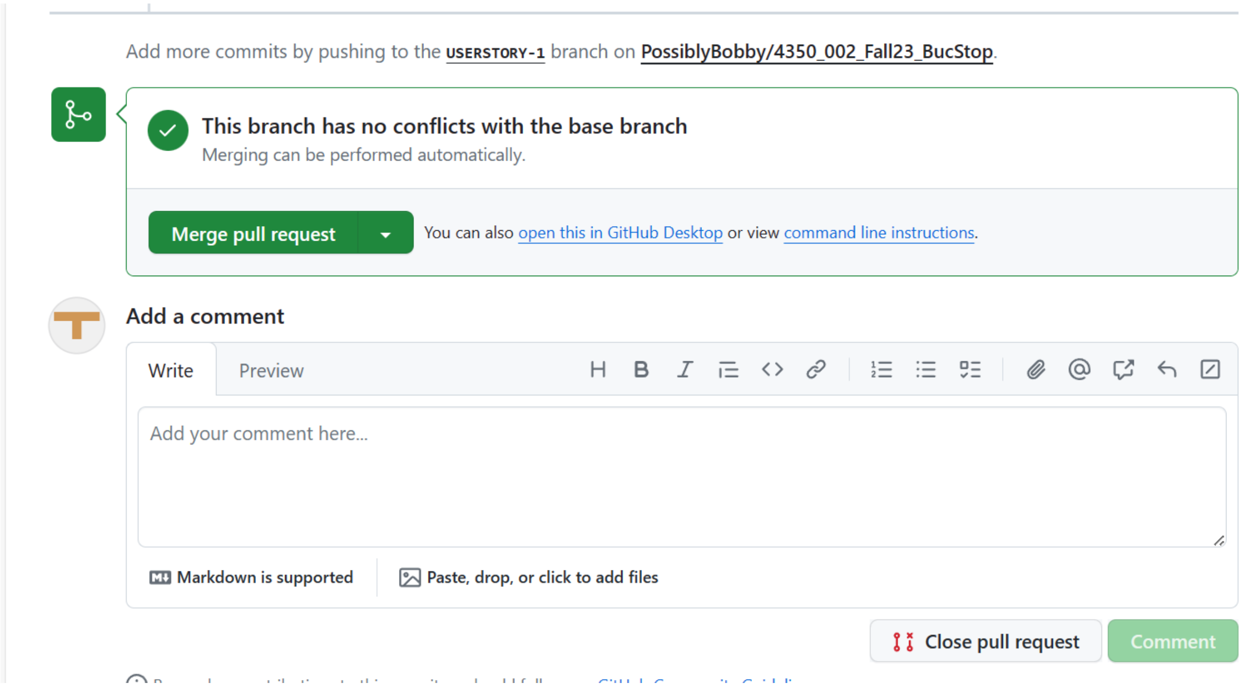
Add your description here...

Markdown is supported

Paste, drop, or click to add files

Figure 12 - Proper Pull Request

This screenshot shows what a smooth pull request to your repository should look like, the top shows the branch you want to update (which in most cases would be testing, but not every project is alike) it also shows the branch you are updating from, in my case this is "USERSTORY-1". You are able to visibly see that this update is able to merge automatically, this means that everything is going to go smoothly after you create the pull request using the circled button on the bottom.



Add more commits by pushing to the USERSTORY-1 branch on PossiblyBobby/4350_002_Fall23_BucStop.

This branch has no conflicts with the base branch

Merging can be performed automatically.

You can also open this in GitHub Desktop or view command line instructions.

Add a comment

Add your comment here...

Markdown is supported

Paste, drop, or click to add files

Figure 13 - Finish Pull Request

After all of those steps you should now be able to properly finish merging your update, if the repository is yours, you can go ahead and select “Merge Pull Request”, otherwise, you may need to have the owner of the repository merge the request.