

Learning Git, GitHub, and GitHub Desktop

Git and GitHub will make your work as a coder much easier, and they'll look good on your resume as well.




What is Git?



Git is a type of software called a version control system, which tracks changes to files. What this means is that it will detect all your code changes, and you can use it to record different versions of your files at different points in time. This is helpful for developers for a number of reasons. For starters, having Git is kind of like having a giant set of save points. If you make a code change that you realize later on was a huge mistake, you can revert back to the older version of that File. Git also makes working on a team a lot easier.

Each developer can work on a copy of the project on their computer. This copy is stored in a folder connected to Git, which is called a local repository. The developers can then send their code changes up to the main remote repository, which is stored online, and get code changes made by other developers.

Take note of the following terms:

TERMINOLOGIES	DESCRIPTION
<div>1. Git</div> <div></div>	It is the actual version control software. Originally meant to run on the command line, and a lot of developers run Git this way.
<div>2. GitHub</div> <div></div>	GitHub is a website where you can host your Git repositories, collaborate with other users or groupmates, and discover other open-source repositories.
<div>3. GitHub Desktop</div> <div></div>	It is a program that runs Git on your computer and allows you to do most of the Git command line commands, just through a more visual program interface.

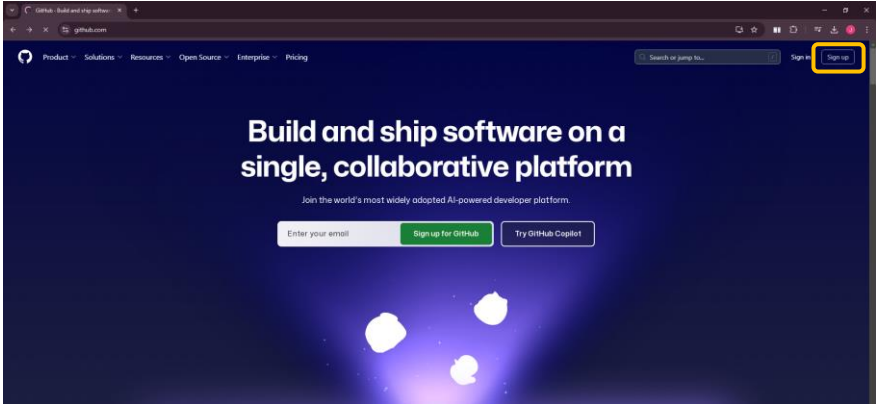
GitHub

It is the most popular place to store your remote repository, which is owned by Microsoft and is free to use. You can create your GitHub account to GitHub for free.

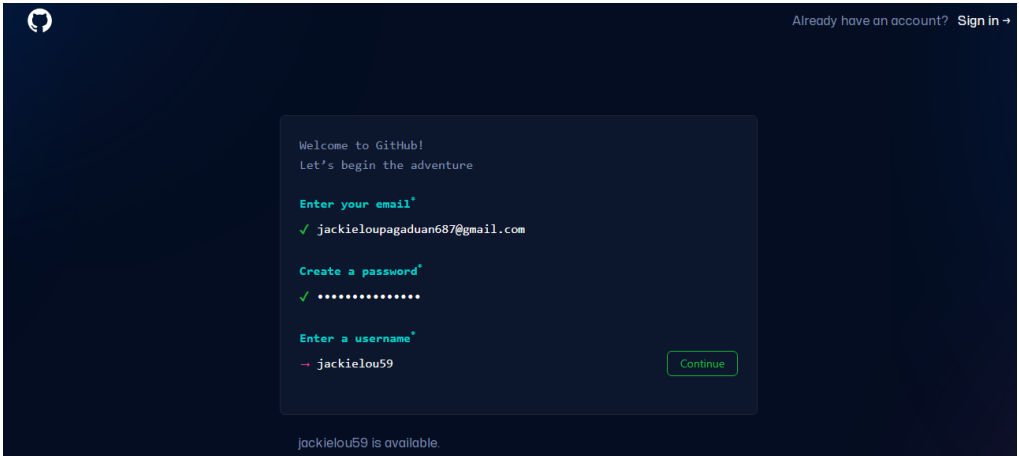
Creating GitHub account

Step-by-step guide:

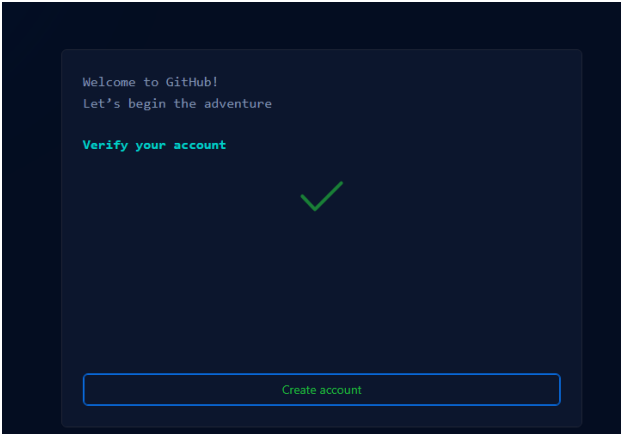
- Go to [GitHub.com](https://github.com), then click Sign Up to create a new account.



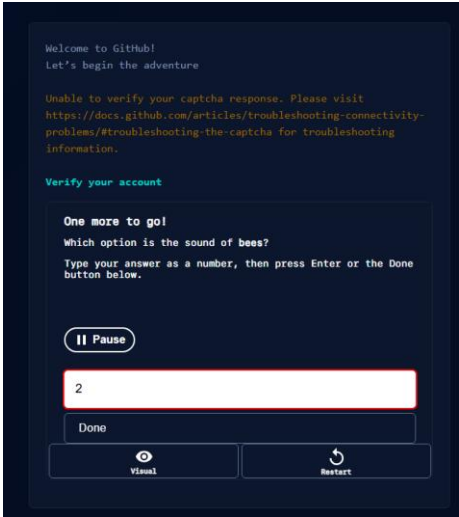
2. A page below will appear after clicking Sign up, allowing you to enter your valid email address and create a password and username. Follow on-screen instructions, then hit continue.



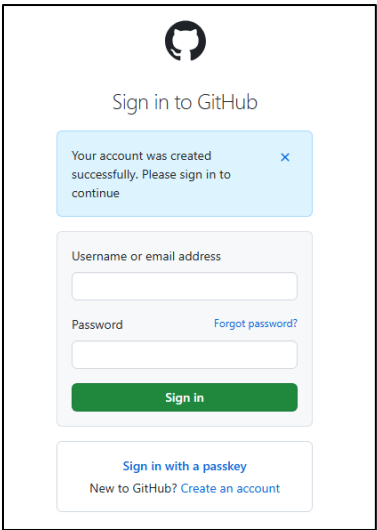
3. Wait for GitHub to verify your account, then hit Create Account.



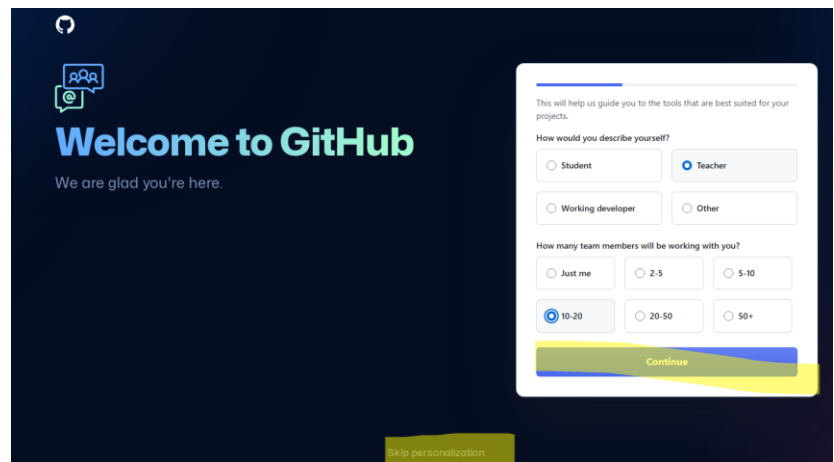
4. After clicking Create an account, the web page below will appear for you to solve. Follow the on-screen instructions. After complete verification, a PIN code will be sent to your email.



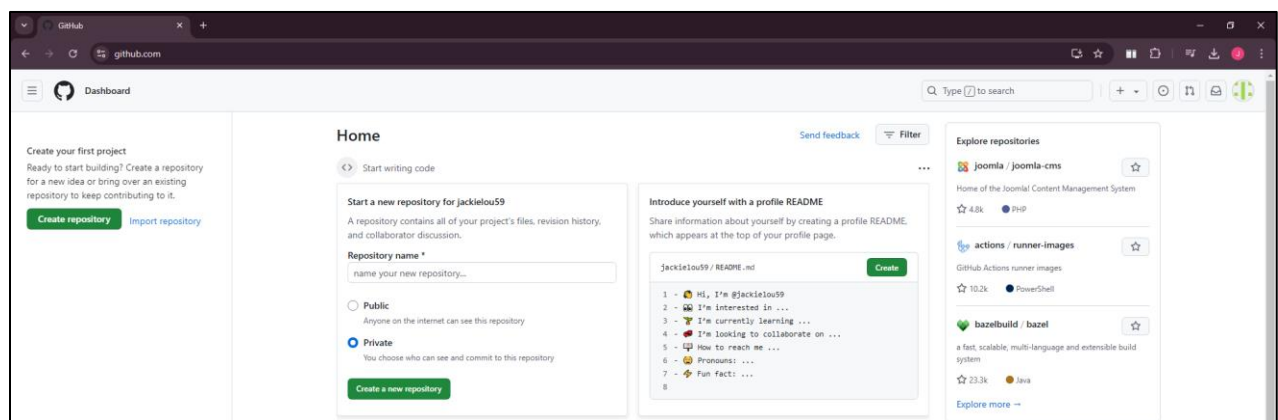
5. After successfully verifying your account, you can now log in to GitHub using your newly created account. Input necessary details. Then, follow on-screen instructions.



6. Provide the necessary details, or You may skip this personalization.



7. Hit continue for free. Wait for your dashboard to be initialized. Once done, you will be directed to the following dashboard.



Installing necessary tools for Collaboration

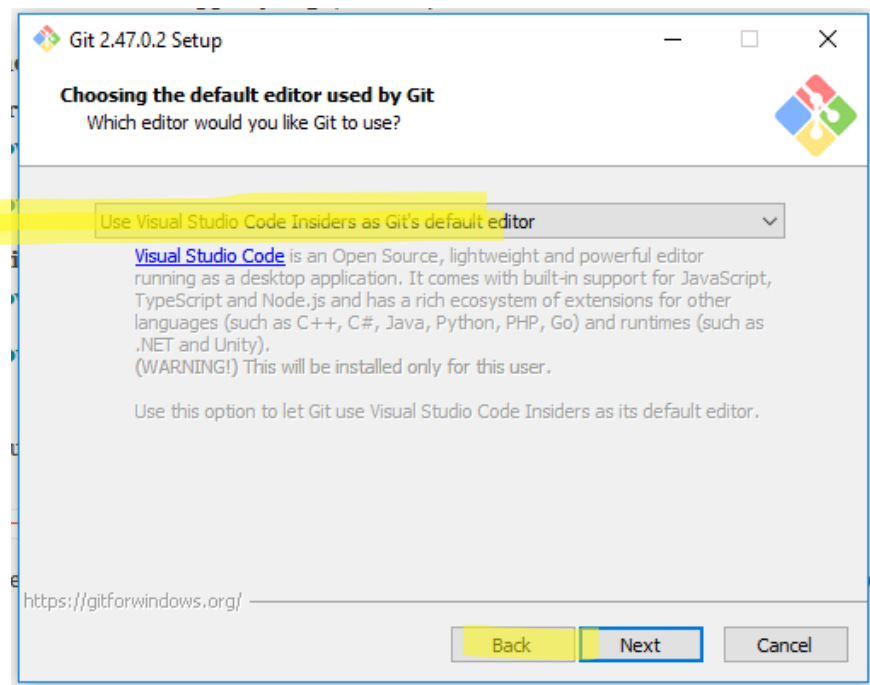
Download Git-2.27.0.2-64 and GitHub Desktop, which are uploaded to our Google Classroom, and install them. See details for installation below.

Installing Git for Windows 2.47.0

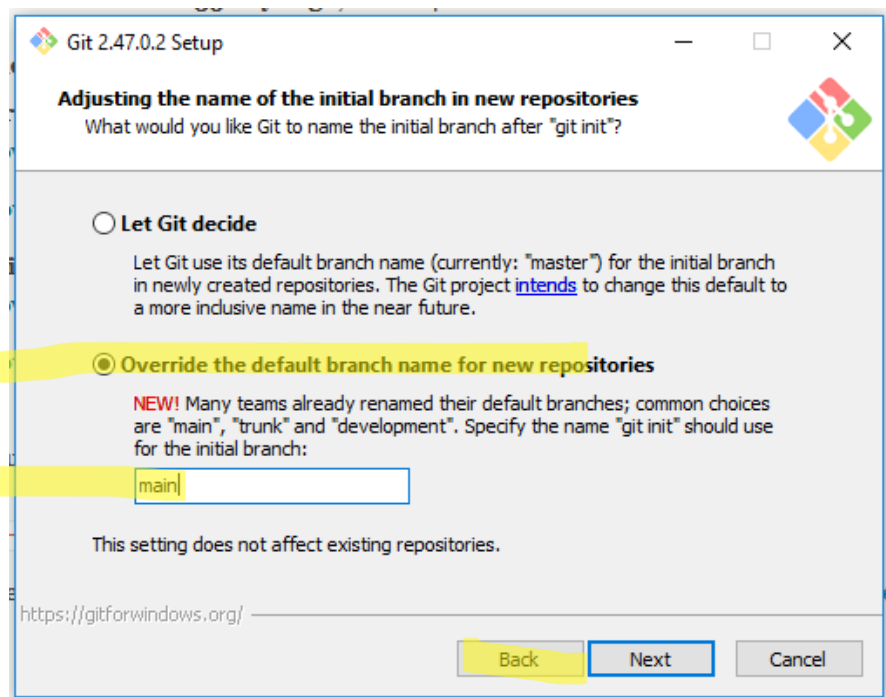
1. We need to install these tools first before anything else to have a smooth flow of activity. First, install Git 2.47, and then install the GitHub desktop. Follow the given instructions here. Run and install the application.



- 2. Click Next until you reach this page. Choose "Use Visual Studio Code Insiders as Git's default editor," then click Next.

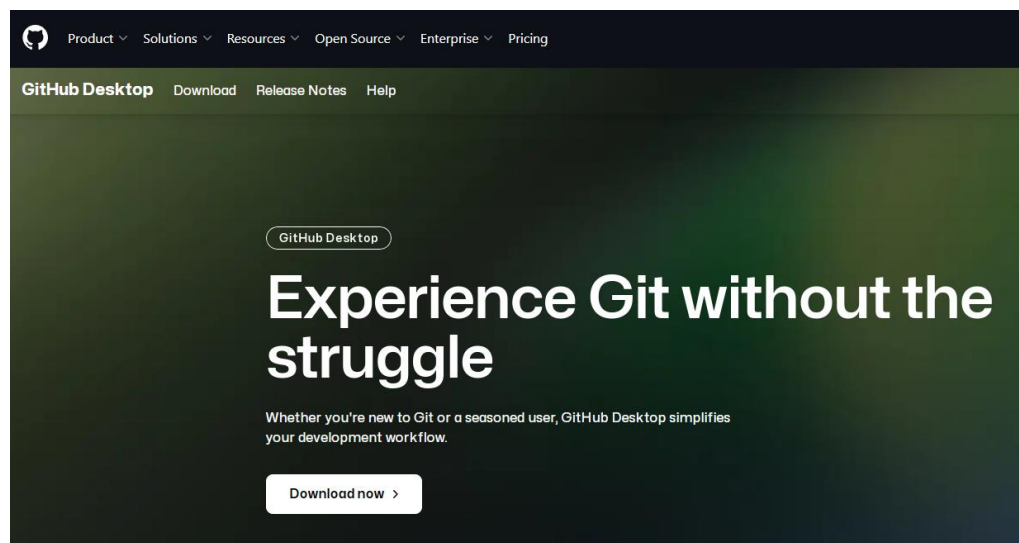


- 3. Choose Override the default branch name for new repositories, then click next until installation is complete.

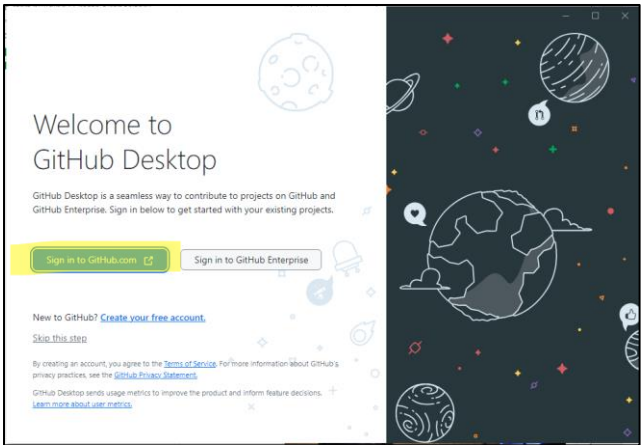


Installing GitHub Desktop

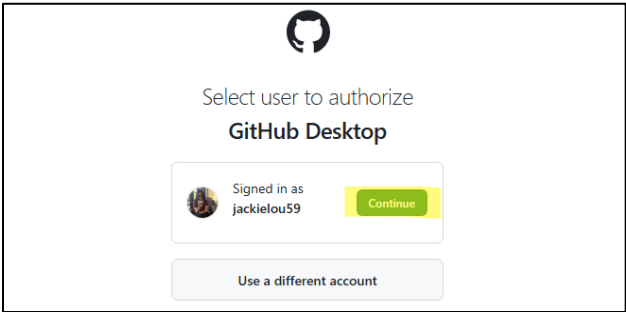
- 1. Download, run, and install the application.



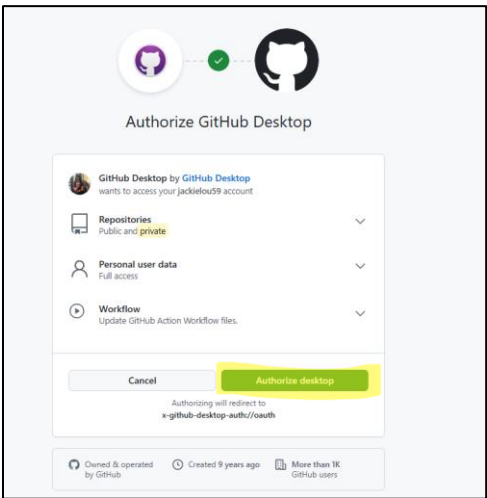
2. Sign in to your GitHub account. Wait for a few seconds.



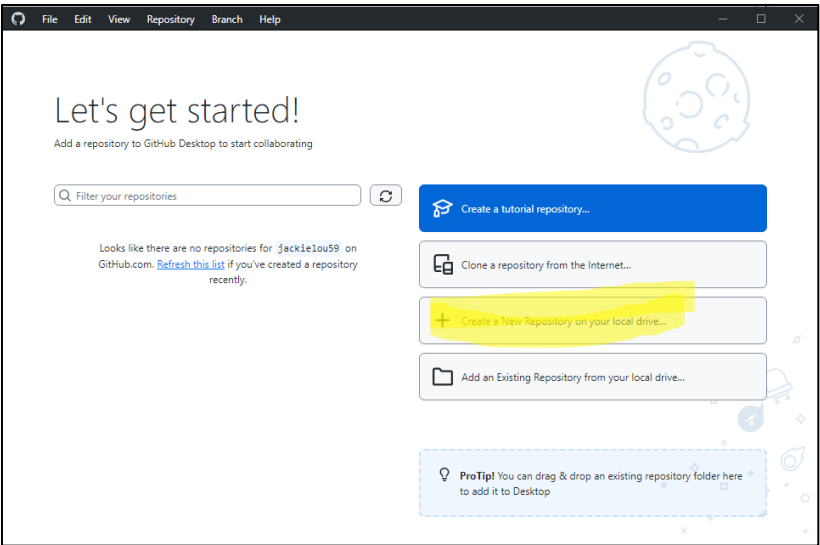
If this does not show during installation, go to File > Options, and in the "Accounts" section, click the "Sign in" button. This will prompt you to sign in using your browser, so click "Continue with browser."



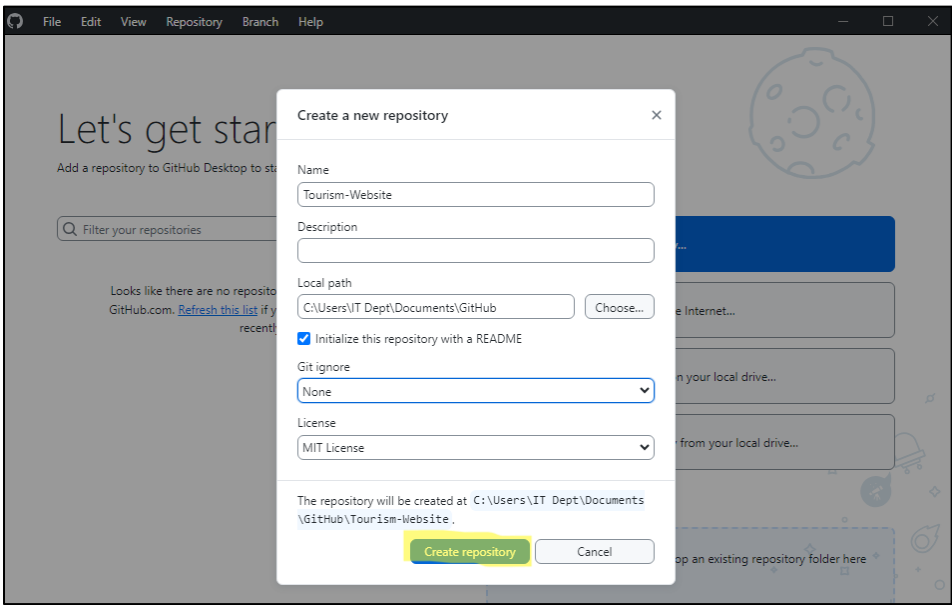
- 3. Your default browser on your computer will try to log in to your GitHub account. It will prompt you to log in using the account you created earlier.
- 4. Click "Authorize desktop". This will let you input your password. Once you enter your password, it will open GitHub Desktop. Wait for a few seconds, then click Finish.



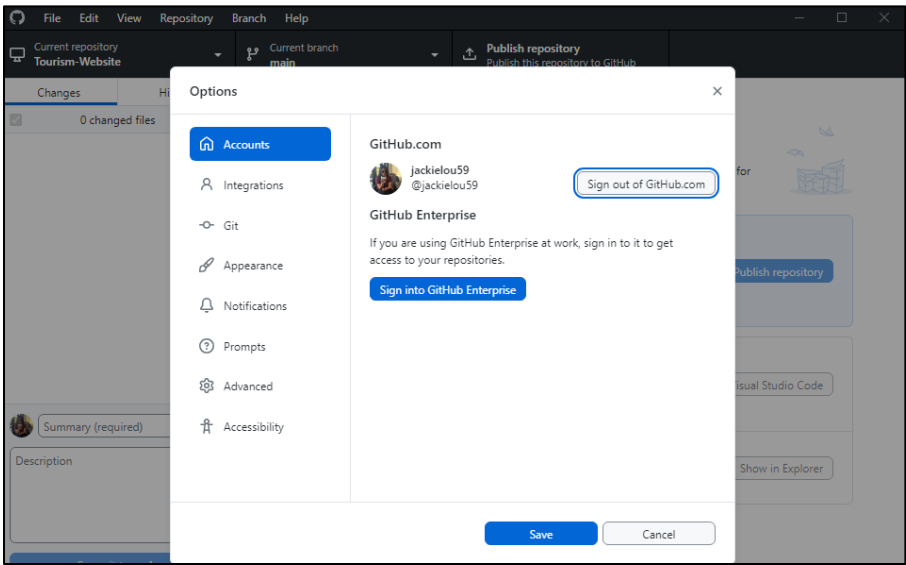
5. Let's Get Started page will appear. Choose "Create a New Repository on your local drive".



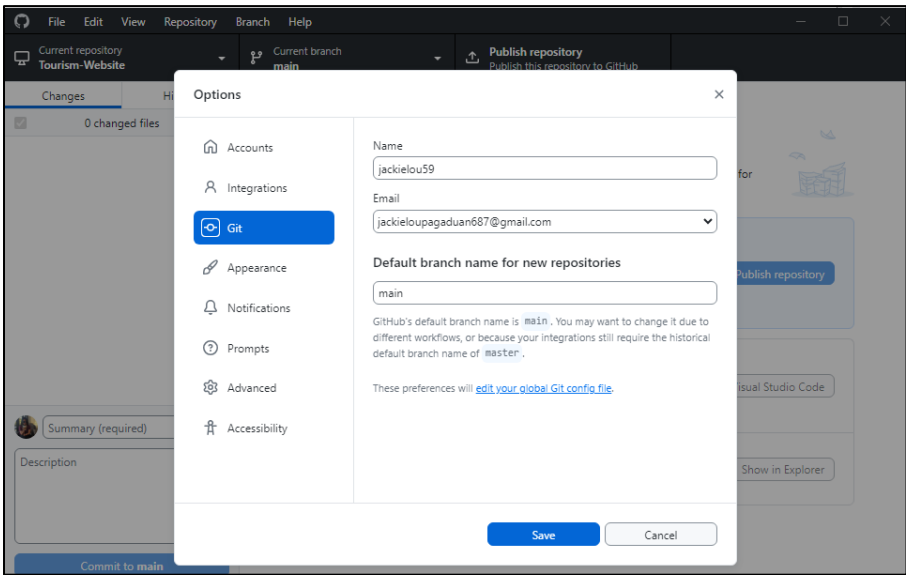
6. Provide the necessary details to create a new repository, e.g., for Name: Portfolio, then hit "Create Repository." See the **Step-by-step guide to creating a new project repository for your Final Project** after this section.



7. To make sure everything worked, go back to File> Options> Accounts, and you should see your GitHub username and profile picture on the right side.



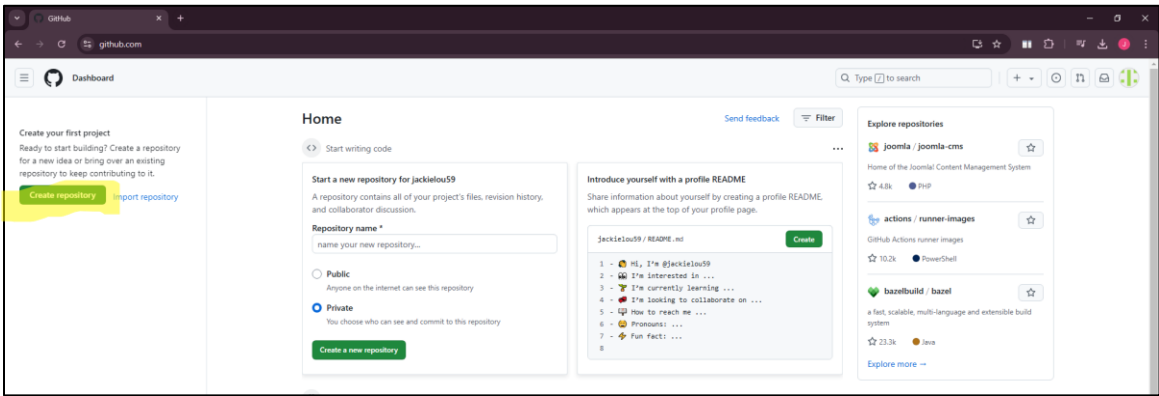
8. Next, we set our Global Git configuration. In the options, go to the "Git" tab, and you should see your GitHub username listed under Name and your email under "Email." Under "Default branch," select either main. Note that Master used to be the default branch on Git, but currently, GitHub and other places are using "main" as the default, so we will be using it as well. Select "main". Once your settings are set, make sure to click the "Save" button, even if you didn't make any changes on any changes on this screen.



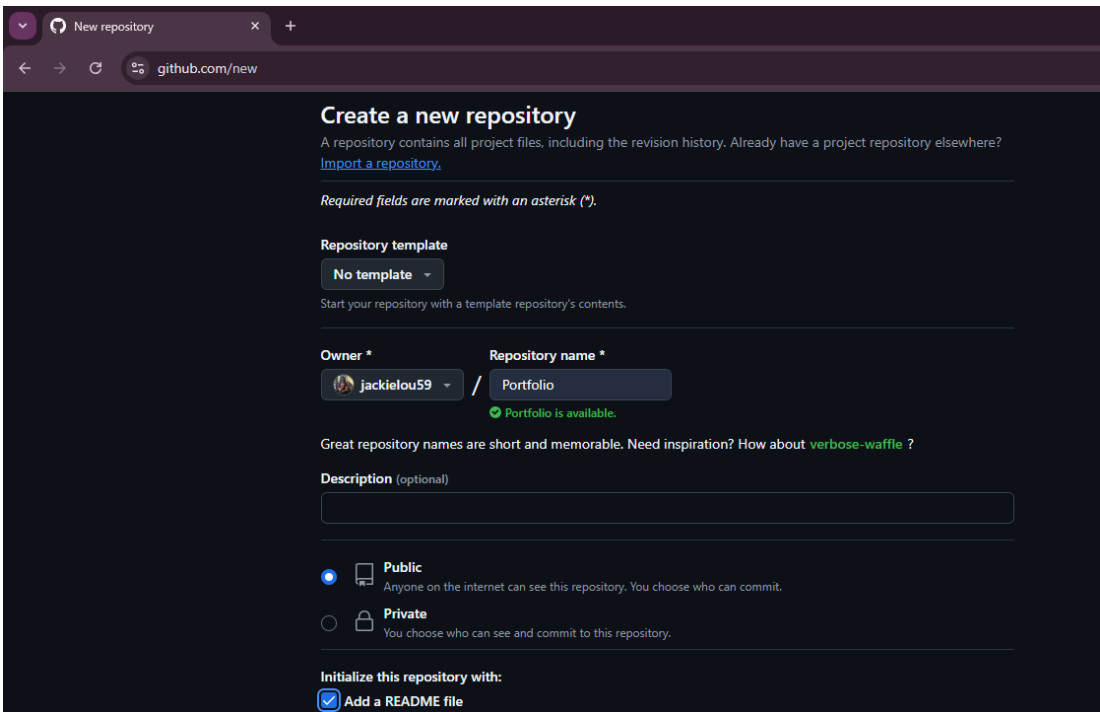
9. Walk through the basics of a Git workflow with a test project.

Uploading your portfolio to GitHub.com

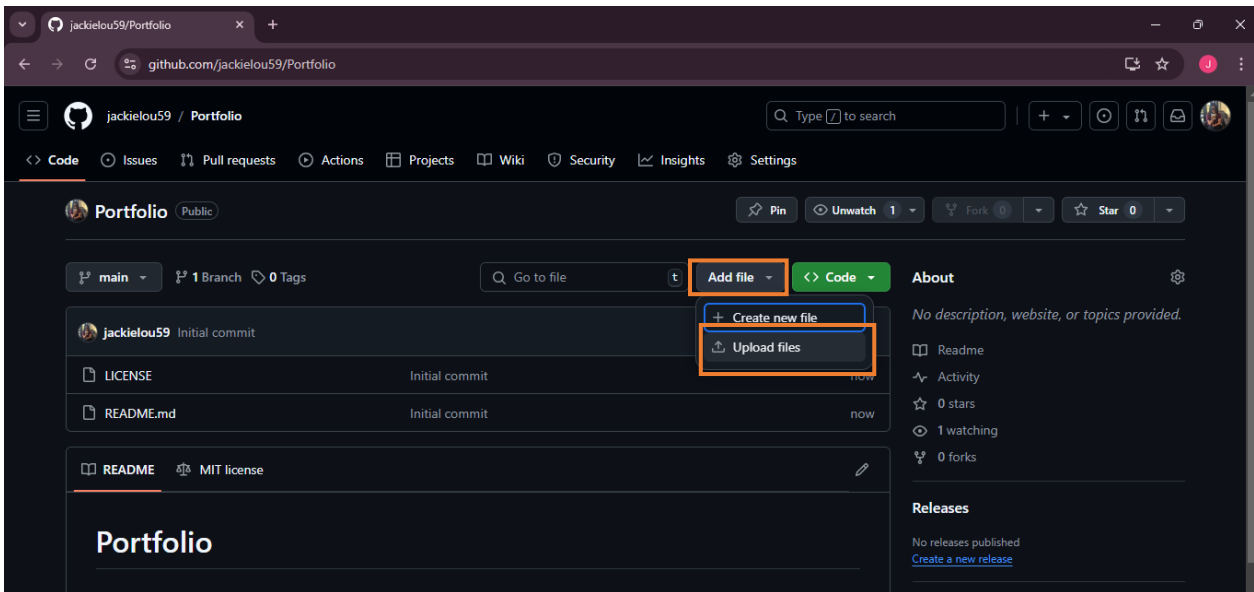
1. Before uploading files to GitHub, you need to create your repository. In your home, click Create New Repository or New. Or use the repository you just created using GitHub Desktop. Just locate it in your repository.



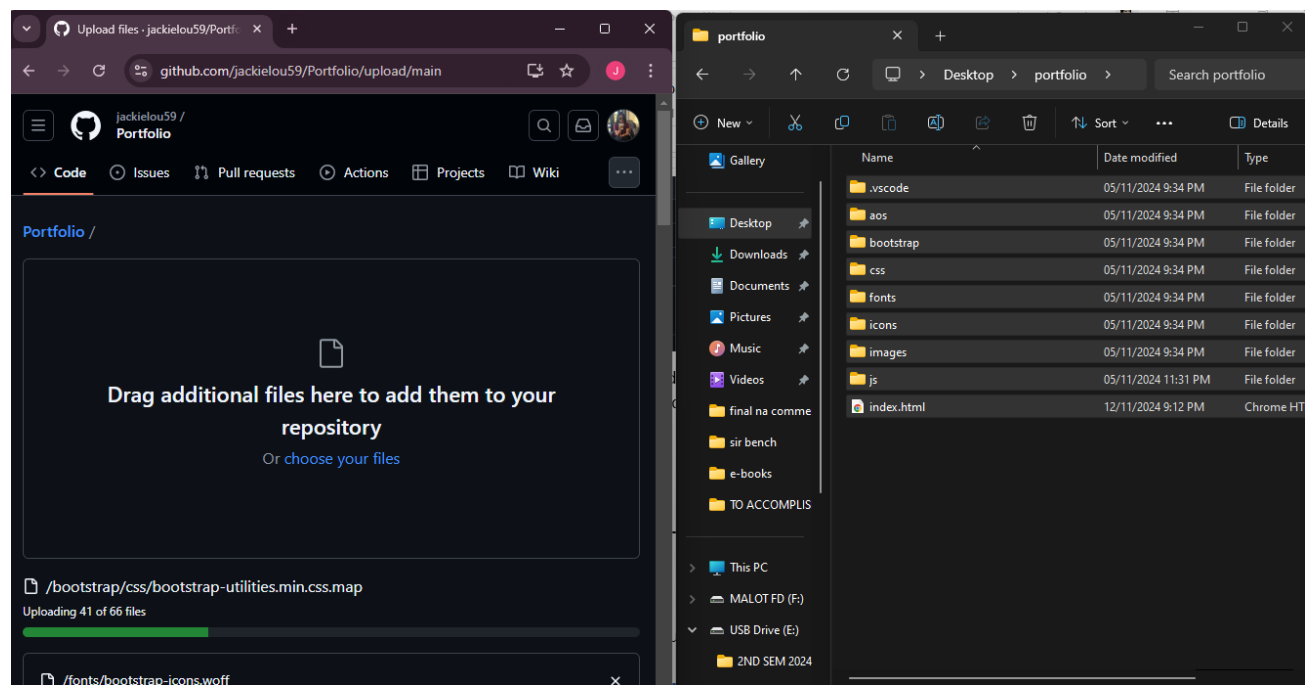
2. Provide necessary details like Repository Name: Portfolio, set it to public, check Add read me file, choose a License: MIT License, then Hit Create repository. Wait for a few seconds.



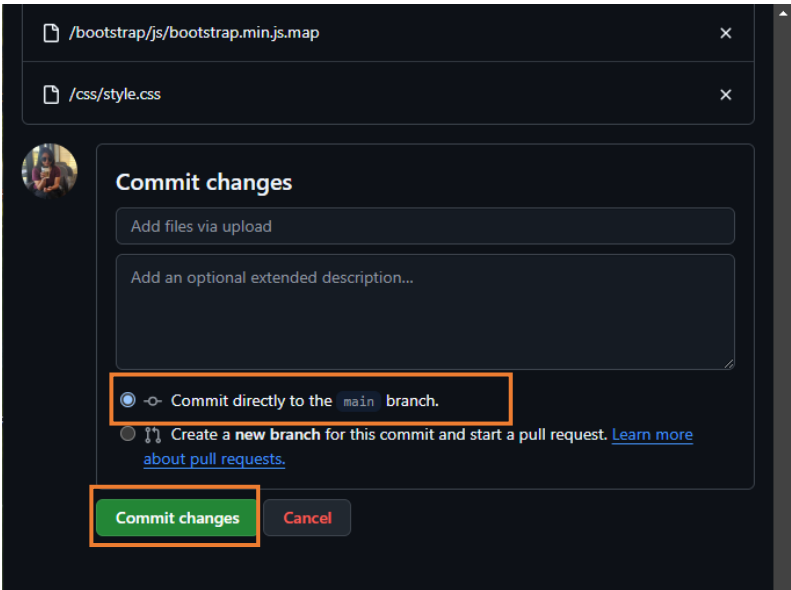
3. In your Portfolio repository, click the dropdown button Add File, and then select Upload files.



4. Select all your portfolio files in your local drive, and then drag them to GitHub. If it keeps failing, try to drag your files by two or by folder.



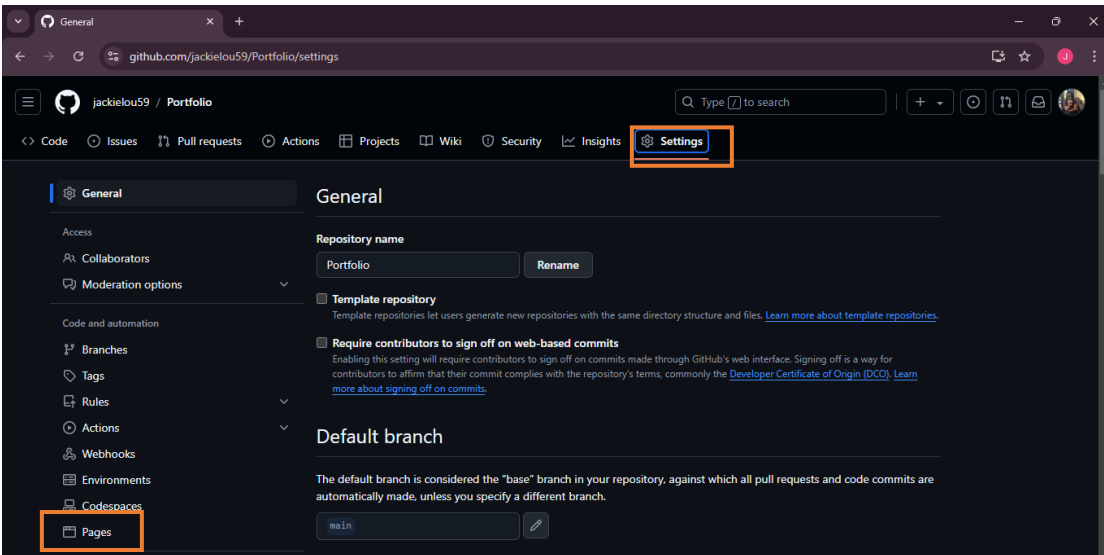
5. If done uploading, click commit changes. Note: Make sure Commit directly to the main Branch is selected.



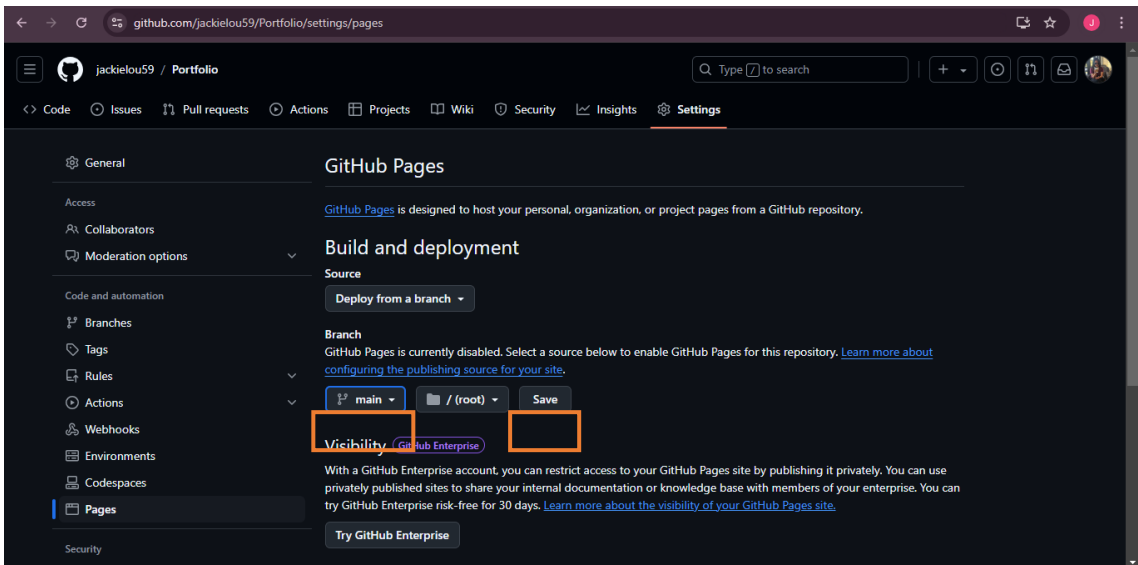
Hosting your repository using GitHub Pages

To view our repository or portfolio online, we need to host it using GitHub Pages. Follow the following instructions.

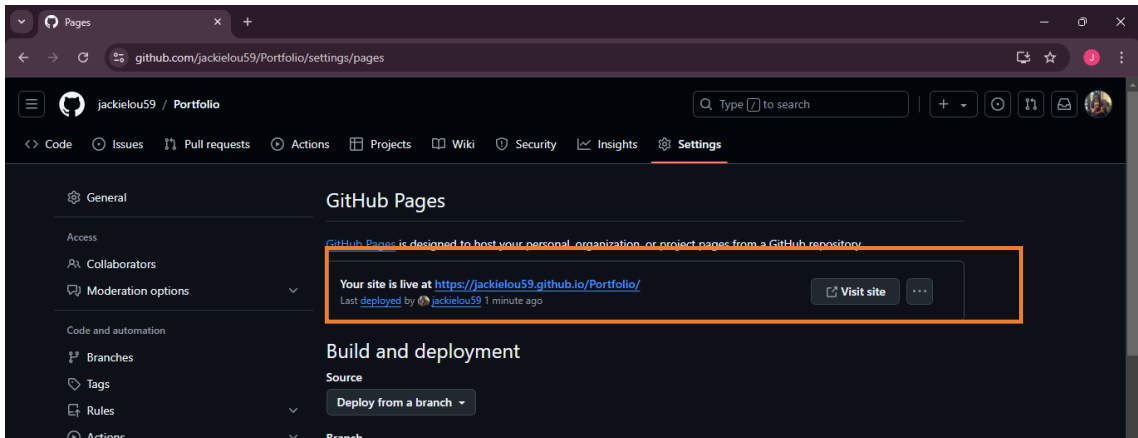
1. In your Portfolio repository, select Settings, then Pages.



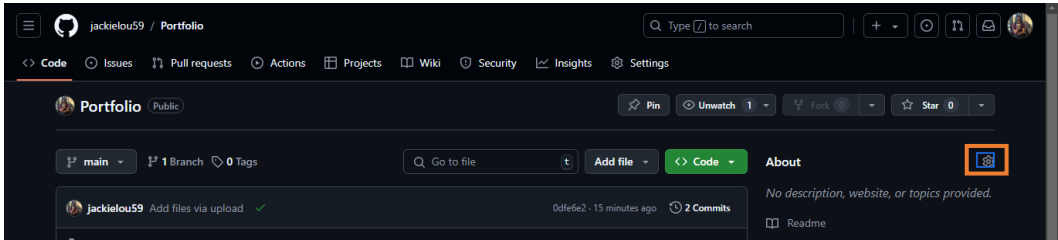
2. In your GitHub Pages page, go to Branch, select Main, then hit save.



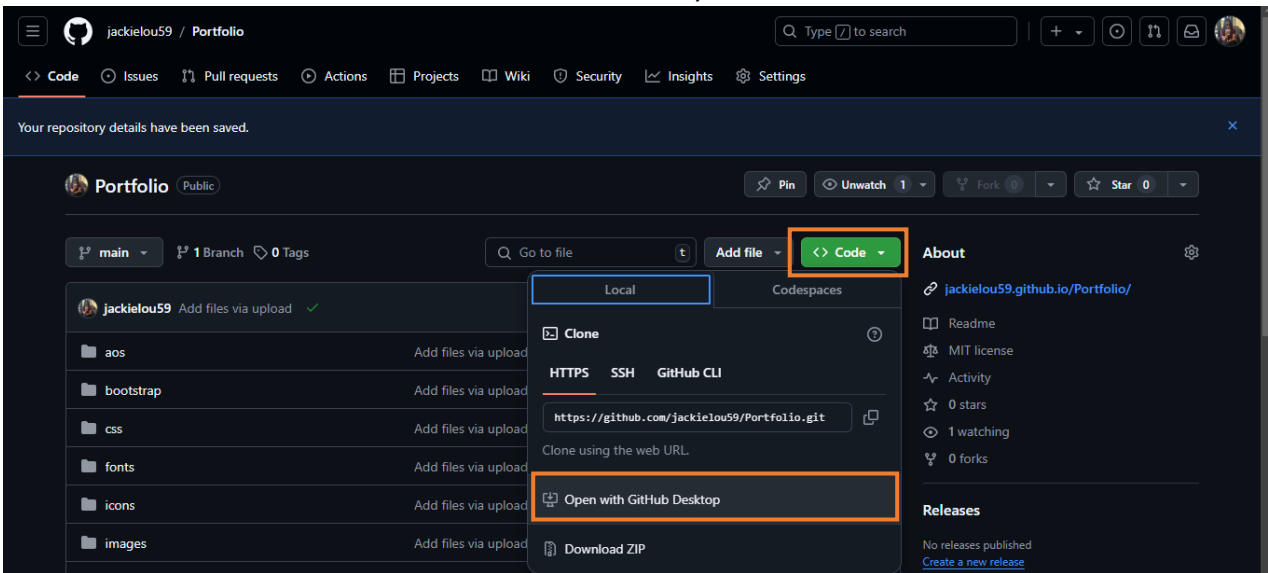
3. Wait for at least one minute, then refresh. You should be able to see the URL generated by GitHub. Click visit the site to try your very first website hosted using GitHub pages.



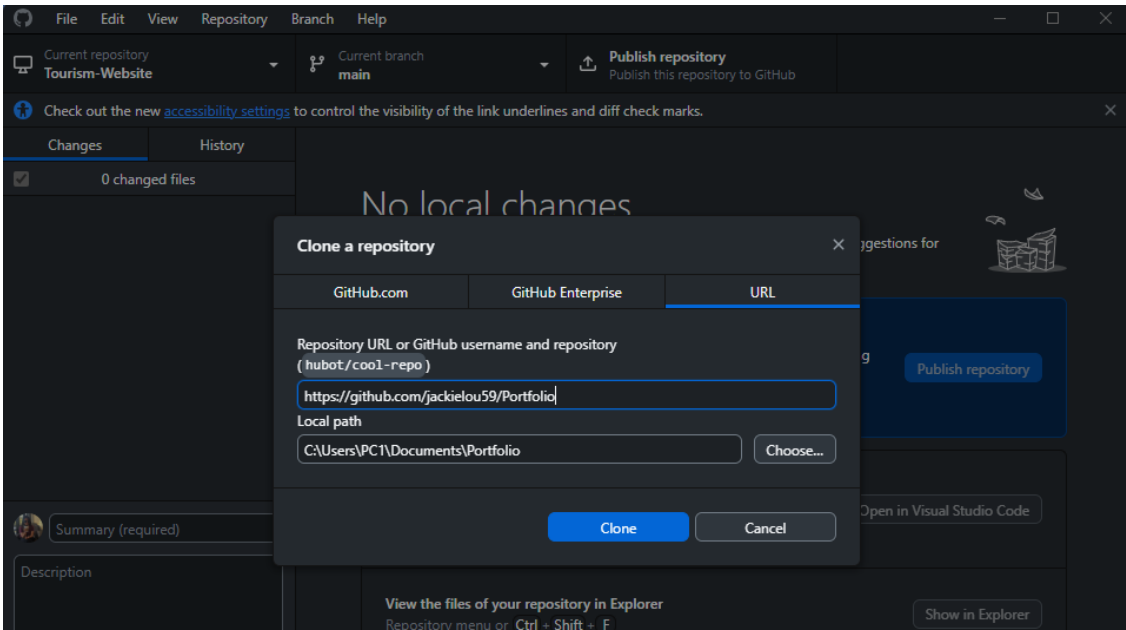
4. Copy the URL, then navigate to Code. Click the About setting, then just click the checkbox "Use your GitHub Pages website" and hit Save Changes. You can see your URL added to your About section. You can now share this with others.



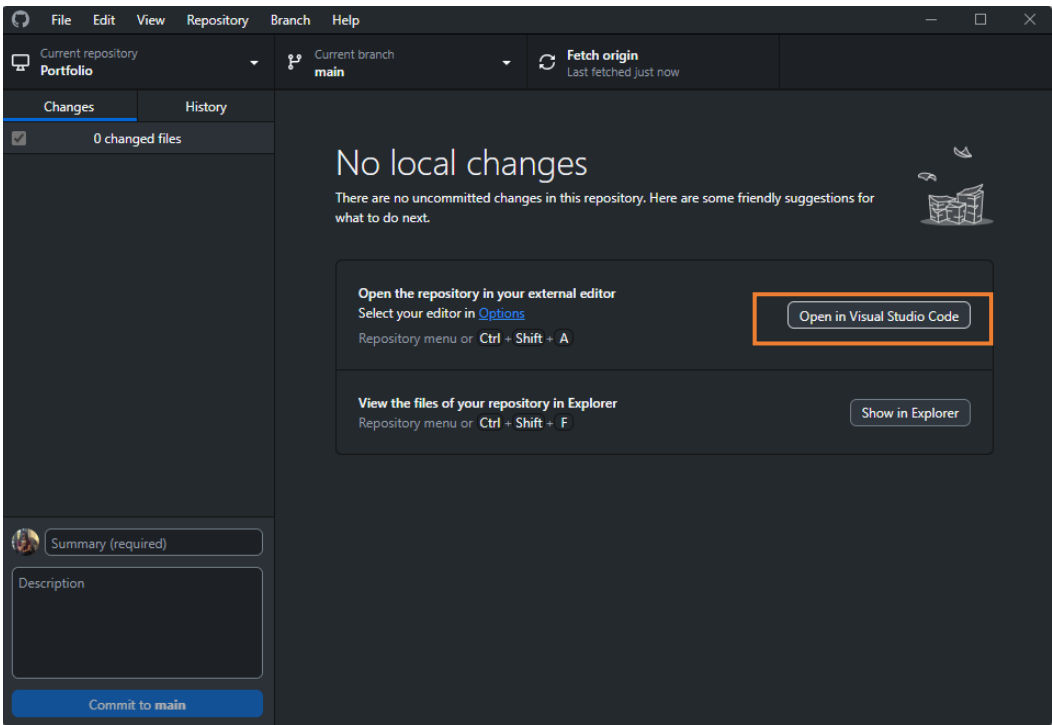
5. If you want to edit your Code, select GitHub Desktop in your code dropdown. Make sure to have this installed first so you can edit your Code as well as VS Code since this is our default editor. If not yet installed, see installation details in the Installation Necessary Tools section.



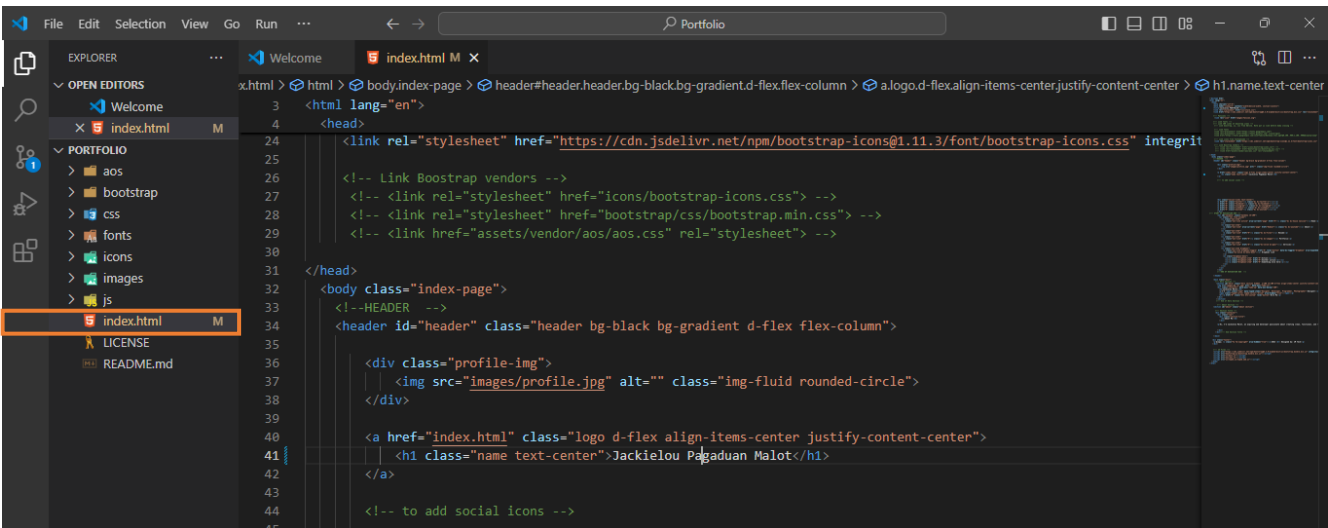
6. When you click the Open with GitHub Desktop, a clone repository modal page will appear. This is a necessary step for you to edit your Code locally. Hit clone and wait for it to be cloned.



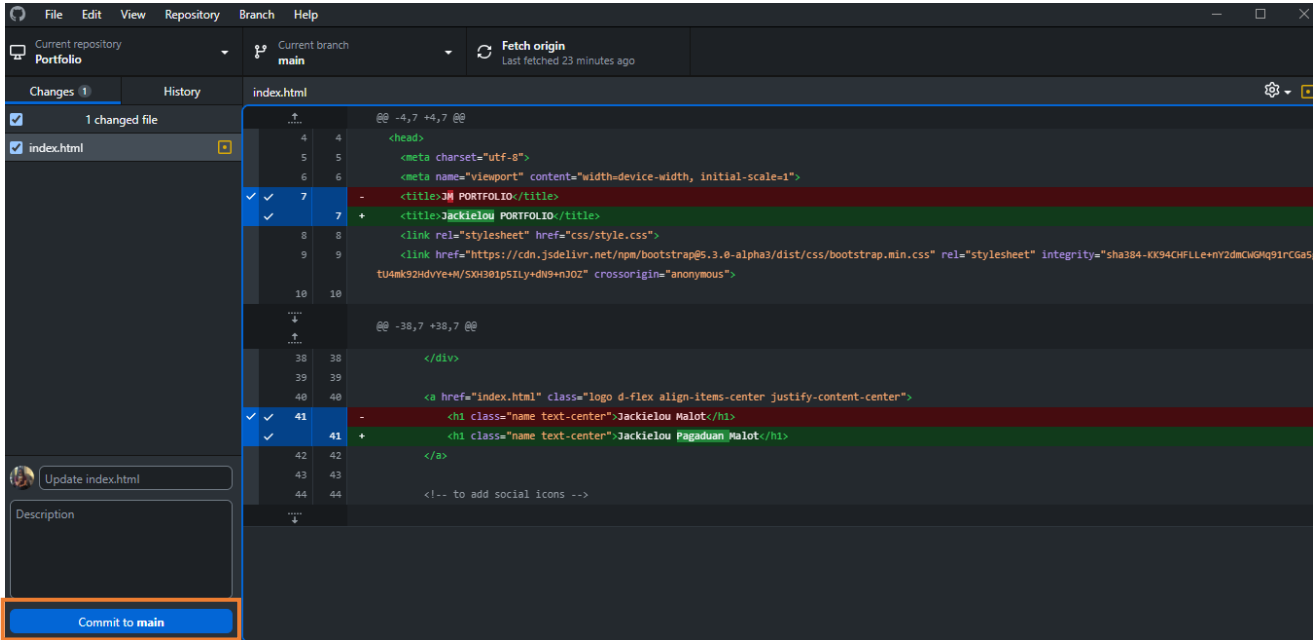
7. After successful cloning, the page below will appear. Hit "Open in Visual Studio code" to continue editing your portfolio code. Do not close this since you are going to use it to save your changes later.



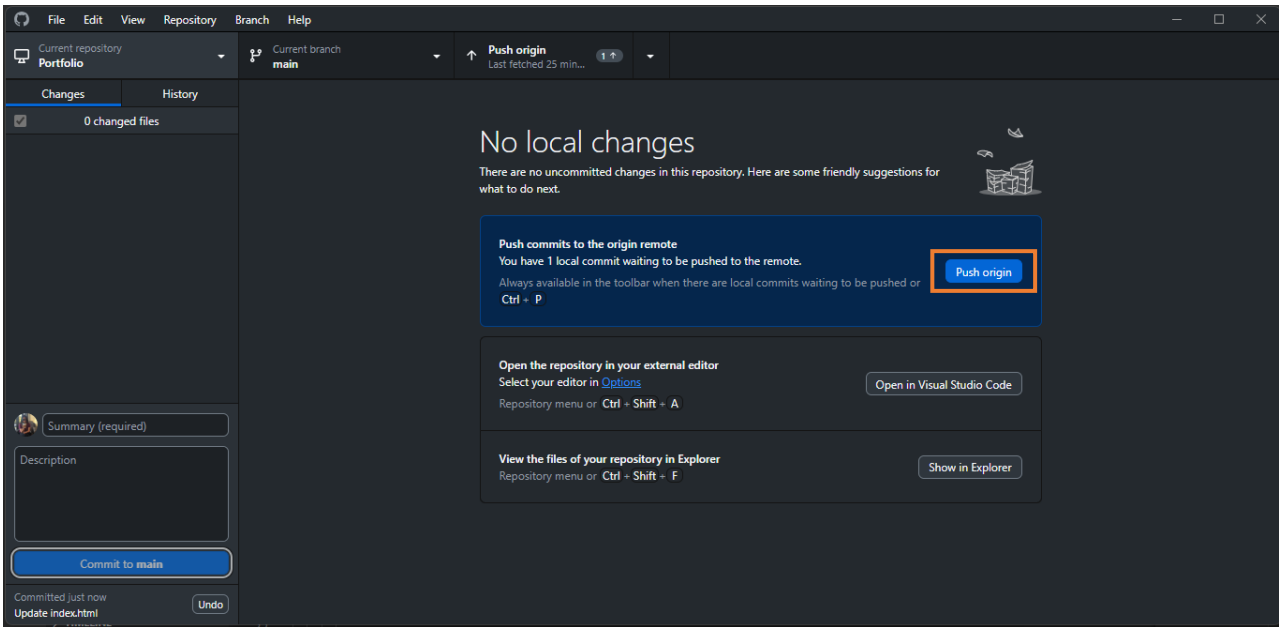
8. In your VS code editor, when you make changes, you can see an indicator that it has been modified. This modification will also be reflected on your GitHub Desktop. Always save when you make changes.



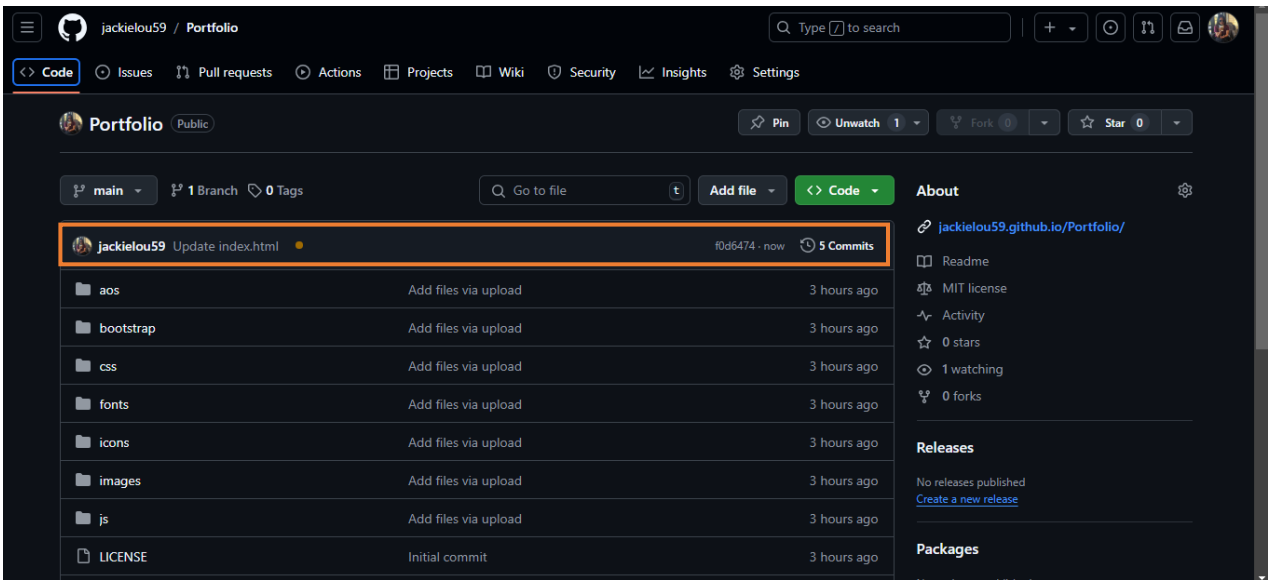
9. To save our changes in our GitHub repository, we need to commit to changes to our main repository. Go back to GitHub Desktop. As noticed, changes made were reflected. To save our changes, click commit to main.



10. After a successful update, we need to Push this to reflect in our GitHub repository. Click the Push Origin button. Wait for a few seconds.

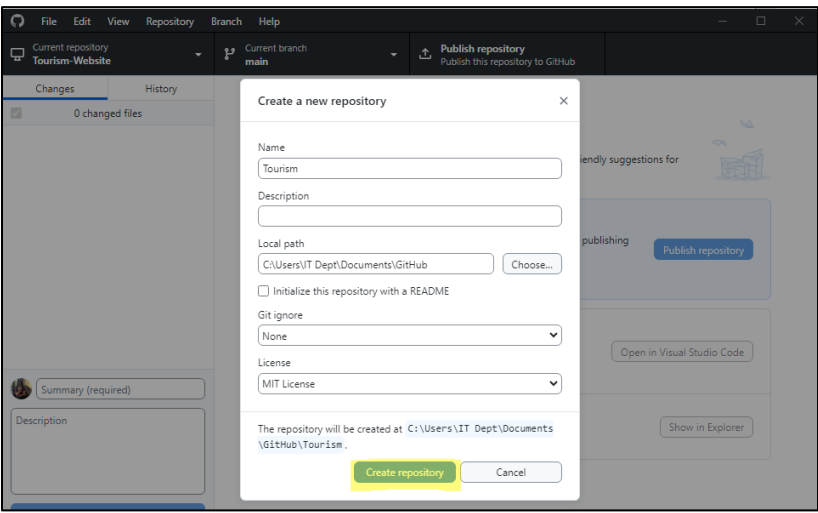


11. After push, go back to your repository. Refresh, and you will notice that index.html is just updated. Click the URL to view changes.



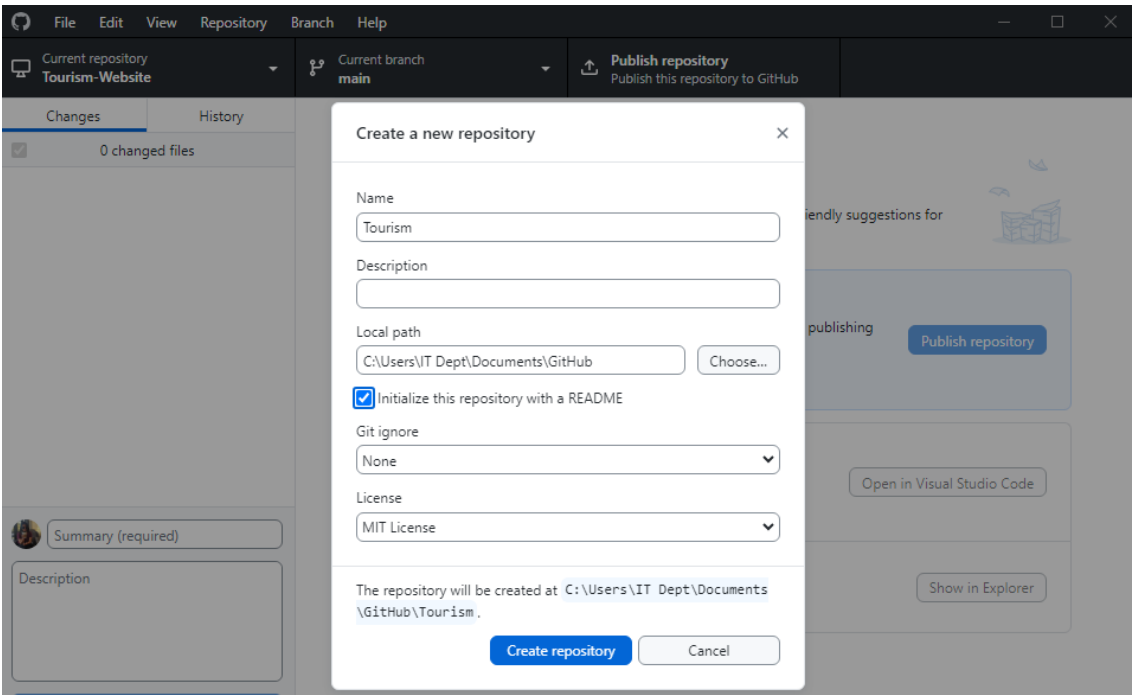
Step-by-step to create a new project repository for your Final Project using GitHub Desktop

1. To create a new repository using GitHub desktop, go to File > New repository, and then in the Name field, write the Name of your test project, for example, your "Tourism" final project.

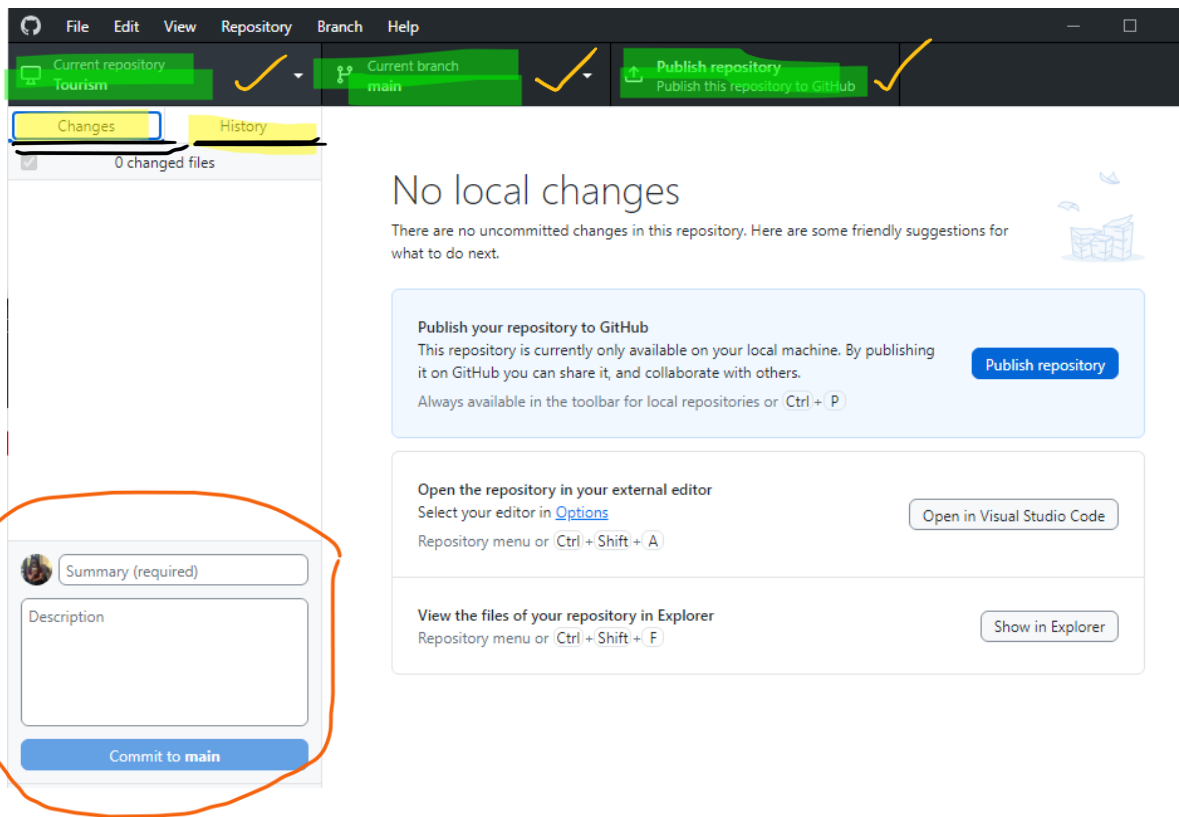


Note: *GitHub repos need to be named a string without spaces. You may use hyphens between words. In the description field, let people who see your repository on GitHub know what it's about. The local path is the folder where you want to create your repository. Let's put our repos in the Documents/GitHub folder. Check the box asking if you want to initialize this repository with a readme file, which lets you write a more detailed description of your project that will show up on GitHub.*

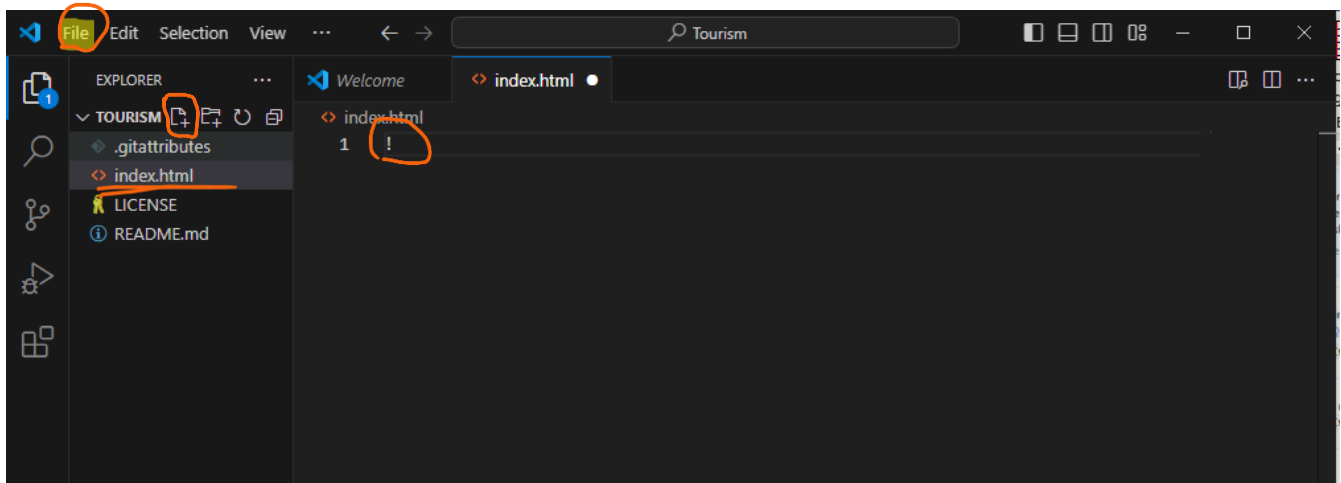
2. The Git ignore fields lets you select types of files that you don't want to add to the repository. Let's just leave it as "None" and then ignore files.
3. The License field tells people what they are allowed to do with your Code in the repository. Since a lot of open sources exist on GitHub nowadays, developers select the MIT License, which allows them to copy, distribute, and modify your Code. If you leave it blank, your project will be licensed with standard copyright. Read further about this at [ChooseALicense.com](https://choosealicense.com).
4. Now, click "Create repository". This will take a few seconds, but GitHub Desktop should create and automatically load the repository.



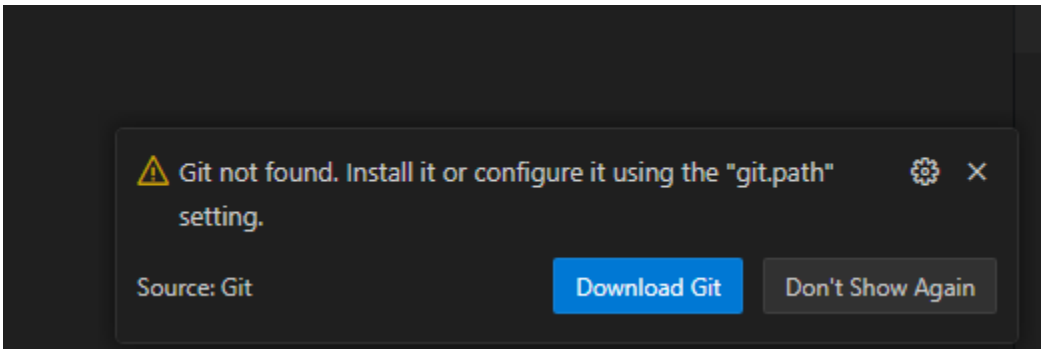
5. Under the menu bar, you'll see another bar with information about your repository. On the left is the current open repository. Next are current branches, which we will tackle later. Just take note that this is one version of the codebase, and you can have multiple branches. The third step is to publish the repository on GitHub.
6. In the current repository, you noticed we have two tabs: the changes tab and the history tab. The changes tab is currently blank since we haven't added any files yet or made changes. For the history tab, we already have an "initial commit" with the files generated by GitHub Desktop when we created this repo.



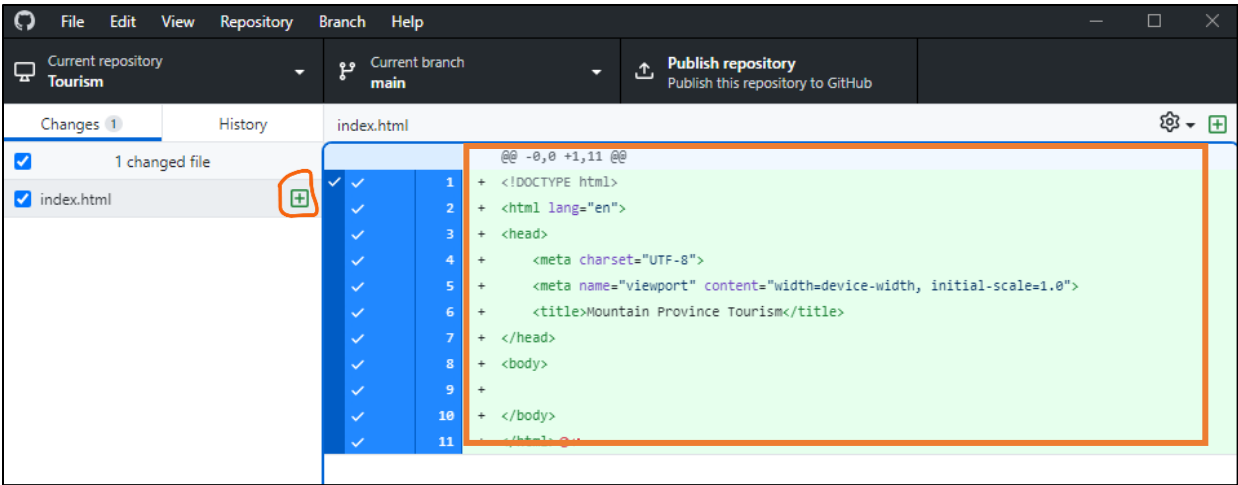
7. If you have the "Changes" tab selected, the commits panel is at the very bottom of the sidebar. This is the "save point" that you can create during development, which includes a set of changes that you want to track. Let's start making some changes to see what happens in Git.
8. In your VS Code editor, go to File > Open Folder and select the location where you created your GitHub repository (Document)
9. To create a new file, click the "New File" icon in the left sidebar and create an index.html file.
10. In the File, type an exclamation point and hit the tab to create a boilerplate HTML markup, then save it.



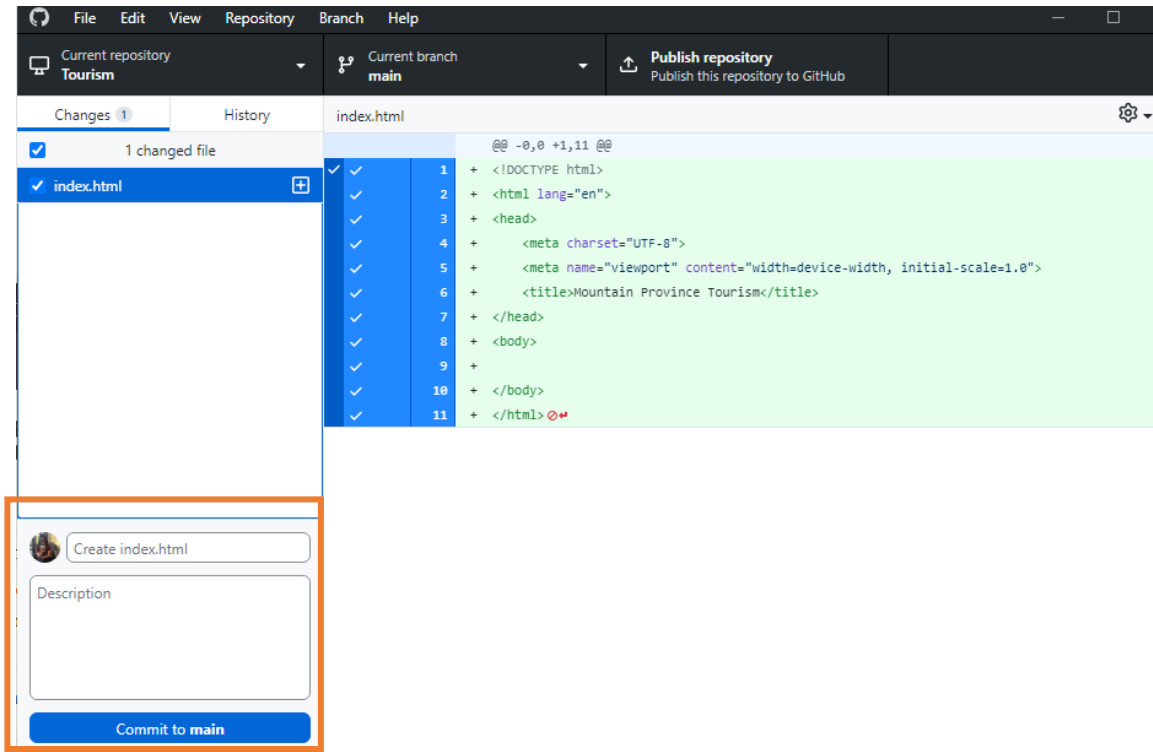
If the following error appears, install the Git 2.47.



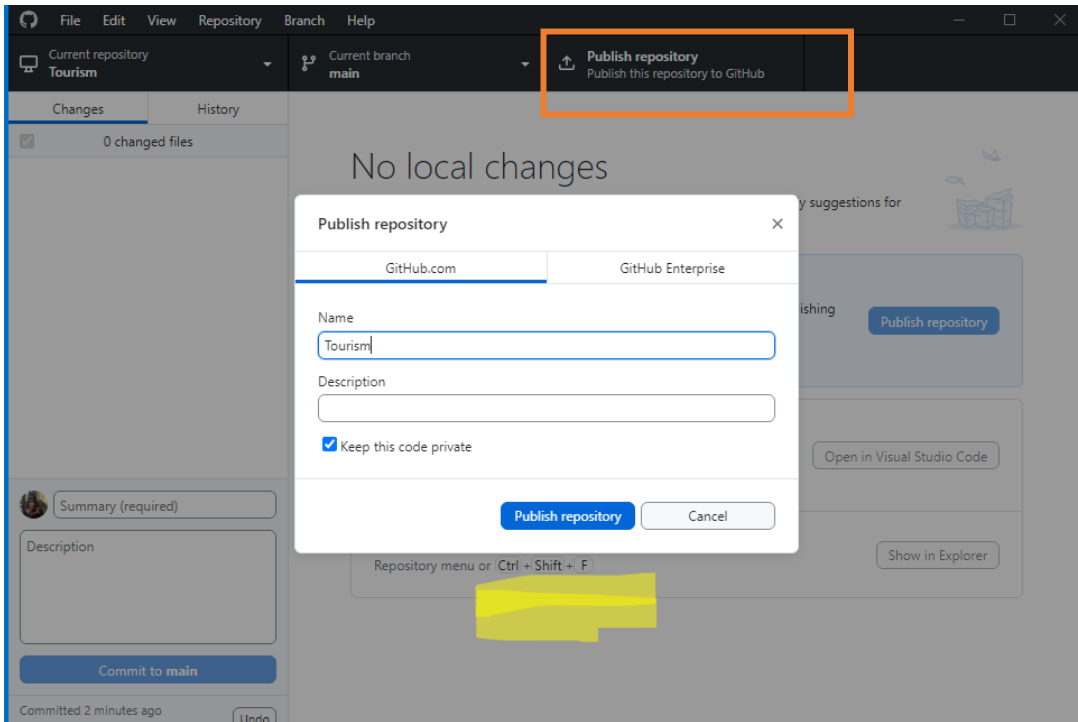
11. Go back to GitHub Desktop, and you'll notice that in the left sidebar under the "Changes" tab will be the index.html File. A green plus icon will be visible beside the filename. This indicates that Git has detected a new file and wants to add it to your repository to track changes. On the right panel, you'll see the actual code changes that you made in the index.html file.



12. Let's create our commit to add the index.html file to our repository.
13. In the bottom commit section, there is a field where you can add what we call a commit message. GitHub Desktop provides a text in the input field saying "Create index.html." Just leave it as is. Click "Commit to main" to create a commit on your main Branch.

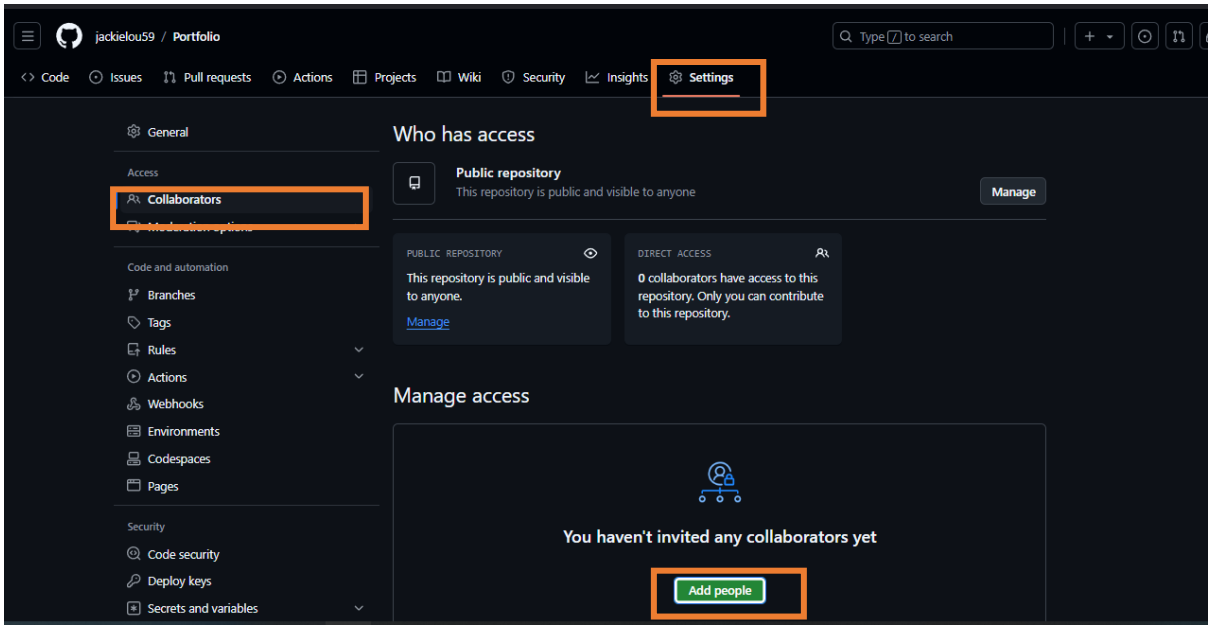


14. Since we created a repository locally, it won't exist on GitHub until we publish it. Click Publish repository, then uncheck the Keep this private. Then hit the Publish repository button. Wait for a few seconds.

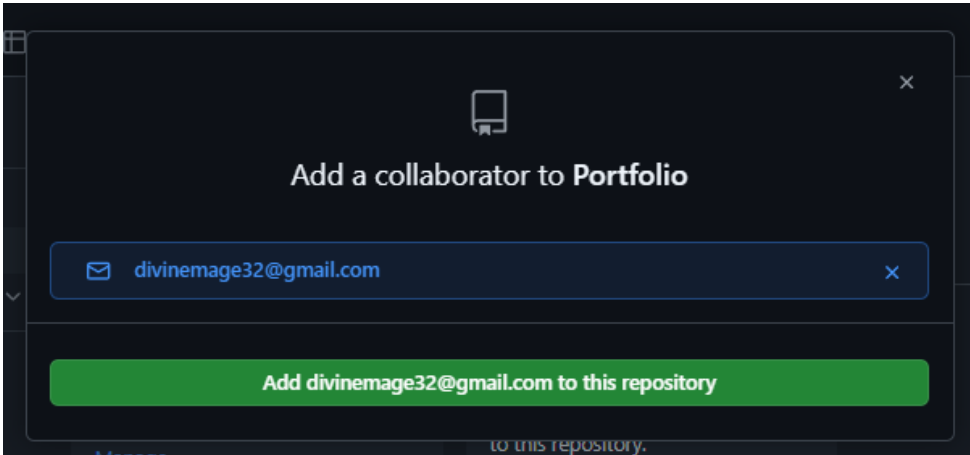


Adding collaborators (Team members)

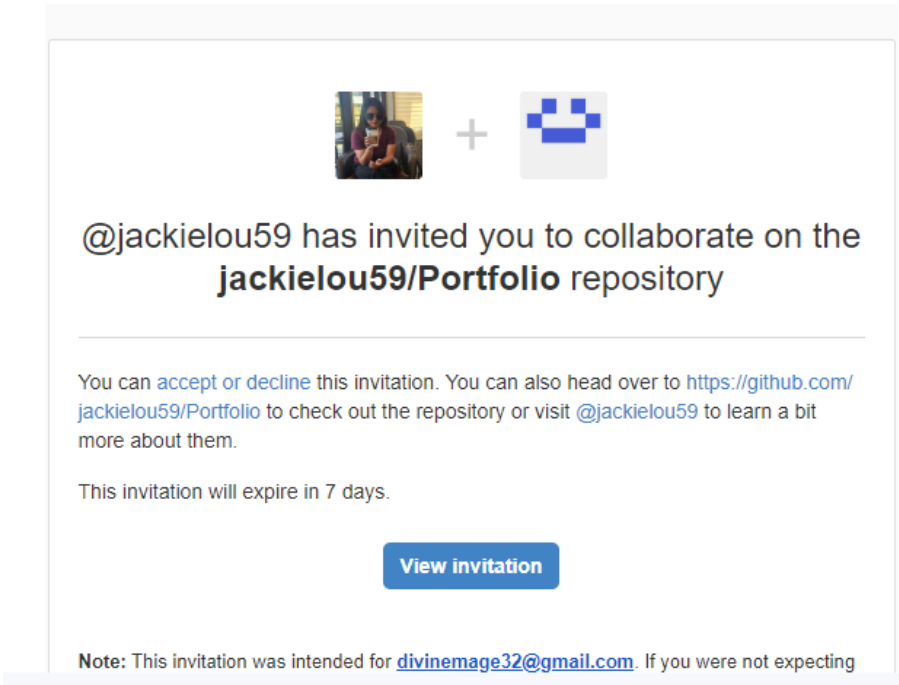
- 1. Assign someone to be the original owner of your project. Then, invite teammates. Do the following to add collaborators or teammates. Make sure your repository is public.
- 2. Navigate Settings > Collaborators > Click Add people.



- 3. The modal page below will appear. Add all your teammates.

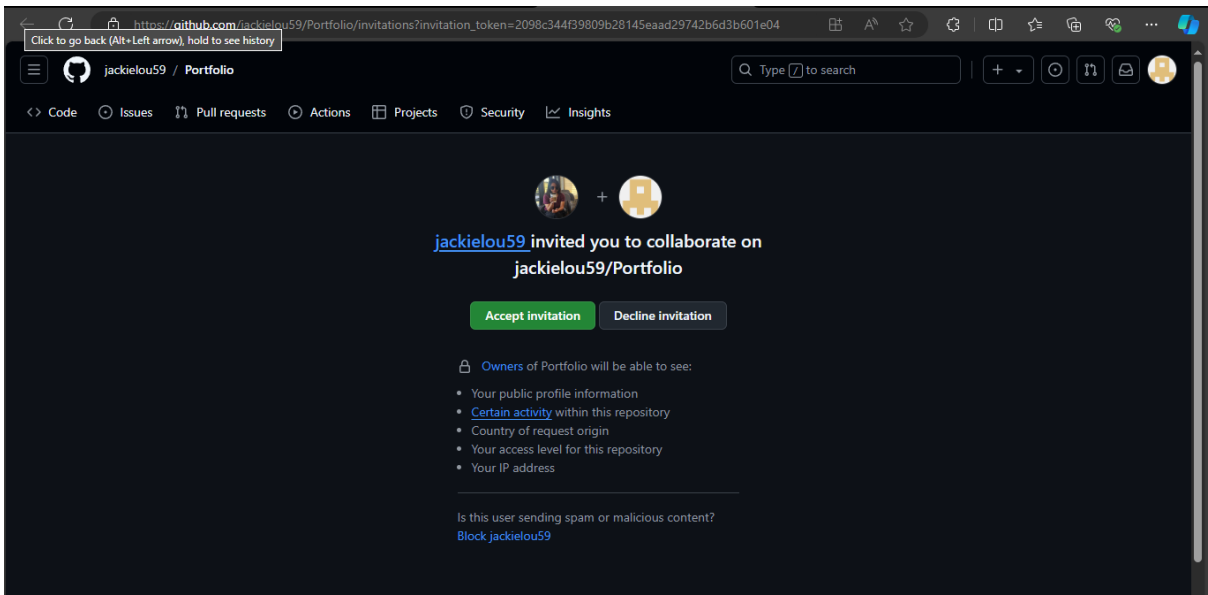


- 4. After adding your teammates' accounts, an invitation link will be sent to their email. The sample invitation link is below. Click the invitation to be directed to the shared GitHub repository to edit.

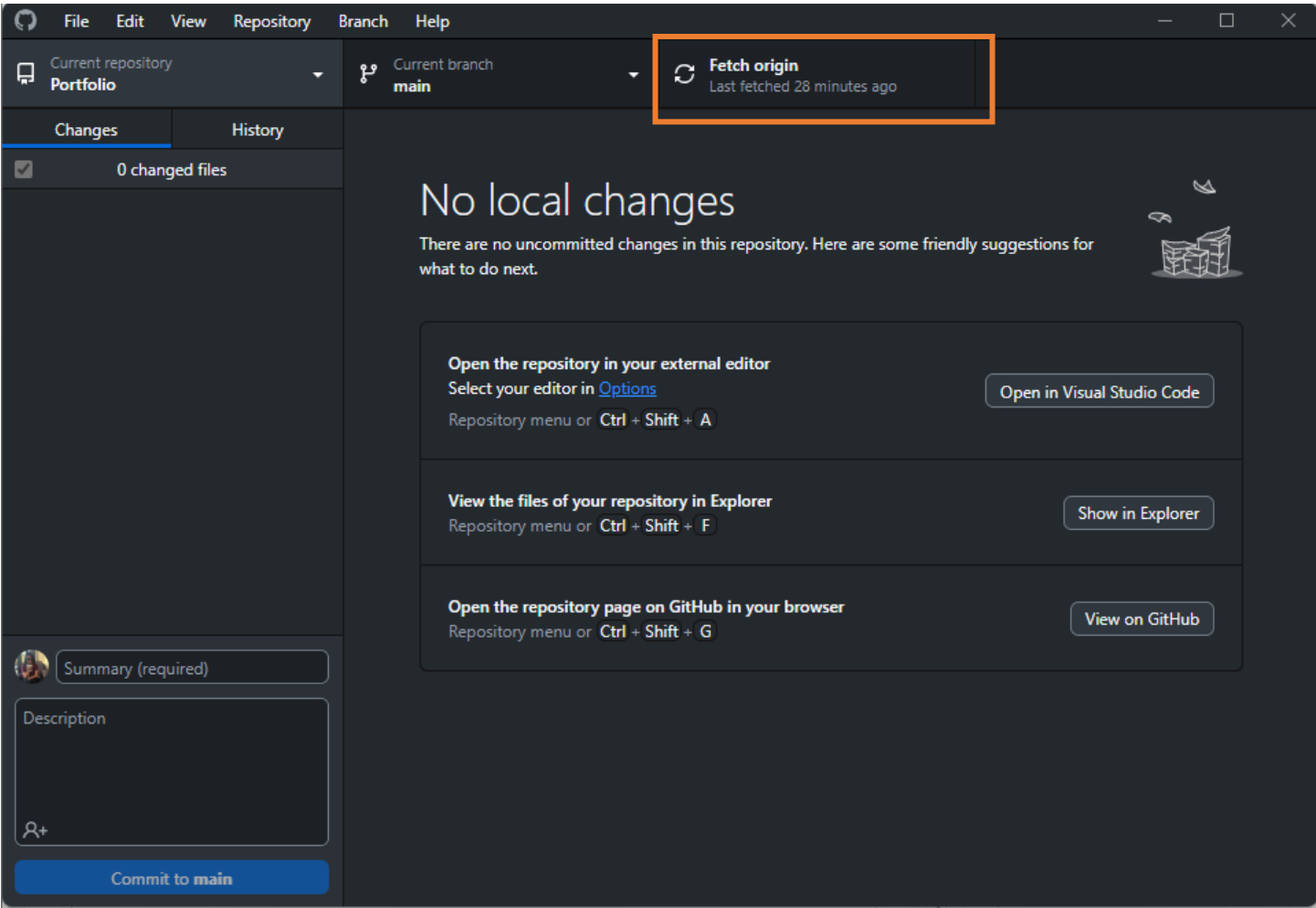


Invitation Collaborators side

1. After clicking the View Invitation button, you will be directed to GitHub. Click Accept invitation.



2. You can now work as a team. Terms to take note of when working in GitHub are commit, push, pull, and fetch. You will encounter these as you go along with your project.
3. If your groupmates made changes, it will be reflected in Git. So, if you are going to edit the same page in GitHub Desktop, make sure to click Fetch Origin so you can have the latest Code before you open it to VS Code.



Or you can assign someone to work on specific page.