

GitHub Tutorial For Beginners.



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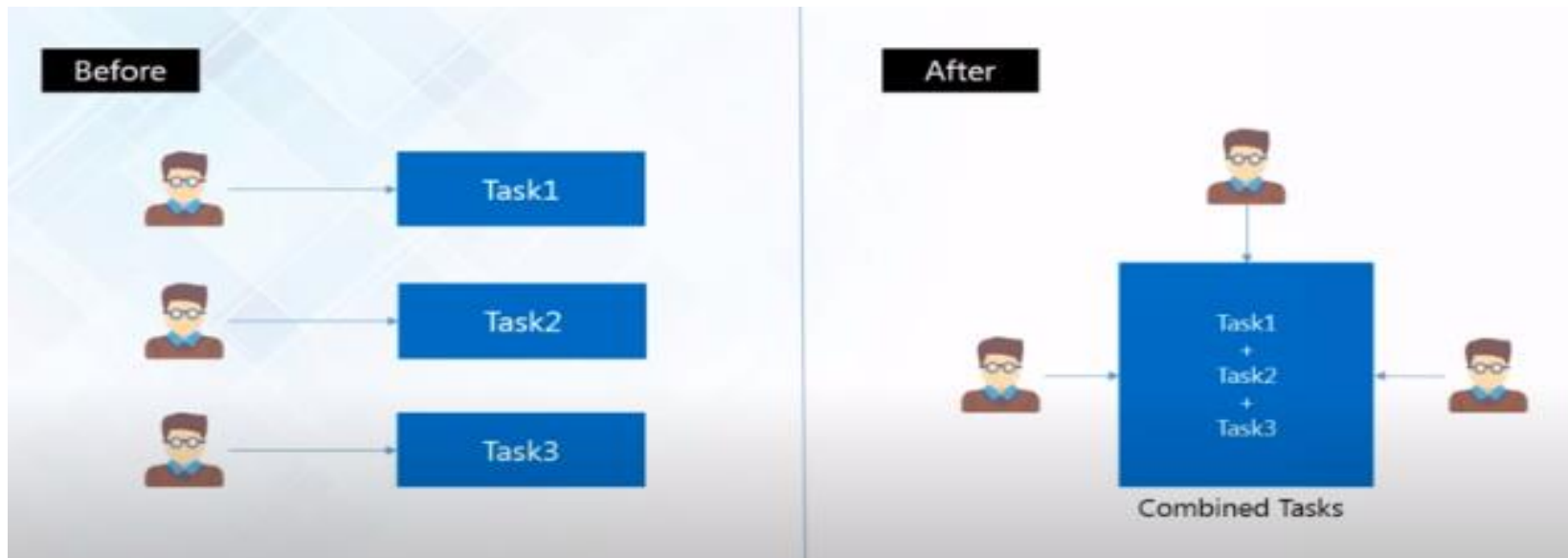
Profile: Quality Analyst

Table Of Contents

1. What Is Version Control System?
2. What is GitHub?
3. What is a Repository in GitHub?
4. How to create Repository in GitHub?
5. What is branching in GitHub?
6. How to create a branch in GitHub?
7. How to use Commit Command in GitHub?
8. How to use Pull Command in GitHub?
9. How to use Merge Command in GitHub?
10. How to Clone and Fork GitHub Repository?

❑ What Is Version Control System?

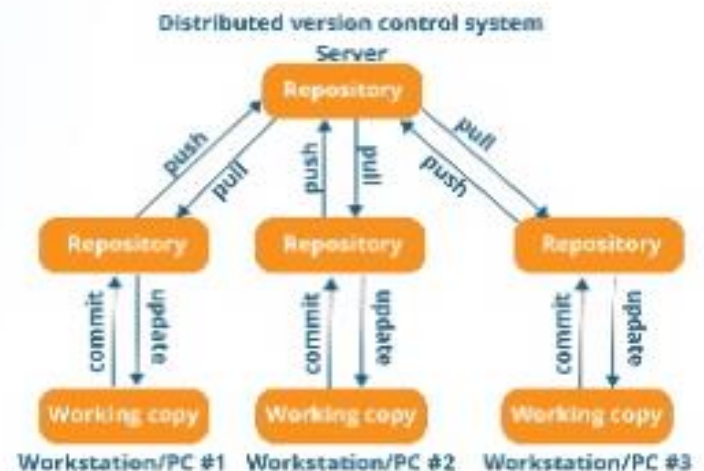
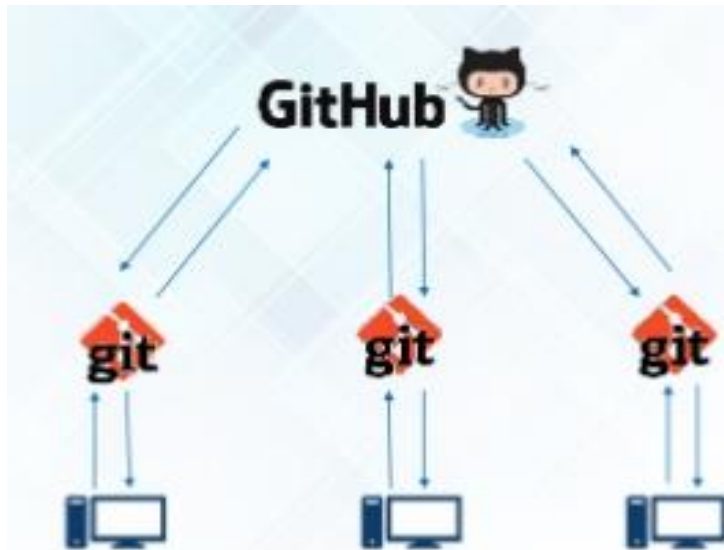
- Version control system is the management of changes to documents, computer programs, Websites, and other information's.
- These changes are usually termed as “Versions”.
- If a mistake is made, developers can turn back the clock and compare earlier versions of the code to help fix the mistake while minimizing disruption to all team members which is the main advantage of version control system.



❑ What is GitHub?

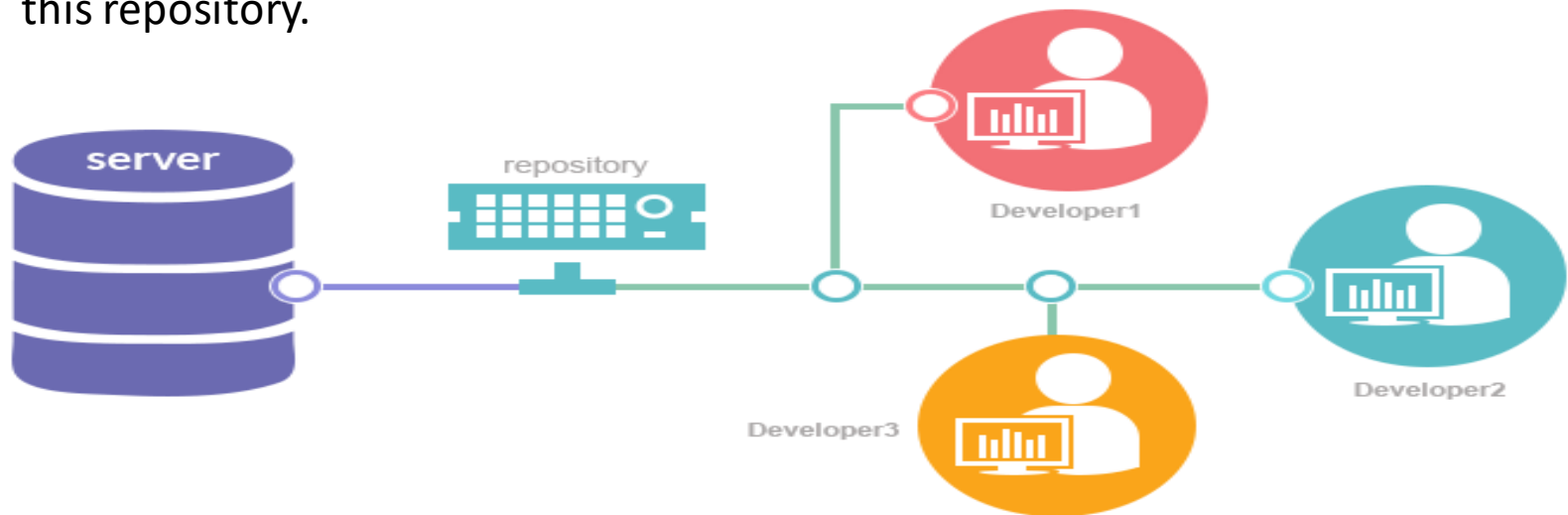
- Git is an open-source version control system that was started by Linus Torvalds—the same person who created Linux. Git is similar to other version control systems like Subversion, CVS, and Mercurial.
- Version control systems keep these revisions straight, storing the modifications in a central repository. This allows developers to easily collaborate, as they can download a new version of the software, make changes, and upload the newest revision. Every developer can see these new changes, download them, and contribute.
- GitHub is a Git repository hosting service, but it adds many of its own features. While Git is a command line tool, GitHub provides a Web-based graphical interface. It also provides access control and several collaboration features, such as a wikis and basic task management tools for every project.
- The flagship functionality of GitHub is “forking” – copying a repository from one user’s account to another. This enables you to take a project that you don’t have write access to and modify it under your own account. If you make changes you’d like to share, you can send a notification called a “pull request” to the original owner. That user can then, with a click of a button, merge the changes found in your repo with the original repo.
- These three features – fork, pull request and merge – are what make GitHub so powerful.

- If you look at the image below, GitHub is a central repository and Git is a tool which allows you to create a local repository. Now people usually get confused between git and GitHub but its actually very different. Git is a version control tool that will allow you to perform all kinds of operations to fetch data from the central server or push data to it whereas GitHub is a core hosting platform for version control collaboration. GitHub is a company that allows you to host a central repository in a remote server.



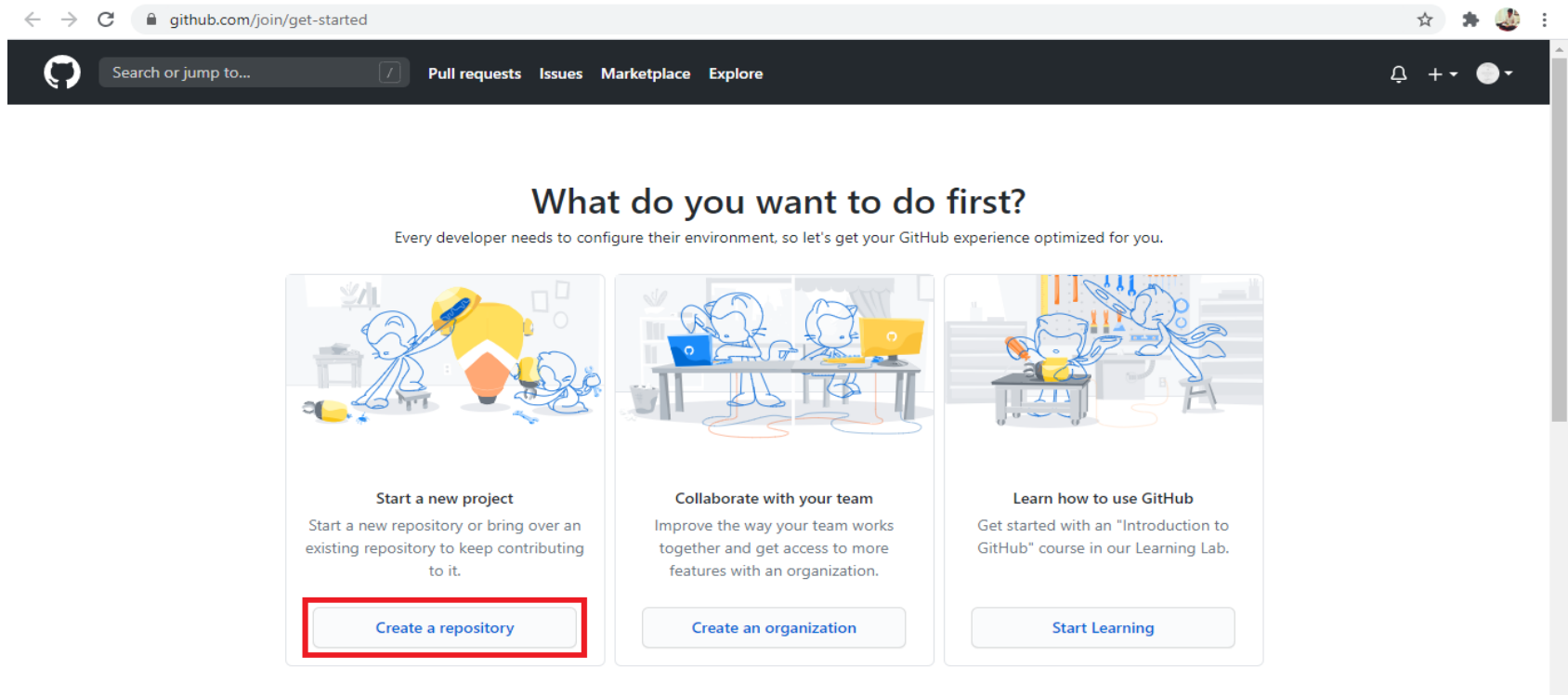
❑ What is a Repository in GitHub?

- Repository is a directory or storage space where your projects can live. Sometimes GitHub users shorten this to “repo.” It can be local to a folder on your computer, or it can be a storage space on GitHub or another online host. You can keep code files, text files, image files, you name it, inside a repository.
- Repository are of two types:
 1. Central Repository: It is typically located on Remote Server. It consists of “.git” repository folder. It is used for the development teams to share and exchange data.
 2. Local Repository: It is typically located on local machine. It stays as a “.git” folder inside your project’s root. Only the Owner/ Admin of the machine can work with this repository.




❑ How to create Repository in GitHub?

- You need a GitHub repository when you have done some changes which are ready to be uploaded. The GitHub repository will act as your remote repository.
- Follow these simple steps to create a GitHub repository:
 1. Go to the link: <https://github.com/>.
 2. Fill the sign up form and click on “Sign up for Github”.
 3. Click on “Create a repository” button in “Start a new project” tile.
- Refer to the below screenshot to get a better understanding.




4. Enter any repository name and click on “Create Repository”. You can also give a description to your repository (optional).

 Search or jump to... Pull requests Issues Marketplace Explore


Create a new repository


A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Owner *


 bipin2094

Repository name *


GitHub Learning 

Great repository names are  Your new repository will be created as GitHub-Learning, not curly-succotash?

Description (optional)

☒  Public

Anyone on the internet can see this repository. You choose who can commit.

☐  Private

You choose who can see and commit to this repository.

Initialize this repository with:

Skip this step if you're importing an existing repository.

☒ Add a README file


This is where you can write a long description for your project. [Learn more.](#)

☐ Add .gitignore

Choose which files not to track from a list of templates. [Learn more.](#)

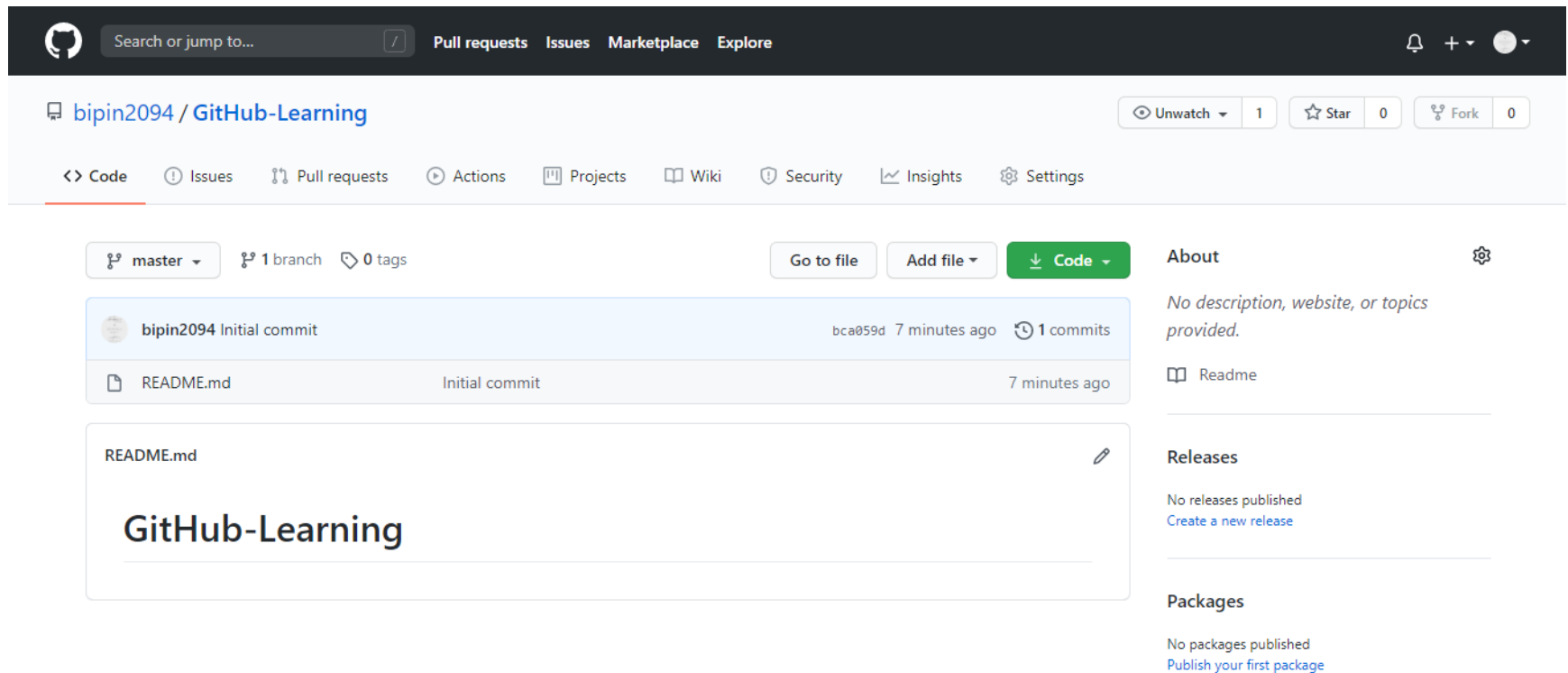
☐ Choose a license

A license tells others what they can and can't do with your code. [Learn more.](#)

This will set  master as the default branch. Change the default name in your settings.

Create repository

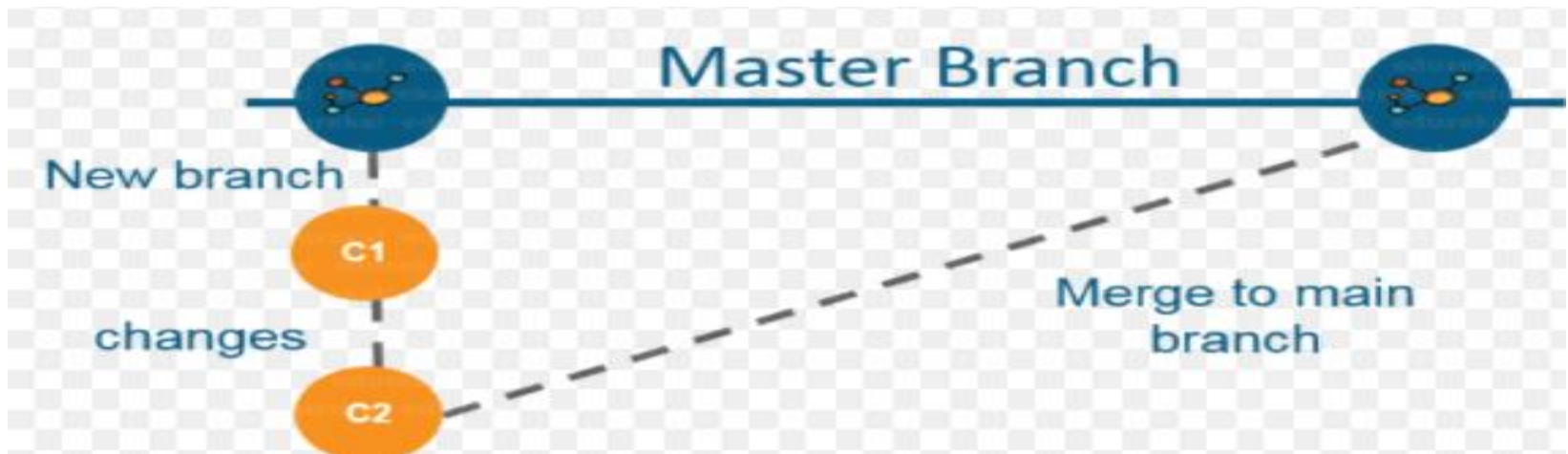
5. Initialize the repository with a README file. This file contains the description of the file and once you check this box, this will be the first file inside your repository.
6. After successful creation of repository it will look like the below screenshot:



7. After successful creation of central repository you are ready to commit, pull, push and perform all the other operations.

❑ What is branching in GitHub ?

- Branches allow you to move back and forth between the different states/versions of a project. In the above scenario, you can create a new branch and test the new feature without affecting the main branch. Once you are done with it, you can merge the changes from new branch to the main branch. Here the main branch is the master branch, which is there in your repository by default. Refer to the below image for better understanding:
- As depicted in the above image, there is a master/ production branch which has a new branch for testing. Under this branch, two set of changes are done and once it completed, it is merged back to the master branch. So this is how branching works!



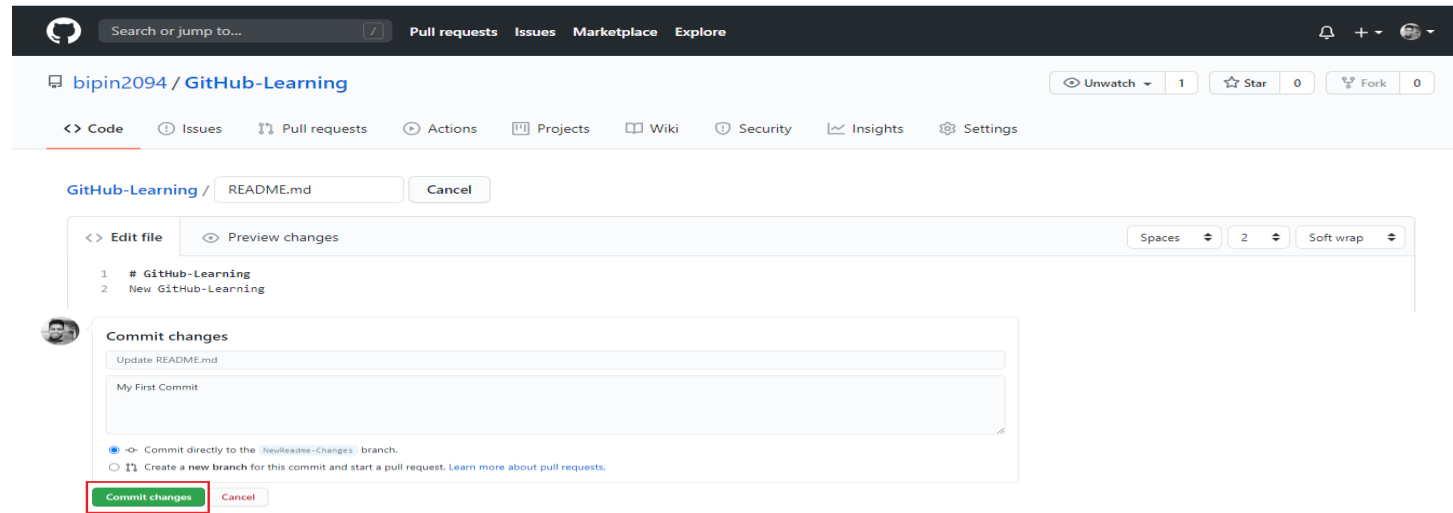
❏ How to create a branch in GitHub ?

- Follow the below mentioned steps to create a branch in GitHub:
 - Click on the dropdown “Branch: master”.
 - After clicking on the branch, you can find an existing branch or you can create a new one. In my case, I have created a new branch with a name “NewReadme-Changes”. Please refer the below screenshot for the same.

The screenshot displays the GitHub interface for the repository `bipin2094 / GitHub-Learning`. The top navigation bar includes the GitHub logo, a search bar, and links for Pull requests, Issues, Marketplace, and Explore. The repository header shows the owner `bipin2094`, the repository name `GitHub-Learning`, and interaction buttons for Unwatch (1), Star (0), and Fork (0). Below the header, a navigation bar contains links for Code, Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. The main content area is titled 'Branches' and features a tabbed interface with 'Overview', 'Yours', 'Active', 'Stale', and 'All branches'. The 'Overview' tab is selected, showing a list of branches. The 'Default branch' section highlights the `master` branch as the default, with a 'Change default branch' button. The 'Your branches' section lists the `NewReadme-Changes` branch, which was updated 23 hours ago by `bipin2094`. The 'Active branches' section also lists the `NewReadme-Changes` branch. Both the `NewReadme-Changes` branches in the 'Your branches' and 'Active branches' sections show a 'New pull request' button and a trash icon.


❏ How to use Commit Command in GitHub ?

- This operation helps you to save the changes in your file. When you commit a file, you should always provide the message, just to keep in the mind the changes done by you also follow the below steps our first commit
 1. Click on “readme- changes” file which we have just created.
 2. Click on the “edit” or a pencil icon in the right most corner of the file.
 3. Once you click on that, an editor will open where you can type in the changes.
 4. Write a commit message which identifies your changes.
 5. Click commit changes in the end.
- Refer to the below screenshot for better understanding:



❏ How to use Pull Command in GitHub ?

- Pull command is the most important command in GitHub. It tell the changes done in the file and request other contributors to view it as well as merge it with the master branch. Once the commit is done, anyone can pull the file and can start a discussion over it. Follow the below steps involved to pull request in GitHub.
 1. Click the 'Pull requests' tab.
 2. Click 'New pull request'.
 3. Once you click on pull request, select the branch and click 'readme- changes' file to view changes between the two files present in our repository.
 4. Click "Create pull request".
 5. Enter any title, description to your changes and click on "Create pull request".
 6. Refer to the screenshots in next slide for better understanding.

 Search or jump to... Pull requests Issues Marketplace Explore

bipin2094 / GitHub-Learning

Unwatch 1 Star 0 Fork 0

<> Code Pull requests Actions Projects Wiki Security Insights Settings


Label issues and pull requests for new contributors
Now, GitHub will help potential first-time contributors [discover issues](#) labeled with [good first issue](#)

NewReadme-Changes had recent pushes 7 minutes ago

Filters is:pr is:open Labels 9 Milestones 0

Compare & pull request

New pull request




Welcome to pull requests!

Pull requests help you collaborate on code with other people. As pull requests are created, they'll appear here in a searchable and filterable list. To get started, you should [create a pull request](#).

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: master ← compare: NewReadme-Changes ✓ Able to merge. These branches can be automatically merged.



Update README.md

Write Preview

H B I ≡ <> 🔗 ≡ ≡ ≡ ☑️ @ 🗨️ ↶

My First Commit

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

Create pull request

Reviewers
No reviews

Assignees
No one—assign yourself

Labels
None yet

Projects
None yet

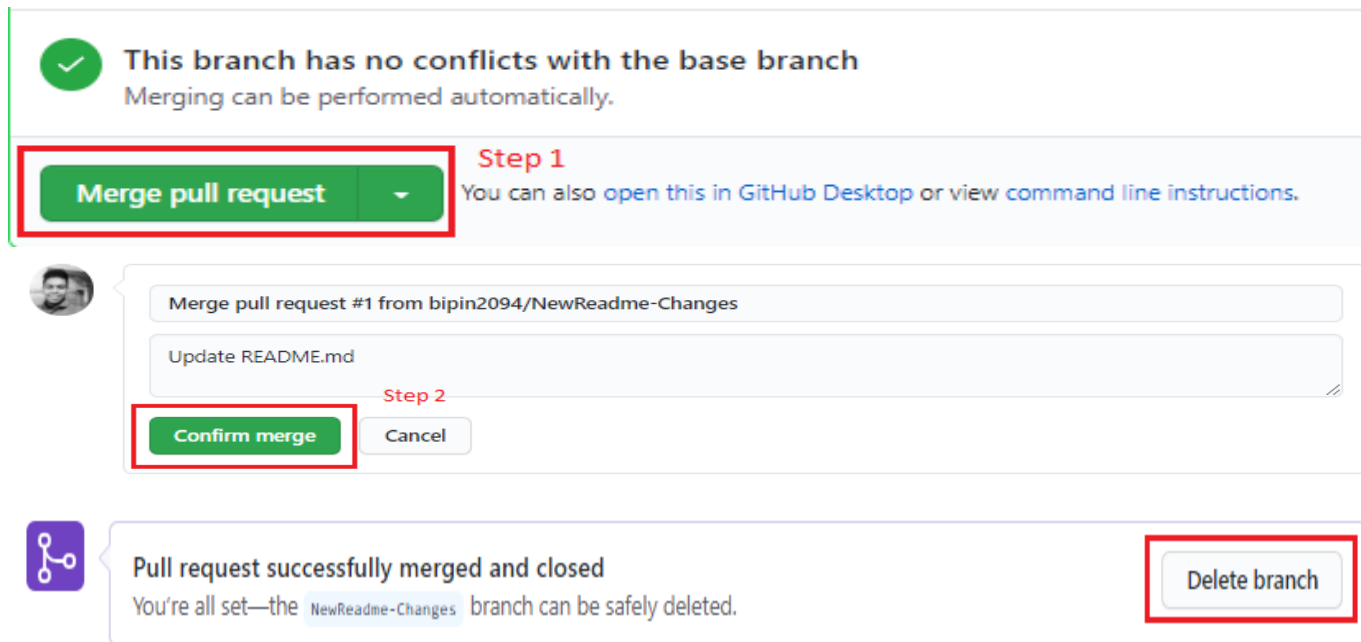
Milestone
No milestone

Linked issues
Use [Closing keywords](#) in the description to automatically close issues

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

❑ How to use Merge Command in GitHub ?

- Merge command is used to merge the changes into the main master branch.
- Follow the below steps to merge pull request:
 1. Click on “Merge pull request” to merge the changes into master branch.
 2. Click “Confirm merge”.
 3. You can delete the branch once all the changes have been incorporated and if there are no conflicts. Refer to the below screenshots.

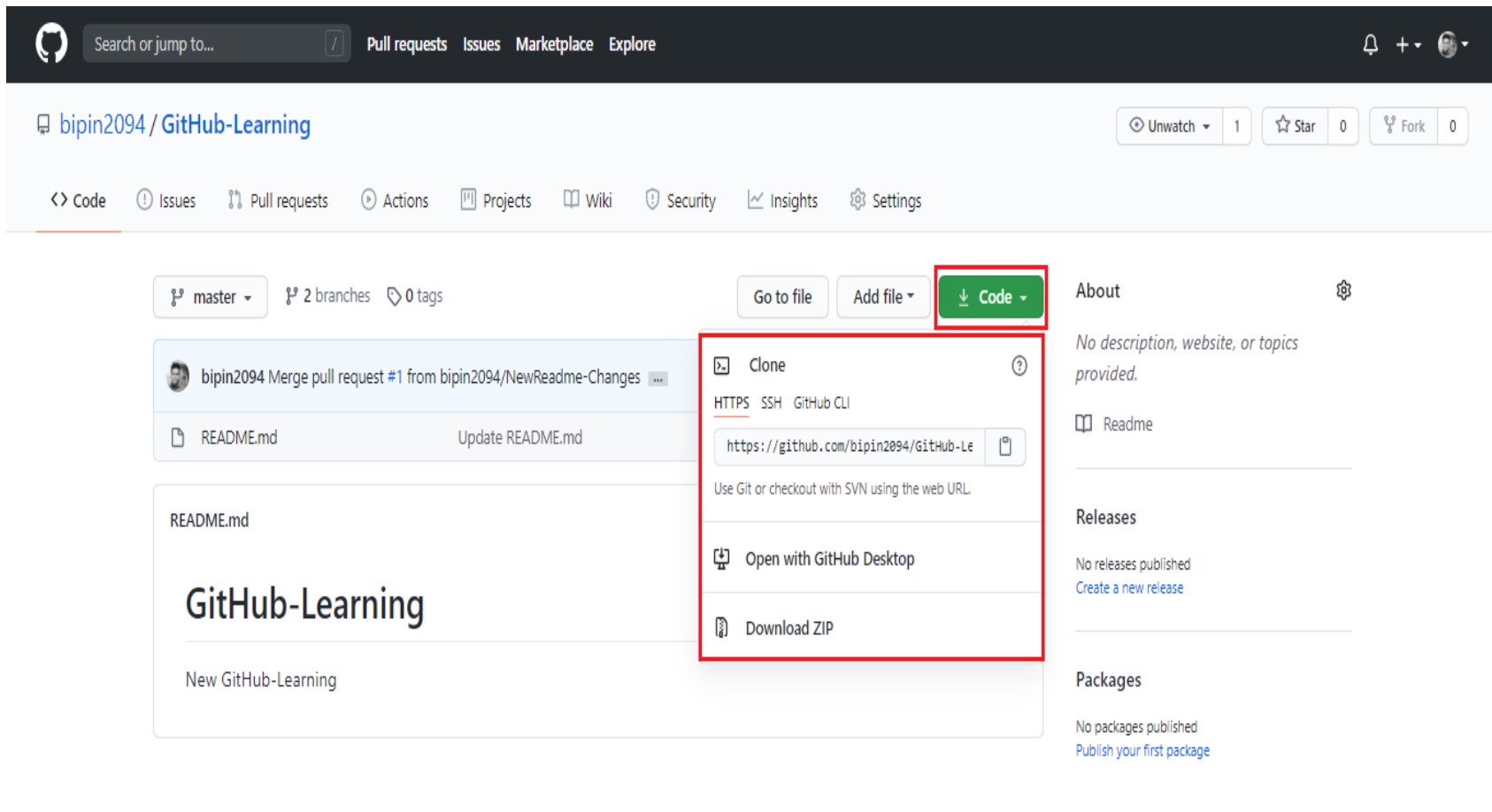


The screenshot illustrates the GitHub merge workflow in three stages:

- Step 1:** A green checkmark icon is followed by the text "This branch has no conflicts with the base branch" and "Merging can be performed automatically." Below this, a green button labeled "Merge pull request" with a dropdown arrow is highlighted with a red box. To its right, the text "Step 1" is shown, followed by "You can also [open this in GitHub Desktop](#) or view [command line instructions](#)."
- Step 2:** A user profile picture is shown next to a merge summary box. The box contains the text "Merge pull request #1 from bipin2094/NewReadme-Changes" and "Update README.md". Below this, a green button labeled "Confirm merge" and a grey button labeled "Cancel" are shown. The "Confirm merge" button is highlighted with a red box. To the right of the buttons, the text "Step 2" is displayed.
- Final Step:** A purple icon with a branching diagram is shown next to a message box. The message box contains the text "Pull request successfully merged and closed" and "You're all set—the `NewReadme-Changes` branch can be safely deleted." To the right of the message box, a grey button labeled "Delete branch" is highlighted with a red box.

❏ How to Clone and Fork GitHub Repository ?

- **Cloning** is done to use some code which is present in a public repository, where you can directly copy the contents by cloning or downloading.
- Refer to the below screenshot for better understanding.



The screenshot displays the GitHub interface for the repository 'bipin2094 / GitHub-Learning'. The top navigation bar includes the GitHub logo, a search bar, and links to 'Pull requests', 'Issues', 'Marketplace', and 'Explore'. The repository name 'bipin2094 / GitHub-Learning' is shown, along with 'Unwatch' (1), 'Star' (0), and 'Fork' (0) buttons. Below the repository name, there are tabs for 'Code', 'Issues', 'Pull requests', 'Actions', 'Projects', 'Wiki', 'Security', 'Insights', and 'Settings'. The 'Code' tab is selected, showing a 'master' branch with 2 branches and 0 tags. A 'Go to file' button and an 'Add file' dropdown are visible. A red box highlights the 'Code' button, which has opened a dropdown menu. This menu contains options to 'Clone' (with sub-options for HTTPS, SSH, and GitHub CLI), 'Open with GitHub Desktop', and 'Download ZIP'. The repository's README is partially visible in the background, showing the title 'GitHub-Learning' and the text 'New GitHub-Learning'.

Search or jump to... / Pull requests Issues Marketplace Explore

bipin2094 / GitHub-Learning Unwatch 1 Star 0 Fork 0

<> Code Issues Pull requests Actions Projects Wiki Security Insights Settings

master 2 branches 0 tags Go to file Add file Code

Clone ?
HTTPS SSH GitHub CLI
https://github.com/bipin2094/GitHub-Le
Use Git or checkout with SVN using the web URL.
Open with GitHub Desktop
Download ZIP

About
No description, website, or topics provided.
Readme
Releases
No releases published
Create a new release
Packages
No packages published
Publish your first package

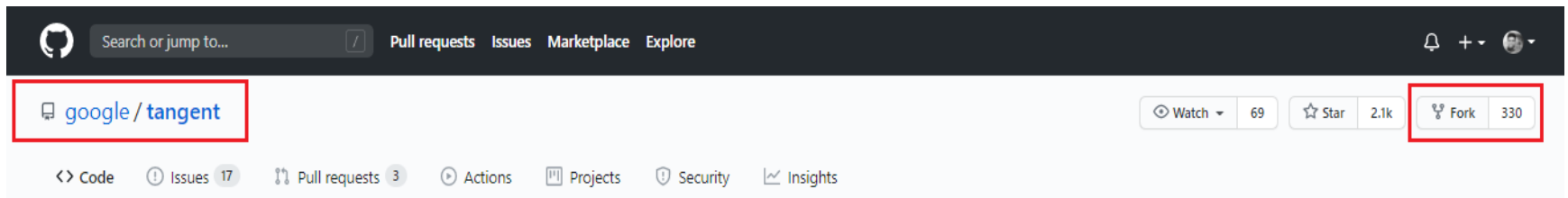
README.md Update README.md

README.md

GitHub-Learning

New GitHub-Learning

- **Forking:** After using GitHub by yourself for a while, you may find yourself wanting to contribute to someone else's project. Or maybe you'd like to use someone's project as the starting point for your own. This process is known as forking.
- Before we get started with forking, there are some important points which you should always keep in mind.
 - A. Changes done to the original repository will be reflected back to the forked repository.
 - B. If you make a change in forked repository, it will not be reflected to the original repository until and unless you have made a pull request.
- Follow the below steps to fork a repository:
 1. Go to Explore and search for public repositories.
 2. Click "fork". Note that this "tangent" repository is already forked 330 times and it is under "google" account. Refer the below image for better understanding.



- As soon as you click on “Fork”, it will take some time to fork the repository. Once done you will notice that the repository name is under your account. For reference, you can have a look at the below screenshot.

The screenshot shows the GitHub interface for a repository named 'bipin2094/tangent'. The repository is a fork of 'google/tangent'. The 'Fork' button is highlighted with a red box, showing 331 forks. The repository has 0 watches and 0 stars. The 'Code' button is highlighted with a green box. The repository is currently on the 'master' branch, with 8 branches and 5 tags. A pull request is open, titled 'Fix swapping of branches (google#83)', by 'bartvm and alexbw', dated 'Aug 9, 2018', with 68 commits. The repository is licensed under Apache-2.0.

Search or jump to... Pull requests Issues Marketplace Explore

bipin2094 / tangent
forked from google/tangent

Watch 0 Star 0 Fork 331

<> Code Pull requests Actions Projects Security Insights Settings

master 8 branches 5 tags Go to file Add file Code

This branch is even with google:master. Pull request Compare

bartvm and alexbw Fix swapping of branches (google#83) 6533e83 on Aug 9, 2018 68 commits

About
Source-to-Source Debuggable
Derivatives in Pure Python
Readme
Apache-2.0 License

Thank You!