# Module 2: Working with Git Repositories

## Demo 2: Demo on difference between repositories.

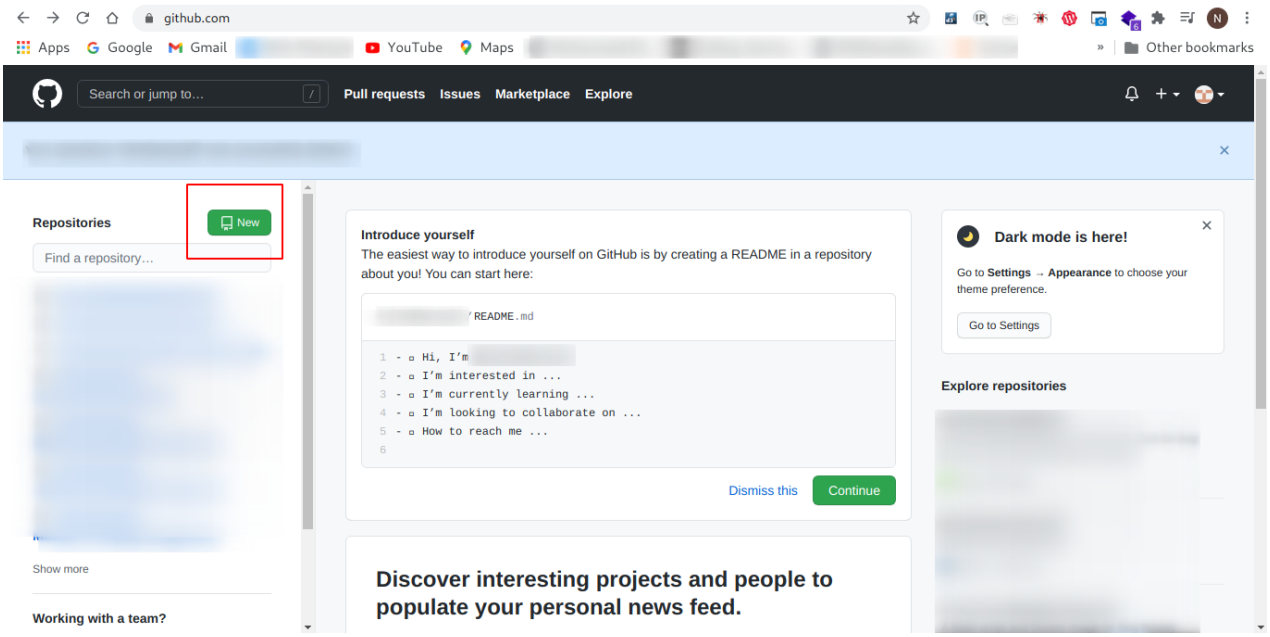
**Problem Statement:**

How we can use git push and git pull command for differentiating different repositories (local and remote).

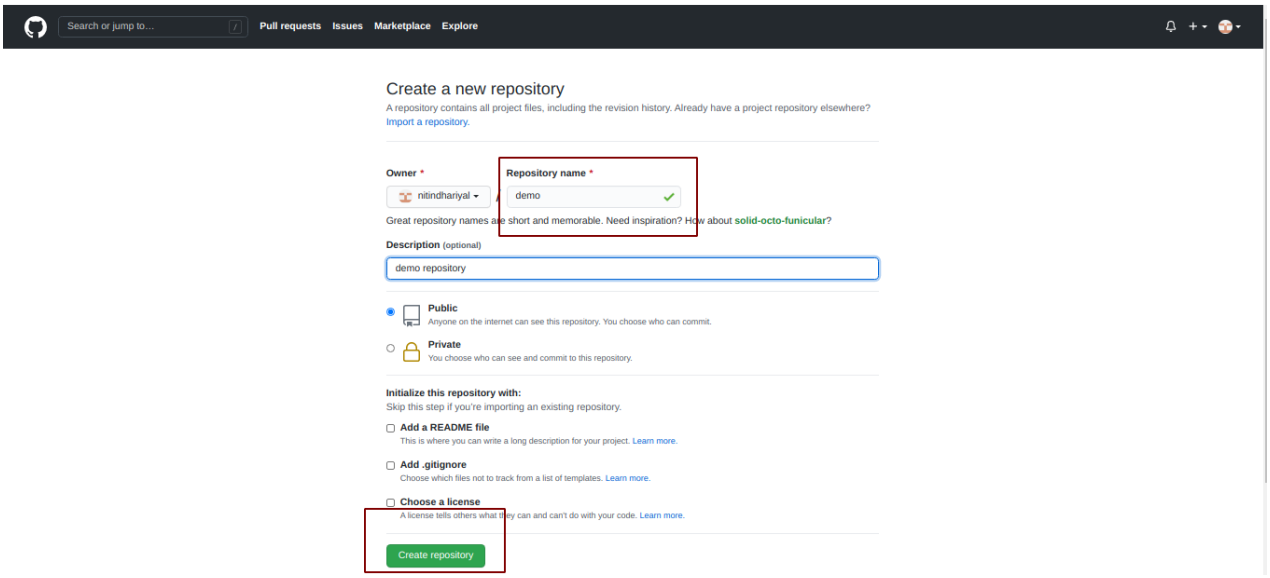
**Solution:**

Step 1: In this demo, we are going to push our project into a remote git repository using the command ***git push***. Using the git push command, the commit is transferred or pushed to a remote repository like GitHub on a local branch on your computer. Below is the command used to push GitHub.
git push 'remote_name' 'branch_name'

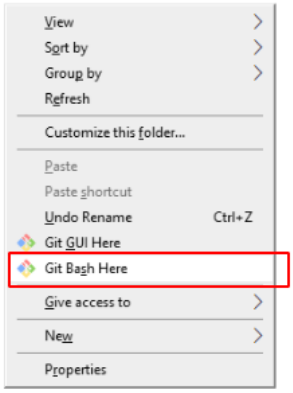
Let us create a new repository first. Open your Github click on **"new"**.




You got a "**Create a new repository**", after completing this page you successfully created your new repository.




Step 2: **Open your Git Bash.** Git Bash can be downloaded here, and it is a shell used to interface with the operating system which follows the UNIX command.




Step 3: Create your local project on your desktop, or open that project which you want to add into a remote git repository.

Command Used: pad
Command used: cd filename

```
Terminal
File  Edit  View  Search  Terminal  Help
┌─[kamikaze@parrot]─[~/Desktop/Programs]
└──╼ $pwd
/home/kamikaze/Desktop/Programs
┌─[kamikaze@parrot]─[~/Desktop/Programs]
└──╼ $cd Git/
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git]
└──╼ $
```

Step 4: Let us Initialize the git repository**.**

Command Used: git init

This command will be used to create a new empty repository or directory of hidden files.

```
Terminal
File  Edit  View  Search  Terminal  Help
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git]
└──╼ $git init
hint: Using 'master' as the name for the initial branch. This default branch na
e
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
Initialized empty Git repository in /home/kamikaze/Desktop/Programs/Git/.git/
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git]
└──╼ $
```

Step 5: Let us add our files to the new local repository.
Command Used: git add.
Command Used: git status

git add . the command is used to add all files to our local repository. whereas git status command is used to view all files to be placed on your first commit.

```
Terminal
File  Edit  View  Search  Terminal  Help
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git]
└──╼ $git add .
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git]
└──╼ $git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   README.md
        new file:   first.c

┌─[kamikaze@parrot]─[~/Desktop/Programs/Git]
└──╼ $
```

Step 6: Let us make a commit message to commit files staged in your local repository.

Command Used: git commit -m 'your commit here'

```
Terminal
File  Edit  View  Search  Terminal  Help
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git]
└──╼ $git commit -m 'first commit'
[master (root-commit) c326a0d] first commit
 2 files changed, 8 insertions(+)
 create mode 100644 README.md
 create mode 100644 first.c
```

Step 7: Let us upload these repositories into our remote repository, for that we must copy our remote repository's URL from GitHub. The HTTPS or URL of the remote repository is copied from a GitHub account.

**Quick setup — if you've done this kind of thing before**

or HTTPS SSH https://github.com/nitindhariyal/demo.git

Get started by creating a new file or uploading an existing file. We recommend every repository include a README, LICENSE, and .gitignore.

Step 8: For adding our local content to our remote repository.

Command Used: git remote add origin ‘your_url_name’

here in the above code, 'origin' is the remote name, the remote URL is "https://github.com/nitindhariyal/Demo.git".

```
Terminal
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git]
└──╼ $git remote add origin https://github.com/nitindhariyal/demo.git
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git]
└──╼ $
```

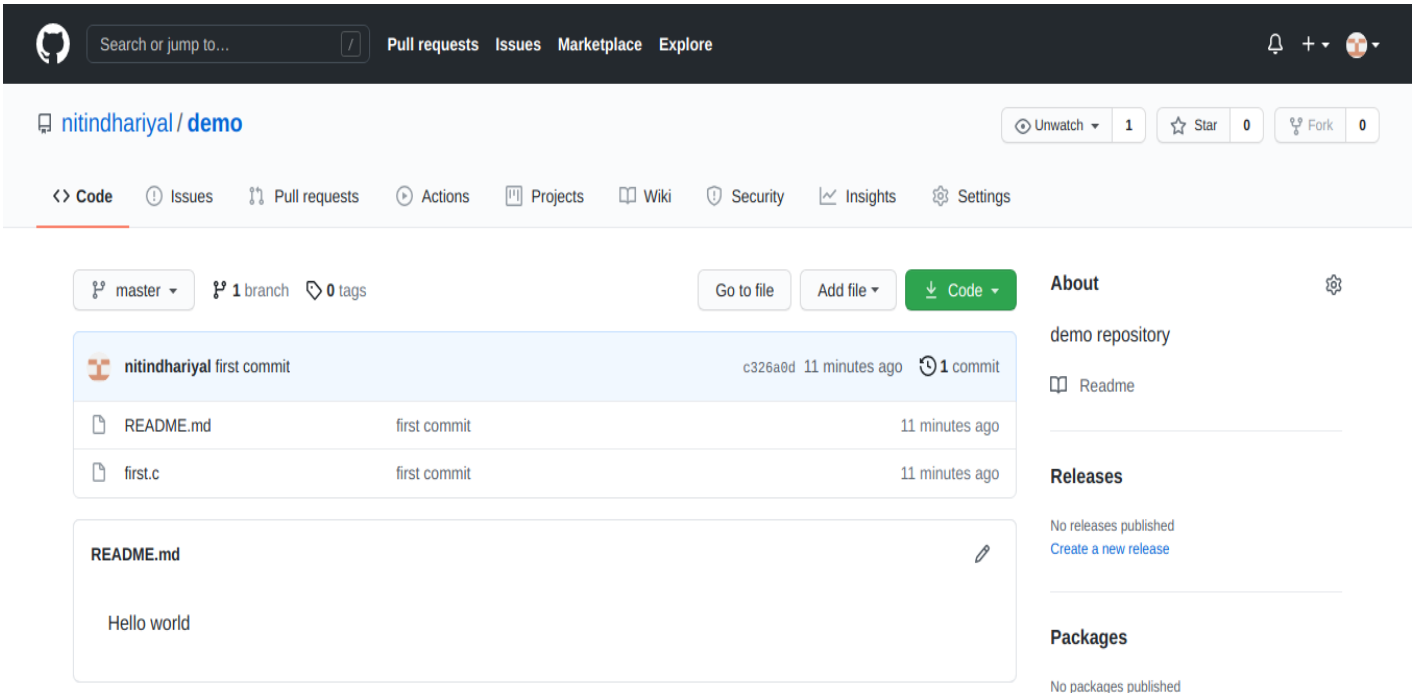
Step 9: Let us Push your local GitHub repository's code.

git push -u origin master

Here, '-u' flag is used for an upstream repository which is equivalent to '-set-upstream,'. Upstream is the repository for the project that we cloned. Complete the username and password of your GitHub.
Command used: git push -u origin master

```
Terminal
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git]
└──╼ $git push -u origin master
Username for 'https://github.com': nitindhariyal
Password for 'https://nitindhariyal@github.com':
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (4/4), 341 bytes | 341.00 KiB/s, done.
Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/nitindhariyal/demo.git
 * [new branch]      master -> master
Branch 'master' set up to track remote branch 'master' from 'origin'.
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git]
└──╼ $
```

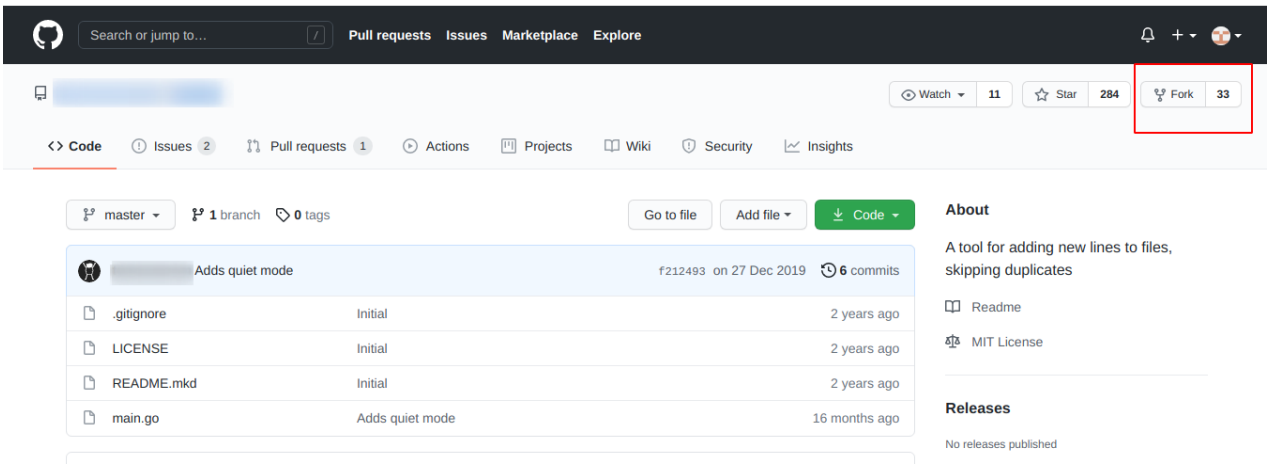
Step 10: Now let us check our GitHub host files in our repository. The files hosting on GitHub you can finally see.




Step 11: GIT PULL allows others to view changes if you change the repository. It is used to recognise the changes you have made to your repository. Or also called a target repository. Below is the simple command to PULL from a branch:

Command Used: git pull 'remote_name' 'branch_name'

The ‘git pull’ command is a combination of ‘git fetch’ and ‘git merge’. remote name' is the name of repository and 'branch name' is the name of a specific branch. Copy of a repository is the "Fork." Forking a repository allows you to experiment freely with modifications without affecting the original project."



Step 12: open file using command cd and ls is used for listing the content in that file.

```
Terminal
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git]
└──╼ $cd anew/
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git/anew]
└──╼ $ls
LICENSE  main.go  README.mkd
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git/anew]
└──╼ $
```

Step 13: Let us build a new branch**.**

Command Used: git checkout -b 'branch_name'

```
Terminal
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git/anew]
└──╼ $git checkout -b fix-typo-readme
Switched to a new branch 'fix-typo-readme'
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git/anew]
└──╼ $
```

Step 14: Let us make a change by vim from bash or by substituting the original README file directly.

Command used: nano filename

add something into that file and press ctrl+x then “Y”.

```
Terminal
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git/anew]
└──╼ $git status
On branch fix-typo-readme
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   README.mkd

no changes added to commit (use "git add" and/or "git commit -a")
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git/anew]
└──╼ $git diff
diff --git a/README.mkd b/README.mkd
index 54203f0..b736de2 100644
--- a/README.mkd
+++ b/README.mkd
@@ -4,7 +4,7 @@ Append lines from stdin to a file, but only if they don't already appear in the
 Outputs new lines to `stdout` too, making it a bit like a `tee -a` that removes duplicates.

 ## Usage Example

+## edited file
 Here, a file called `things.txt` contains a list of numbers. `newthings.txt` contains a second
 list of numbers, some of which appear in `things.txt` and some of which do not. `anew` is used
 to append the latter to `things.txt`.
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git/anew]
└──╼ $
```

Step 15: Let us add and commit the file to the repository.  Using the following commands, you need to add and commit.

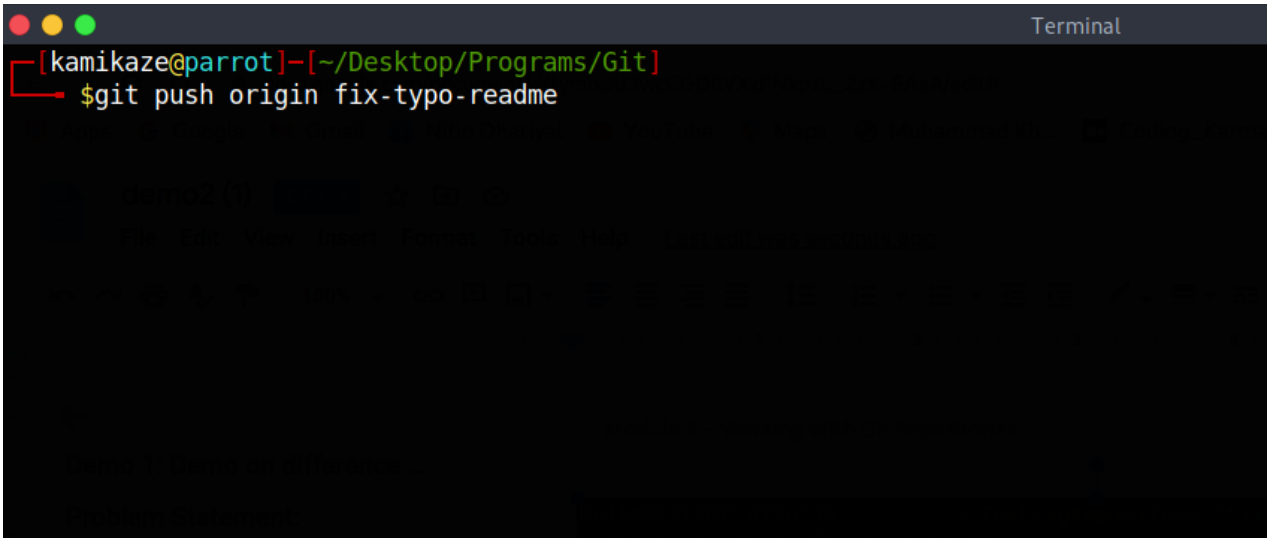
Command Used: git add filename
Command Used: git commit -m ‘commit here’

```
Terminal
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git/anew]
└──╼ $git commit -m 'Modified in README'
[fix-typo-readme c0c2688] Modified in README
 1 file changed, 1 insertion(+), 1 deletion(-)
┌─[kamikaze@parrot]─[~/Desktop/Programs/Git/anew]
└──╼ $
```

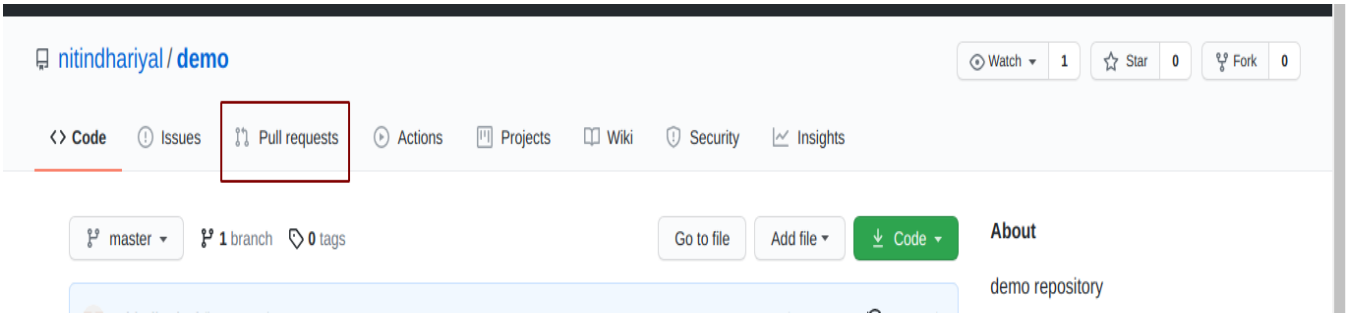
Step 16:  Let us push the GitHub repository. we must push the content through,

Command Used: git push origin 'branch_name'.

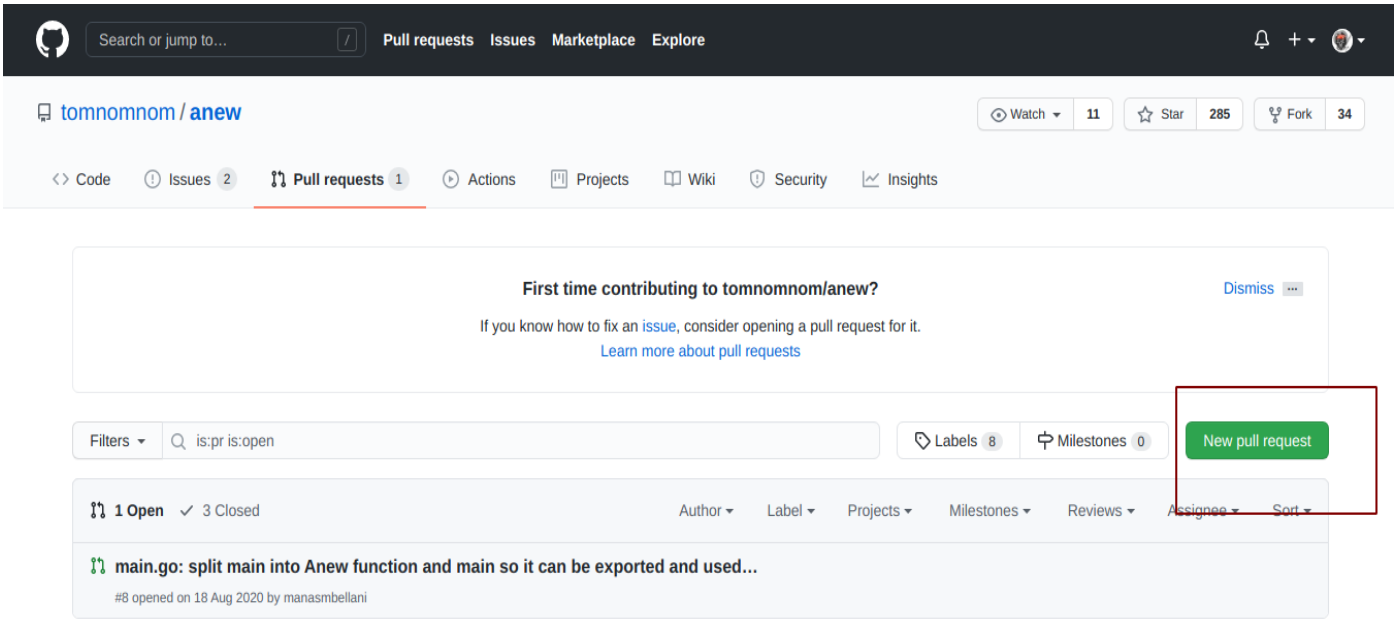
In the above code, the remote repository is the origin, and 'branch_name' is the branch that we want to upload.



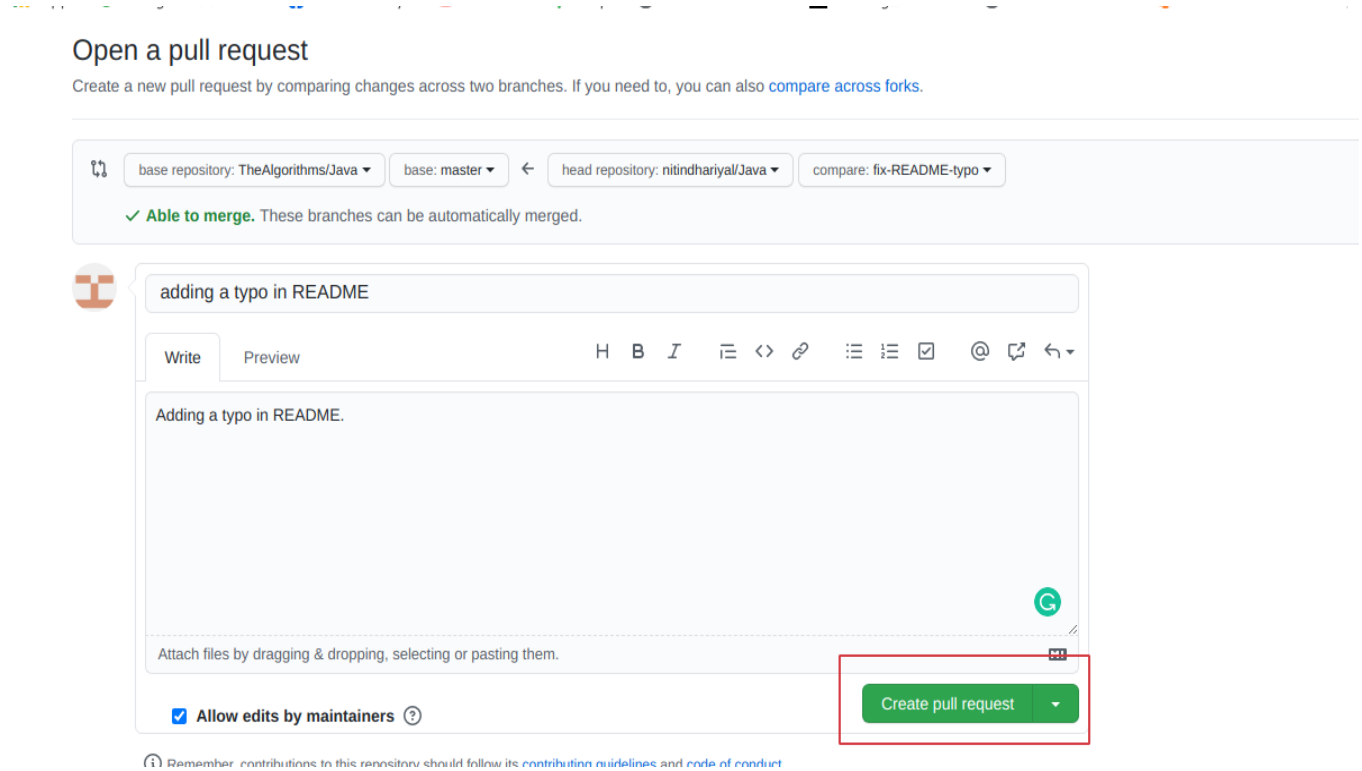

Step 17: let us PULL GitHub application for a particular branch**.** go to Github and just click on Pull requests.



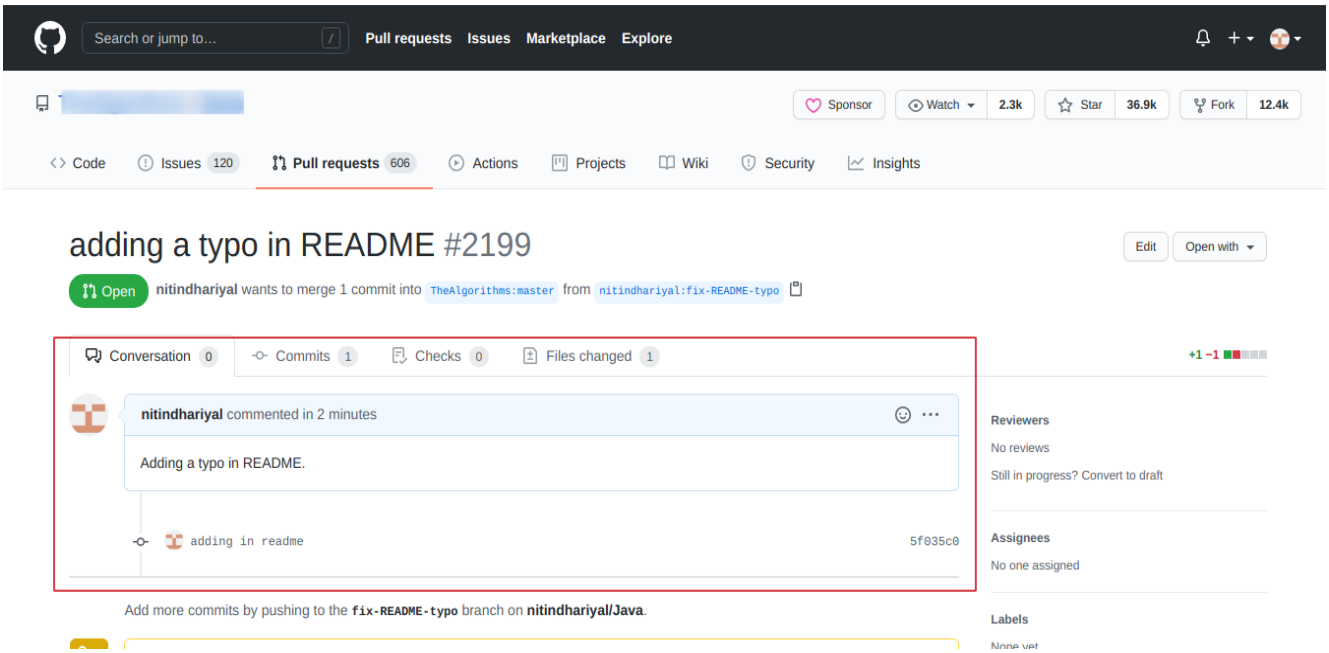

after clicking into this, click on "**New Pull request**".



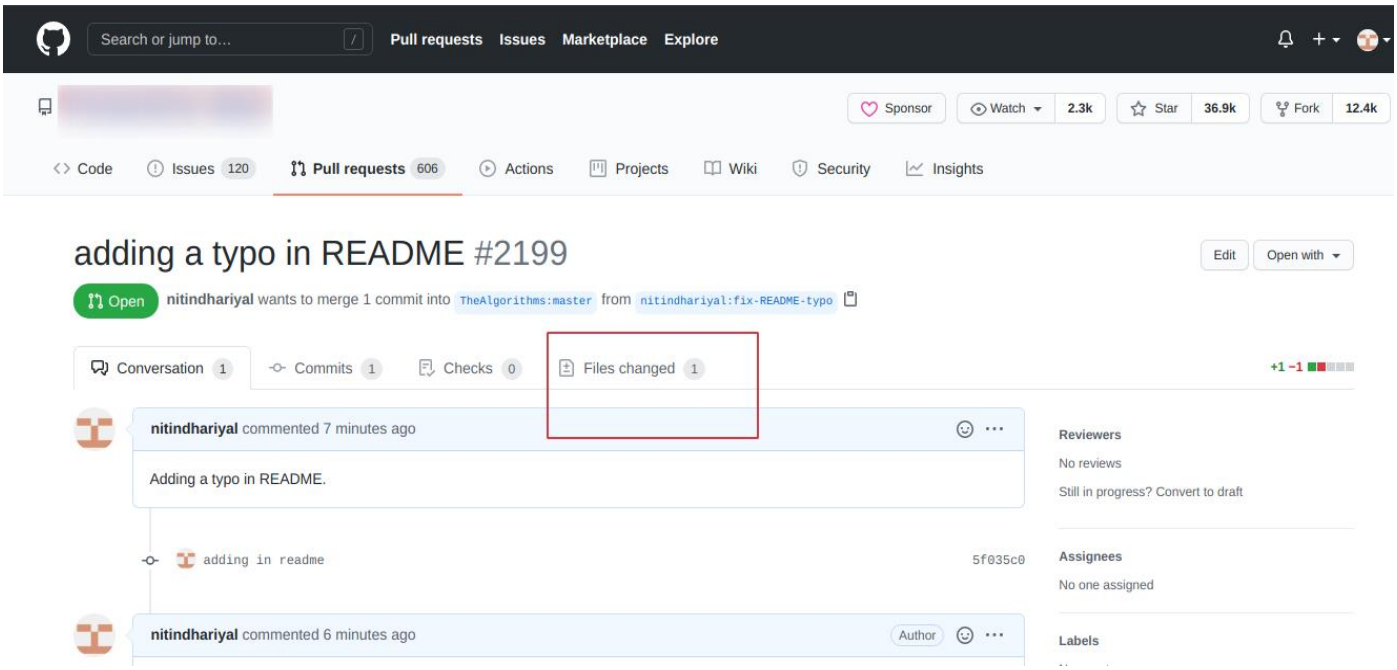
Step 18: Let us Open a Pull request**.** To complete the action, you must click on "Create pull request."




Step 19: Now add some pull requests into this repository which we are edited before.




Step 20: Let us see these changes, click on the 'File changed'.




Step 21: Finally, we have pulled this, you can see into the screenshot below,

Code | Issues 120 | Pull requests 606 | Actions | Projects | Wiki | Security | Insights

# adding a typo in README #2199

Edit | Open with

Open **nitindhariyal** wants to merge 1 commit into `TheAlgorithms:master` from `nitindhariyal:fix-README-typo`

Conversation 1 | Commits 1 | Checks 0 | Files changed 1 | +1 −1

Changes from **all commits** | File filter | Jump to | 0 / 1 files viewed | Review changes

2 README.md | Viewed

```
@@ -1,5 +1,5 @@
 [![Gitpod ready-to-code](https://img.shields.io/badge/Gitpod-ready--to--code-blue?logo=gitpod)](https://gitpod.io/#https://github.com/TheAlgorithms/Java)
-
 # The Algorithms - Java
 [![Build Status](https://api.travis-ci.com/TheAlgorithms/Java.svg?branch=master)](https://travis-ci.com/TheAlgorithms/Java) 
 [![Donate](https://img.shields.io/badge/Donate-PayPal-green.svg)](https://www.paypal.me/TheAlgorithms/100)
```

```
@@ -1,5 +1,5 @@
 [![Gitpod ready-to-code](https://img.shields.io/badge/Gitpod-ready--to--code-blue?logo=gitpod)](https://gitpod.io/#https://github.com/TheAlgorithms/Java)
+ #edited one
 # The Algorithms - Java
 [![Build Status](https://api.travis-ci.com/TheAlgorithms/Java.svg?branch=master)](https://travis-ci.com/TheAlgorithms/Java) 
 [![Donate](https://img.shields.io/badge/Donate-PayPal-green.svg)](https://www.paypal.me/TheAlgorithms/100)
```