GIT Push and Pull Tutorial

Learn how to perform Git PUSH and PULL requests through GitHub Desktop and the Command-Line.

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TOPICS

Git

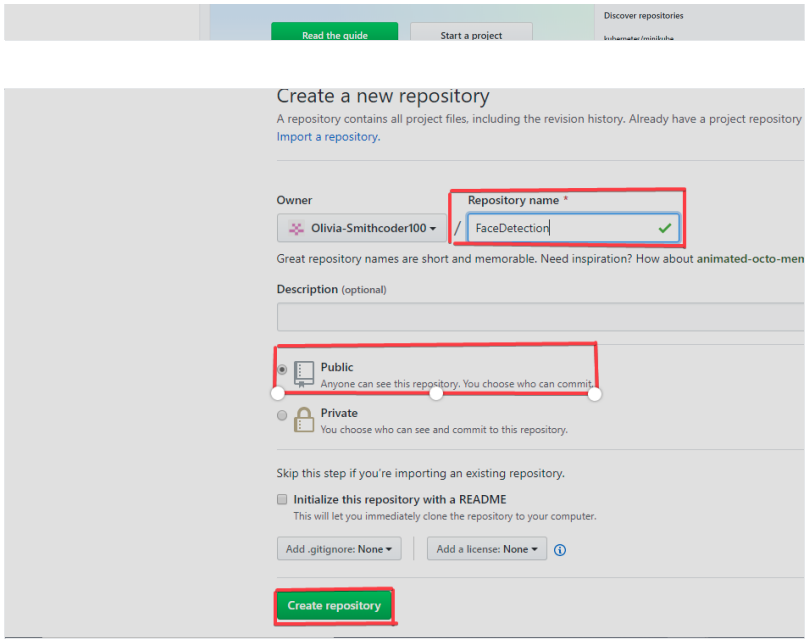
You'll be using GitHub for this tutorial as it is widely used, however, Bitbucket, Gitlab, etc. are also popular, but Developers, Data Scientists, and Data Analysts mostly use the GitHub to PUSH and do PULL Request.

You can easily follow along with all of the materials in the tutorial, even if you are a beginner. However, if you don't have any concept about Git, then have a look at **Git Tutorial for Beginners: Command-Line Fundamentals** and set up your environment by

```
git push 'remote_name' 'branch_name'
```

In this tutorial, you'll be looking two different ways to PUSH to GitHub.

Using Command line to PUSH to GitHub

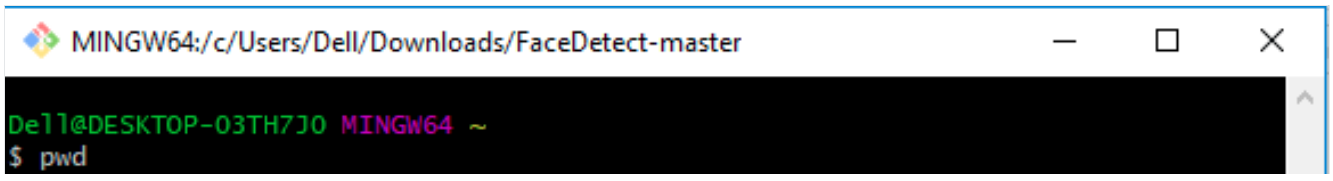


2. Open your Git Bash

- Git Bash can be downloaded in **here**, and it is a shell used to interface with the operating system which follows the UNIX command.

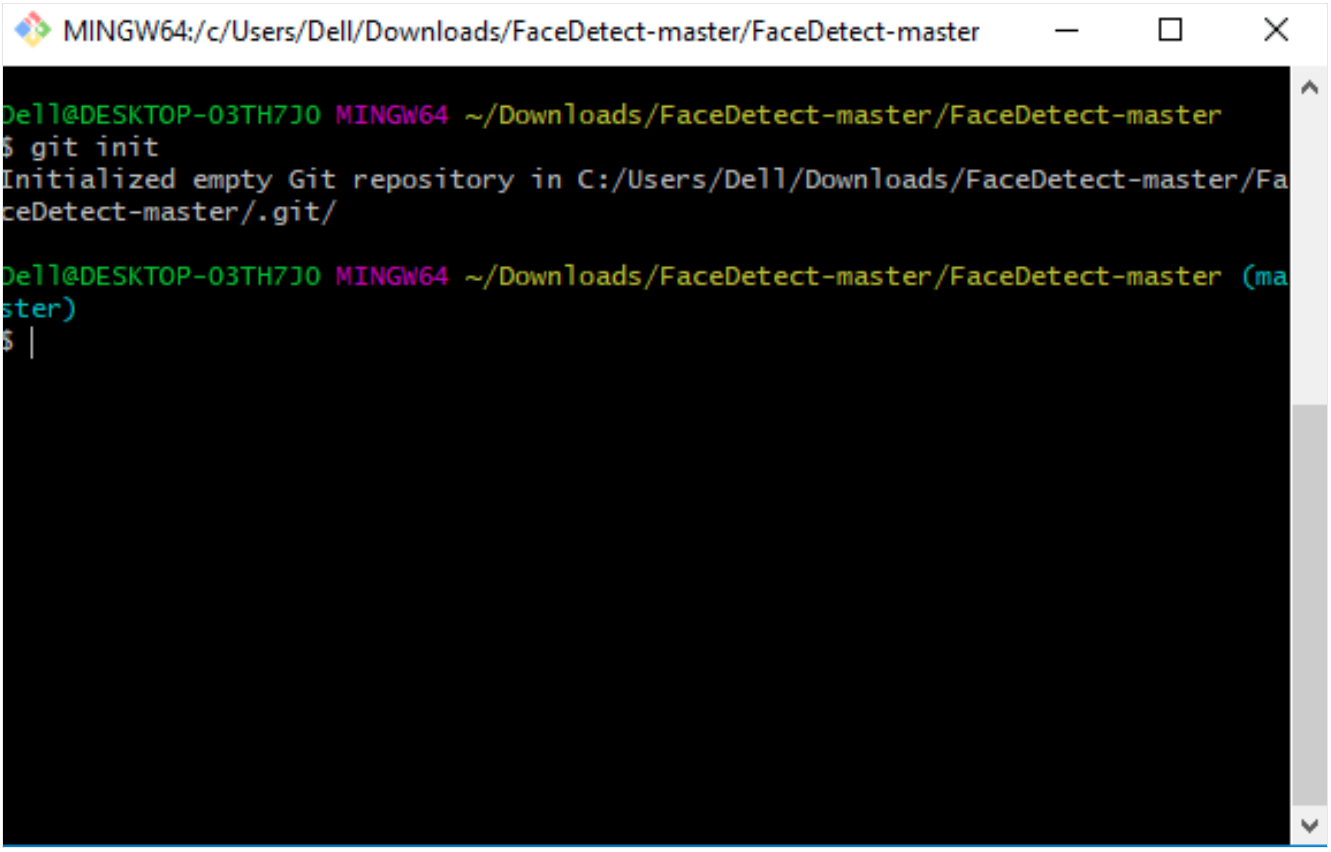
3. Create your local project in your desktop directed towards a current working directory

- `pwd` stands for 'print working directory', which is used to print the current directory.
- Move to the specific path in your local computer by `cd 'path_name'`. The cd commands stand for 'change directory' and it is used to change to the working directory in your operating system, and to locate your file, `'path_name'`, i.e., `C:/Users/Dell/Downloads/FaceDetect-master` needs to be given. This command can identify the required file that you are looking to work with.

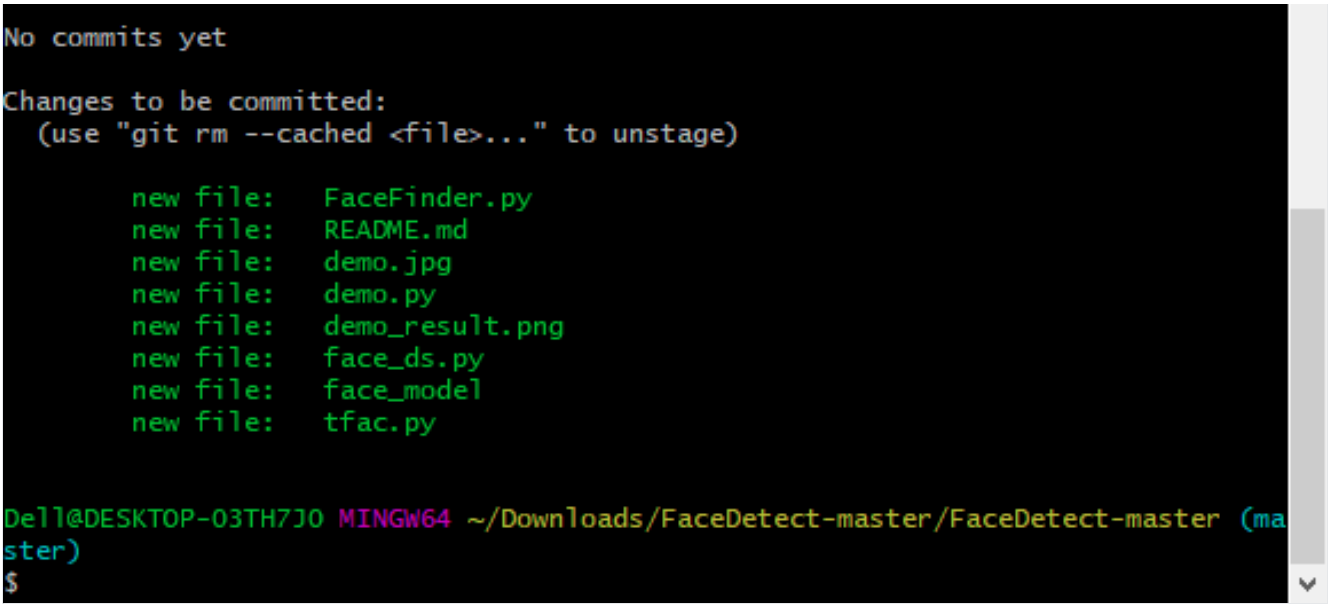


4. Initialize the git repository

- Use `git init` to initialize the repository. It is used to create a new empty repository or directory consisting of files' with the hidden directory. '.git' is created at the top level of your project, which places all of the revision information in one place.

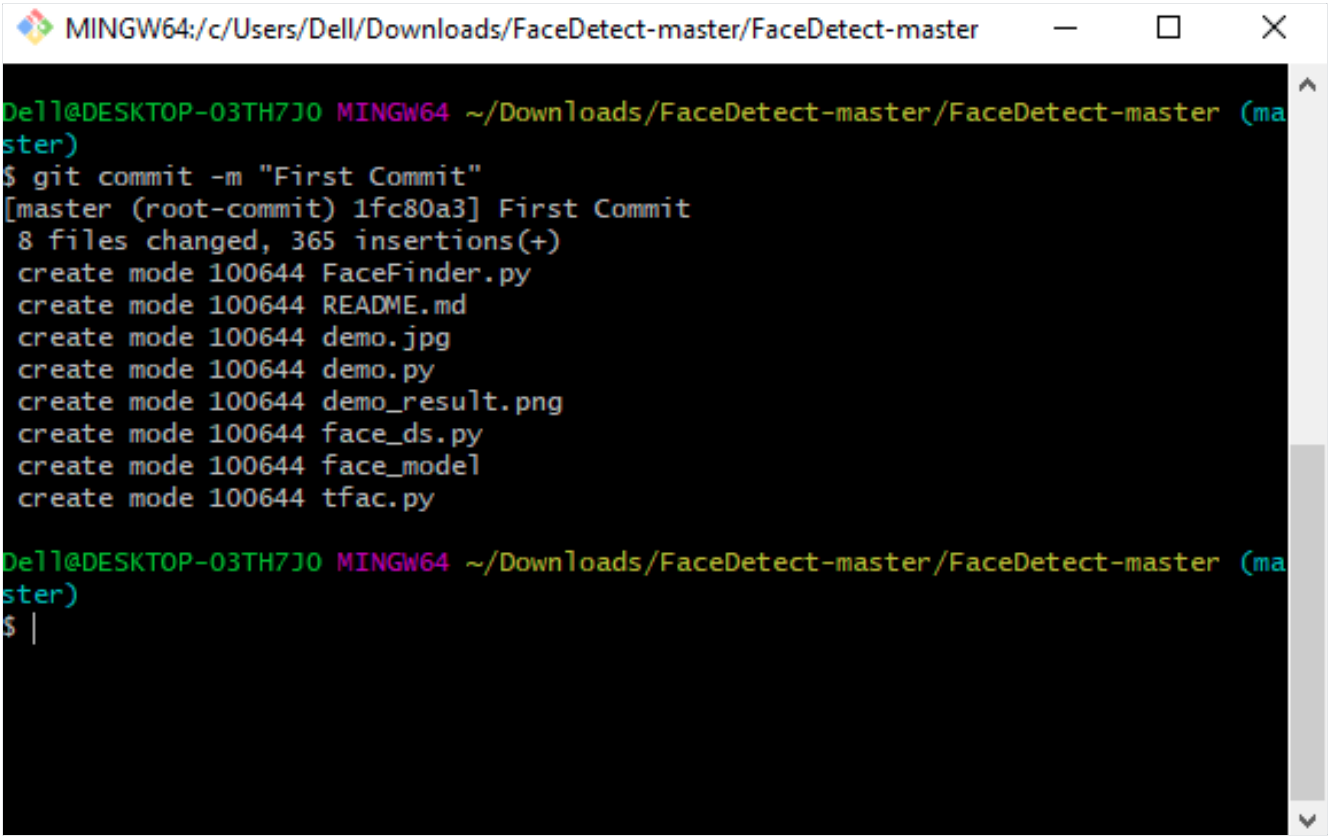


5. Add the file to the new local repository



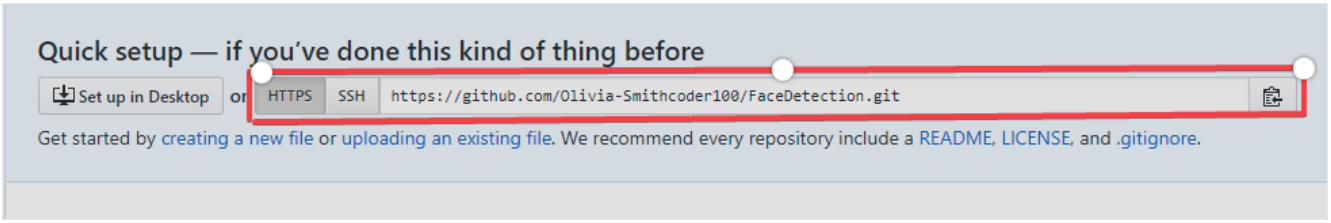
6. Commit the files staged in your local repository by writing a commit message

- You can create a commit message by `git commit -m 'your message'`, which adds the change to the local repository.
- `git commit` uses '-m' as a flag for a message to set the commits with the content where the full description is included, and a message is written in an imperative sentence up to 50 characters long and defining "what was changed", and "why was the change made".



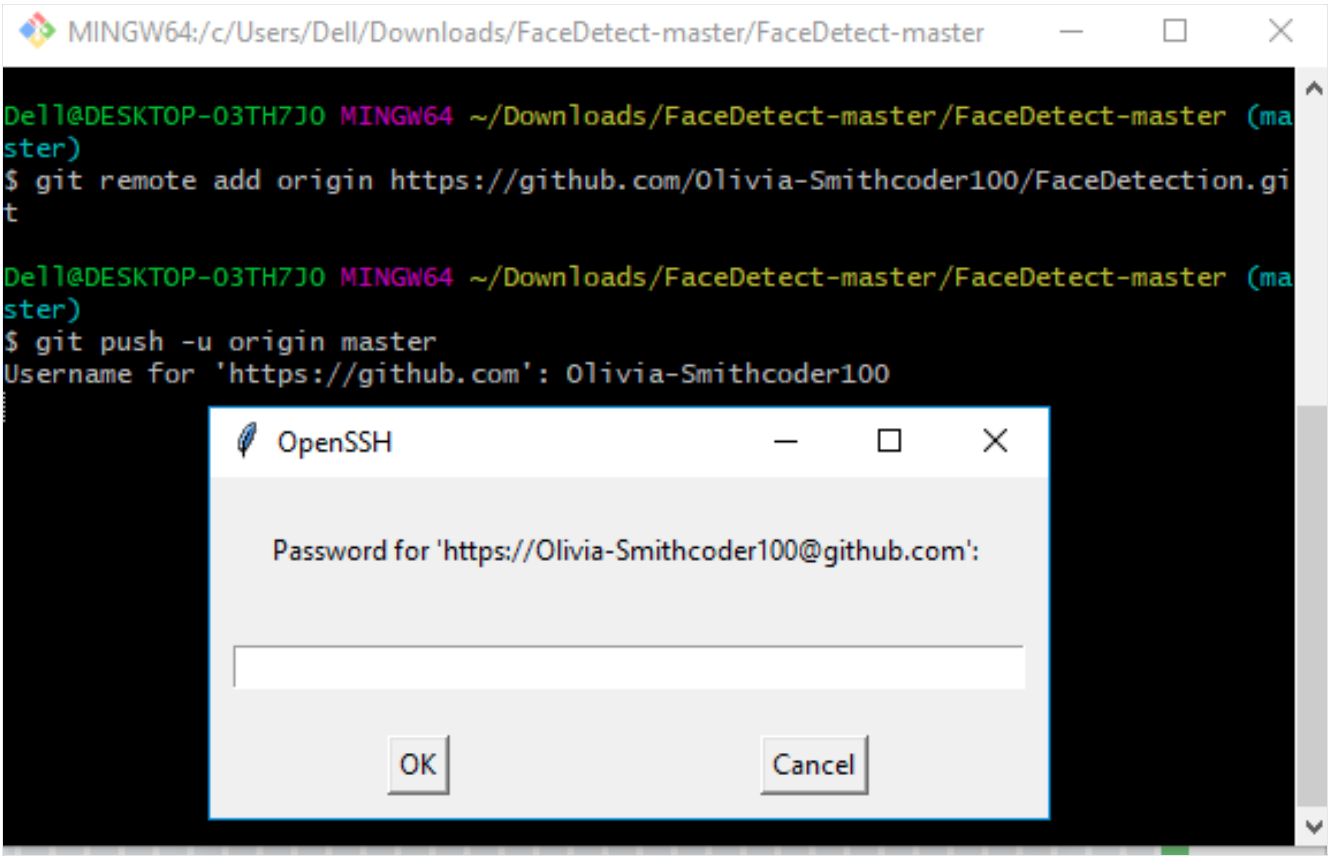
7. Copy your remote repository's URL from GitHub

- The HTTPS or URL is copied from the given GitHub account, which is the place of the remote repository.



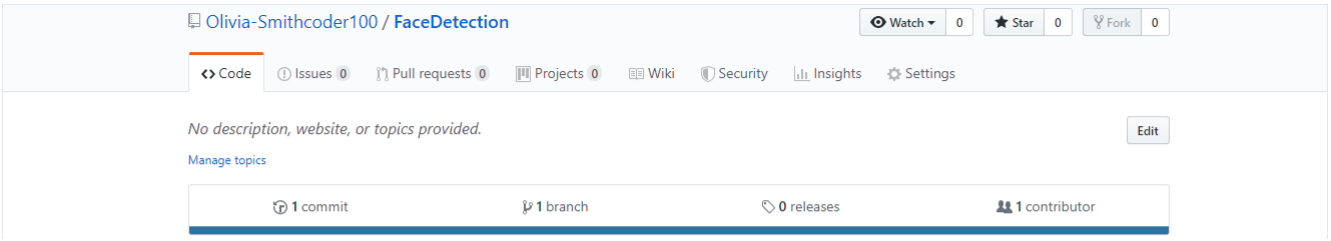
8. Add the URL copied, which is your remote repository to where your local content from your repository is pushed

- In the code, the origin is your default remote repository name and '-u' flag is upstream, which is equivalent to '-set-upstream.' and the master is the branch, name.upstream is the repository that we have cloned the project.
- Fill in your GitHub username and password.



10. View your files in your repository hosted on GitHub

- You can finally see the file hosted on GitHub.



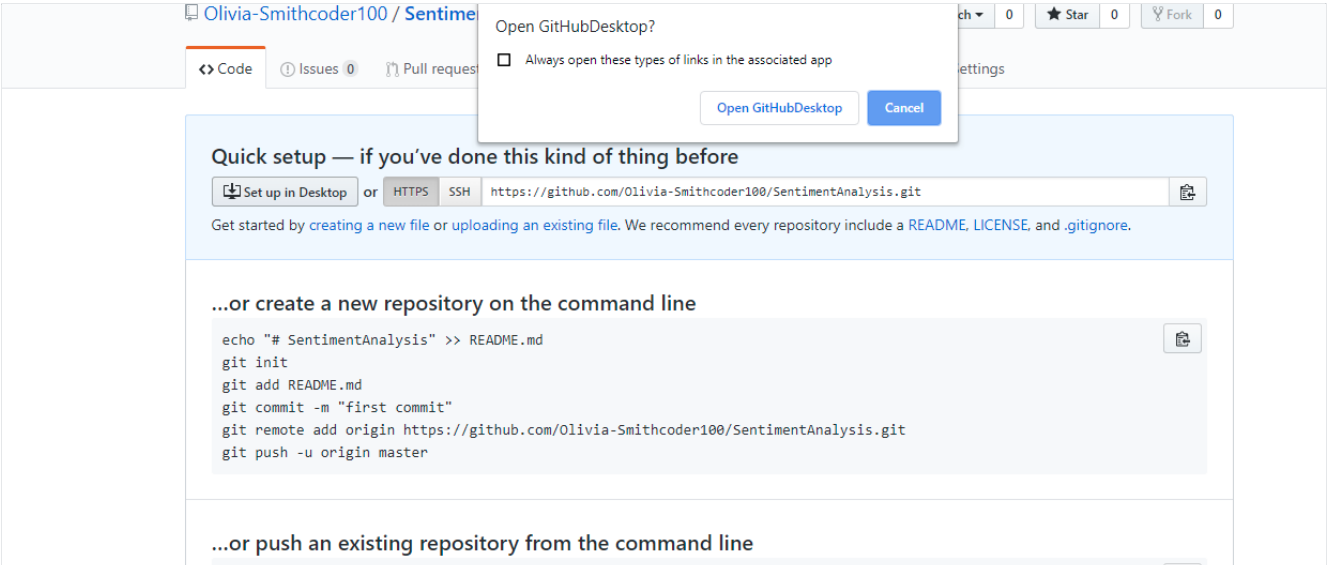
Using GitHub Desktop to PUSH to your local content to GitHub.

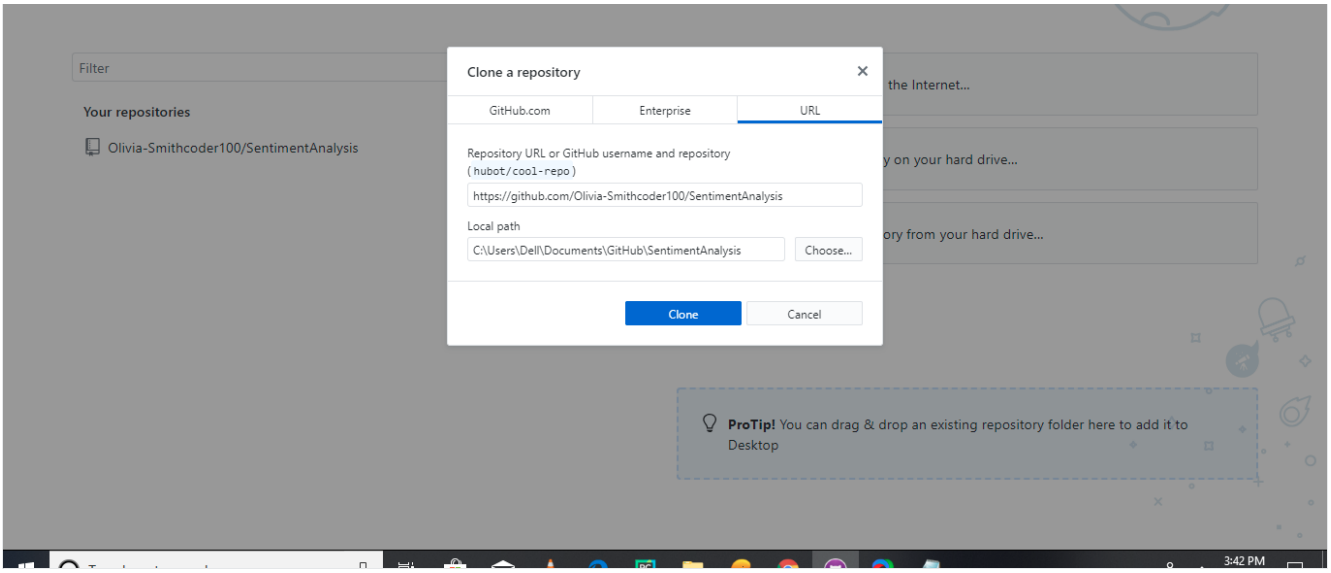
GitHub Desktop is available to download for any operating system, and it gives the GUI(Graphical User Interface) platform to push your local content from your local repository to a remote repository like GitHub.

You need to open your GitHub account in your browser and the process of creating a new repository, i.e., step 1 is the same as mentioned above in "Using Command line to PUSH to GitHub".

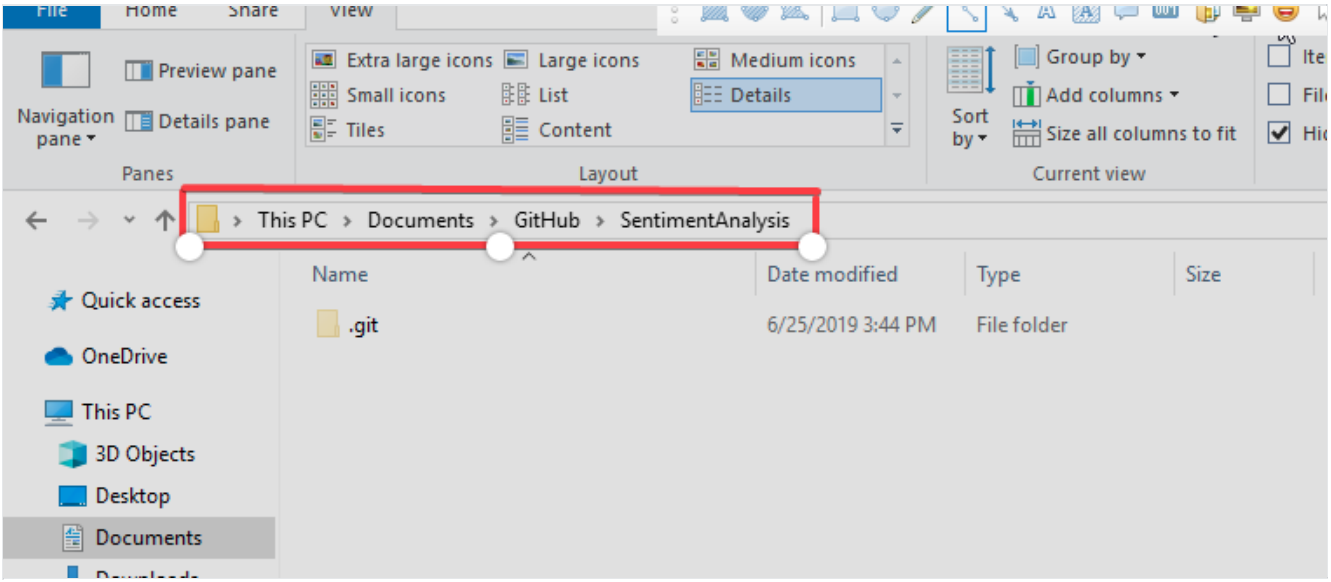
1. Click "Set up in a Desktop"

- You need to click on the button, as shown below where a pop up comes, and you click on "Open GitHub desktop".



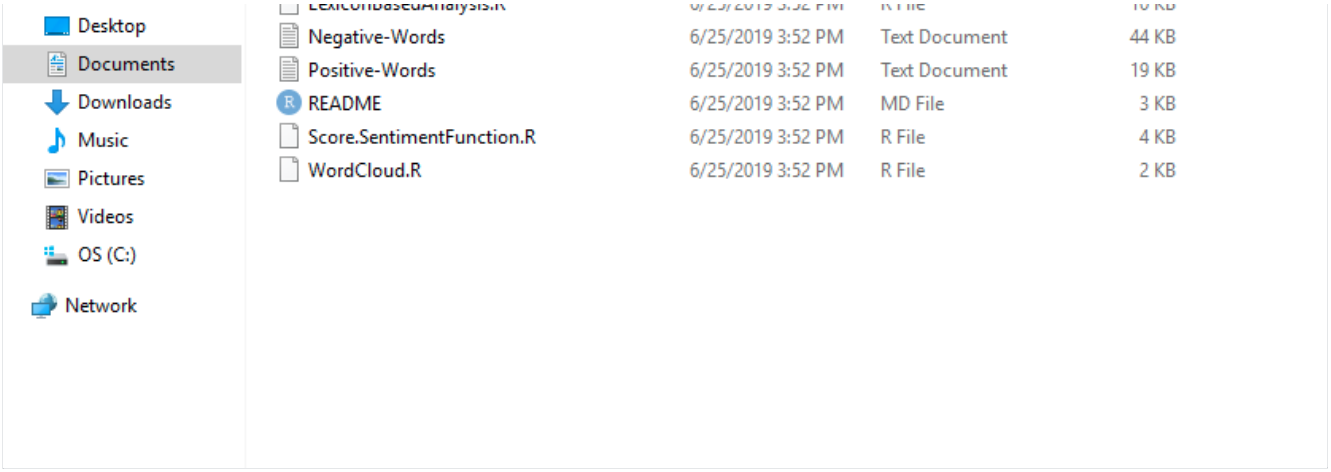


After cloning a new clone, the folder is created in your local computer where a hidden directory ".git" is also present.



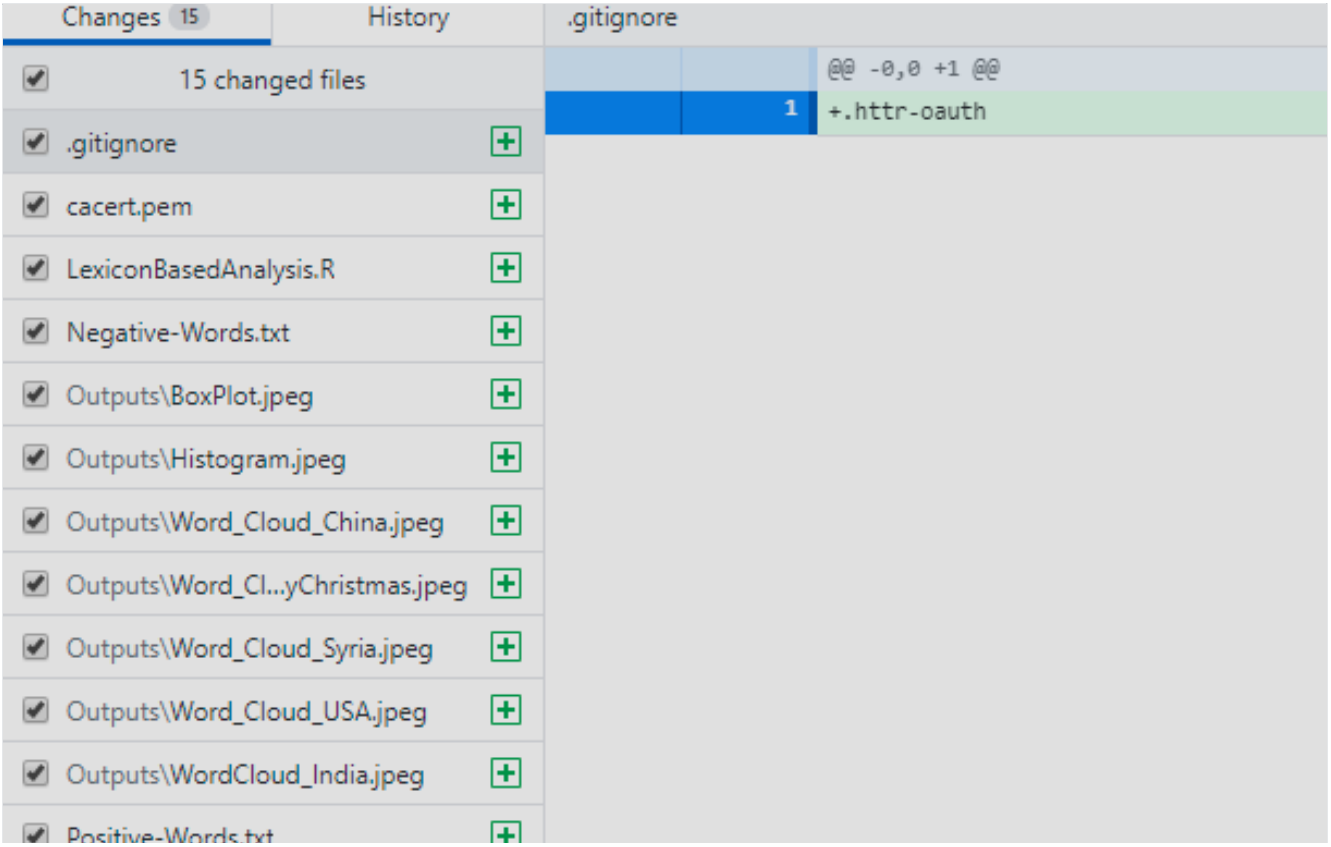
3. Copy all the required files from your local computer into the clone folder on your computer

- You need to copy all the required files, images, README files, etc., to the clone



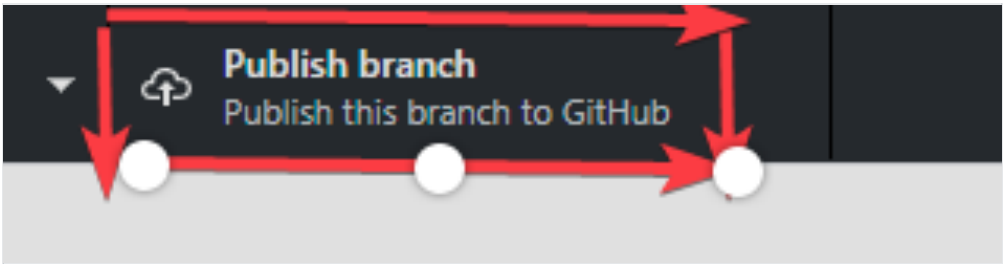
4. Move to GitHub Desktop and commit to master

- You can see the files that are added into the clone folder are seen in GitHub Desktop too. Finally, write your message and push "Commit to master".

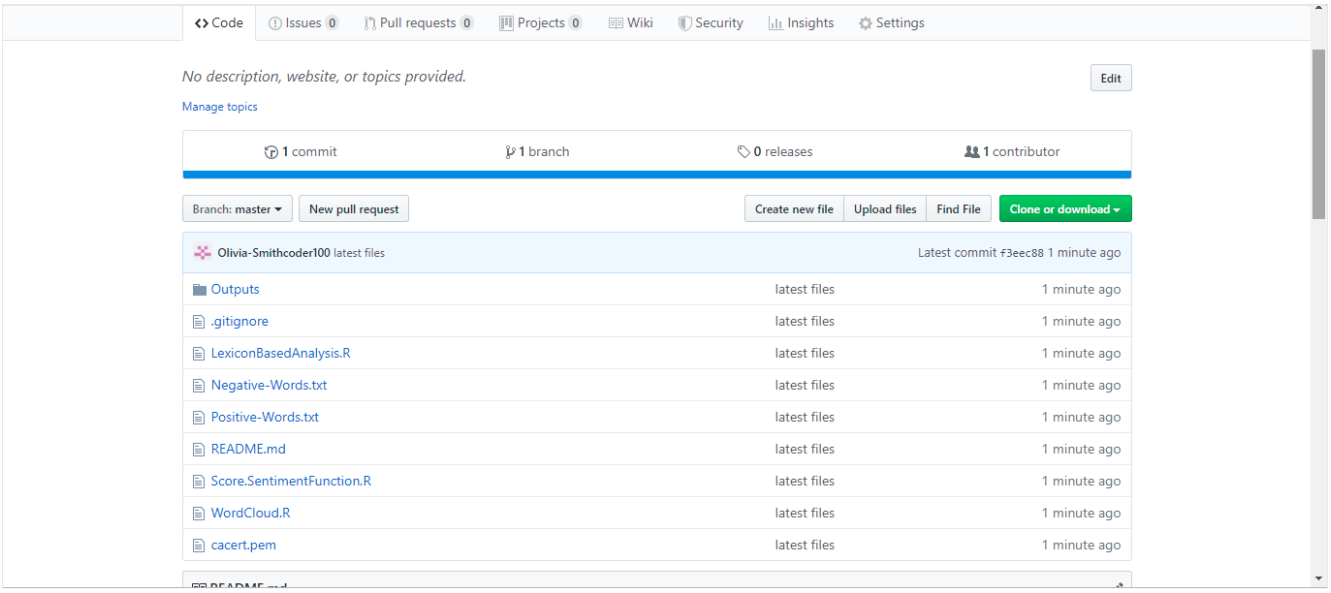


5. Publish branch in GitHub Desktop to upload your all files to GitHub

- You can click on "Publish Branch" to publish your all local content to GitHub.



You can view your repository in GitHub after you have completed all steps.

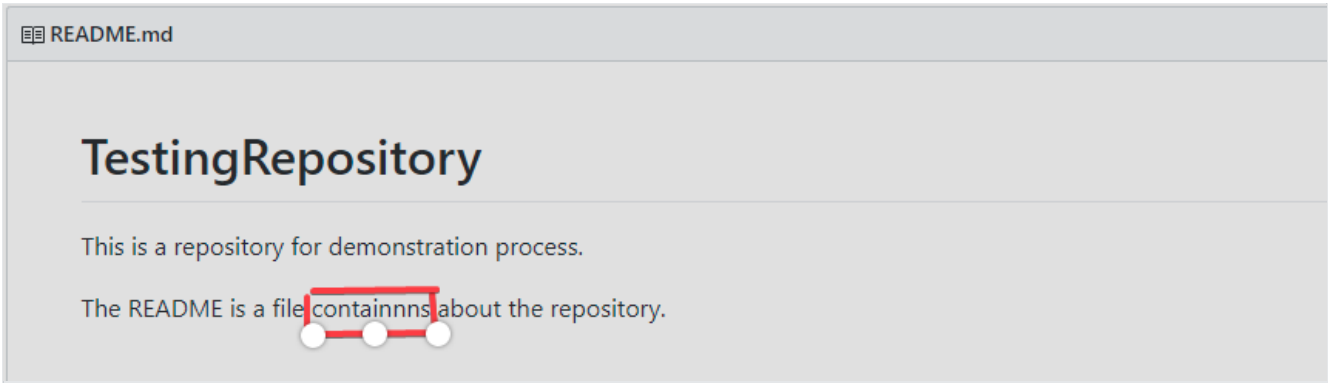


The git pull command is a combination of git fetch which fetches the recent commits in the local repository and git merge , which will merge the branch from a remote to a local branch also 'remote_name' is the repository name and 'branch_name' is the name of the specific branch.

You"ll be looking at two different ways on how to use the PULL request.

PULL Request through Command Line

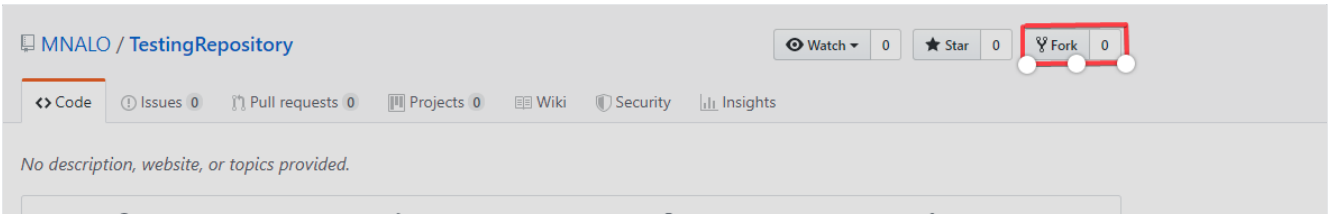
You can see the README files below which contains a typo. The README file has the word "contain" misspelled as "containnns". The owner of this repository is MNALO, and Olivia is the collaborator. She will solve the error and submit a PULL Request You'll see the process for making a PULL Request through a particular example given below.

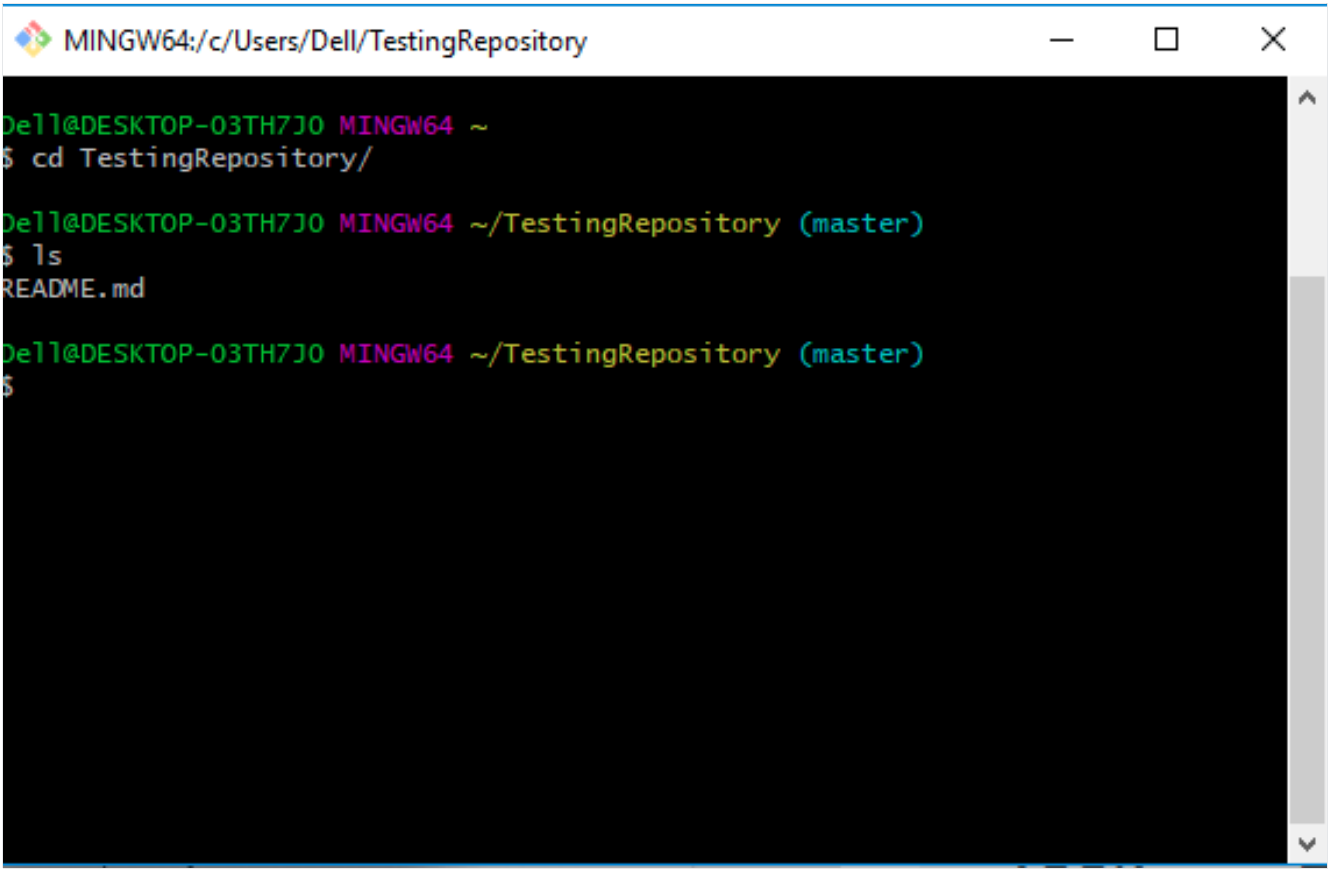


In the file above, you can see a typo in the word "containnns".

1. Fork the Repository

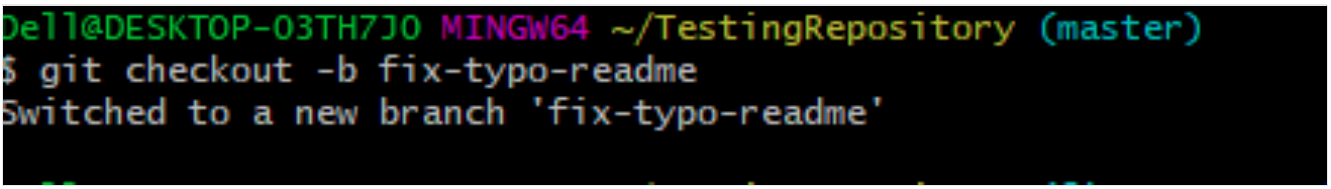
- "The "Fork" is a copy of a repository. Forking a repository allows you to freely experiment with changes without affecting the original project."**(Source)**





3. Make a new branch

- You can create a new branch by using the `git checkout -b 'branch_name'`. In the above code, '-b' flag is used to create a new branch, and 'branch_name' is used to give the branch a specific name, and with checkout, the branch is switched to the newly created branch.



4. Make a change by using vim from bash or direct replacement

```
        modified:   README.md

no changes added to commit (use "git add" and/or "git commit -a")

Dell@DESKTOP-03TH7JO MINGW64 ~/TestingRepository (fix-typo-readme)
$ git diff
diff --git a/README.md b/README.md
index bc04944..48fb41f 100644
--- a/README.md
+++ b/README.md
@@ -1,4 +1,4 @@
 # TestingRepository
 This is a repository for demonstration process.

-The README is a file containnns about the repository.
+The README is a file contains about the repository.
```

5. Adding and Committing a file to the repository

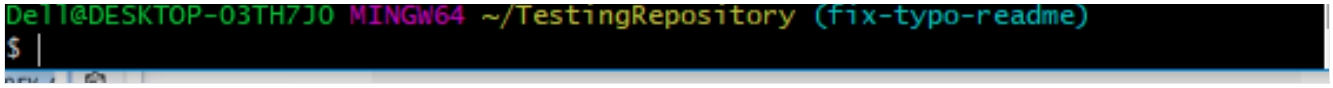
- You need to add and commit by the following commands.

```
Dell@DESKTOP-03TH7JO MINGW64 ~/TestingRepository (fix-typo-readme)
$ git add README.md

Dell@DESKTOP-03TH7JO MINGW64 ~/TestingRepository (fix-typo-readme)
$ git commit -m "Fix typo in README"
[fix-typo-readme 9f6cf3e] Fix typo in README
 1 file changed, 1 insertion(+), 1 deletion(-)

Dell@DESKTOP-03TH7JO MINGW64 ~/TestingRepository (fix-typo-readme)
$
```

6. Push the repository to the GitHub

- You need to push the content by `git push origin 'branch_name'`
- In the above code, the origin is the remote repository, and 'branch_name' is the required branch that you need to upload your local content.

```
Dell@DESKTOP-03TH7JO MINGW64 ~/TestingRepository (fix-typo-readme)
$ git push origin fix-typo-readme
Username for 'https://github.com': Olivia-Smithcoder100
```

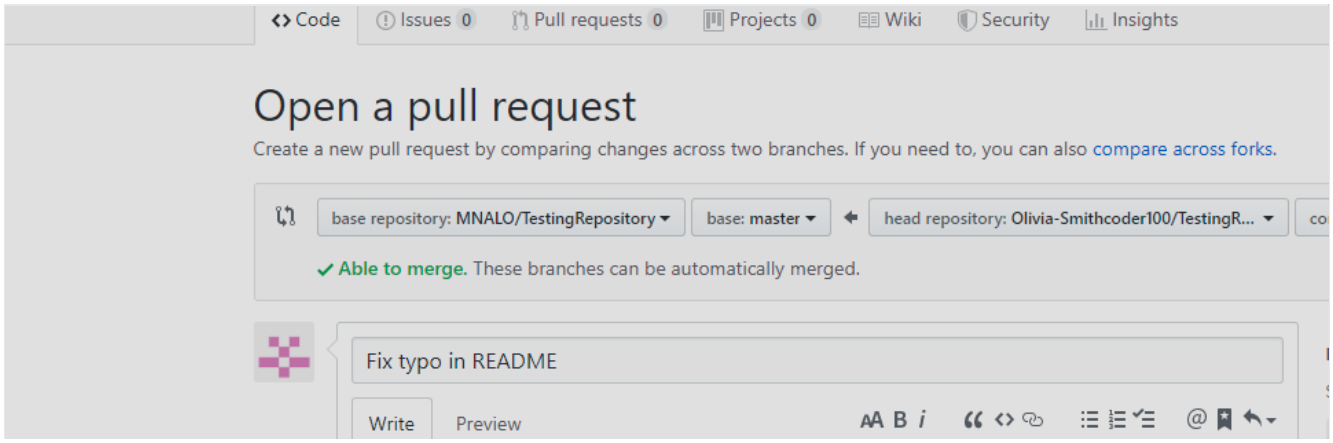


7. PULL request for a specific branch on GitHub

- You can move to your repository in GitHub and see that there is a new branch.
- You can now move to step 8, but there is a need for a local repository update with the upstream repository, read this detailed blog on **How To Create a Pull Request on GitHub**
- Alternatively, you can do `git pull-request` in the command line and complete the PULL Request to GitHub, where it will force push your current branch to a remote repository.

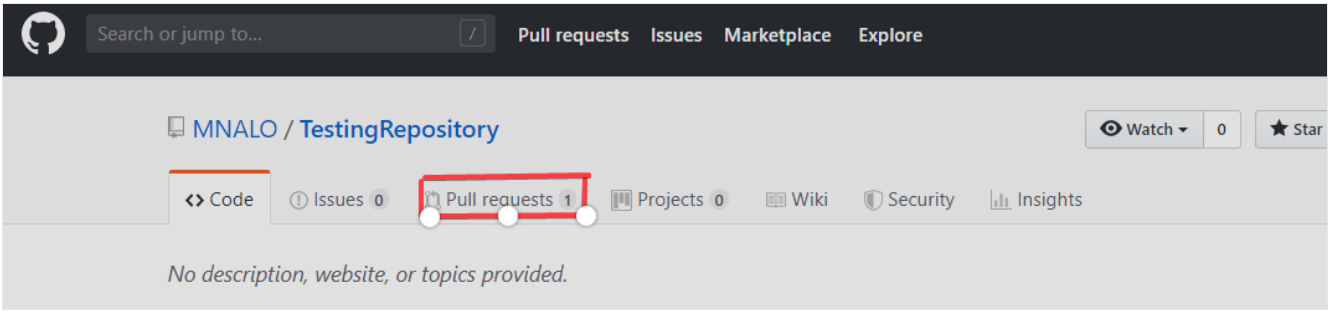
8. Open a Pull request

- You need to click the button on "Create pull request," to finish the action.

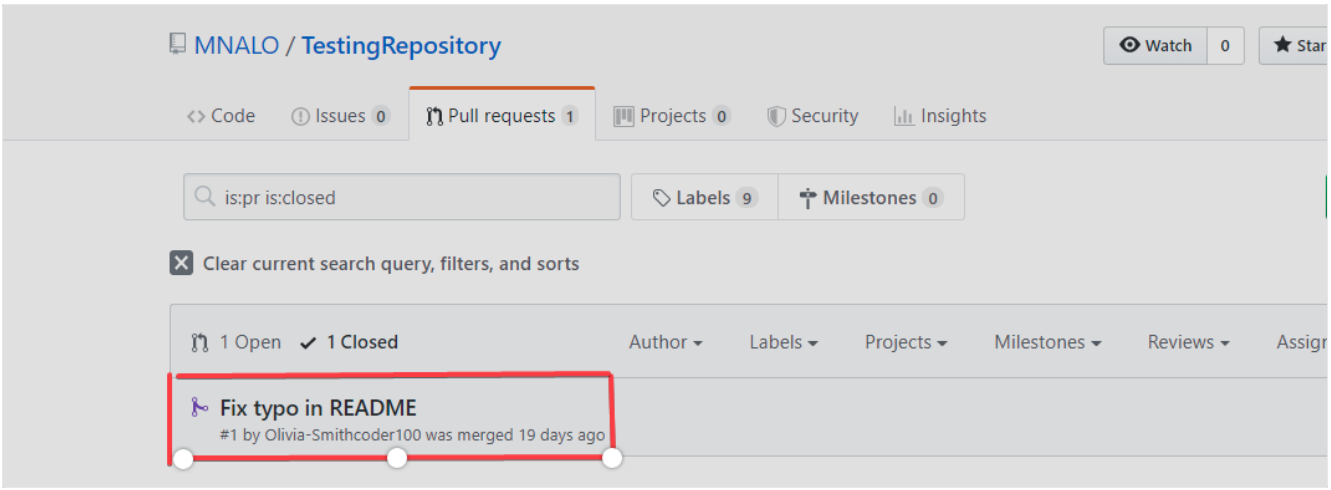


Deleting a Branch after the PULL Request is Merged

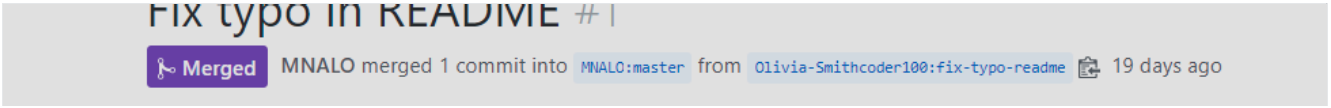
- You need to move to the main page of the repository and click "Pull requests".

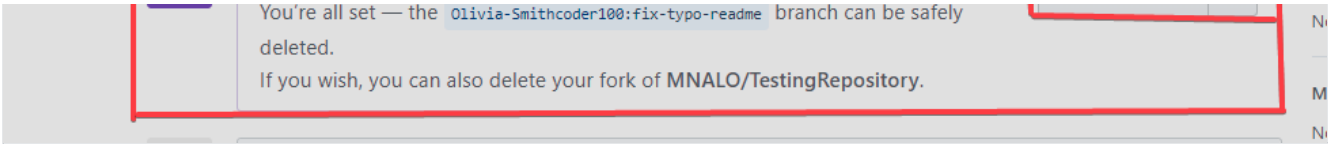


- You need to click 'Closed' to see the lists of all the PULL Requests that you've made, but there is only one at the moment which needs to be selected. It is the one related to your branch that you want to delete.

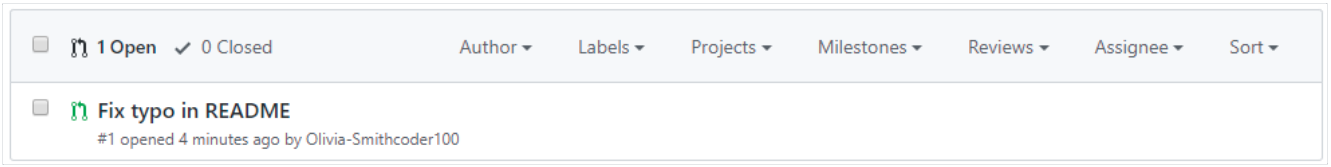


- You can now click 'Delete branch' to complete the action.

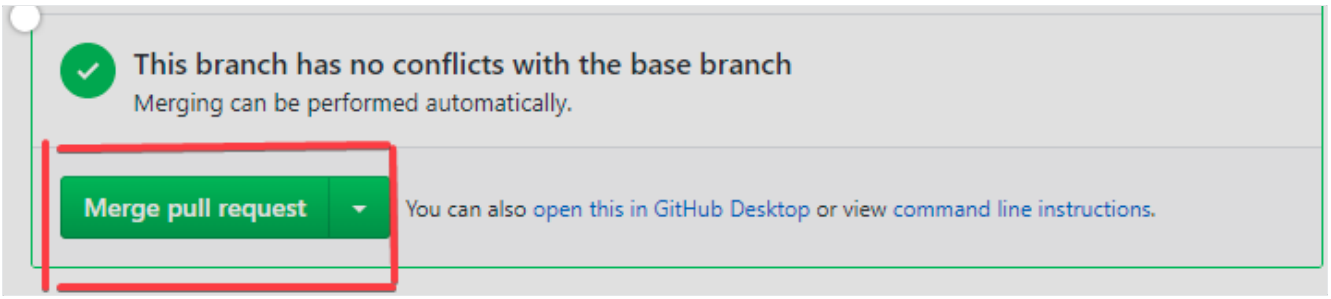


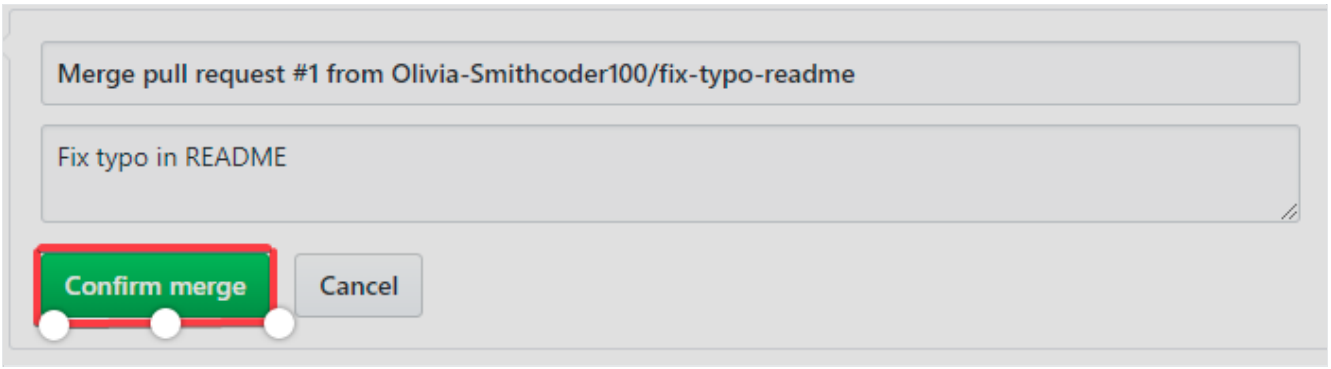


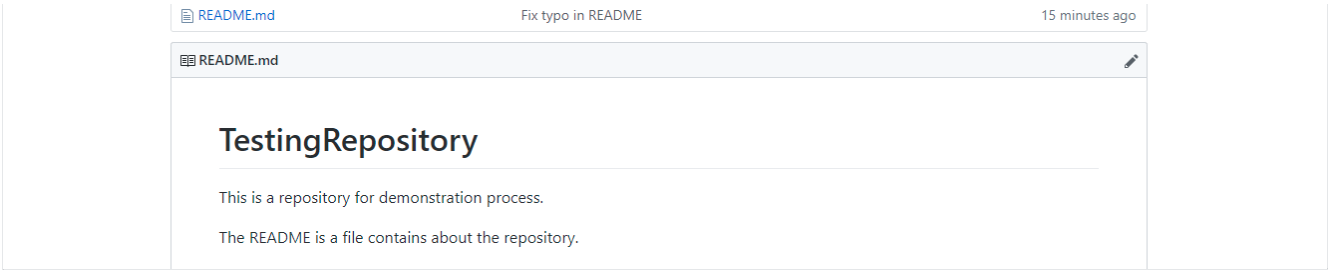
The owner of the repository can view all the commits, pull request, etc., made by collaborators and others. The changes made by someone can be significant, quick fixes for a bug, errors, etc., and are added to the project.



The owner now clicks "Merge pull request". Also, he/she will click "Confirm merge" through the following process.





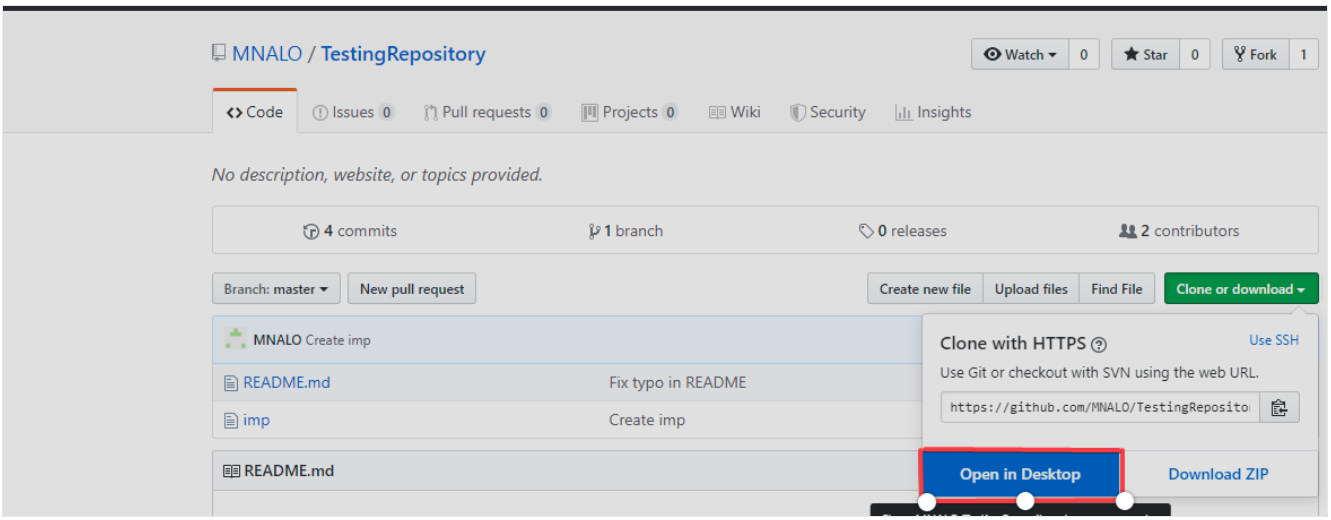


PULL Request through GitHub Desktop

The file "imp" contains a typo where MNALO is the owner and Olivia is collaborator follows the following process to create a PULL request from GitHub Desktop.

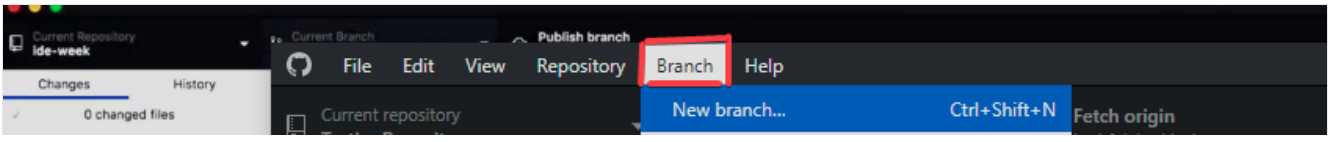
1. Cloning and Opening to Desktop

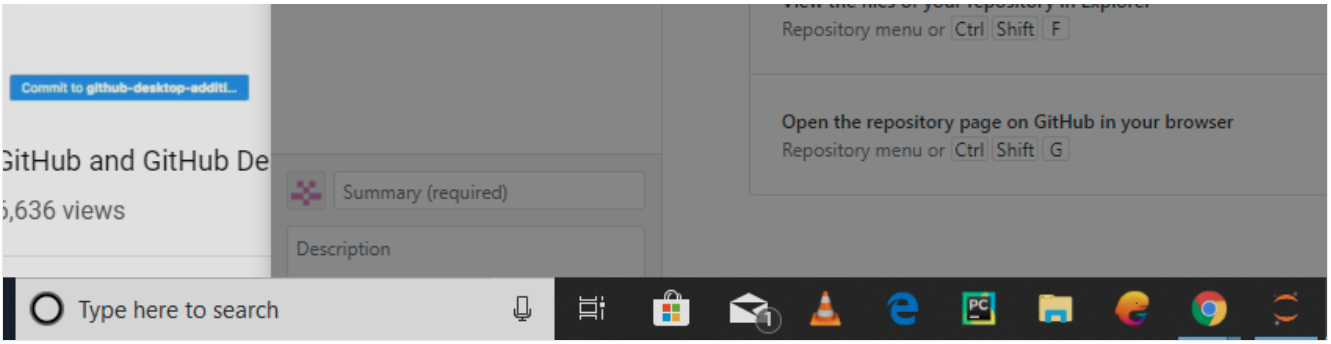
- A project is cloned and click to "Open in Desktop".



2. Create a new branch

- A new branch, "fix-typo-imp" is created.



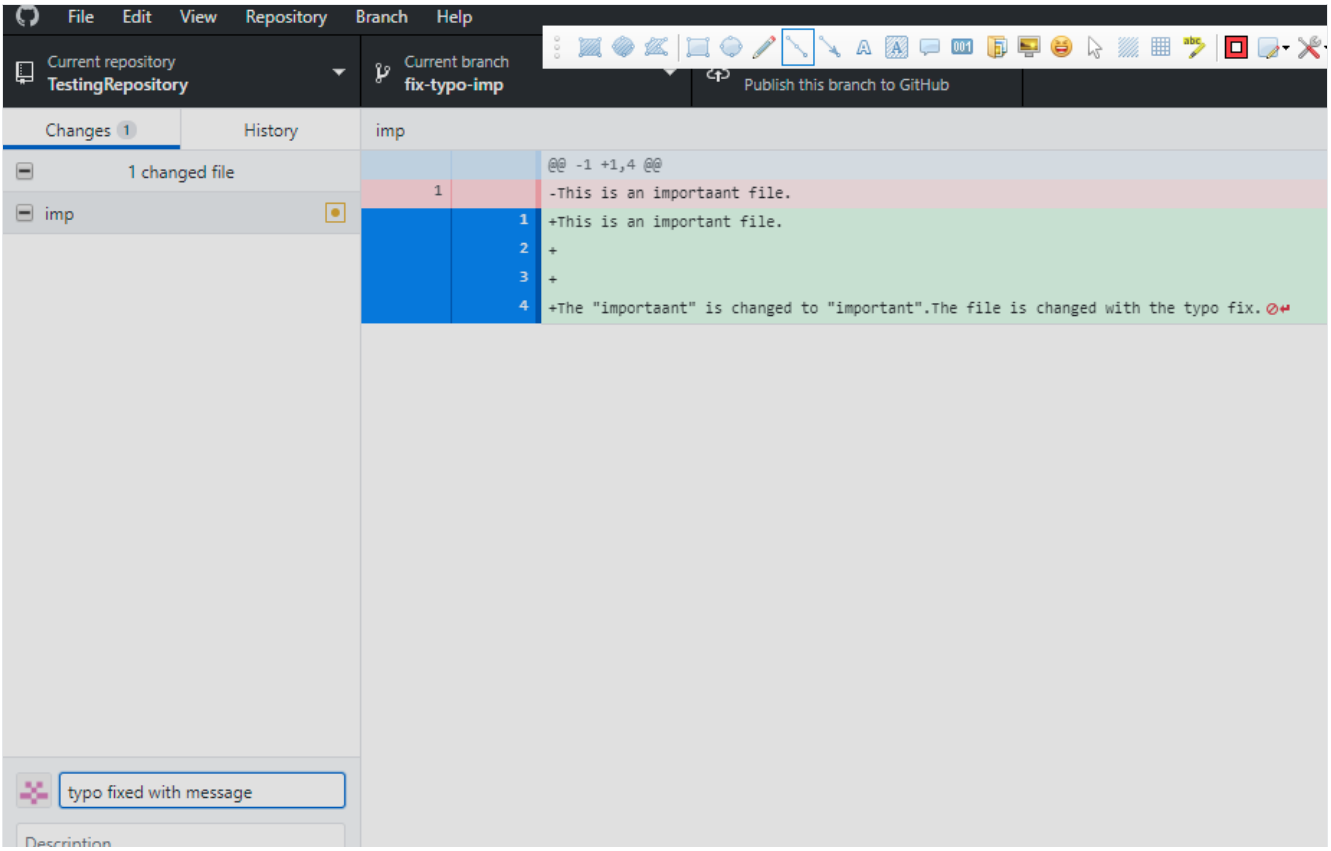


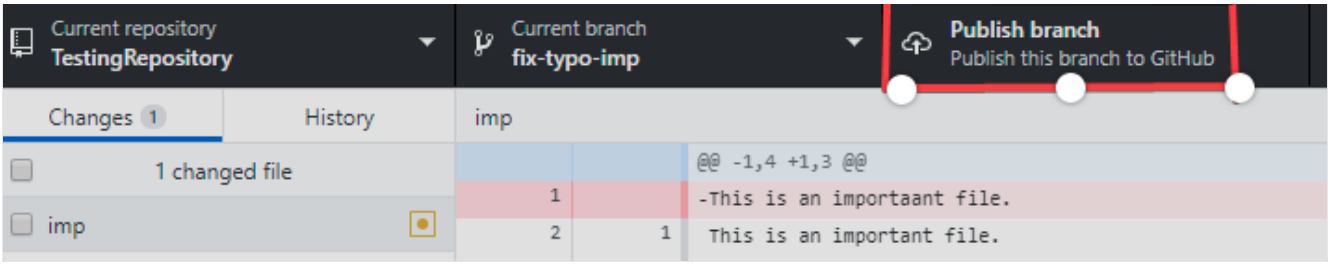
3. Make a change in the imp file from the text editor

- You can change the content of the imp file, fix a typo, and add some text.

4. Commit the changes

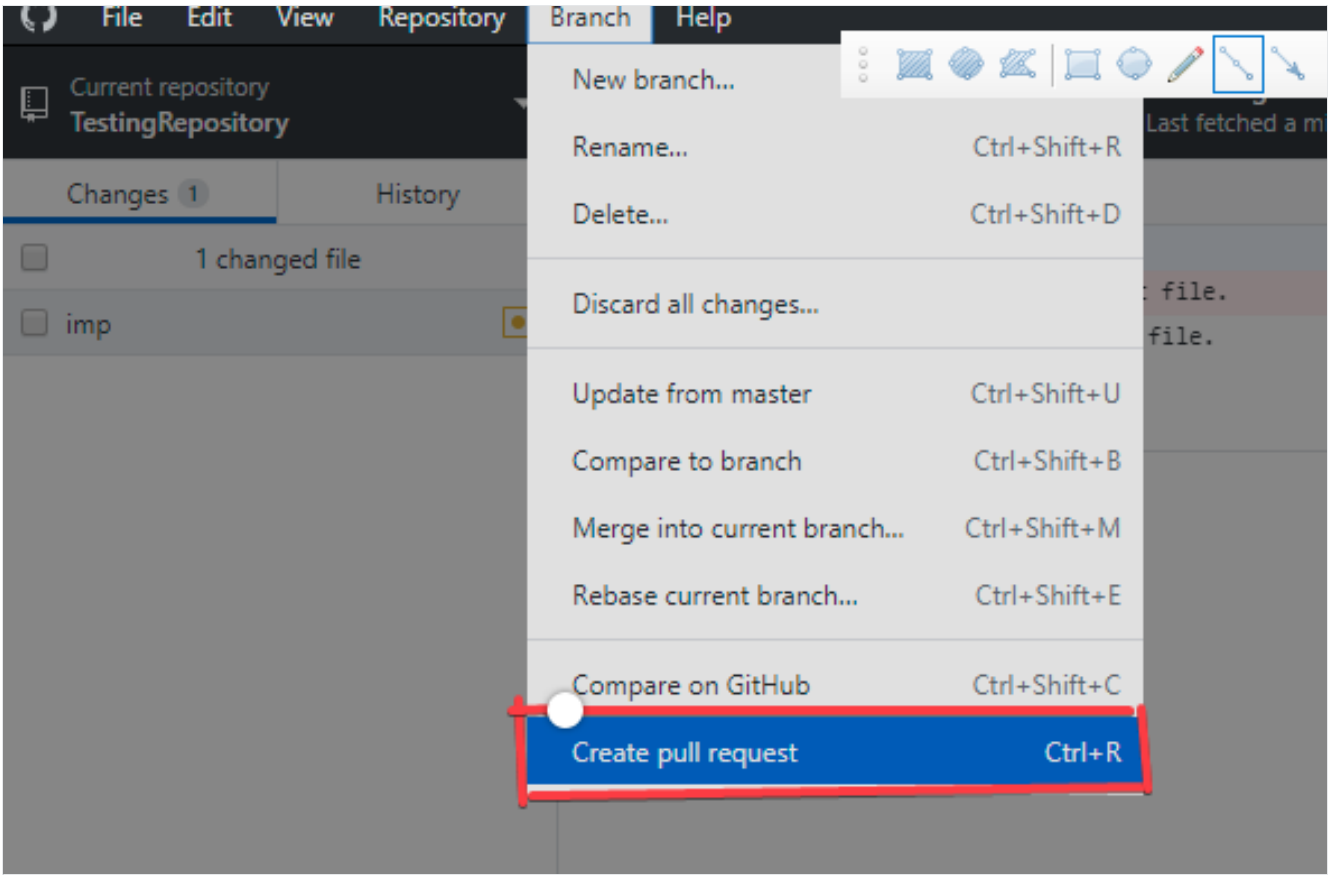
- A commit message written and "Commit to fix-typo-imp" is clicked.

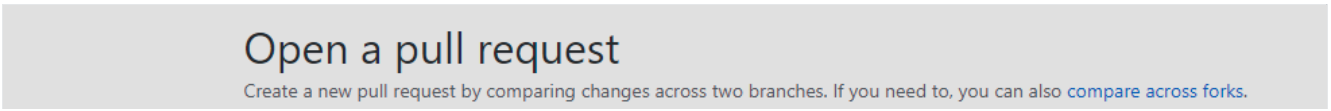


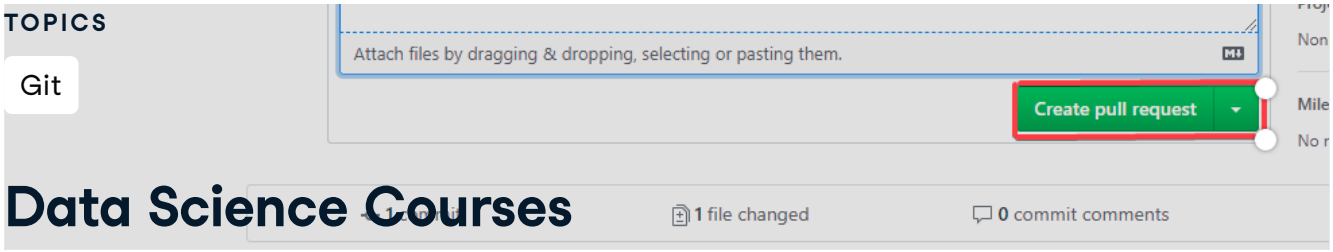


6. Create a PULL Request

- You can now make a PULL request by clicking "Create pull request".
- You can also now write a message and then click "Create pull request" again.







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