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## GIT Push and Pull Tutorial

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

 **Contents**

Jul 2019 · 13 min read



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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 using [GIT SETUP: The Definitive Guide](#).

You do need to have a GitHub account. If you don't, you can create one [here](#).

*Practice Git Push and Pull commands with this hands-on exercise.*

### Git PUSH

The `git push` command is used to transfer or push the commit, which is made on a local branch in your computer to a remote repository like GitHub. The command used for pushing to GitHub is given below.

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

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

### Start Learning Git For Free

#### Introduction to Git

Beginner  4 hr  128.8K learners

This course is an introduction to version control with Git for data scientists.

[See Details →](#)

## Introduction to Version Control with Git

Beginner 4 hr 3.8K learners

Familiarize yourself with Git for version control. Explore how to track, compare, modify, and revert files, as well as collaborate with colleagues using Git.

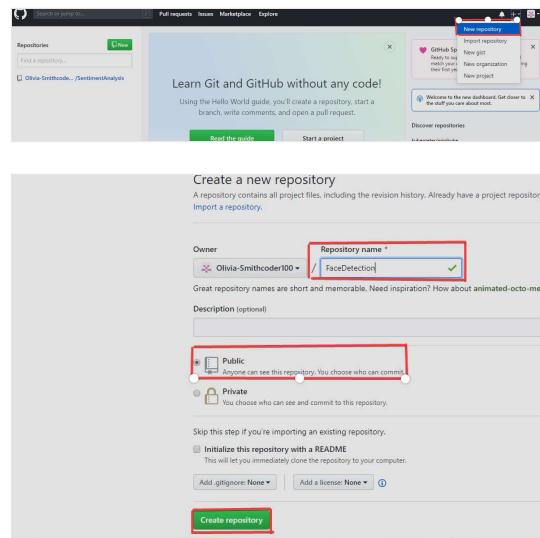
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# Using Command line to PUSH to GitHub

## 1. Creating a new repository

- You need to create a new repository and click on the plus sign.
- Fill up all the required details, i.e., repository name, description and also make the repository public this time as it is free.

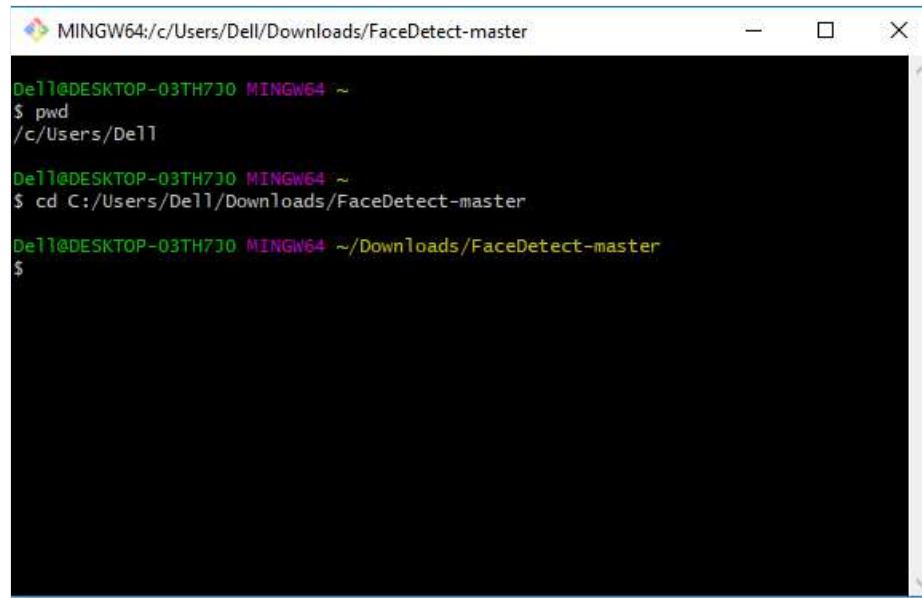


## 2. Open your Git Bash

- 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.



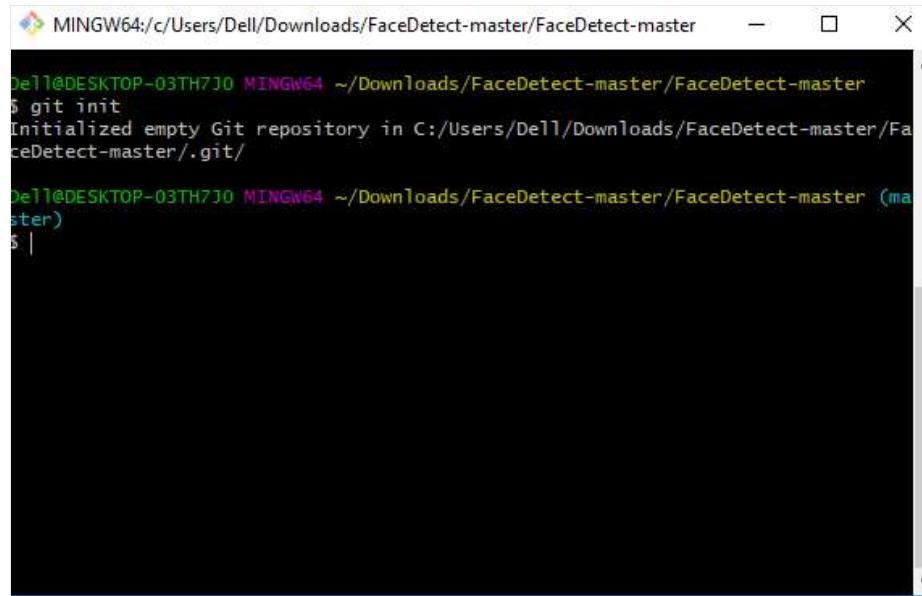
```
MINGW64:/c/Users/Dell/Downloads/FaceDetect-master
Dell@DESKTOP-03TH7J0 MINGW64 ~
$ pwd
/c/Users/Dell

Dell@DESKTOP-03TH7J0 MINGW64 ~
$ cd C:/Users/Dell/Downloads/FaceDetect-master

Dell@DESKTOP-03TH7J0 MINGW64 ~/Downloads/FaceDetect-master
$
```

#### 4. Initialize the git repository

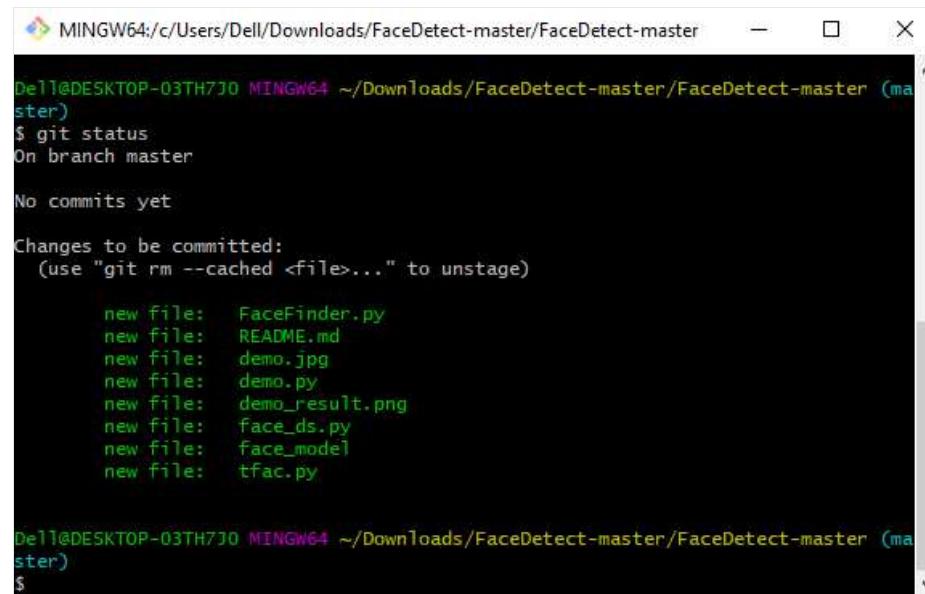
- Use `git init` to initialize the repository. It is used to create a new empty repository or directory consisting of files' with the hidden directory, '.git' is created at the top level of your project, which places all of the revision information in one place.



```
MINGW64:/c/Users/Dell/Downloads/FaceDetect-master/FaceDetect-master
Dell@DESKTOP-03TH7J0 MINGW64 ~/Downloads/FaceDetect-master/FaceDetect-master
$ git init
Initialized empty Git repository in C:/Users/Dell/Downloads/FaceDetect-master/FaceDetect-master/.git/
Dell@DESKTOP-03TH7J0 MINGW64 ~/Downloads/FaceDetect-master/FaceDetect-master (master)
$ |
```

#### 5. Add the file to the new local repository

- Use `git add .` in your bash to add all the files to the given folder.
- Use `git status` in your bash to view all the files which are going to be staged to the first commit.



```
Dell@DESKTOP-03TH7J0 MINGW64 ~/Downloads/FaceDetect-master/FaceDetect-master (master)
$ git status
On branch master

No commits yet

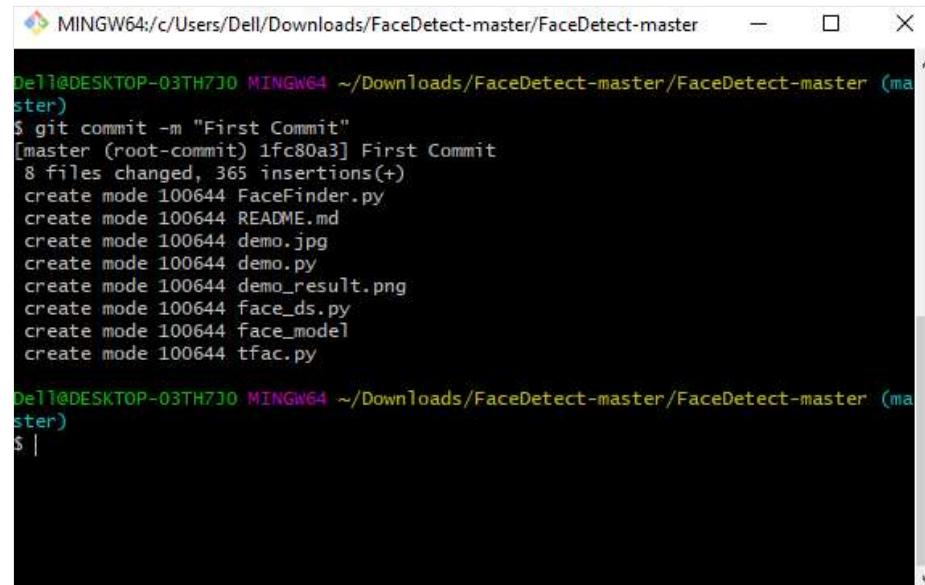
Changes to be committed:
  (use "git rm --cached <file>..." to unstage)

    new file: FaceFinder.py
    new file: README.md
    new file: demo.jpg
    new file: demo.py
    new file: demo_result.png
    new file: face_ds.py
    new file: face_model
    new file: tfac.py

Dell@DESKTOP-03TH7J0 MINGW64 ~/Downloads/FaceDetect-master/FaceDetect-master (master)
$
```

## 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".



```
Dell@DESKTOP-03TH7J0 MINGW64 ~/Downloads/FaceDetect-master/FaceDetect-master (master)
$ git commit -m "First Commit"
[master (root-commit) 1fc80a3] First Commit
 8 files changed, 365 insertions(+)
 create mode 100644 FaceFinder.py
 create mode 100644 README.md
 create mode 100644 demo.jpg
 create mode 100644 demo.py
 create mode 100644 demo_result.png
 create mode 100644 face_ds.py
 create mode 100644 face_model
 create mode 100644 tfac.py

Dell@DESKTOP-03TH7J0 MINGW64 ~/Downloads/FaceDetect-master/FaceDetect-master (master)
$ |
```

## 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.

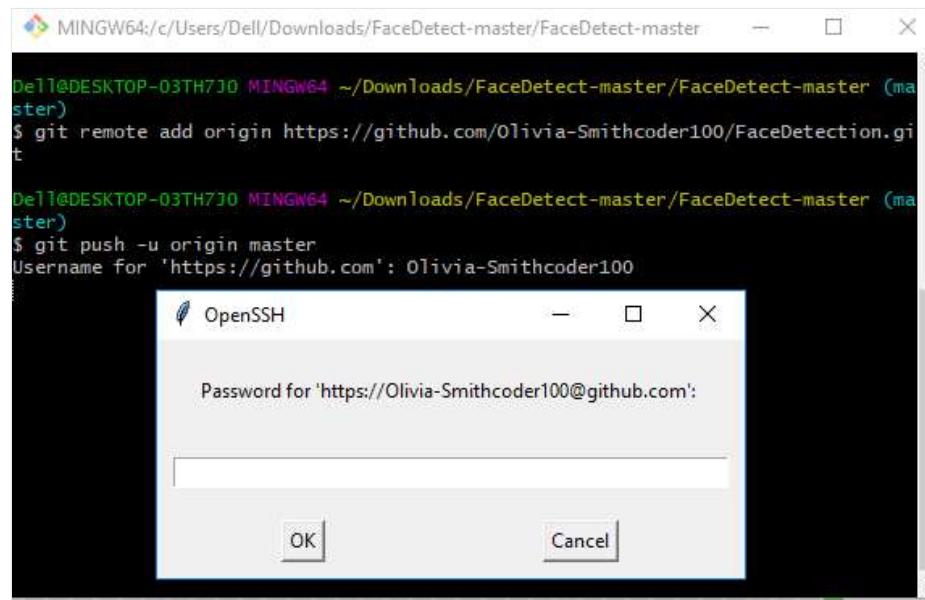


## 8. Add the URL copied, which is your remote repository to where your local content from your repository is pushed

- `git remote add origin 'your_url_name'`
- In the above code, The 'origin' is the remote name, and the remote URL is "<https://github.com/Olivia-Smithcoder100/FaceDetection.git>". You can see the remote as GitHub in this case, and GitHub provides the URL for adding to the remote repository.

## 9. Push the code in your local repository to GitHub

- `git push -u origin master` is used for pushing local content to GitHub.
- 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.

**Olivia-Smithcoder100 / FaceDetection**

No description, website, or topics provided.

1 commit · 1 branch · 0 releases · 1 contributor

Olivia-Smithcoder100 First Commit	First Commit	5 minutes ago
FaceFinder.py	First Commit	5 minutes ago
README.md	First Commit	5 minutes ago
demo.jpg	First Commit	5 minutes ago
demo.py	First Commit	5 minutes ago
demo_result.png	First Commit	5 minutes ago
face_ds.py	First Commit	5 minutes ago
face_model	First Commit	5 minutes ago
tfac.py	First Commit	5 minutes ago
README.md		

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

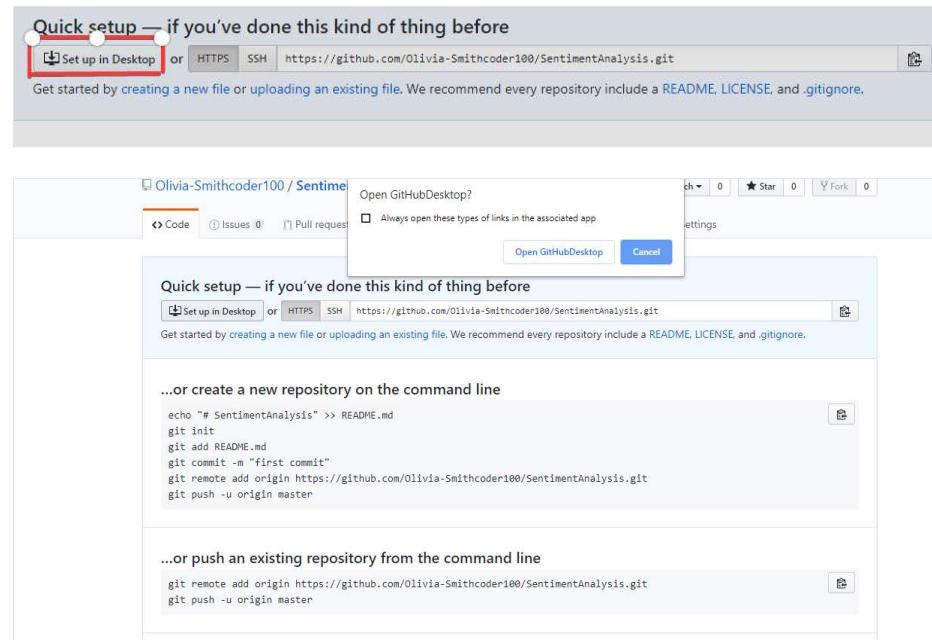
[GitHub Desktop](#) is available to download for any operating system, and it gives the GUI(Graphical User Interface) platform to push your local content from your local repository

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".

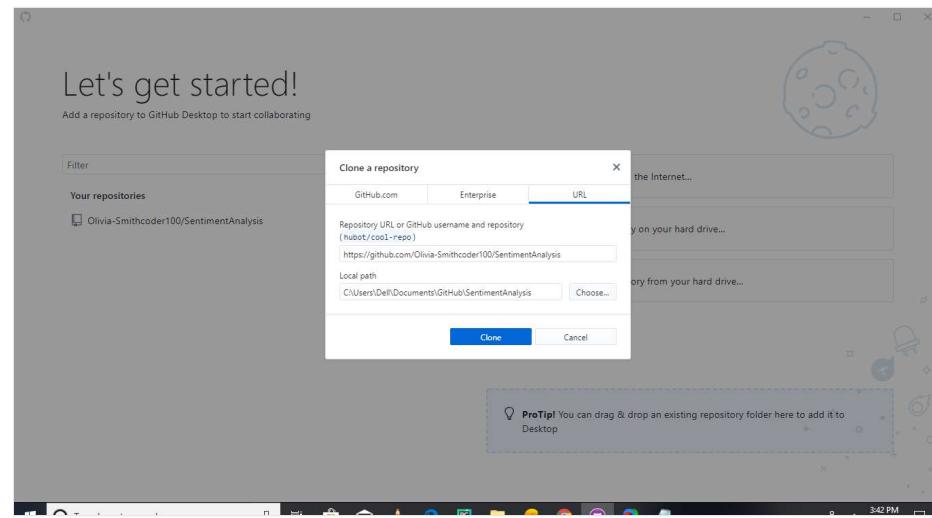
## 1. Click "Set up in a Desktop"

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

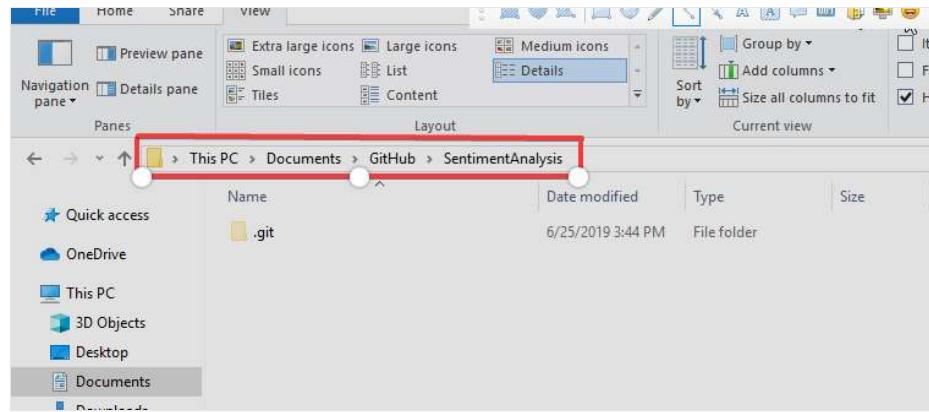


## 2. Cloning in a GitHub Desktop

- You can click the "Clone" button, as shown below.

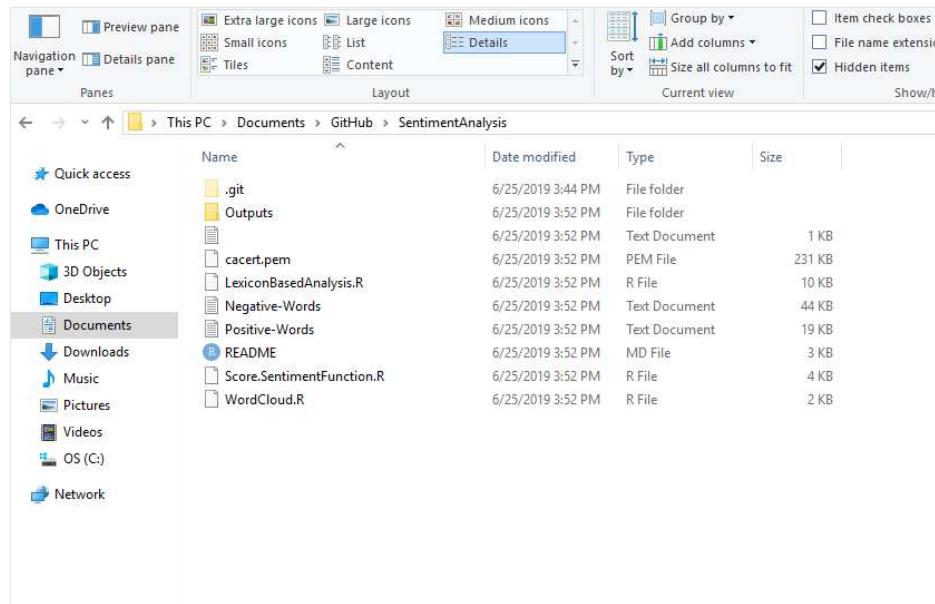


After cloning a new clone, the folder is created in your local computer where a hidden directory ".git" is also present.



### 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 folder.



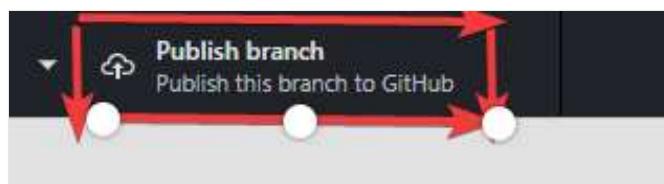
### 4. Move to GitHub Desktop and commit to master

- 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".

The screenshot shows the GitHub Desktop application interface. On the left, there's a list of changes with checkboxes next to each file. A red box highlights the 'latest files' placeholder in the commit message input field. A red arrow points from this highlighted area to the 'Commit to master' button at the bottom right of the commit message area.

## 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 screenshot shows a GitHub repository page. At the top, there are navigation links for Code, Issues (0), Pull requests (0), Projects (0), Wiki, Security, Insights, and Settings. Below that, there's a section for 'Manage topics'. The main area displays a commit history with 1 commit, 1 branch, 0 releases, and 1 contributor. The commit details show an upload of 'latest files' by 'Olivia-Smithcoder100' at '1 minute ago'. The commit message is 'latest files'. Below the commit, there's a list of files: Outputs, .gitignore, LexiconBasedAnalysis.R, Negative-Words.txt, Positive-Words.txt, README.md, Score.SentimentFunction.R, WordCloud.R, and cacert.pem, all listed as 'latest files' at '1 minute ago'.

## PULL Request

If you make a change in a repository, GIT PULL can allow others to view the changes. It is used to acknowledge the change that you've made to the repository that you're working on. Or also called a target repository.

The simple command to PULL from a branch is:

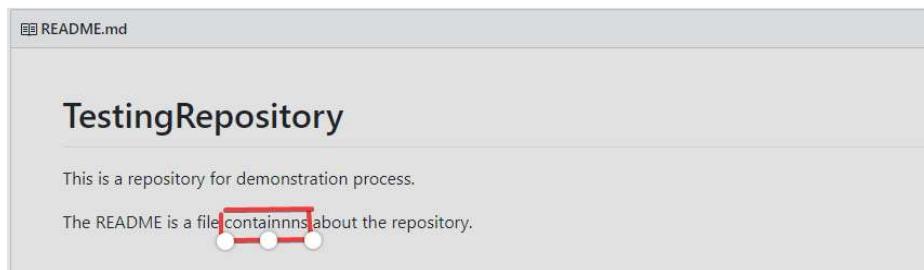
```
git pull 'remote_name' 'branch_name'.
```

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

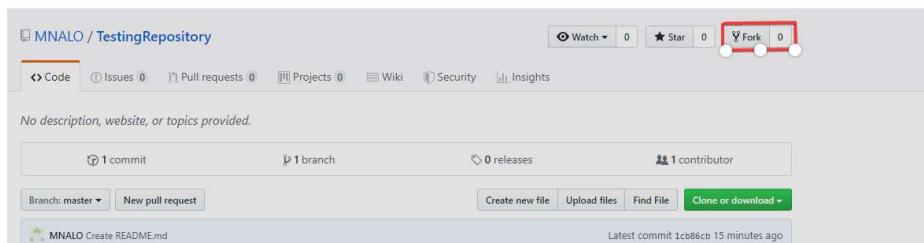
You can see the README files below which contains a typo. The README file has the word "contain" misspelled as "containnns". The owner of this repository is MNALO, and Olivia is the collaborator. She will solve the error and submit a PULL Request You'll see the process for making a PULL Request through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



### 2. Open your bash in your computer

- You need to move to the required path or folder by using the `cd` command, and the content can be viewed by using the `ls` command, which will list all of the present files in the directory and in our case you can see the 'README.md' is present.

```
MINGW64:/c/Users/Dell/TestingRepository
Dell@DESKTOP-03TH7J0 MINGW64 ~
$ cd TestingRepository/
Dell@DESKTOP-03TH7J0 MINGW64 ~/TestingRepository (master)
$ ls
README.md

Dell@DESKTOP-03TH7J0 MINGW64 ~/TestingRepository (master)
$
```

### 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.

```
Dell@DESKTOP-03TH7J0 MINGW64 ~/TestingRepository (master)
$ git checkout -b fix-typo-readme
Switched to a new branch 'fix-typo-readme'
```

### 4. Make a change by using vim from bash or direct replacement from the original README file

- You can change the word "containnns" to "contains" in the README file, and the changes with the current status can be viewed by using the following command.

```
Dell@DESKTOP-03TH7J0 MINGW64 ~/TestingRepository (fix-typo-readme)
$ git status
On branch fix-typo-readme
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   README.md

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

Dell@DESKTOP-03TH7J0 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-03TH7J0 MINGW64 ~/TestingRepository (fix-typo-readme)
$ git add README.md

Dell@DESKTOP-03TH7J0 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-03TH7J0 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-03TH7J0 MINGW64 ~/TestingRepository (fix-typo-readme)
$ git push origin fix-typo-readme
Username for 'https://github.com': Olivia-Smithcoder100
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 304 bytes | 152.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
remote:
remote: Create a pull request for 'fix-typo-readme' on GitHub by visiting:
remote:   https://github.com/Olivia-Smithcoder100/TestingRepository/pull/new/
fix-typo-readme
remote:
To https://github.com/Olivia-Smithcoder100/TestingRepository.git
 * [new branch]      fix-typo-readme -> fix-typo-readme

Dell@DESKTOP-03TH7J0 MINGW64 ~/TestingRepository (fix-typo-readme)
$ |
```

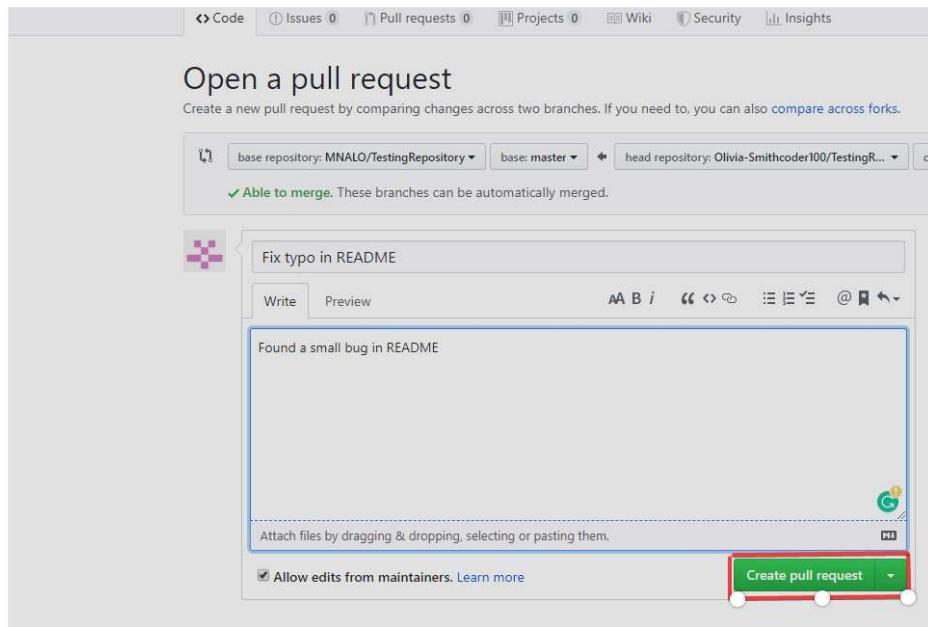
## 7. PULL request for a specific branch on GitHub

- 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.



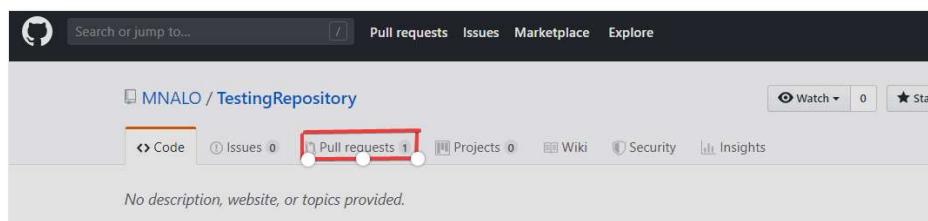
## 8. Open a Pull request

- 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 screenshot shows a GitHub pull request titled "fix typo in README #1". The status is "Merged". The commit message is "Fix typo in README". The pull request was merged by MNALO into the master branch 19 days ago. A comment from Olivia-Smithcoder100 states: "Found a small bug in README". The pull request has been successfully merged and closed. A button labeled "Delete branch" is visible.

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 screenshot shows the GitHub pull request list. There is one open pull request titled "Fix typo in README" by Olivia-Smithcoder100, which was opened 4 minutes ago.

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

The screenshot shows the "Merge pull request" dialog. It displays a green checkmark icon and the message: "This branch has no conflicts with the base branch. Merging can be performed automatically." A red box highlights the "Merge pull request" button.

The screenshot shows the "Confirm merge" dialog. It contains the text "Merge pull request #1 from Olivia-Smithcoder100/fix-typo-readme" and "Fix typo in README". At the bottom are two buttons: "Confirm merge" (highlighted with a red box) and "Cancel".

The last change made to the README.md file with a corrected typo is below.

No description, website, or topics provided.

3 commits 1 branch 0 releases 1 contributor

Branch: master New pull request Create new file Upload files Find file Clone or download

MNALO Merge pull request #1 from Olivia-Smithcoder100/fix-typo-readme Latest commit f63b688 4 minutes ago

README.md Fix typo in README 15 minutes ago

README.md

**TestingRepository**

This is a repository for demonstration process.

The README is a file contains about the repository.

## 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".

No description, website, or topics provided.

4 commits 1 branch 0 releases 2 contributors

Branch: master New pull request Create new file Upload files Find file Clone or download

MNALO Create imp Use SSH

README.md Fix typo in README

imp Create imp

README.md

**Open in Desktop** Download ZIP

### 2. Create a new branch

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

Current Repository ide-week Changes History 0 changed files

Current Branch Publishing Publish branch Branch Help

New branch... Ctrl+Shift+N

Rename... Ctrl+Shift+R

Delete... Ctrl+Shift+D

Discard all changes...

Update from master Ctrl+Shift+U

Compare to branch Ctrl+Shift+B

Merge into current branch... Ctrl+Shift+M

Rebase current branch... Ctrl+Shift+E

Compare on GitHub Ctrl+Shift+C

Create pull request Ctrl+R

View the files of your repository in Explorer Repository menu or Ctrl+Shift+F

Open the repository page on GitHub in your browser Repository menu or Ctrl+Shift+G

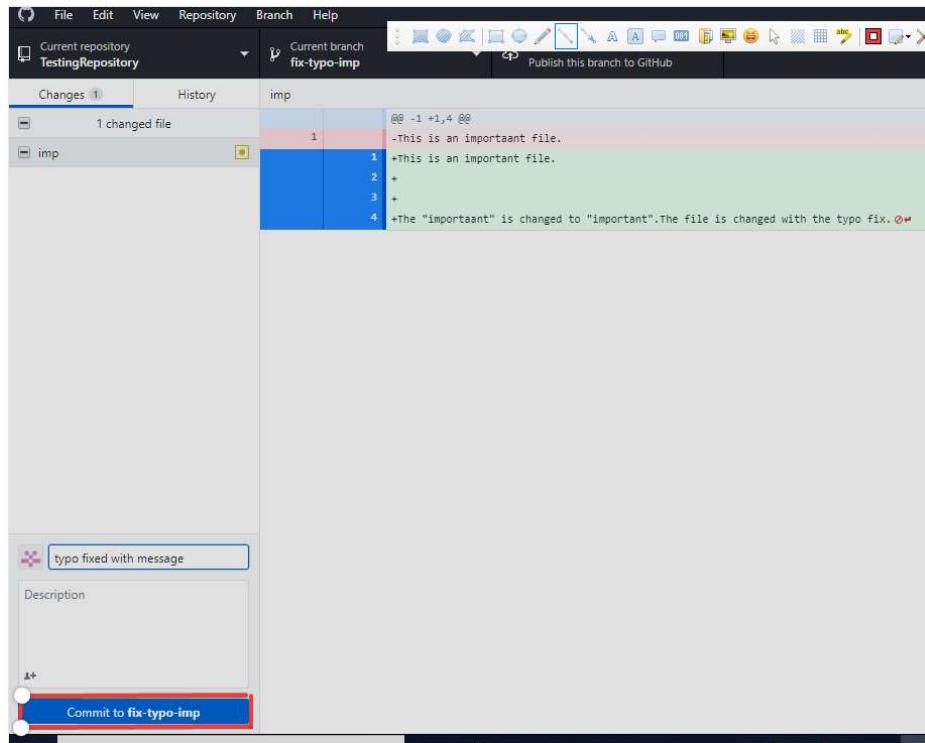
Type here to search

### 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.

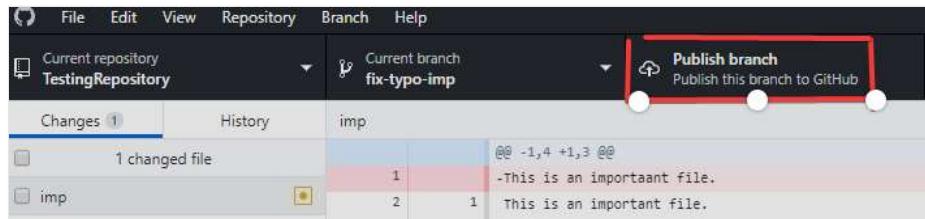
#### 4. Commit the changes

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



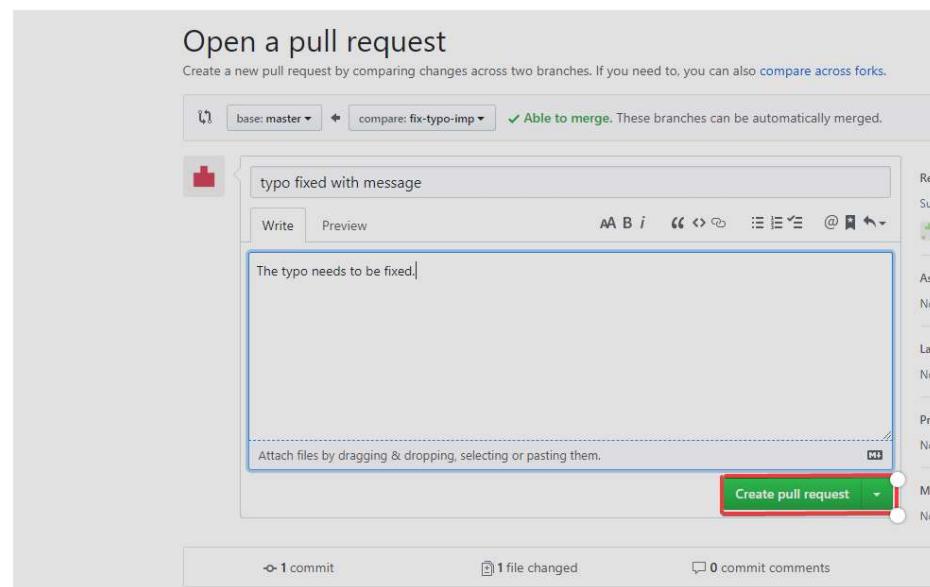
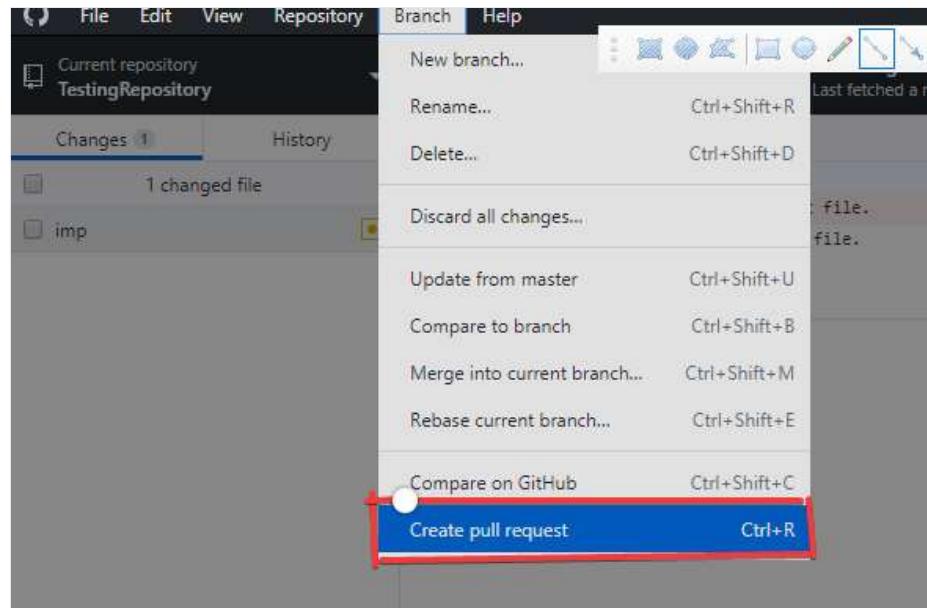
#### 5. Publish the branch

- You can now publish the branch, which pushes the commit to GitHub.



#### 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.



The process afterward is the same as above in "PULL Request through Command Line".

## Conclusion

In this tutorial, you have learned the PUSH and PULL request and also the different ways through which the PUSH and PULL request is done through the command line and GitHub Desktop Applications.

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### TOPICS

Git

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