

Lab Manual

Step: --

1. Create a repo in local machine
2. Create a file (default it would be as master) with 1st line.
3. Add 2nd line to the file and save it to the BRANCH on GIT local repo
4. Merge the file to the master on the GIT Local repo
5. Edit the file with an Editor on the local machine, and add 3rd line to the file and save it on your machine, Commit this change to the Branch copy on GIT local repo.
6. Push master origin to GITHUB.com & Push branch origin to GITHUB.com
7. Finally, merge the Branch on GITHUB.com to Master on GITHUB.com.

Step1: Create an repo in local machine

Install “GIT bash” on the laptop.



A screenshot of a MINGW64 terminal window titled "MINGW64:/d/repository". The terminal shows the following commands and output:

```
pwd
/c/Users/Vishwanath

vishwanath@vishwa MINGW64 ~
$ d:/repository
bash: d:/repository: Is a directory

vishwanath@vishwa MINGW64 ~
$ d:/repository/
bash: d:/repository/: Is a directory

vishwanath@vishwa MINGW64 ~
$ d:\repository
bash: d:repository: command not found

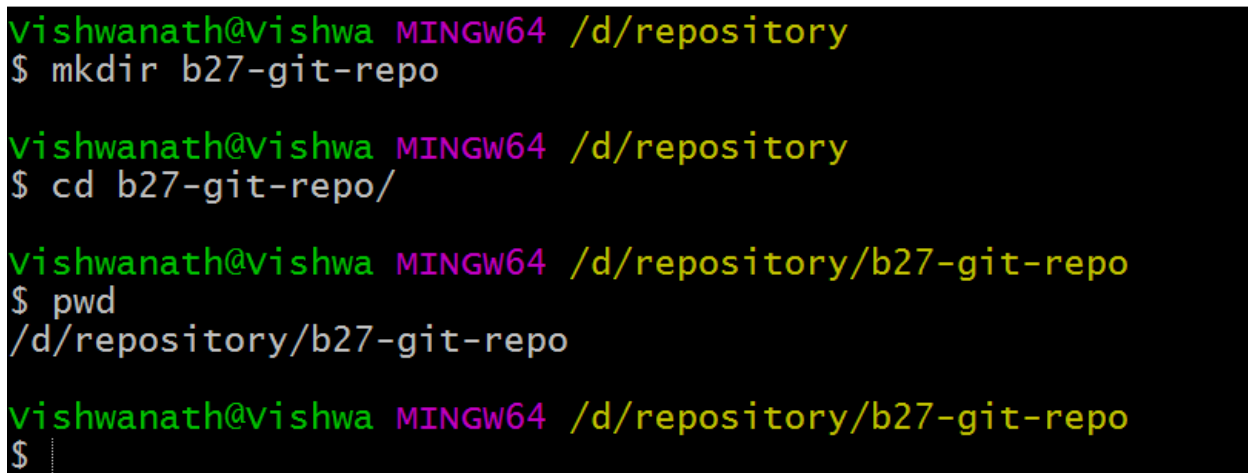
vishwanath@vishwa MINGW64 ~
$ cd d:\repository

vishwanath@vishwa MINGW64 /d/repository
pwd
/d/repository
```

Three specific lines are circled in white: the first `pwd` command and its output `/c/Users/Vishwanath`, the `cd d:\repository` command, and the second `pwd` command and its output `/d/repository`.

Change to the directory for the repo.

Create a sub folder for the particular repository



A screenshot of a MINGW64 terminal window showing the following commands and output:

```
vishwanath@vishwa MINGW64 /d/repository
$ mkdir b27-git-repo

vishwanath@vishwa MINGW64 /d/repository
$ cd b27-git-repo/

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo
$ pwd
/d/repository/b27-git-repo

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo
$
```

Now make this folder as the repository by running the below command.

Command “git init”

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo
$ git init
Initialized empty Git repository in D:/repository/b27-git-repo/.git/
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ |
```

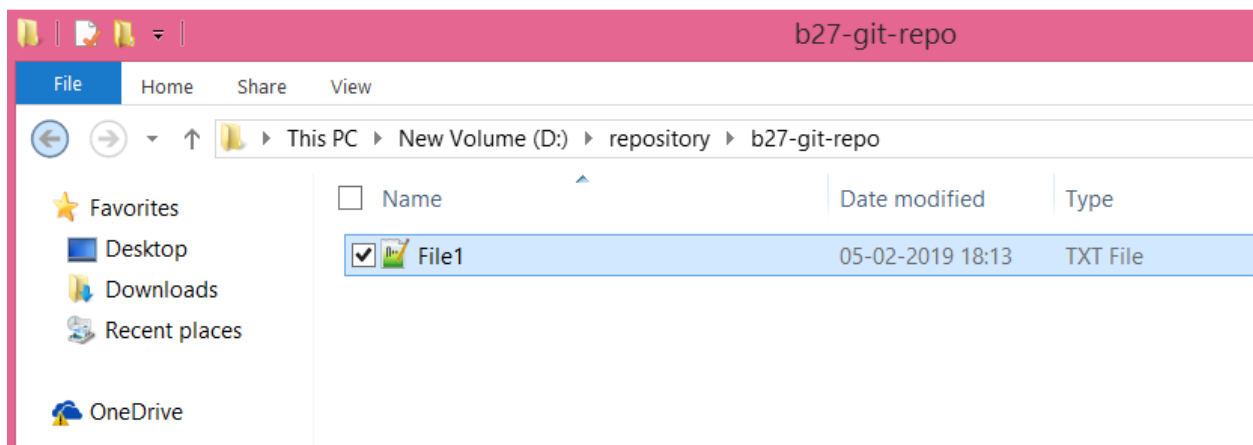
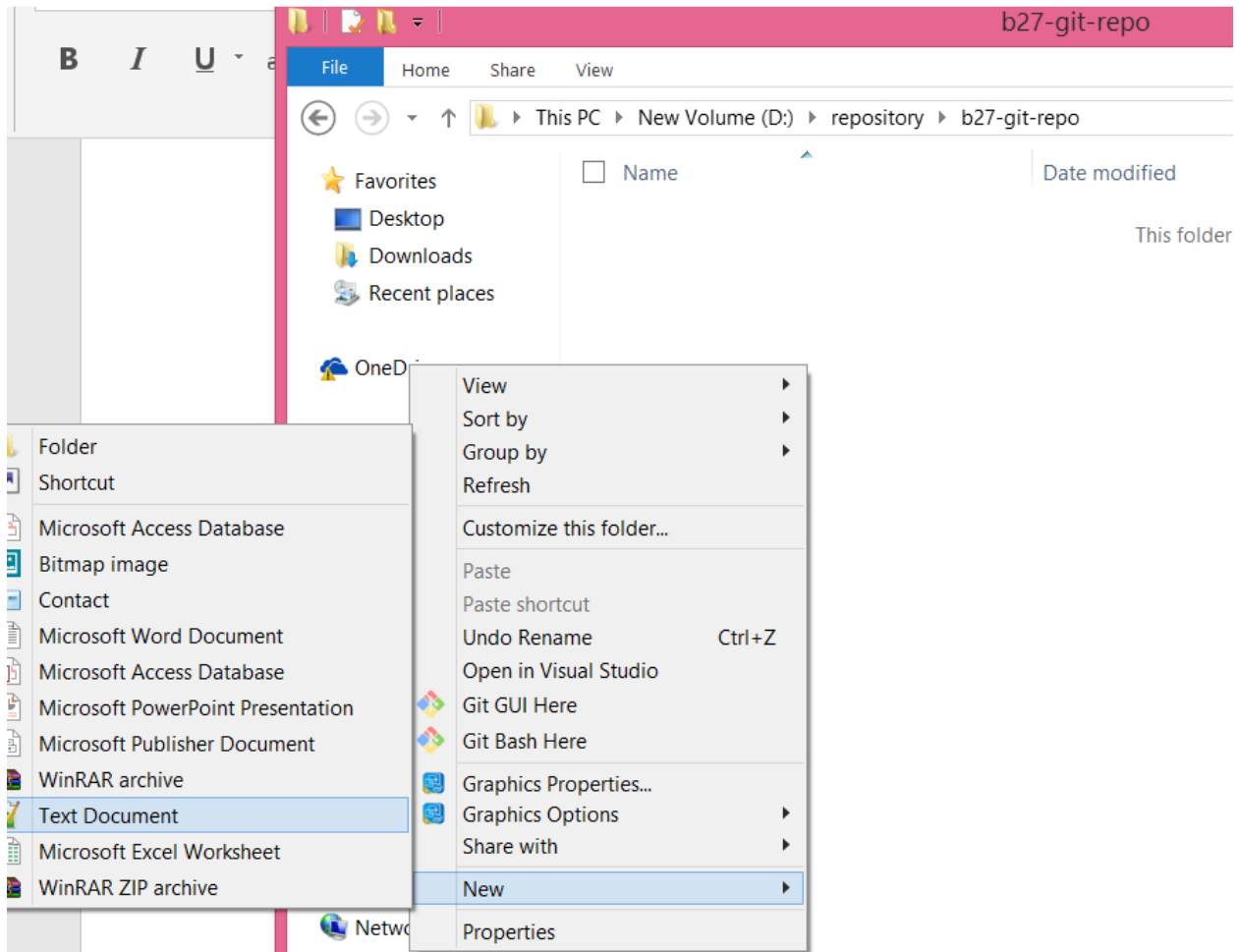
Now run “git status” to check the current status of the git repo.

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ git status
On branch master

No commits yet

nothing to commit (create/copy files and use "git add" to track)
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ |
```

Step2: Create a file (default it would be as master) with 1st line.



Now run **“git status”** again, it would detect a file

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)

        File1.txt

nothing added to commit but untracked files present (use "git add" to track)
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ |
```

Currently the file is in the Working space.

By running the command “**git add <filename>**” will push it to next stage , that is staging space.

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ git add File1.txt

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ git status
On branch master

No commits yet

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

        new file:   File1.txt

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ |
```

The “git status” shows that the file is tagged for changes.

Now let’s commit the changes to move the file from “staging space” to “local repo”.

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ git commit -m "file1 1st line added"
[master (root-commit) 993c9ce] file1 1st line added
1 file changed, 1 insertion(+)
create mode 100644 File1.txt

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ |
```

Now running the “**git status**” will show that there is nothing to commit nor any changes to be recorded.

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ git status
On branch master
nothing to commit, working tree clean

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ |
```

The file is currently committed to the “**Master**” branch.

Step3: Add 2nd line to the file and save it to the BRANCH on GIT local repo

Create a branch

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ git branch branch1

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ git branch
  branch1
* master

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ |
```

Change to branch --- “git checkout <branchname>”

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ git checkout branch1
Switched to branch 'branch1'

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ |

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ ls
File1.txt

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ |
```

Now let's add 2nd line to the file1.txt.

```
ew 15 x new 17 x new 4 x new 5 x new 12 x 08-Jan-19.txt x new 20 x new 19 x new 21
1 This is a new file in the local repo via GIT.
2 2nd line added to the Branch of local repo GIT.
```

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ git status
on branch branch1
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:   File1.txt

no changes added to commit (use "git add" and/or "git commit -a")
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ |
```

“**git status**” will show that there are some changes to the file in the branch.

Now let's add the file, since we have done changes to the file.

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ git add *

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ |
```

Here we have used “**git add ***” this would add all the modified files in that branch to get “**Commit**”.

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ git status
on branch branch1
changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

        modified:   File1.txt

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ |
```

Status shows that the file is ready for the commit to the branch.


```
Vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ git commit -m "2nd line added to file1 in the banrch"
[branch1 2029775] 2nd line added to file1 in the banrch
1 file changed, 2 insertions(+), 1 deletion(-)

Vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ |
```

Now the file is “**Committed**” to move the file to local repo.

Step4: Merge the file to the master.

Switch back to master. “git checkout master”

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ git checkout master
Switched to branch 'master'

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ |
```

Now let's merge the branch1 to master.

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ git merge branch1
Updating 993c9ce..2029775
Fast-forward
 File1.txt | 3 ++-
 1 file changed, 2 insertions(+), 1 deletion(-)

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ |
```

To test the output. Run the below commands.

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ ls
File1.txt

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ cat File1.txt
This is a new file in the local repo via GIT.
2nd line added to the Branch of local repo GIT.

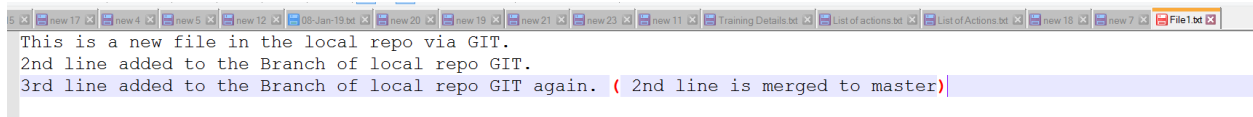
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (master)
$ |
```

Step5:

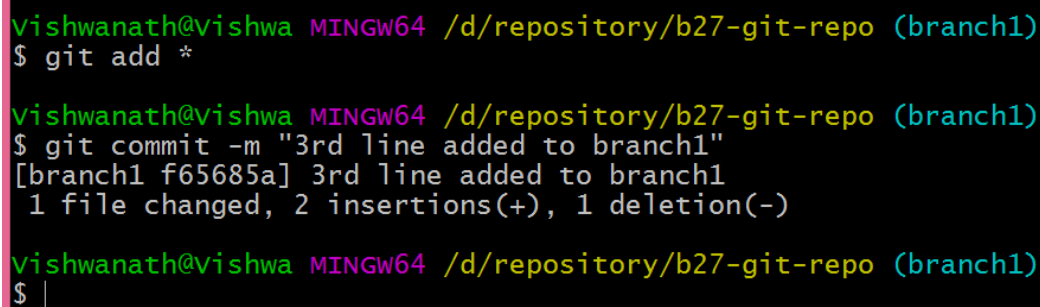
Edit the file with an Editor on the local machine, and add 3rd line to the file and save it on your machine.

Switch back to “branch1”.

Add the 3rd line to the file.



```
5 new 17 new 4 new 5 new 12 08-Jan-19.txt new 20 new 19 new 21 new 23 new 11 Training Details.txt List of actions.txt List of Actions.txt new 18 new 7 File1.txt  
This is a new file in the local repo via GIT.  
2nd line added to the Branch of local repo GIT.  
3rd line added to the Branch of local repo GIT again. ( 2nd line is merged to master)
```

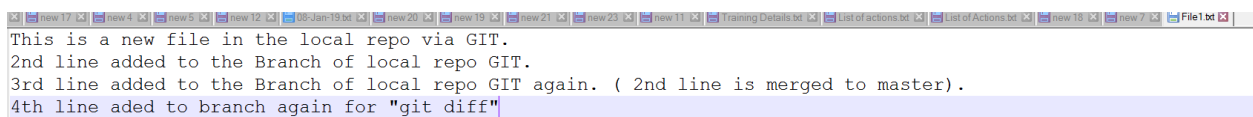


```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)  
$ git add *  
  
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)  
$ git commit -m "3rd line added to branch1"  
[branch1 f65685a] 3rd line added to branch1  
1 file changed, 2 insertions(+), 1 deletion(-)  
  
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)  
$ |
```

The file is committed to the branch.

Lets explore “git diff” command.

Lets add 4th line to the branch again.



```
new 17 new 4 new 5 new 12 08-Jan-19.txt new 20 new 19 new 21 new 23 new 11 Training Details.txt List of actions.txt List of Actions.txt new 18 new 7 File1.txt  
This is a new file in the local repo via GIT.  
2nd line added to the Branch of local repo GIT.  
3rd line added to the Branch of local repo GIT again. ( 2nd line is merged to master).  
4th line added to branch again for "git diff"
```

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ git diff
diff --git a/File1.txt b/File1.txt
index e9b6fc3..67fbc4e 100644
--- a/File1.txt
+++ b/File1.txt
@@ -1,3 +1,4 @@
 This is a new file in the local repo via GIT.
 2nd line added to the Branch of local repo GIT.
-3rd line added to the Branch of local repo GIT again. ( 2nd line is merged to m
aster)
\ No newline at end of file
+3rd line added to the Branch of local repo GIT again. ( 2nd line is merged to m
aster).
+4th line added to branch again for "git diff"
\ No newline at end of file

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ |
```

Git diff shows the difference of the file content between “**working space**” and “**local repo**”.

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ git add *

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ git diff

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ |
```

After adding the file with “**git add ***” the file moves to staging space and “**git diff**” does not have any content in the “**working space**” to compare with “**local repo**”.

Now to compare the staged space with local repo run

“git diff --staged” as below

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ git diff --staged
diff --git a/File1.txt b/File1.txt
index e9b6fc3..67fbc4e 100644
--- a/File1.txt
+++ b/File1.txt
@@ -1,3 +1,4 @@
  This is a new file in the local repo via GIT.
  2nd line added to the Branch of local repo GIT.
-3rd line added to the Branch of local repo GIT again. ( 2nd line is merged to m
aster)
\ No newline at end of file
+3rd line added to the Branch of local repo GIT again. ( 2nd line is merged to m
aster).
+4th line added to branch again for "git diff"
\ No newline at end of file

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ |
```

Once the Commit of the file is done, there would be no files in any stage to compare with local repo.

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ git commit -m "4th line added to branch1"
[branch1 8f419f6] 4th line added to branch1
1 file changed, 2 insertions(+), 1 deletion(-)

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ git diff --staged

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ git diff

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ |
```

To see all the commits that has been done till now. Run

“git log”.

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ git log
commit 8f419f6af8a267abf594d48d673bc37696fd6999 (HEAD -> branch1)
Author: Vishwa <vishwanath.murthy@gmail.com>
Date: Tue Feb 5 18:49:03 2019 +0530

    4th line added to branch1

commit f65685a1f03dae1b10214114634e383d28cdc763
Author: Vishwa <vishwanath.murthy@gmail.com>
Date: Tue Feb 5 18:41:34 2019 +0530

    3rd line added to branch1

commit 2029775d255d9a9dd2d89a973244f391ca10e694 (master)
Author: Vishwa <vishwanath.murthy@gmail.com>
Date: Tue Feb 5 18:33:53 2019 +0530

    2nd line added to file1 in the banrch

commit 993c9ce9abf2813e6c56073b59f367706c03c05e
Author: Vishwa <vishwanath.murthy@gmail.com>
Date: Tue Feb 5 18:20:32 2019 +0530

    file1 1st line added

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ |
```

Step6: Push master origin to GITHUB.com.

To push the files from local repo git to GITHUB.com, first create the same repo folder on GITHUB.com.


First create user details on the local GIT bash

```
# git config --global user.name "vishwa"  
# git config --global user.email "your email id"
```

Create a new repository

A repository contains all the files for your project, including the revision history.

Owner

 Vishwanathms ▾


 /

Repository name *


b27-git-repo ✓

Great repository names are short and memorable. Need inspiration? How about **refactored-broccoli**.

Description (optional)

☒  **Public**

Anyone can see this repository. You choose who can commit.


☐  **Private**

You choose who can see and commit to this repository.

☐ **Initialize this repository with a README**

This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: None ▾

Add a license: None ▾ 

Create repository

Now before we push the files to the remote repository (GITHUB.com).

We need to authenticate. **(sign-in)**

“git remote add **origin** https://github.com/Vishwanathms/b27-git-repo.git”


```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ git remote add origin https://github.com/Vishwanathms/b27-git-repo.git

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ git remote -v
origin https://github.com/Vishwanathms/b27-git-repo.git (fetch)
origin https://github.com/Vishwanathms/b27-git-repo.git (push)

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ |
```

```
git remote add origin remote repository URL
# Sets the new remote
git remote -v
# Verifies the new remote URL
```

Next is to push the changes to github.com.

\$ git push origin master

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ git push origin master
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (6/6), 574 bytes | 63.00 KiB/s, done.
Total 6 (delta 0), reused 0 (delta 0)
To https://github.com/Vishwanathms/b27-git-repo.git
 * [new branch]      master -> master

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ |
```

This command, will only push the “master” branch.

Also, when you are doing this for the first time to your GITHUB.com account, you would be prompted for sign-in.

The master copy of the “file1.txt” is visible in the GITHUB.com.

Now lets push branch copy.

```
vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ git push origin branch1
Enumerating objects: 8, done.
Counting objects: 100% (8/8), done.
Delta compression using up to 4 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (6/6), 613 bytes | 76.00 KiB/s, done.
Total 6 (delta 1), reused 0 (delta 0)
remote: Resolving deltas: 100% (1/1), done.
remote:
remote: Create a pull request for 'branch1' on GitHub by visiting:
remote:   https://github.com/vishwanathms/b27-git-repo/pull/new/branch1
remote:
To https://github.com/vishwanathms/b27-git-repo.git
 * [new branch]      branch1 -> branch1

vishwanath@vishwa MINGW64 /d/repository/b27-git-repo (branch1)
$ |
```

“git push origin branch1”.

Branch: branch1 ▾ [b27-git-repo](#) / File1.txt

 Vishwanathms 4th line added to branch1

1 contributor

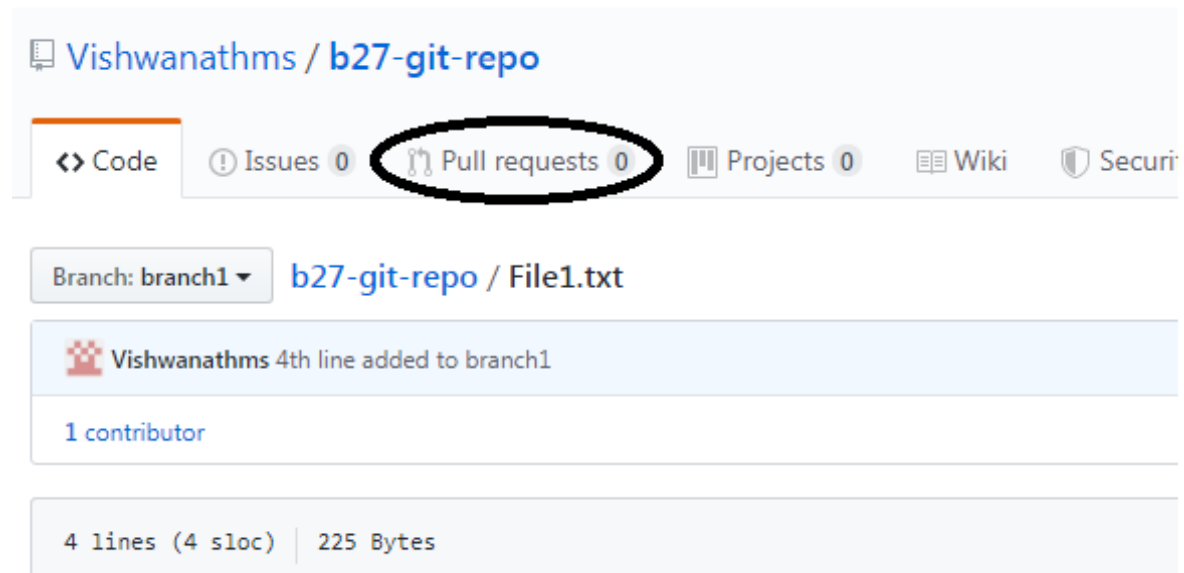
4 lines (4 sloc) | 225 Bytes Raw Bl

```
1 This is a new file in the local repo via GIT.
2 2nd line added to the Branch of local repo GIT.
3 3rd line added to the Branch of local repo GIT again. ( 2nd line is merged to master).
4 4th line aded to branch again for "git diff"
```

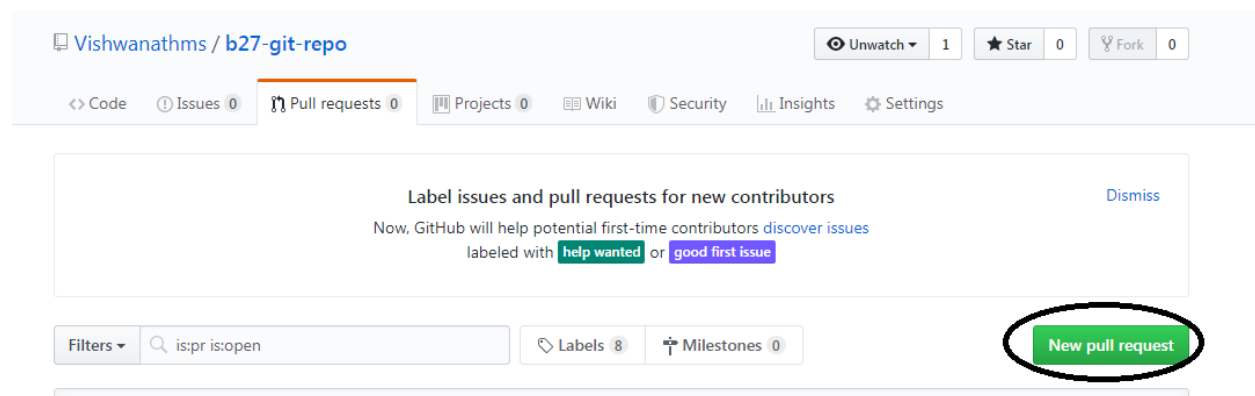
This is the output of on the GITHUB.com on the branch.

Step7:

Finally, merge the Branch on GITHUB.com to Master on GITHUB.com.



Click on “Pull requests”



Click on “New pull request”

Vishwanathms / b27-git-repo

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Comparing changes

Choose two branches to see what's changed or to start a new pull request. If you need to, you can also [compare across forks](#).

base: master ← compare: branch1 ✓ Able to merge. These branches can be automatically merged.

Create pull request Discuss and review the changes in this comparison with others.

2 commits 1 file changed 0 commit comments 1 contributor

Commits on Feb 05, 2019

- Vishwanathms 3rd line added to branch1 f65685a
- Vishwanathms 4th line added to branch1 8f419f6

Showing 1 changed file with 3 additions and 1 deletion.

Unified Split

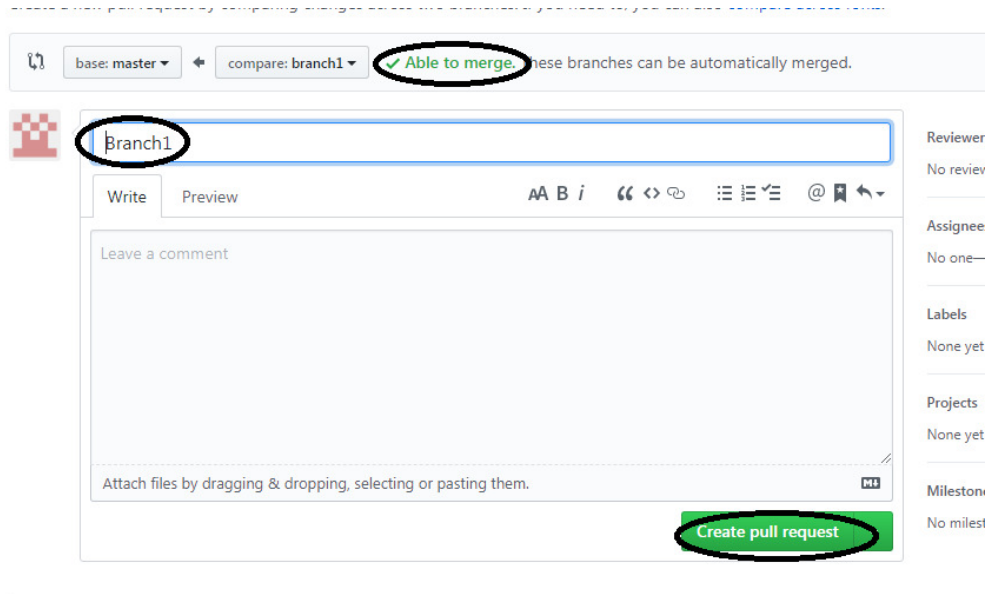
File1.txt

```
@@ -1,2 +1,4 @@
1 This is a new file in the local repo via GIT.
2 -2nd line added to the Branch of local repo GIT.
3 +2nd line added to the Branch of local repo GIT.
4 +3rd line added to the Branch of local repo GIT again. ( 2nd line is merged to master).
5 +4th line added to branch again for "git diff"
```

Select the source **“branch1”** and destination as **“master”**

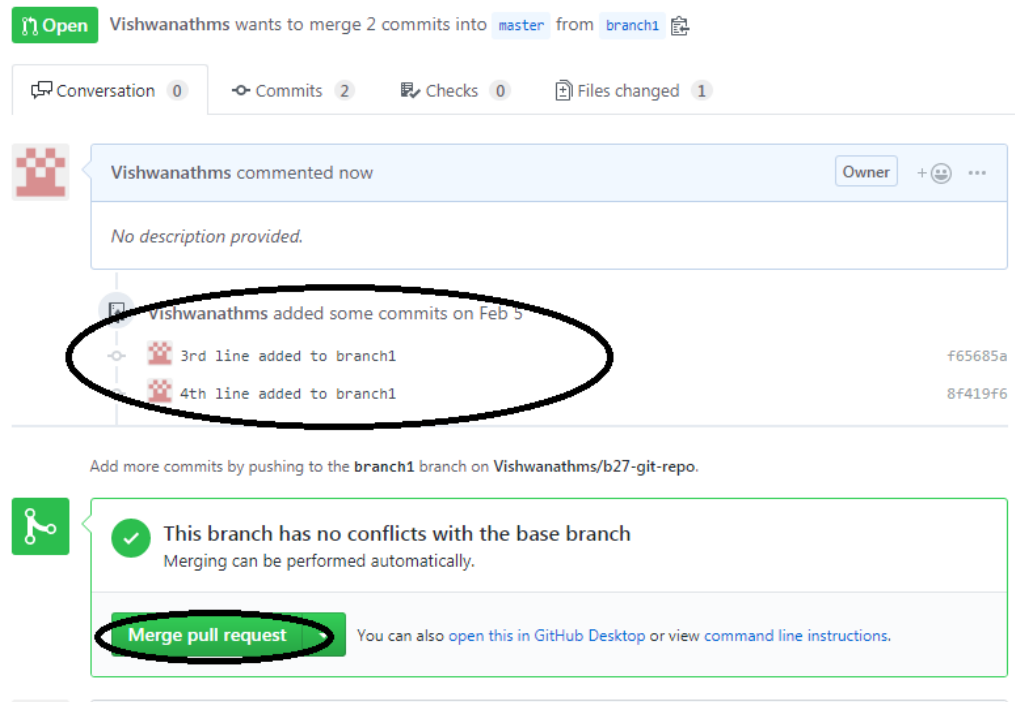
There would be an comparison below between **branch** and **master**.

Then click on **“Create pull request”**.

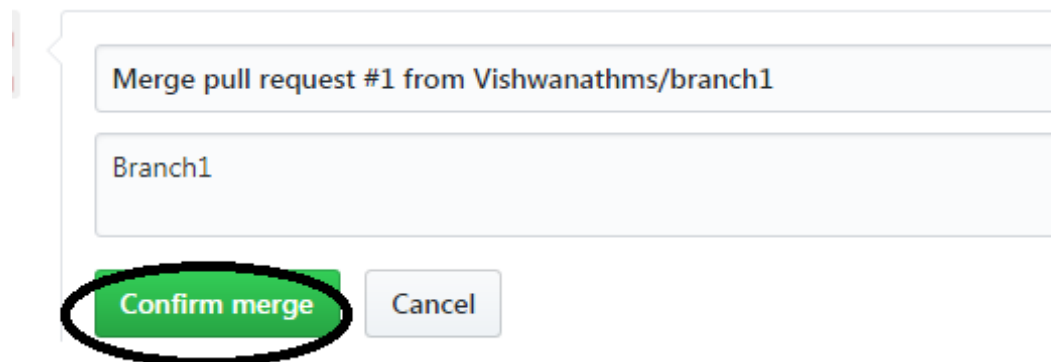


Once the “Able to merge” is highlighted then click on “Create pull request”

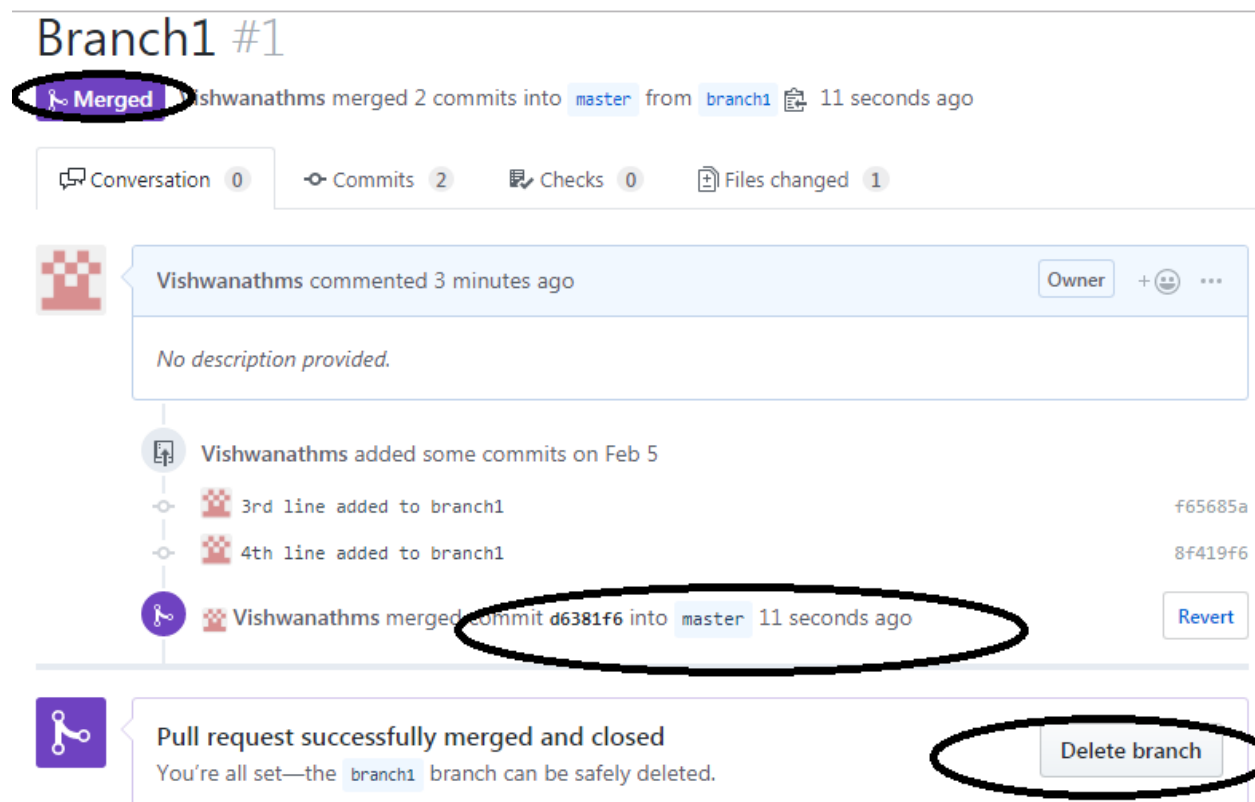
Branch1 #1



Click on “Merge pull request”




Click on “**Confirm Merge**”



Now you have an option to “**Delete Branch**” after the merger.

Output:

Branch: master ▾ 27-git-repo / File1.txt

 Vishwanathms 4th line added to branch1

1 contributor

4 lines (4 sloc) | 225 Bytes

```
1 This is a new file in the local repo via GIT.
2 2nd line added to the Branch of local repo GIT.
3 3rd line added to the Branch of local repo GIT again. (2nd line is merged to master).
4 4th line added to branch again for "git diff"
```