19162121031

SMIT R PATEL

SEM 5

SOFTWARE ENGINEERING

PRACTICAL 7

Aim: Demonstration of Source Code & Configuration Management using Git, Gitbash & GitHub.

Demo Task:

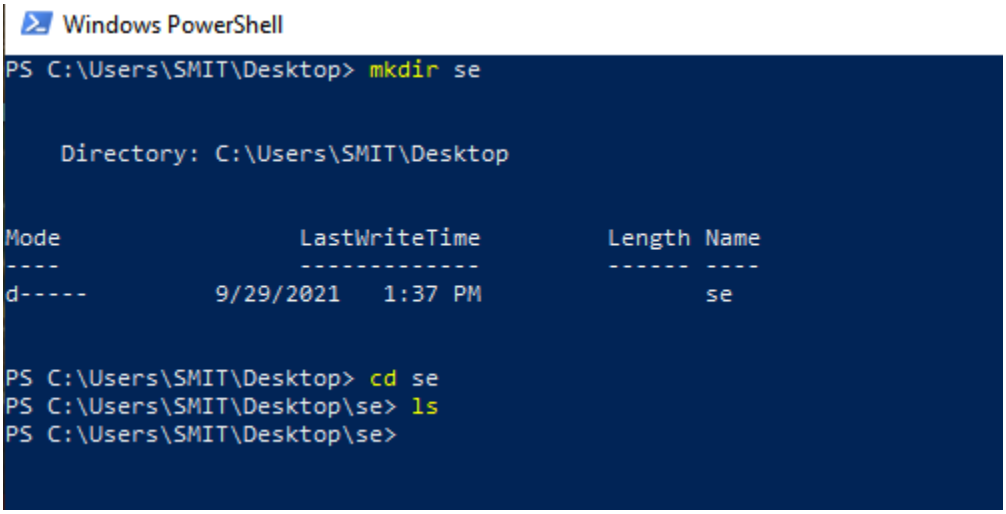
For demo project, commands and steps to perform various source code and config management activities using Git, Git bash and Github.

Task to be performed by Students:

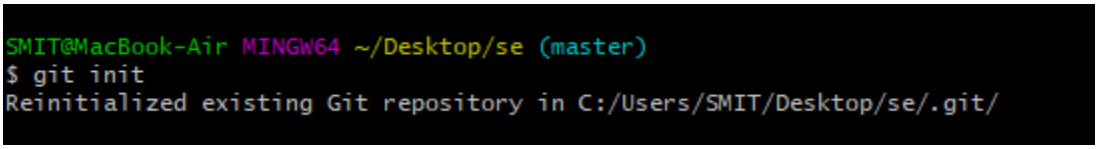
Follow the below workflow for your project using SCM tools.

Make sure to add and get awareness for the following below tasks for your project/system assigned to you.

1. Managing your organization’s GitHub account , Install Git



To initialize a git repository in the root of the folder, run the git init



2. Create and adding new files to local git repository

```
SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$ touch Pr7_git.txt

SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$ ls
Pr7_git.txt  hello.txt  index.html  registration.html

SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$ git status
On branch master
Your branch is up to date with 'origin/master'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        Pr7_git.txt

nothing added to commit but untracked files present (use "git add" to track)

SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$ ll
total 8
-rw-r--r-- 1 SMIT 197121    0 Sep 29 12:36 Pr7_git.txt
-rw-r--r-- 1 SMIT 197121    0 Sep 29 12:29 hello.txt
-rw-r--r-- 1 SMIT 197121  657 Sep 22 11:03 index.html
-rw-r--r-- 1 SMIT 197121 2049 Sep 22 10:57 registration.html

SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$
```

Here git has noticed that there is a new file called PR6_git.txt but unless we use “git add” command git will not do anything with it.

3. Demonstrate the staging environment and various commits

```
SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$ ll
total 8
-rw-r--r-- 1 SMIT 197121  657 Sep 22 11:03 index.html
-rw-r--r-- 1 SMIT 197121 2049 Sep 22 10:57 registration.html

SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$ git commit -m "First commit"
[master (root-commit) 2541845] First commit
 2 files changed, 149 insertions(+)
 create mode 100644 index.html
 create mode 100644 registration.html

SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$ git log
commit 25418457e698ddcfa9684e1fd45e2ee09d1f4131 (HEAD -> master)
Author: JayAmbeProgrammer <smitrpatel19@gnu.ac.in>
Date:   Wed Sep 29 09:56:53 2021 +0530

    First commit

SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$
```

4. Add a file in to the staging environment

```
SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$ git add pr7_git.txt

SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$ git status
On branch master
nothing to commit, working tree clean

SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$
```

After doing git add “filename” when we see the status of the file using git status command we can see that the file is in the staging area.

5. Create commit and new branches

```
SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$ git commit -m "First commit"
On branch master
nothing to commit, working tree clean

SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$ git status
On branch master
nothing to commit, working tree clean

SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$
```

The file has been

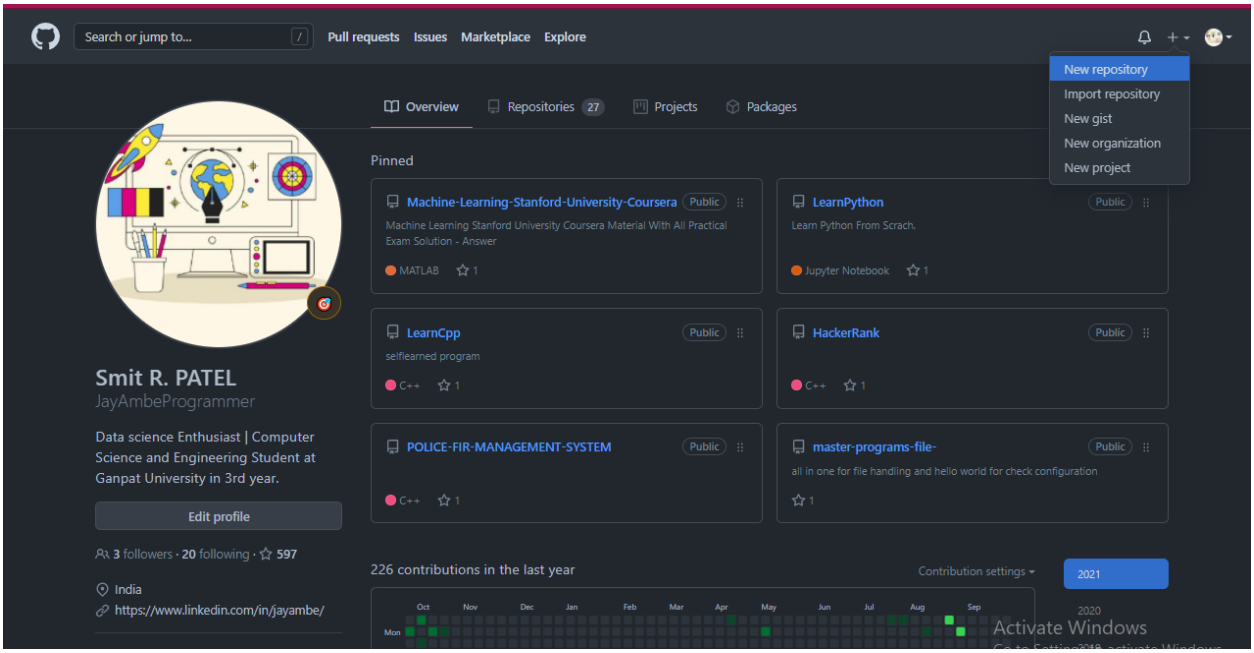
commited.Now

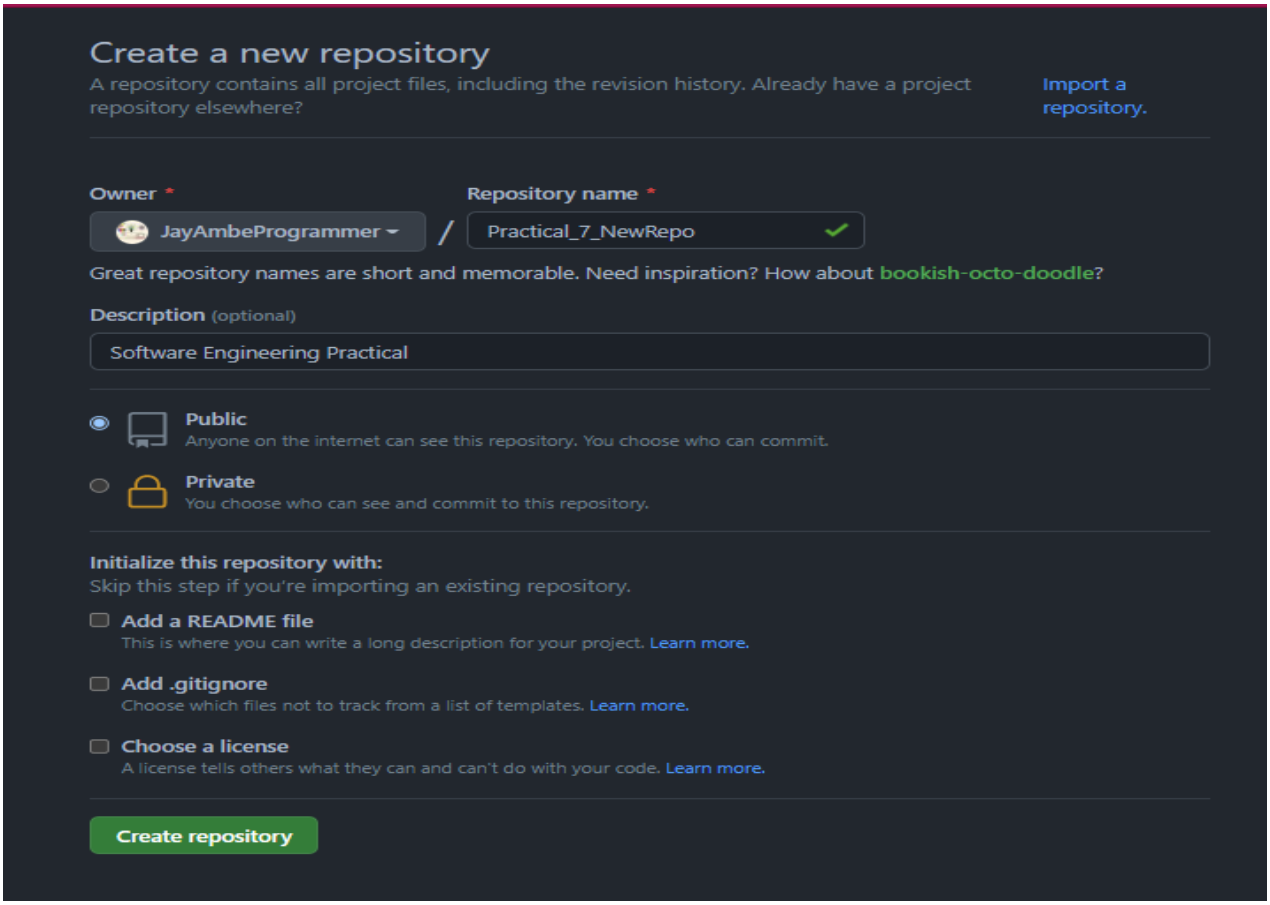
creating new branch:-

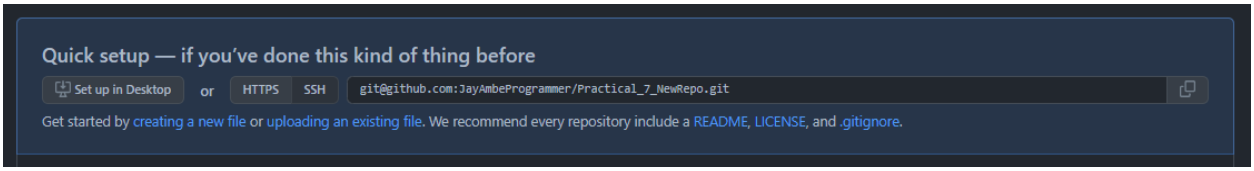
```
SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$ git branch
* master

SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$ git checkout -b newBranch
Switched to a new branch 'newBranch'

SMIT@MacBook-Air MINGW64 ~/Desktop/se (newBranch)
$ git branch
  master
* newBranch

SMIT@MacBook-Air MINGW64 ~/Desktop/se (newBranch)
$
```

First there was only “master” branch but after using git checkout -b newBranch it will create a newbranch and will move us to the new branch.

6. Create a new repository on Github.





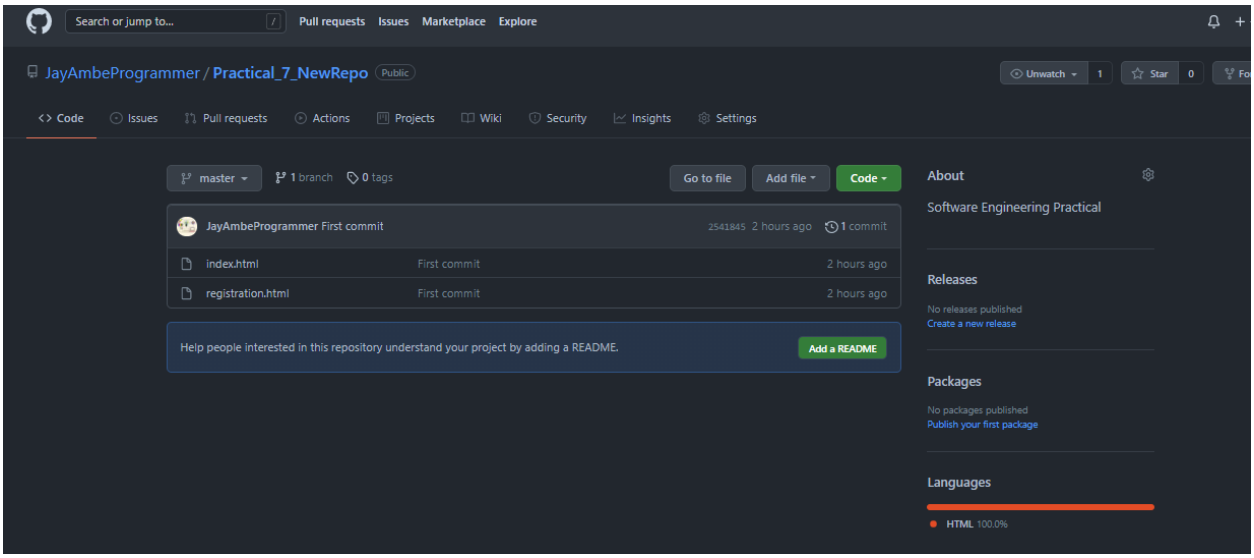



```
SMIT@MacBook-Air MINGW64 ~/Desktop/se (newBranch)
$ git remote add origin https://github.com/JayAmbeProgrammer/Practical_7_NewRepo

SMIT@MacBook-Air MINGW64 ~/Desktop/se (newBranch)
$
```

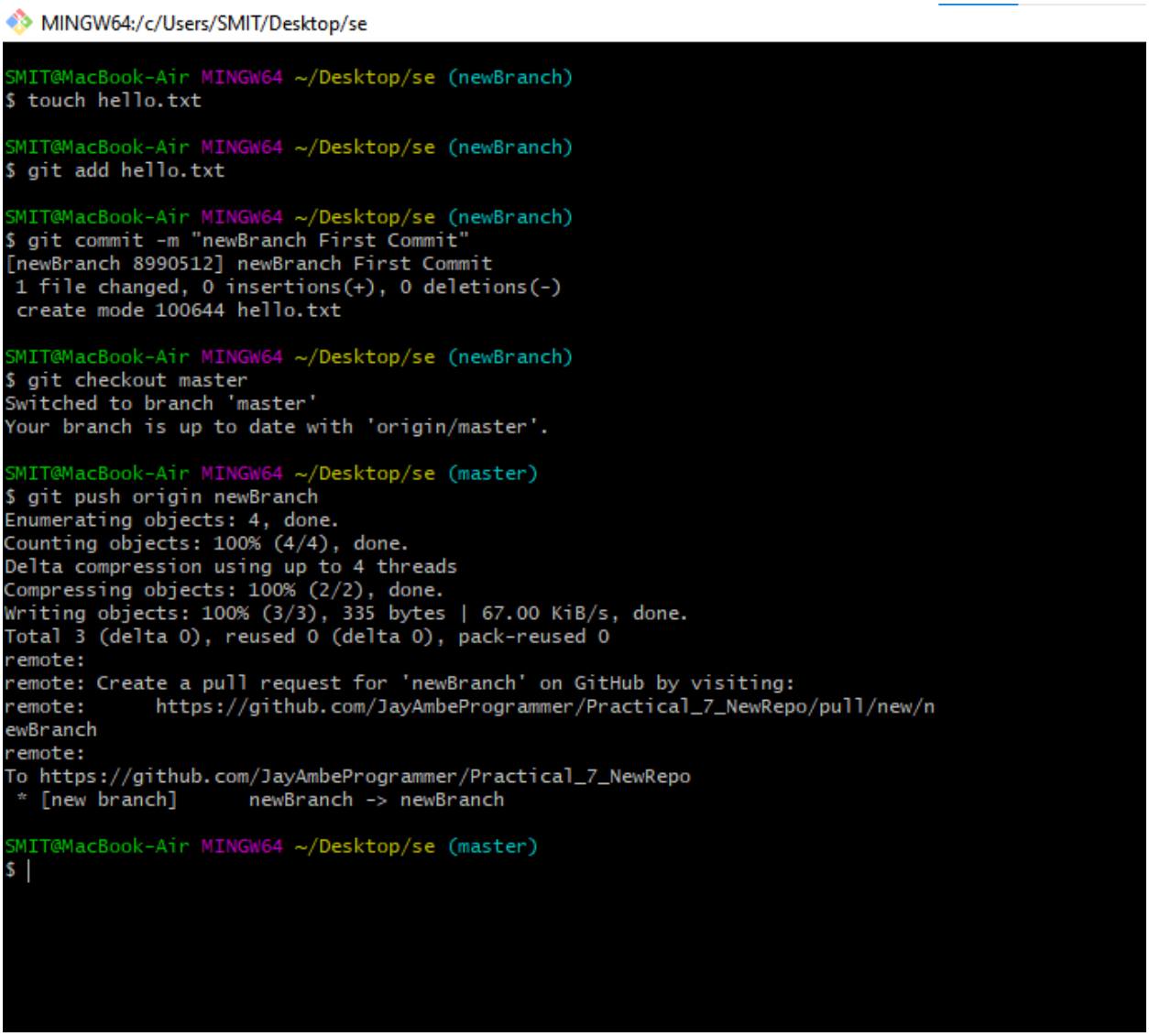
Added Git repository to local folder

```
SMIT@MacBook-Air MINGW64 ~/Desktop/se (newBranch)
$ git push -u origin master
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 4 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 1.44 KiB | 367.00 KiB/s, done.
Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/JayAmbeProgrammer/Practical_7_NewRepo
 * [new branch]      master -> master
Branch 'master' set up to track remote branch 'master' from 'origin'.

SMIT@MacBook-Air MINGW64 ~/Desktop/se (newBranch)
$
```

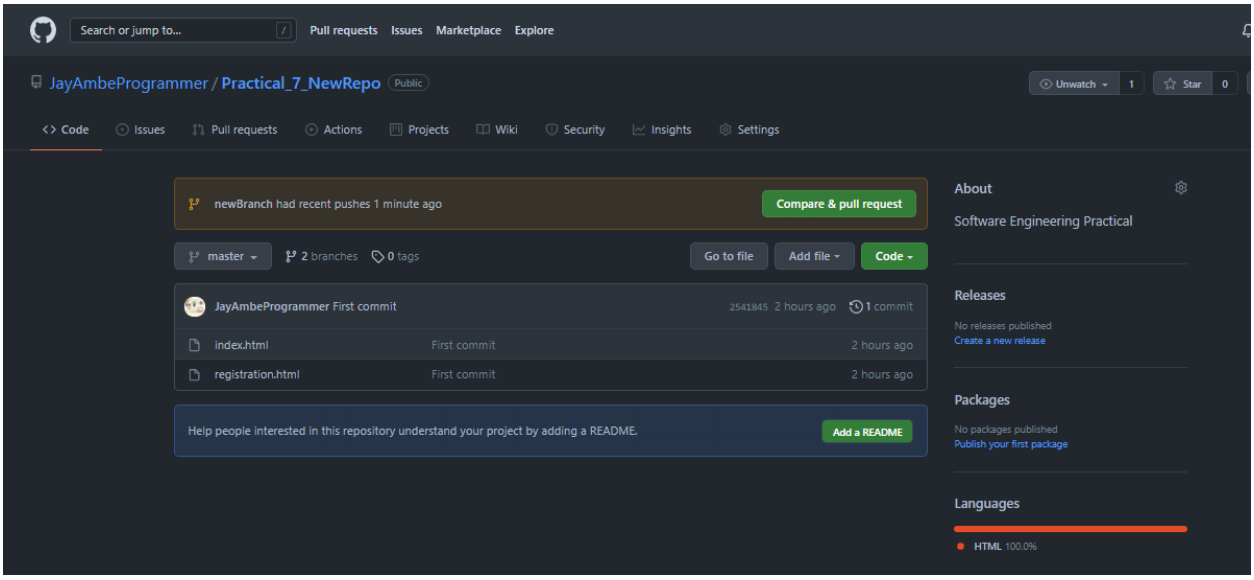
Pushed file to git.



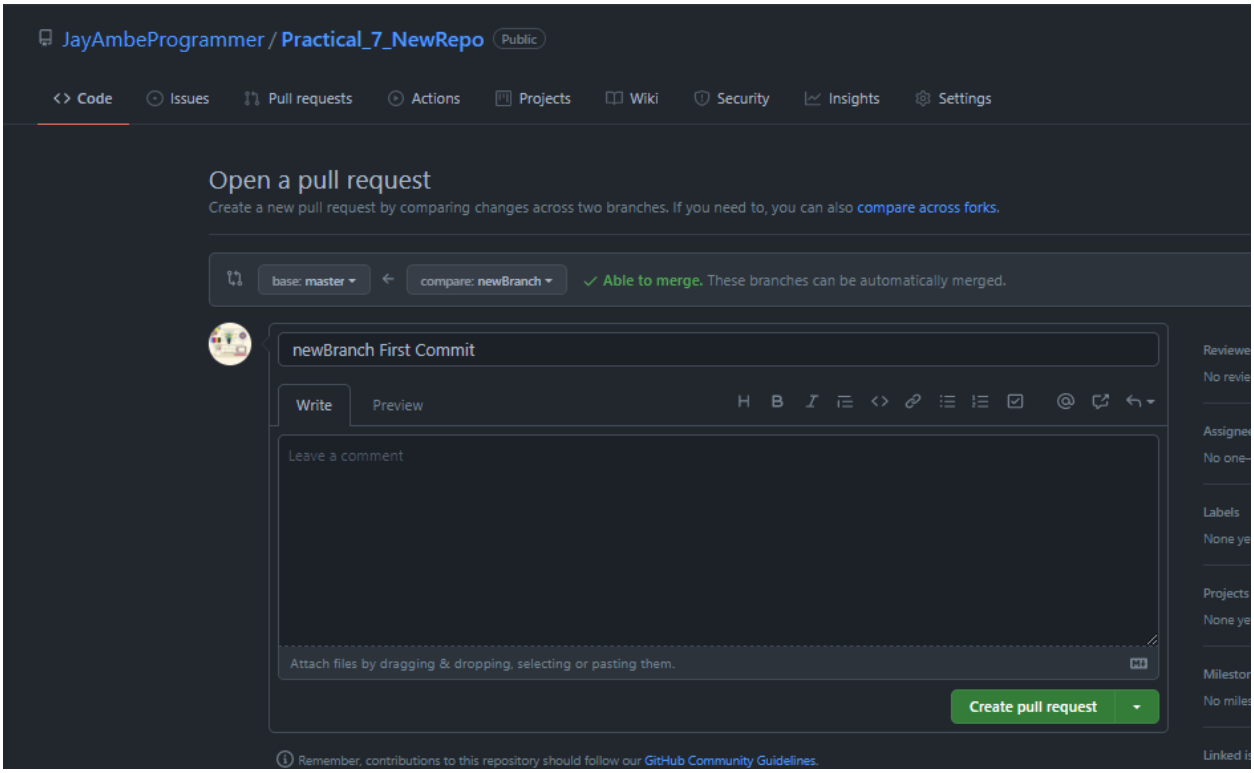
7. Pushing a branch to Github



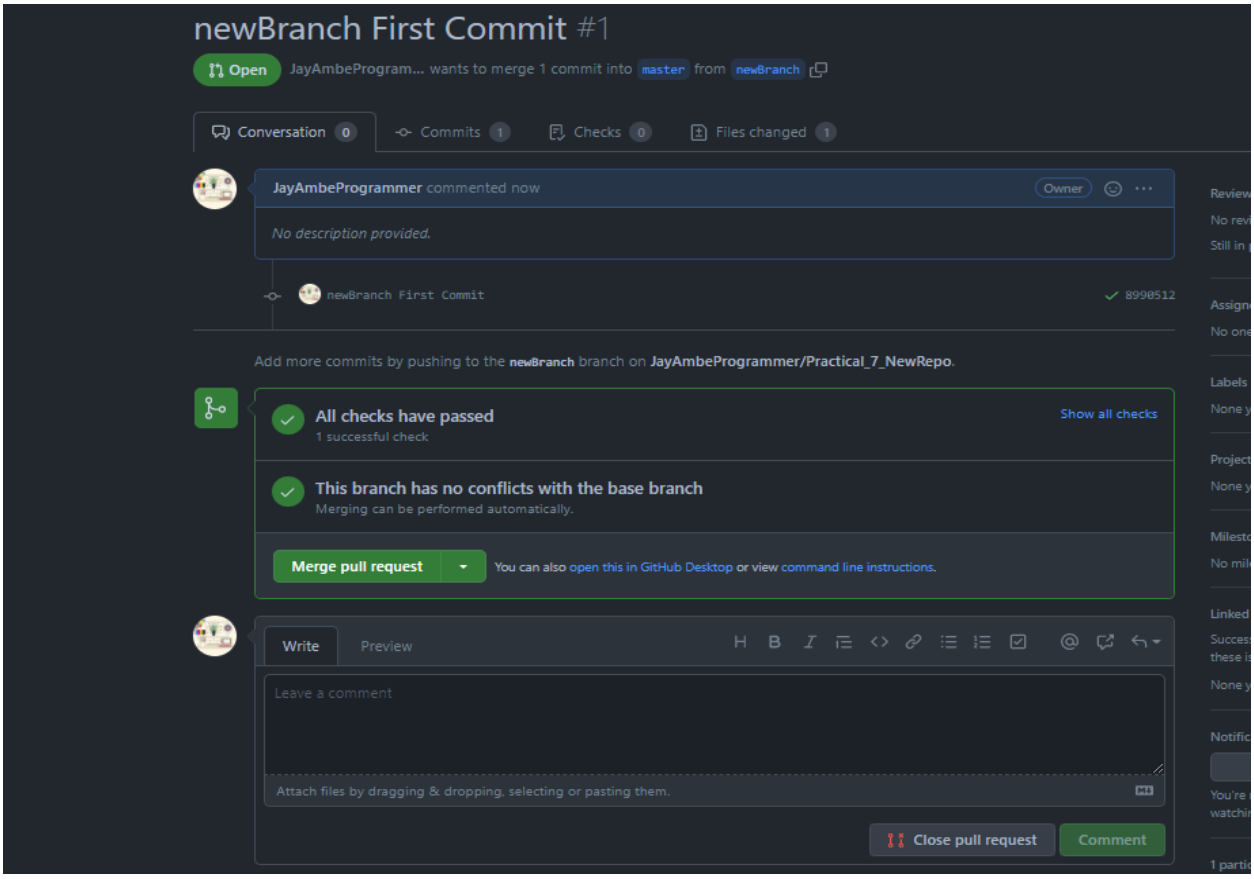
Here I created and commited a new file in newBranch branch then from master branch I PushednewBranch to github

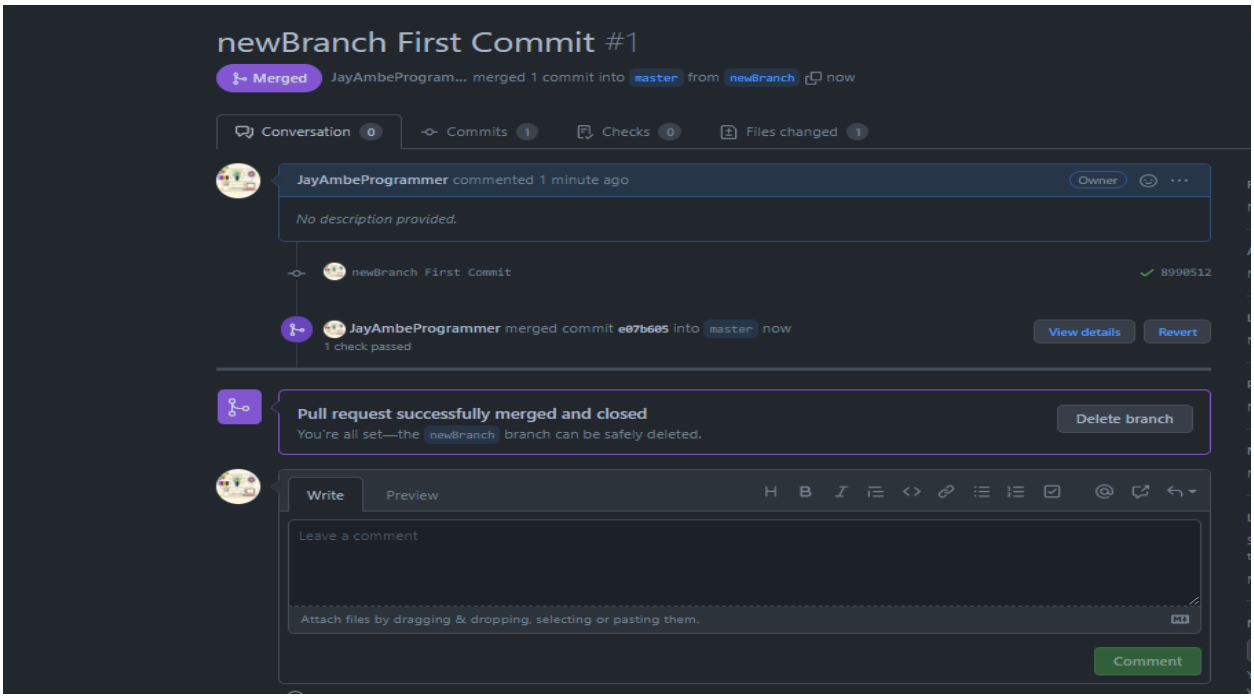


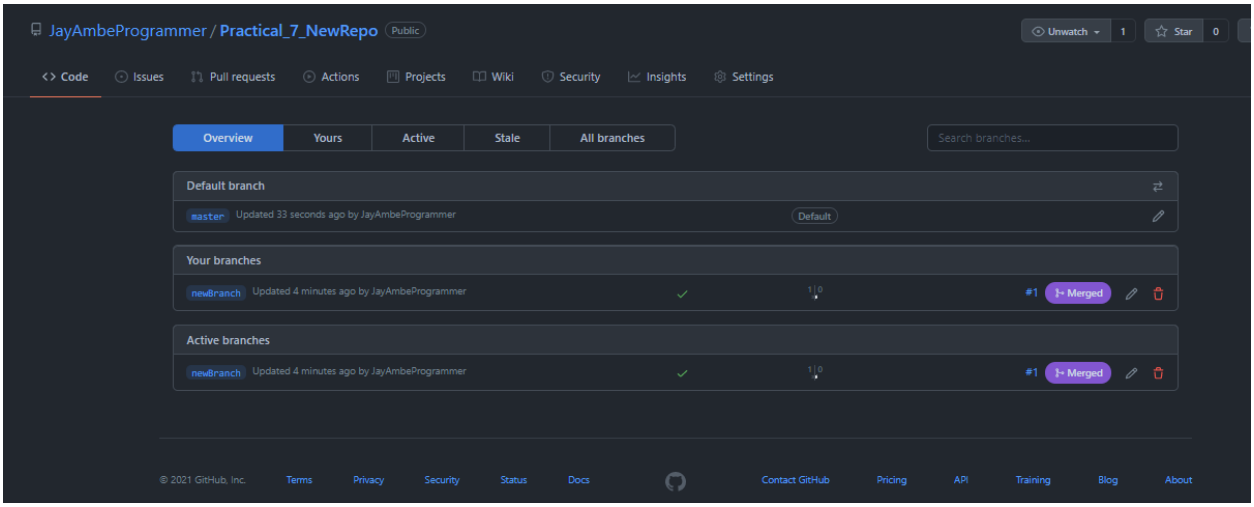
Here there are difference in master branch and newBranch so after clicking “Compare and pull request” it will change the master branch.



8. Managing Pull Request for your projects (PRs)



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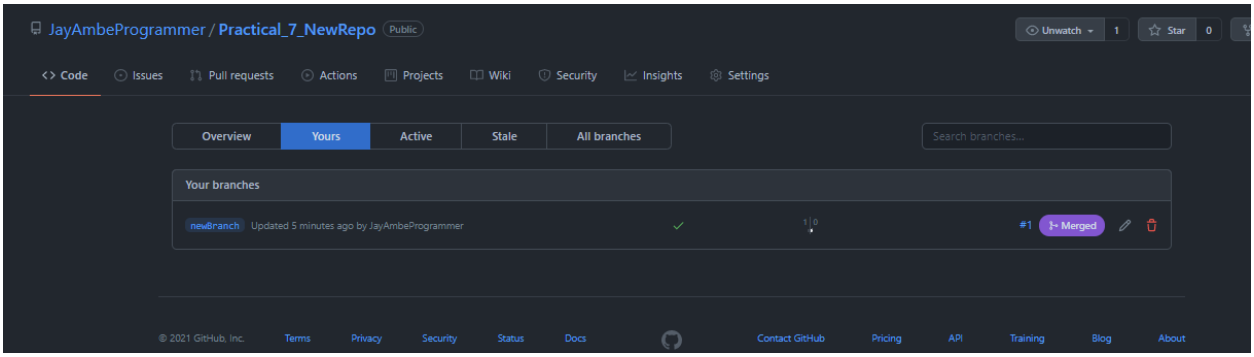
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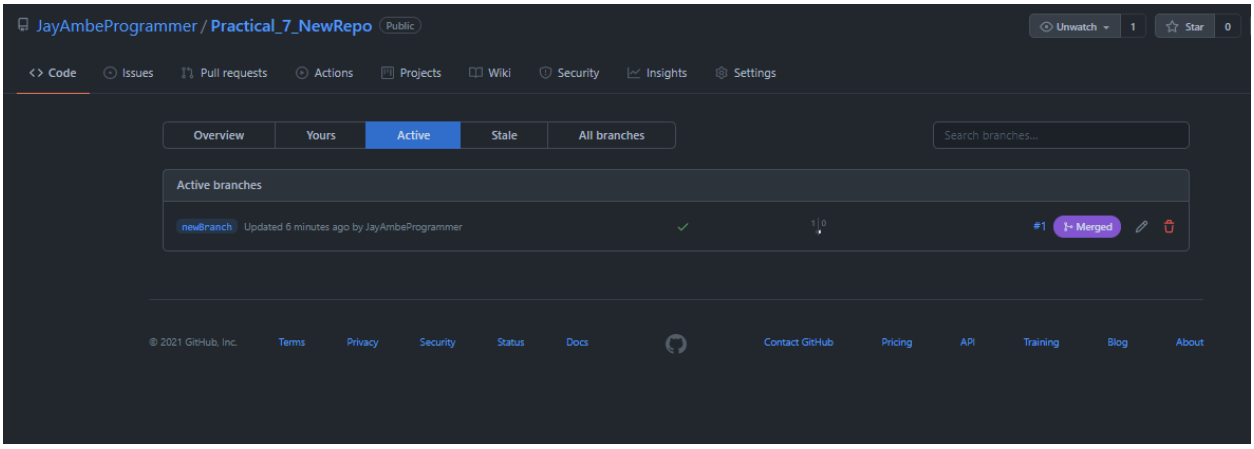
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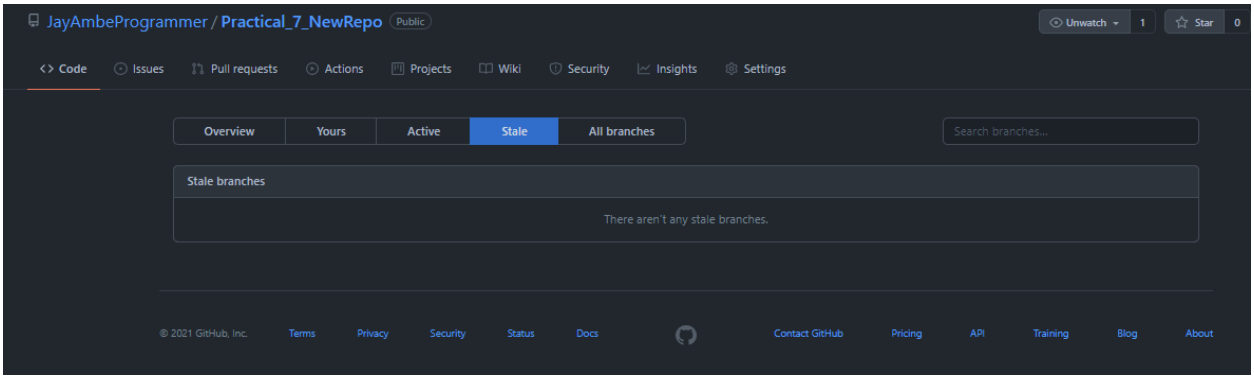
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Stale branches
There aren't any stale branches.
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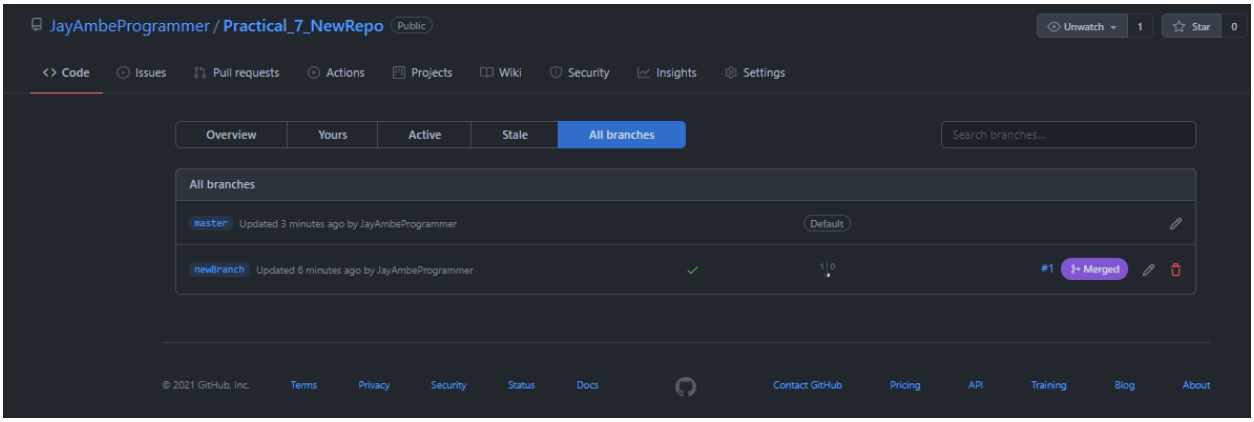
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All branches
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All branches
master
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Updated 6 minutes ago by JayAmbeProgrammer
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9. Managing changes back to your Local PC from Github

```
SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$ git pull origin master
remote: Enumerating objects: 1, done.
remote: Counting objects: 100% (1/1), done.
remote: Total 1 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (1/1), 639 bytes | 11.00 KiB/s, done.
From https://github.com/JayAmbeProgrammer/Practical_7_NewRepo
 * branch            master     -> FETCH_HEAD
   2541845..e07b605  master     -> origin/master
Updating 2541845..e07b605
Fast-forward
 hello.txt | 0
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 hello.txt
```

Using git log we are seeing the commit we have made:-

```
SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$ git log
commit e07b60542c455d9bd7656592a315d928bd7af484 (HEAD -> master, origin/master)
Merge: 2541845 8990512
Author: Smit R. PATEL <smitrpatel19@gnu.ac.in>
Date:   Wed Sep 29 12:23:00 2021 +0530

    Merge pull request #1 from JayAmbeProgrammer/newBranch

    newBranch First Commit

commit 89905128bbb1c143900440a2fd217fcf07c5ba0b (origin/newBranch, newBranch)
Author: JayAmbeProgrammer <smitrpatel19@gnu.ac.in>
Date:   Wed Sep 29 12:19:54 2021 +0530

    newBranch First Commit

commit 25418457e698ddcfa9684e1fd45e2ee09d1f4131
Author: JayAmbeProgrammer <smitrpatel19@gnu.ac.in>
Date:   Wed Sep 29 09:56:53 2021 +0530

    First commit

SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$
```

Extra :-

Prerequiste :

1) check connection:

command :-

$ ssh -T git@github.com

```
SMIT@MacBook-Air MINGW64 ~/.ssh (master)
$ ssh -T git@github.com
git@github.com: Permission denied (publickey).
```

2) $ssh-keygen.exe

```
SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$ ssh-keygen.exe
Generating public/private rsa key pair.
Enter file in which to save the key (/c/Users/SMIT/.ssh/id_rsa):
/c/Users/SMIT/.ssh/id_rsa already exists.
Overwrite (y/n)? y
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /c/Users/SMIT/.ssh/id_rsa
Your public key has been saved in /c/Users/SMIT/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:WjBjl/Q2q/x9BRy9ojh74vtniWqwUd/yfGb+xs1lsoo SMIT@MacBook-Air
The key's randomart image is:
+---[RSA 3072]----+
|        .      . |
|       . o    . .|
|      = o +  . ..|
|     . = o o .o. |
|        S + o .. |
|       * + + .. +|
|      . * o = .Bo|
|       . = = *o+=|
|        o+E.=o=oo|
+----[SHA256]-----+
```

3) $cd "C:\Users\Admin\.ssh"

```
SMIT@MacBook-Air MINGW64 ~/Desktop/se (master)
$ cd "C:\Users\SMIT\.ssh"
```

4) $ls

```
SMIT@MacBook-Air MINGW64 ~/.ssh (master)
$ ls
id_rsa  id_rsa.pub  known_hosts  known_hosts.old
```

5) $cat id_rsa.pub

Note :- [Copy this public key & add to github-seeting -key : Paste the copied public key in ssh key and then add key.]

```
SMIT@MacBook-Air MINGW64 ~/.ssh (master)
$ cat id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABgQC+RjySB2bCqgzw4Fnn3lBzOw/lzAasSn5cuqtj96RN
nG5A5a/5VKDzPrgoma2XPB/AiicYdOUiM9VD7Sj8CqD/UFcWqCYokbPulFlhbavMKPP9bH5oGaNpS+Yp
5AplQVAffMxbrVvzVS1S4oshZiSaPcWyj9o+M7y4EgzK97ZpMG8/9m95/qttHetWZofOHMzPrOMpbW4F
MgEjyjlbeiDmOAkJyuDl5McenHUVzOZ4+WvqLwvXDvCerufGFk/19moF7PIYKHxwhSqfqJqvFgM/txXH
R+icmsA/X9qClujAh2nYodnYrdKaLpvjUQWMOeHhfWERZxinK+TKtTkluAmb3uNWu4zQO+PeequxxqBD
Lp5d4R7Gp3JxDPWa5m9rNDKum4oVeNk6ZgLRm6iDHujN53ZkRyF/t9wJpx7BWKENVVOOs8t4kvzdy9Fp
AdXOzT1H1HPXC5fYj4BKjB6IU+b+ksSYvSQ4OZMs9oxEtnDh9nJkEjLov4u/VlLHCE8LKOs= SMIT@Ma
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```

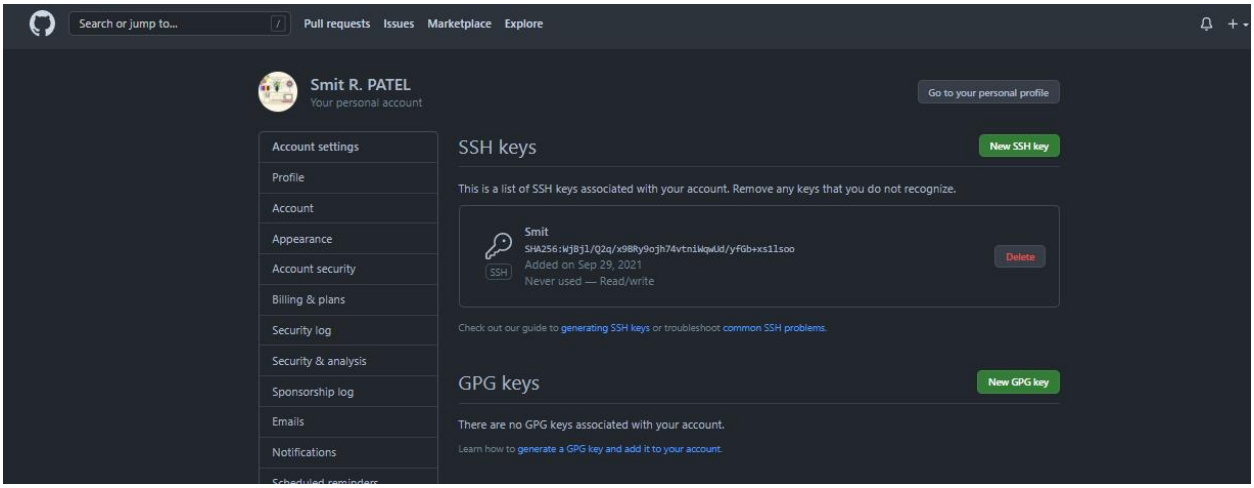

6) Check SST connection again using

$ssh -T git@github.com

```
SMIT@MacBook-Air MINGW64 ~/.ssh (master)
$ ssh -T git@github.com
Hi JayAmbeProgrammer! You've successfully authenticated, but GitHub does not pro
vide shell access.
```

7)

$git config --global user.name "Smit"

$git config --global user.email "smitrpatel19@gnu.ac.in"

```
SMIT@MacBook-Air MINGW64 ~/.ssh (master)
$ git config --global user.name "Smit"

SMIT@MacBook-Air MINGW64 ~/.ssh (master)
$ git config --global user.email "smitrpatel19@gnu.ac.in"
```