GIT ASSIGNMENT 1

1. Create a New Repository.

- git init
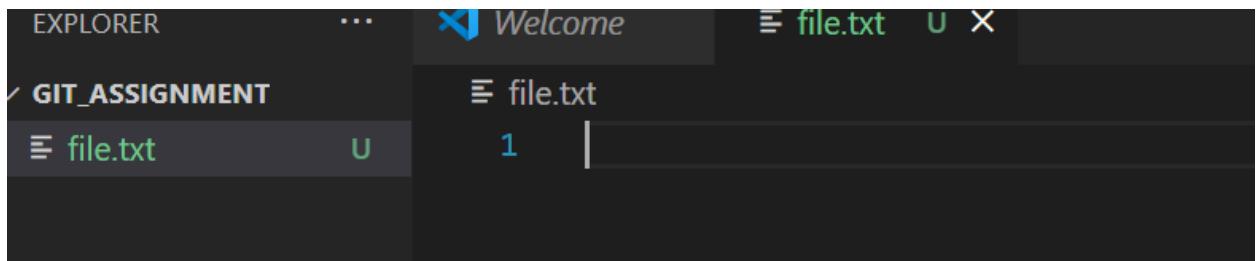
```
● PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git init
  Initialized empty Git repository in C:/Users/hp/Dropbox/My PC (LAPTOP-GQ1783RA)/Desktop/git_assignment/.git/
○ PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment>
```

- git remote add origin https://github.com/adarsh-codes/git_assignment_

```
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git remote add origin https://github.com/adarsh-codes/g
it_assignment_
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment>
```

---

2. Create a New File

- Created file.txt

```
EXPLORER                    ...        Welcome              file.txt   U X
✓ GIT_ASSIGNMENT                           file.txt
   file.txt                     U         1        |
```

3. Create a Branch

- **git branch -M master**

```
 PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git branch -M master
```

4. Make Changes in the New Branch

- Made changes in the master file.txt file.
- git add .
- git commit -m "master"
- git push -u origin master

```
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git add .
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git commit -m "master"
[master (root-commit) dbbe04c] master
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 file.txt
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git push -u origin master
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Writing objects: 100% (3/3), 206 bytes | 206.00 KiB/s, done.
```
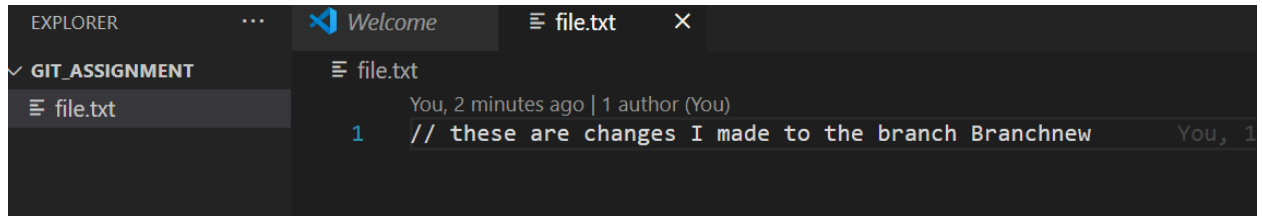
5. Create Another Branch (Optional)

- Created another branch named Branchnew

```
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git branch
* master
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git branch Branchnew
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git branch
  Branchnew
* master
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment>
```

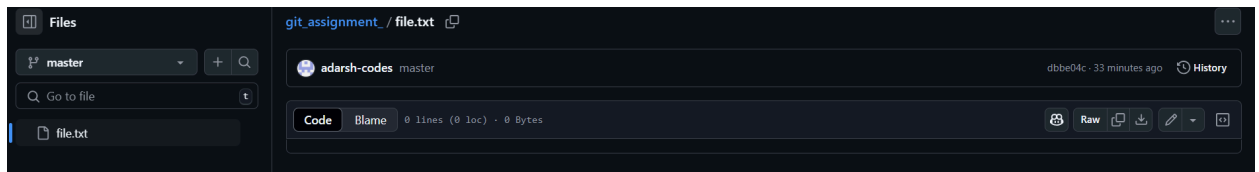- git checkout Branchnew (switch to the branch Branchnew)

```
> PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git checkout Branchnew
  Switched to branch 'Branchnew'
  PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git branch
* Branchnew
    master
> PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment>
```

```
EXPLORER                    ...     ⚡ Welcome          ≡ file.txt    ×

∨ GIT_ASSIGNMENT                    ≡ file.txt

  ≡ file.txt                              You, 2 minutes ago | 1 author (You)
                                    1     // these are changes I made to the branch Branchnew        You, 1
```
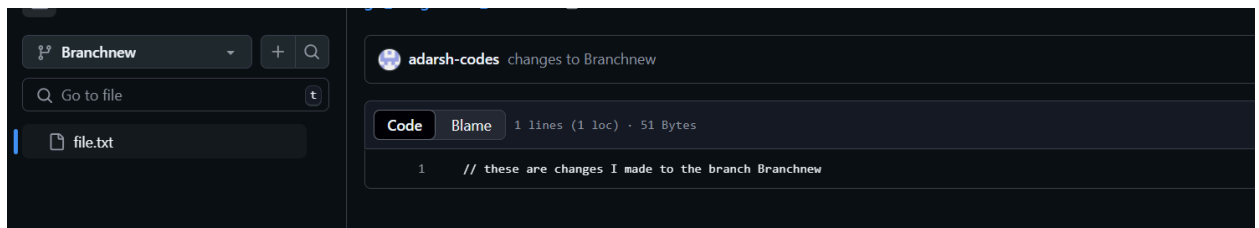
- Made changes to the branch Branchnew which is only visible to the Branchnew

```
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git add .
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git commit -m "changes to Branchnew"
[Branchnew 553b8ae] changes to Branchnew
 1 file changed, 1 insertion(+)
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git push origin Branchnew
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
```

- master branch file.txt looks like this

```
⊞  Files                         git_assignment_ / file.txt  ⧉                                               ...

⑂ master            ▾  +  Q       ⊕ adarsh-codes  master                        dbbe04c · 33 minutes ago  🕘 History

Q Go to file                t
                                  Code   Blame   0 lines (0 loc) · 0 Bytes                     ⊗  Raw  ⧉ ⊻  ∕ ▾  ⟨⟩
  ⧉ file.txt
```

- Branchnew branch file.txt looks like this now

```
⑂ Branchnew           ▾  +  Q       ⊕ adarsh-codes  changes to Branchnew

Q Go to file                t
                                    Code   Blame   1 lines (1 loc) · 51 Bytes
  ⧉ file.txt
                                        1      // these are changes I made to the branch Branchnew
```

6. Merge Branches

- **git checkout master (back to the master branch)**

```
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment>
```
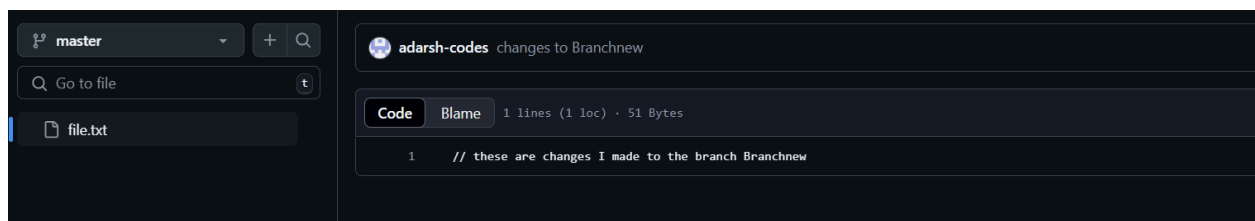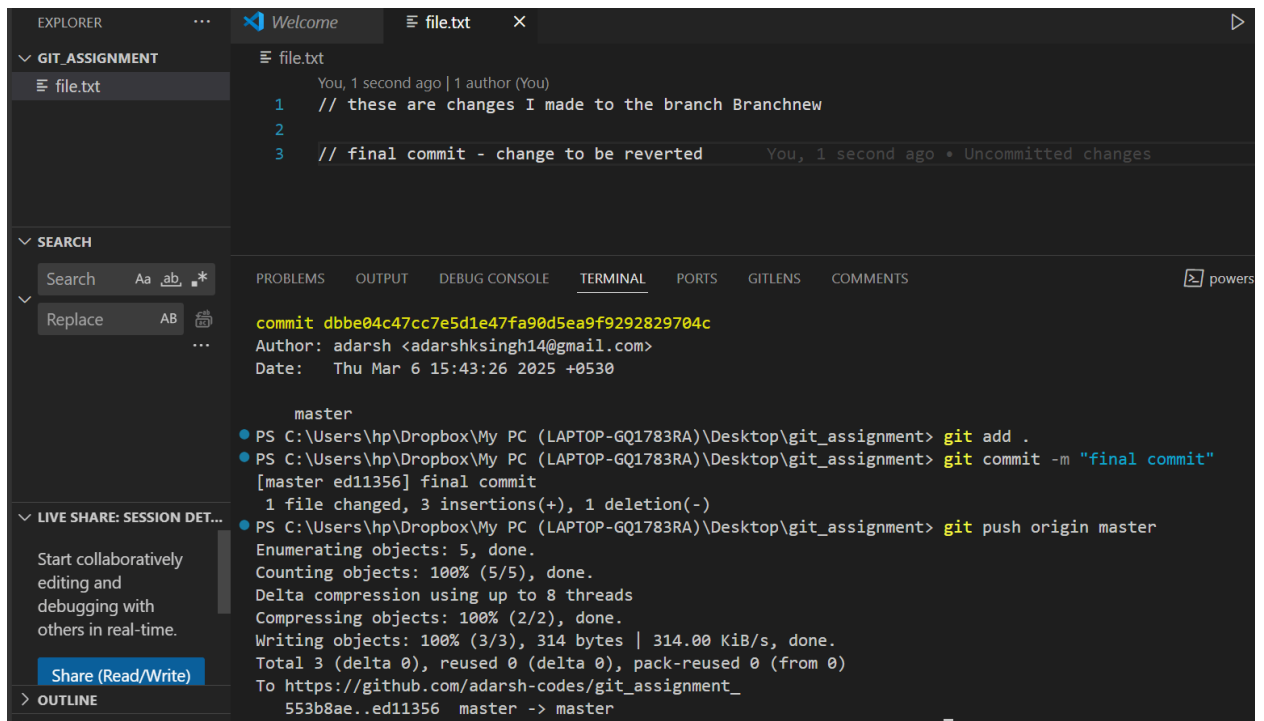
- **git merge Branchnew**

```
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git merge Branchnew
Updating dbbe04c..553b8ae
Fast-forward
 file.txt | 1 +
 1 file changed, 1 insertion(+)
```

- **git push origin master**

```
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git push origin master
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/adarsh-codes/git_assignment_
   dbbe04c..553b8ae  master -> master
```

Now to the master branch we merged the Branchnew branch and now the file changed merge will be visible in the master branch as well.

```
⌥ master              ▾   + Q        adarsh-codes  changes to Branchnew

Q Go to file              t

🗋 file.txt                     Code   Blame   1 lines (1 loc) · 51 Bytes

                                  1       // these are changes I made to the branch Branchnew
```

7. Pull Changes from Remote

- **git pull origin master**

```
dbbe04c..5558dae  master -> master
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git pull origin master
From https://github.com/adarsh-codes/git_assignment_
 * branch            master      -> FETCH_HEAD
Already up to date.
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment>
```

8. View Git Log and History

- **git log**

```
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git log
commit 553b8aecb9b96c40df7b4a0e7be49f66c7cbee9b (HEAD -> master, origin/master, origin/Branchnew, Branchnew)
Author: adarsh <adarshksingh14@gmail.com>
Date:   Thu Mar 6 16:14:08 2025 +0530

    changes to Branchnew

commit dbbe04c47cc7e5d1e47fa90d5ea9f9292829704c
Author: adarsh <adarshksingh14@gmail.com>
```

9. Git Status and Staging

- git status

```
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git status
On branch master
Your branch is up to date with 'origin/master'.

nothing to commit, working tree clean
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment>
```

- **git add .**

```
nothing to commit, working tree clean
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git add .
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment>
```

- **git commit -m "commit-check"**

```
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git commit -m  "commit-check"
On branch master
Your branch is up to date with 'origin/master'.

nothing to commit, working tree clean
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment>
```

- **git push -u origin master**

```
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git push -u origin master
branch 'master' set up to track 'origin/master'.
Everything up-to-date
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment>
```

10. Revert and Reset

- Made changes to the file.txt

    - git add .
    - git commit -m "final commit"
    - git push origin master

- **git log –oneline (to get the commit hash to revert)**

- **git revert ed31156**


```
final commit reverted

This reverts commit ed113563c0d2177588ddafd9c9dc88f54413ed22.
# Please enter the commit message for your changes. Lines starting
# with '#' will be ignored, and an empty message aborts the commit.
#
# On branch master
# Your branch is up to date with 'origin/master'.
#
# Changes to be committed:
#       modified:   file.txt
#
~
~
~
~
~
.git/COMMIT_EDITMSG[+] [unix] (17:12 06/03/2025)                    2,0-1 All
:wq
```

```
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git revert ed11356
[master c4c4f49] final commit reverted
 1 file changed, 1 insertion(+), 3 deletions(-)
```

- **git log**


```
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git log
commit c4c4f49fc8fd3b95bd3990bdb7e99ffd99befd99 (HEAD -> master)
Author: adarsh <adarshksingh14@gmail.com>
Date:   Thu Mar 6 17:12:55 2025 +0530

    final commit reverted

    This reverts commit ed113563c0d2177588ddafd9c9dc88f54413ed22.

commit ed113563c0d2177588ddafd9c9dc88f54413ed22 (origin/master)
Author: adarsh <adarshksingh14@gmail.com>
Date:   Thu Mar 6 17:09:33 2025 +0530

    final commit

commit 553b8aecb9b96c40df7b4a0e7be49f66c7cbee9b (origin/Branchnew, Branchnew)
Author: adarsh <adarshksingh14@gmail.com>
Date:   Thu Mar 6 16:14:08 2025 +0530
```

- **git push origin master**

```
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git push origin master
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 284 bytes | 284.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/adarsh-codes/git_assignment_
   ed11356..c4c4f49  master -> master
```

GIT REMOTE REPOSITORY

RESET -

Reset is used in cases where we need to change the history of commits also. While revert was used just to revert a commit and make a new commit of it.
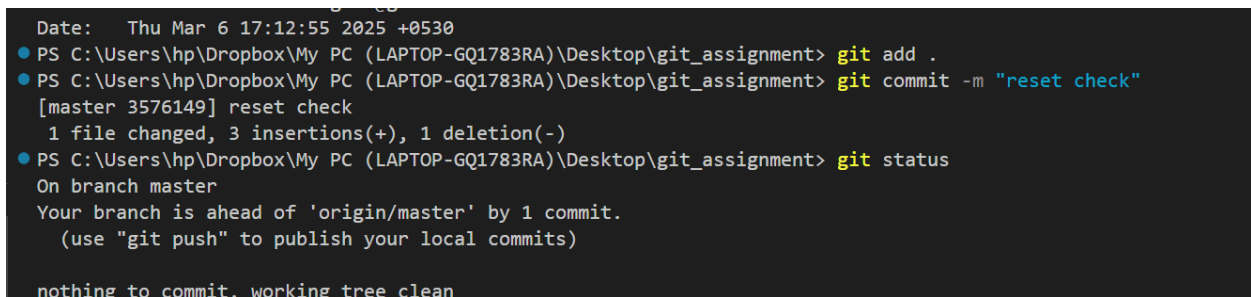We use reset when we need to reset the local commits before pushing it into the remote repository. No extra commit is created in the git log.

- **Making some change in the files.**
- **// reset example is new change**

- **git add .**
- **git commit -m "reset check"**
- **git status**

NOW RESET THE LATEST COMMIT (HEAD~1)

- **git reset –soft HEAD~1**
- **git status**

```
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git reset --soft  HEAD~1
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git status
On branch master
Your branch is up to date with 'origin/master'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   file.txt
```

After un-commiting the file goes into staged area again. This is what soft reset does.

TO MAKE THE CHANGES RESET COMMIT AND UNSTAGED, WE CAN USE MIXED RESET

- **git reset –mixed HEAD~1**
- **git status**

```
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git reset --mixed HEAD~1
Unstaged changes after reset:
M       file.txt
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git status
On branch master
Your branch is behind 'origin/master' by 1 commit, and can be fast-forwarded.
  (use "git pull" to update your local branch)

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:   file.txt
```

The changes have been unstaged now.

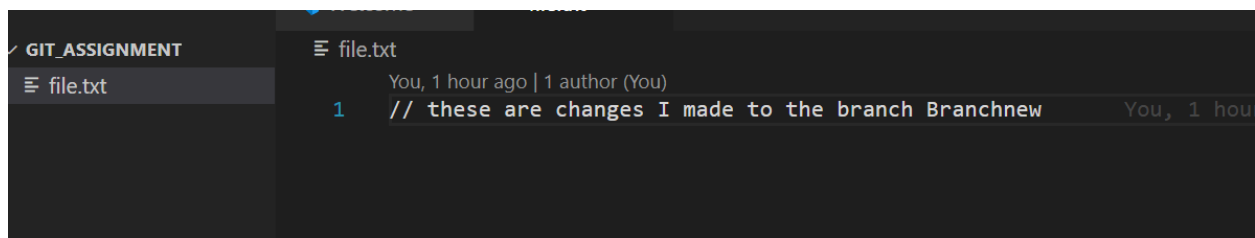**TO COMPLETELY REMOVE THE HISTORY OF COMMITS, WE USE HARD RESET -**

- **git reset –hard HEAD~1**
- **git status**

```
no changes added to commit (use "git add" and/or "git commit -a")
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git reset --hard HEAD~1
HEAD is now at c4c4f49 final commit reverted
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment> git status
On branch master
Your branch is behind 'origin/master' by 2 commits, and can be fast-forwarded.
  (use "git pull" to update your local branch)

nothing to commit, working tree clean
PS C:\Users\hp\Dropbox\My PC (LAPTOP-GQ1783RA)\Desktop\git_assignment>
```

USING HARD RESET, WE GO BACK TO THE COMMIT BEFORE THE ONE WE HAVE TILL HARD RESET.

AFTER HARD RESET, OUR FILE LOOKS LIKE BEFORE THIS COMMIT - ALL CHANGES UNDONE.

```
GIT_ASSIGNMENT                    ≡ file.txt
  ≡ file.txt                             You, 1 hour ago | 1 author (You)
                                    1      // these are changes I made to the branch Branchnew      You, 1 hou
```

—--X—--------------------------------------