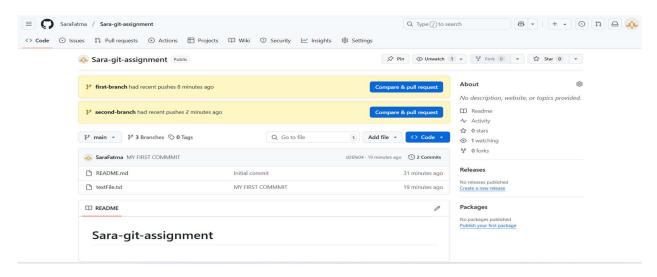
Sara Fatma Git Assignment - NucleusTeq

Objective: The goal of this assignment is to help you get familiar with basic Git commands and workflows, which are commonly used in real-world software development.

- 1. Create a New Repository.
- 2. Create a New File
- 3. Create a Branch
- 4. Make Changes in the New Branch
- 5. Create Another Branch (Optional)
- 6. Merge Branches
- 7. Pull Changes from Remote
- 8. View Git Log and History
- 9. Git Status and Staging
- 10. Revert and Reset

Solutions:

1.Create a New Repository.



2. Create a New File

//First cloned the repo to local

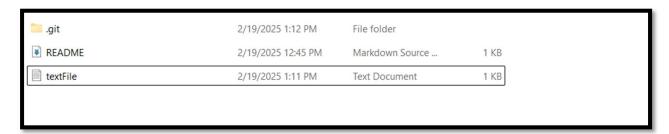
```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment

$ git clone https://github.com/SaraFatma/Sara-git-assignment.git
Cloning into 'Sara-git-assignment'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (3/3), done.

ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment

$ cd Sara-git-assignment
```

//Then created a Textfile



// Inside the Textfile



// Added the textFile to the staging area

// And then Committed

```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara
-git-assignment (main)
$ git add textFile.txt

ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara
-git-assignment (main)
$ git commit -m "MY FIRST COMMMIT"
[main d26fe04] MY FIRST COMMMIT
1 file changed, 1 insertion(+)
create mode 100644 textFile.txt
```

//Pushing the changes to remote

```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (main)

$ git push origin main
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 317 bytes | 317.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/SaraFatma/Sara-git-assignment.git
    ae6addc..d26fe04 main -> main
```

3. Create a Branch

ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (main)
\$ git branch first-branch

4. Make Changes in the New Branch

//Changing the textFile

```
1 hi how are u!!!
2 added new line
```

// Committing the changes

```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (main)
$ git checkout first-branch
Switched to branch 'first-branch'

ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (first-branch)
$ git add textFile.txt

ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (first-branch)
$ git commit -m "SECOND COMMIT EDITED FILE"
[first-branch 61e21cb] SECOND COMMIT EDITED FILE
1 file changed, 2 insertions(+), 1 deletion(-)
```

5. Create Another Branch (Optional)

```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (main)

$ git branch second-branch
```

//Reviewing all the branches

We in total have 3 branches now

Main

First-branch

Second-branch

```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (main)

git branch -a
first-branch

main

second-branch

remotes/origin/HEAD -> origin/main

remotes/origin/main
```

// Adding changes in the second branch

```
1 hi how are u!!!
2 in second branch
```

//Committing the changes

```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (first-branch)

$ git checkout second-branch
Switched to branch 'second-branch'

ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (second-branch)

$ git add textFile.txt

ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (second-branch)

$ git commit -m "Third COMMIT EDITED FILE"

[second-branch c05879d] Third COMMIT EDITED FILE

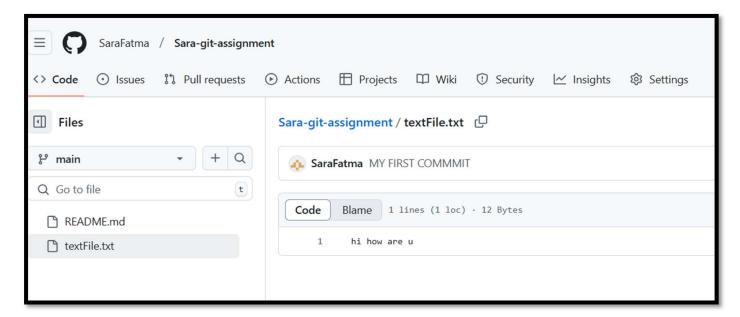
1 file changed, 2 insertions(+), 1 deletion(-)
```

//Pushing changes to the remote repo

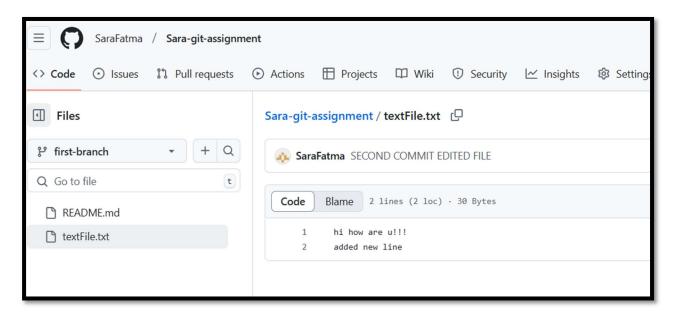
```
ISUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeg/Training/Git/Sara git assignment/Sara-git-assignment (second-branch)
 git push origin second-branch
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
writing objects: 100% (3/3), 345 bytes | 345.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
emote:
remote: Create a pull request for 'second-branch' on GitHub by visiting:
            https://github.com/SaraFatma/Sara-git-assignment/pull/new/second-branch
emote:
emote:
To https://github.com/SaraFatma/Sara-git-assignment.git
                    second-branch -> second-branch
  [new branch]
```

// TextFile in all the 3 branches

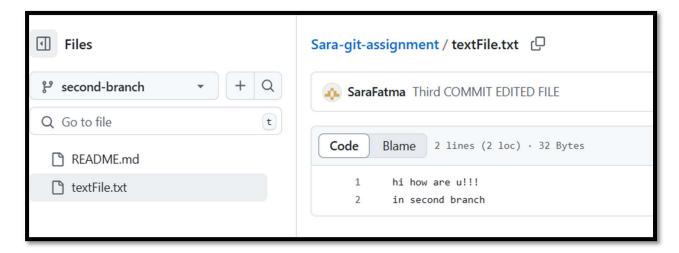
Main



First-branch



Second-branch



6. Merge Branches

// Before merging, **Git will attempt to merge changes automatically**, but if there are conflicts (i.e., different changes made to the same part of a file in both branches), Git **stops the merge and asks you to resolve conflicts manually**.

//switched to the first-branch

//conflict

```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (second-branch) git checkout first-branch
Switched to branch 'first-branch'

ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (first-branch) git merge second-branch
Auto-merging textFile.txt
CONFLICT (content): Merge conflict in textFile.txt
Automatic merge failed; fix conflicts and then commit the result.
```

// conflict came as I tried to edit or modify the same line in both the braches

//Therefore, I will manually edit the textFile in one of the branches and push the changes

// committed the changes

```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (first-branch|MERGING)
$ git add textFile.txt

ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (first-branch|MERGING)
$ git commit -m "Resolving the conflict"
[first-branch aa55afa] Resolving the conflict

ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (first-branch)
$ git push origin first-branch
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 350 bytes | 350.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/SaraFatma/Sara-git-assignment.git
61e21cb..aa55afa first-branch -> first-branch
```

//Merged the braches first-branch and second-branch

```
SUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeg/Training/Git/Sara git assignment/Sara-git-assignment (second-branch)
$ git checkout first-branch
Switched to branch 'first-branch'
 SUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeg/Training/Git/Sara git assignment/Sara-git-assignment (first-branch)
 $ git merge second-branch
Auto-merging textFile.txt
CONFLICT (content): Merge conflict in textFile.txt
Automatic merge failed; fix conflicts and then commit the result.
 SUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeg/Training/Git/Sara git assignment/Sara-git-assignment (first-branch|MERGING)
$ git add textFile.txt
 SUSQLAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (first-branch|MERGING)
  git commit -m "Resolving the conflict 3"
 [first-branch cd3df64] Resolving the conflict 3
  SUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeg/Training/Git/Sara git assignment/Sara-git-assignment (first-branch)
 $ git push origin first-branch
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 374 bytes | 374.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/SaraFatma/Sara-git-assignment.git
   aa55afa..cd3df64 first-branch -> first-branch
  SUSQLAPTOP-INSOC192 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (first-branch)
 git merge second-branch
 Already up to date.
```

```
$ git checkout first-branch
Switched to branch 'first-branch'
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeg/Training/Git/Sara git assignment/Sara
$ git merge second-branch
Auto-merging textFile.txt
CONFLICT (content): Merge conflict in textFile.txt
Automatic merge failed; fix conflicts and then commit the result.
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara
$ git add textFile.txt
$ git commit -m "Resolving the conflict 3"
[first-branch cd3df64] Resolving the conflict 3
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeg/Training/Git/Sara git assignment/Sara
$ git push origin first-branch
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 374 bytes | 374.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/SaraFatma/Sara-git-assignment.git
  aa55afa..cd3df64 first-branch -> first-branch
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara
$ git merge second-branch
Already up to date.
```

7. Pull Changes from Remote

//First committed a change in the remote repo



//Now Pulling the changes

```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeg/Training/Git/Sara git assignment/Sara-git-assignment (first-branch)
 git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeg/Training/Git/Sara git assignment/Sara-git-assignment (main)
 git pull origin main
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (3/3), 965 bytes | 107.00 KiB/s, done.
rom https://github.com/SaraFatma/Sara-git-assignment
* branch
                    main
                               -> FETCH_HEAD
  d26fe04..2c4be0c main
                                -> origin/main
Updating d26fe04..2c4be0c
Fast-forward
textFile.txt | 3 ++-
1 file changed, 2 insertions(+), 1 deletion(-)
```

//Checking the changes

```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (main)

$ cat textFile.txt
hi how are u
Will pull this change
```

```
File Edit View

hi how are u

Will pull this change
```

8. View Git Log and History

//main branch

```
ASUSQLAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (main)

$ git log
commit 2c4be0ca9aeb5fe047cf533d37e17177371c8602 (HEAD -> main, origin/main, origin/HEAD)
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 14:43:14 2025 +0530

UpdateToPull textFile

commit d26fe04c11990d8c08d7e73e12ae7477bdfabb81
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 12:54:59 2025 +0530

MY FIRST COMMMIT

commit ae6addca86c5e030fcbabb4f26746f718853f680
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 12:43:38 2025 +0530

Initial commit
```

//first-branch

```
GUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (main)
 git checkout first-branch
witched to branch 'first-branch'
  SUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (first-branch)
s git log
commit cd3df64e36558ebf7fd735ec3fc670cc373e2255 (HEAD -> first-branch, origin/first-branch)
derge: aa55afa ffbc31e
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 14:11:01 2025 +0530
     Resolving the conflict 3
commit ffbc31e3122e73cd1c12d946ac6508d08e6d362e (origin/second-branch, second-branch)
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 14:04:56 2025 +0530
     Resolving the conflict 2
commit aa55afaf6acaa481e7651934fab243b61893d991
Merge: 61e21cb c05879d
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 13:48:38 2025 +0530
      Resolving the conflict
commit c05879da728e0fc9824b5542e16c3df7081c6670
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 13:12:03 2025 +0530
     Third COMMIT EDITED FILE
commit 61e21cb972471555f15067524abee0fe3c38fcdb
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 13:05:58 2025 +0530
      SECOND COMMIT EDITED FILE
commit d26fe04c11990d8c08d7e73e12ae7477bdfabb81
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 12:54:59 2025 +0530
     MY FIRST COMMMIT
     mit ae6addca86c5e030fcbabb4f26746f718853f680
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 12:43:38 2025 +0530
      Initial commit
```

//second-branch

```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (first-branch)
$ git checkout second-branch
Switched to branch 'second-branch'

ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (second-branch)
$ git log
commit ffbc3le3122e73cdlc12d946ac6508d08e6d362e (HEAD -> second-branch, origin/second-branch)
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 14:04:56 2025 +0530

Resolving the conflict 2

commit c05879da728e0fc9824b5542e16c3df7081c6670
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 13:12:03 2025 +0530

Third COMMIT EDITED FILE

commit d26fe04c11990d8c08d7e73e12ae7477bdfabb81
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 12:54:59 2025 +0530

MY FIRST COMMMIT

commit ae6addca86c5e030fcbabb4f26746f718853f680
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 12:43:38 2025 +0530

Initial commit
```

9. Git Status and Staging

//STATUS

```
@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (second-branch)
$ git status
On branch second-branch
nothing to commit, working tree clean
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (second-branch)
$ git checkout first-branch
Switched to branch 'first-branch'
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (first-branch)
$ git status
On branch first-branch
nothing to commit, working tree clean
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeg/Training/Git/Sara git assignment/Sara-git-assignment (first-branch)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.
nothing to commit, working tree clean
```

//Staging

```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara
$ git add textFile.txt
```

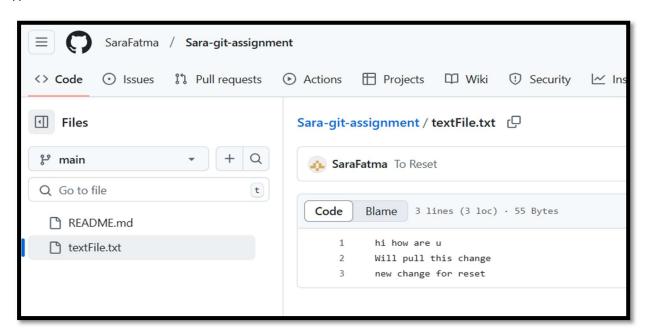
10. Revert and Reset

git reset \rightarrow Moves the branch pointer (history modification).

git revert → Creates a new commit that undoes changes (history remains intact).

// reset

//before



//git log

```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (main)
$ git log
commit 41c63ef627d7c023016bf5d14dde026bba53f079 (HEAD -> main, origin/main, origin/HEAD)
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 15:01:50 2025 +0530

To Reset

commit 2c4be0ca9aeb5fe047cf533d37e17177371c8602
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 14:43:14 2025 +0530

UpdateToPull textFile

commit d26fe04c11990d8c08d7e73e12ae7477bdfabb81
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 12:54:59 2025 +0530

MY FIRST COMMMIT

commit ae6addca86c5e030fcbabb4f26746f718853f680
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 12:43:38 2025 +0530

Initial commit
```

// Reset

```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (main)
$ git reset --hard HEAD~1
HEAD is now at 2c4be0c UpdateToPull textFile
```

// git log after Reset

```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara-git-assignment (main)

§ git log
commit 2c4be0ca9aeb5fe047cf533d37e17177371c8602 (HEAD -> main)
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 14:43:14 2025 +0530

UpdateToPull textFile

commit d26fe04c11990d8c08d7e73e12ae7477bdfabb81
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 12:54:59 2025 +0530

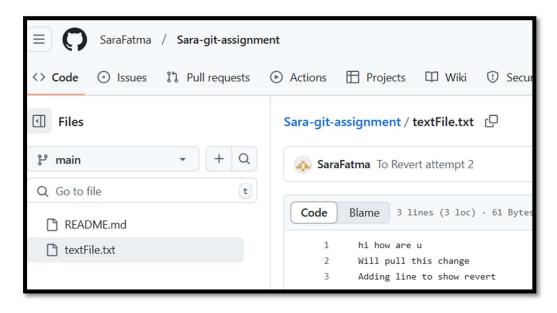
MY FIRST COMMMIT

commit ae6addca86c5e030fcbabb4f26746f718853f680
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 12:43:38 2025 +0530

Initial commit
```

//Revert

//before revert



//git log before revert

```
SUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/sara git assignment/Sara-git-assignment (main)

. git log
commit clc49648b2be05elac1b061bf569900e6248cee6 (HEAD -> main, origin/main, origin/HEAD)
uthor: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
ate: Wed Feb 19 15:11:54 2025 +0530

To Revert attempt 2

commit 12ef72acb41c32eb8ce002d47aabe5d738540f8c
uthor: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
wate: Wed Feb 19 15:10:48 2025 +0530

Update textFile.txt

commit 41c63ef627d7c023016bf5d14dde026bba53f079
uthor: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
wate: Wed Feb 19 15:01:50 2025 +0530

To Reset

commit 2c4be0ca9aeb5fe047cf533d37e17177371c8602
uthor: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
wate: Wed Feb 19 14:43:14 2025 +0530

UpdateToPull textFile

commit d26fe04c11990d8c08d7e73e12ae7477bdfab81
uthor: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
wate: Wed Feb 19 12:54:59 2025 +0530

MY FIRST COMMMIT

commit ae6addca86c5e030fcbab4426746f718853f680
uthor: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
wate: Wed Feb 19 12:43:38 2025 +0530

Initial commit
```

//reverting

//revert succesfull

```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sargit-assignment (main)

Git log --oneline

df9594 (HEAD -> main) Revert "To Revert attempt 2"

1c4964 (origin/main, origin/HEAD) To Revert attempt 2

12ef72a Update textFile.txt

11c63ef To Reset

12c4be0c UpdateToPull textFile

126fe04 MY FIRST COMMMIT

12e6addc Initial commit
```

// pushing the changes

// checking git log

```
ASUS@LAPTOP-INSOCJ92 MINGW64 /d/nucleusTeq/Training/Git/Sara git assignment/Sara
-git-assignment (main)
$ git log
commit fdf9594fe6f6d4c318dc74b2dde5ce3472b65fc1 (HEAD -> main, origin/main, origin/HEAD)
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 15:14:35 2025 +0530

Revert "To Revert attempt 2"

This reverts commit c1c49648b2be05e1ac1b061bf569900e6248cee6.

Commit c1c49648b2be05e1ac1b061bf569900e6248cee6
Author: SaraFatma <141361121+SaraFatma@users.noreply.github.com>
Date: Wed Feb 19 15:11:54 2025 +0530

To Revert attempt 2
```

