LAB 03

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REGISTRATION #: 2023-BSE-061

DEPARTMENT: BSE(5B)

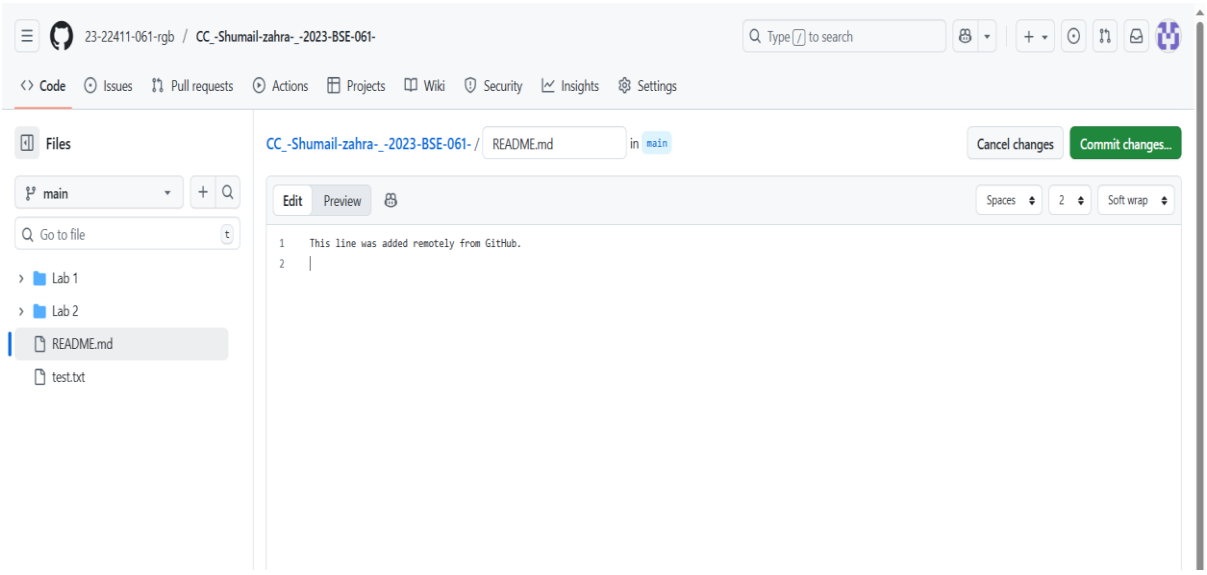
CLOUD COMPUTING LAB

LAB TASK

Task 1 – Handling Local and Remote Commit Conflicts (Pull vs Pull --rebase)

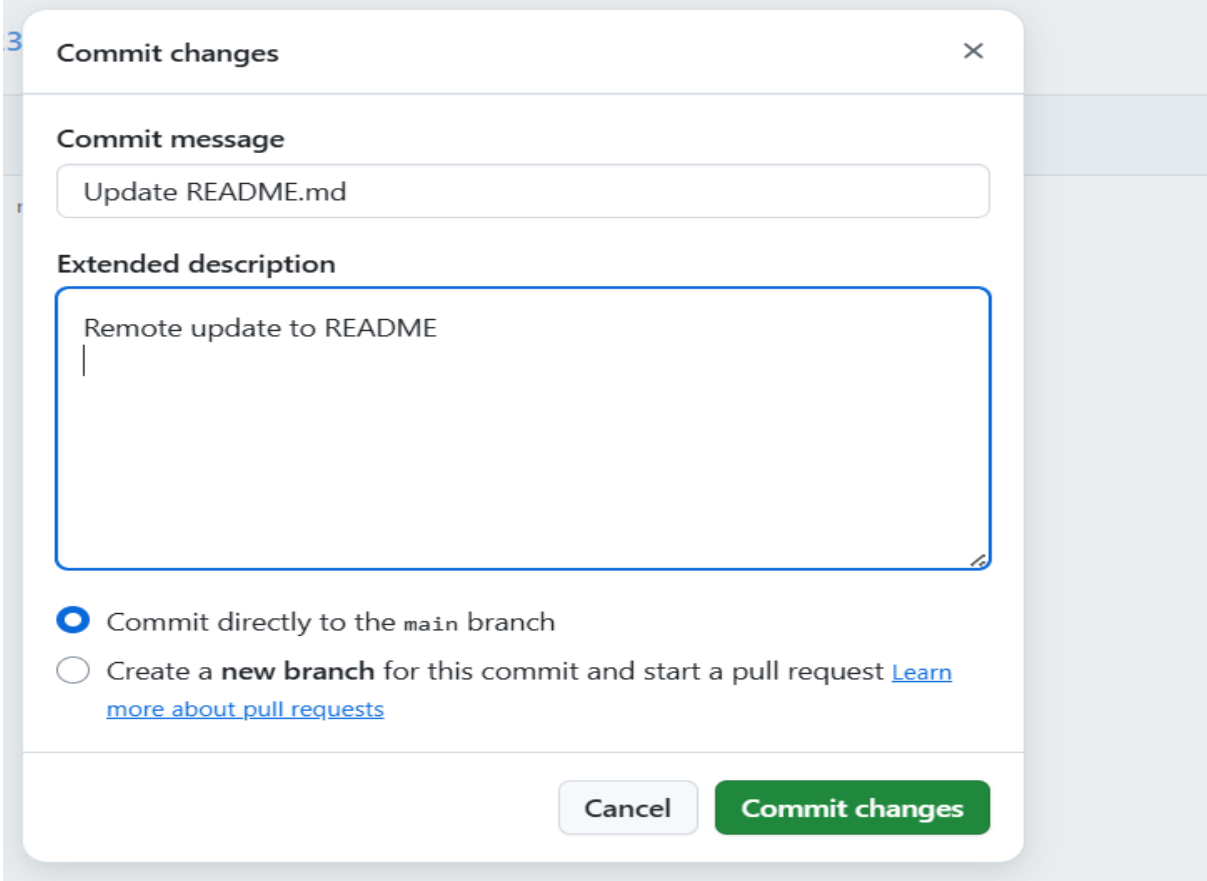
Steps:

1. Open your repository on **GitHub** and edit the README.md file directly in the browser.



Commit your change on GitHub (e.g., message: *Remote update to README*).

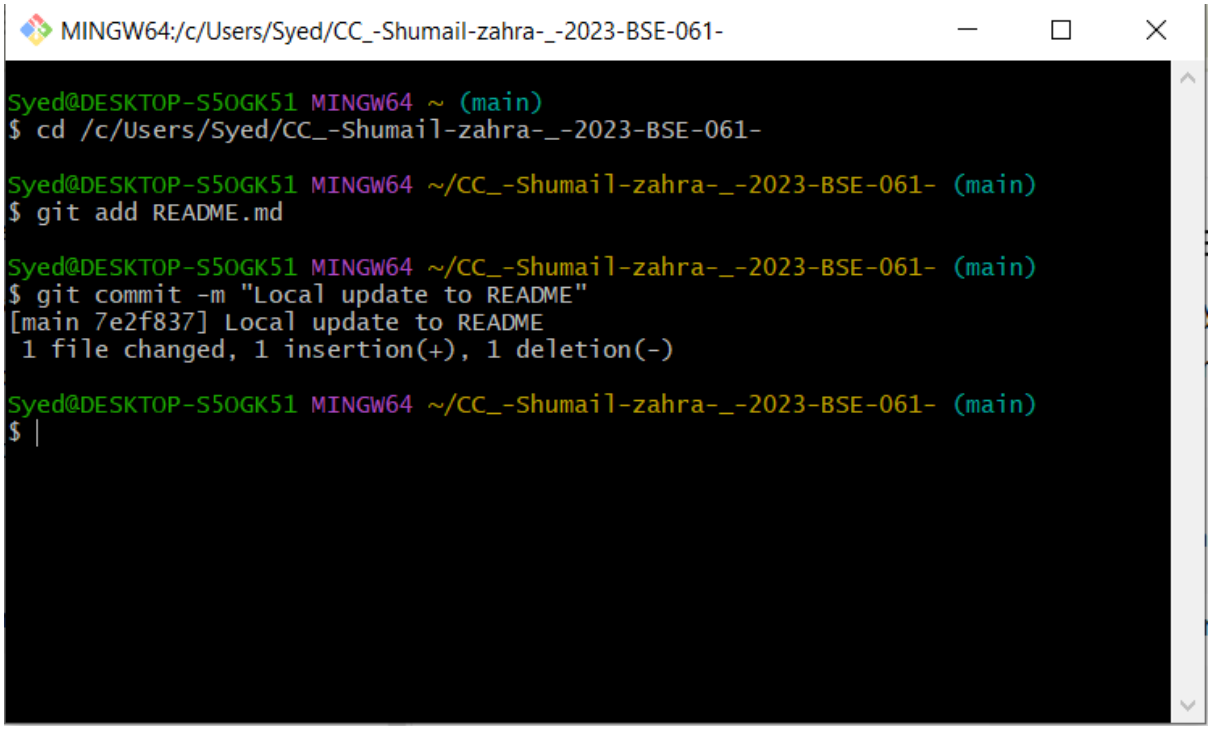
Save a screenshot of your browser showing the change as remote_edit.png.



On your **local machine**, open the same repository folder.

a. Edit the same README.md file locally, for example:

This line was added locally.

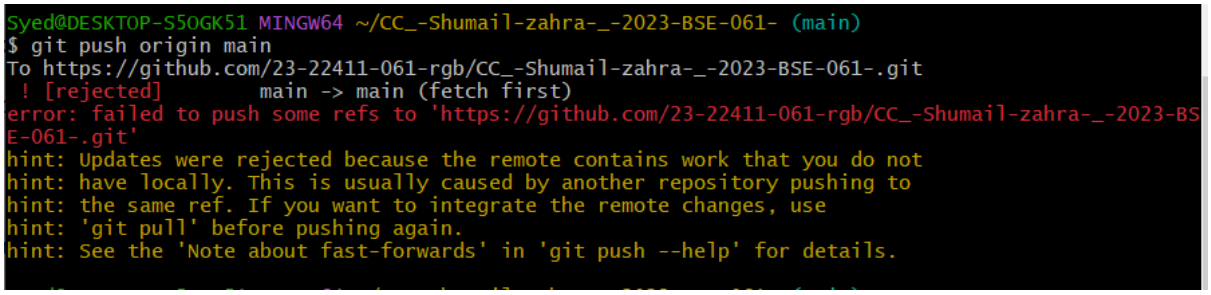


Try to push:

git push origin main

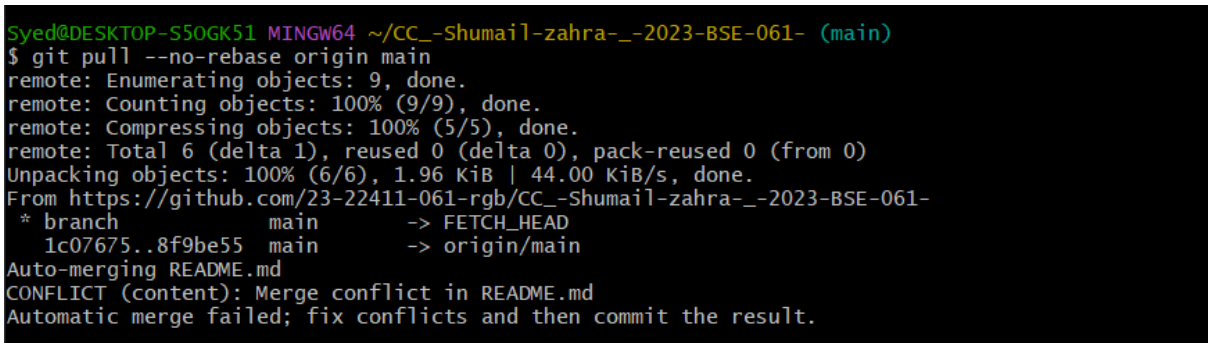
You'll see an error message similar to:

hint: Updates were rejected because the remote contains work that you do not have locally.

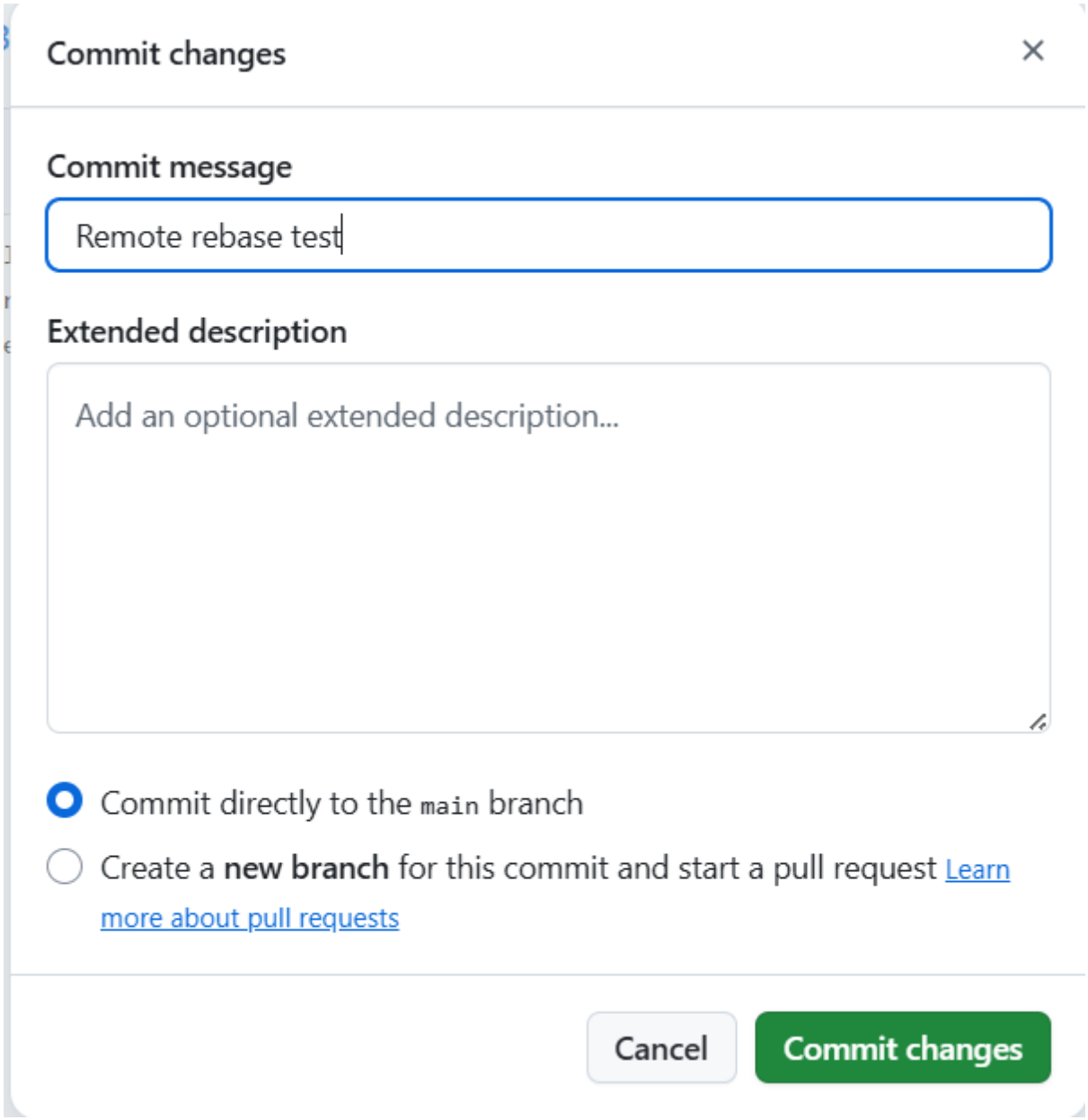


To fix this, pull the latest changes from remote:

git pull --no-rebase origin main



```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main|MERGING)
$ git push -u origin main
To https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
 ! [rejected]        main -> main (non-fast-forward)
error: failed to push some refs to 'https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BS
E-061-.git'
hint: Updates were rejected because the tip of your current branch is behind
hint: its remote counterpart. If you want to integrate the remote changes,
hint: use 'git pull' before pushing again.
hint: See the 'Note about fast-forwards' in 'git push --help' for details.

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main|MERGING)
$ git add README.md

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main|MERGING)
$ git commit -m "Resolved merge conflict in README.md"
[main 552ed40] Resolved merge conflict in README.md

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git push -u origin main
Enumerating objects: 10, done.
Counting objects: 100% (10/10), done.
Delta compression using up to 8 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (6/6), 1.05 KiB | 119.00 KiB/s, done.
Total 6 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
   8f9be55..552ed40  main -> main
branch 'main' set up to track 'origin/main'.
```




```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main|REBASE 1/2)
$ git add README.md


Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main|REBASE 1/2)
$ git rebase --continue
Successfully rebased and updated refs/heads/main.
```

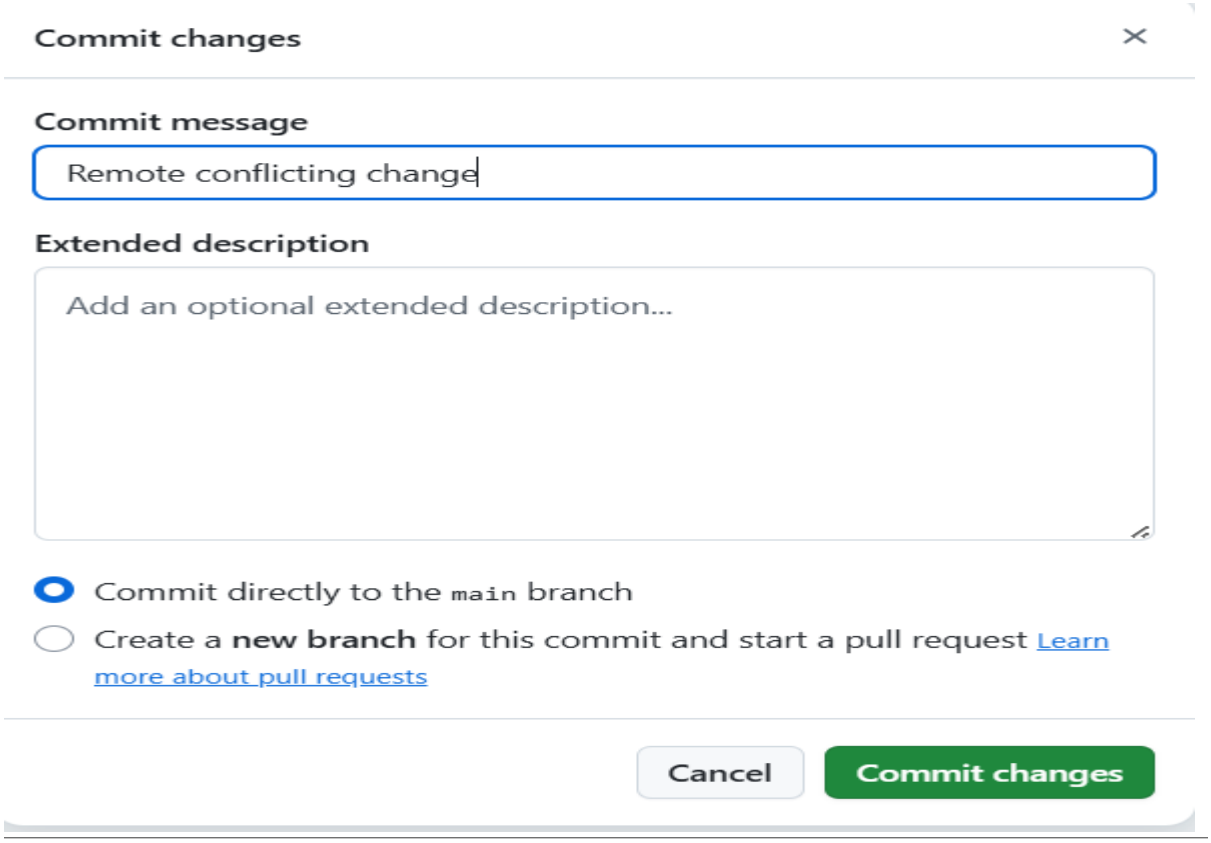
```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git push -u origin main
Enumerating objects: 9, done.
Counting objects: 100% (9/9), done.
Delta compression using up to 8 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (6/6), 887 bytes | 110.00 KiB/s, done.
Total 6 (delta 2), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (2/2), completed with 1 local object.
To https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
   f2eb4ce..1bc57ac  main -> main
branch 'main' set up to track 'origin/main'.
```

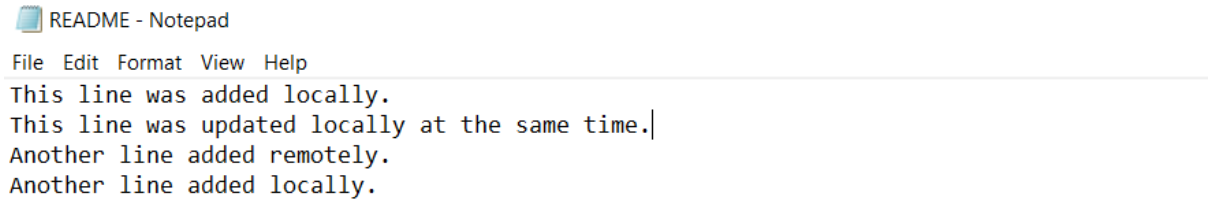
Task 2 – Creating and Resolving Merge Conflicts Manually

This task will help you understand how Git handles file conflicts when two people modify the same line of code differently.

Steps

1. On **GitHub (remote)**, open your README.md file and change an existing line.Change it to: This line was updated remotely again.





Stage and commit your local change:

git add README.md

git commit -m "Local conflicting change

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git add README.md

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "Local conflicting change"
[main de72be1] Local conflicting change
 1 file changed, 1 insertion(+), 1 deletion(-)
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git push -u origin main
To https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
 ! [rejected]        main -> main (fetch first)
error: failed to push some refs to 'https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-B
E-061-.git'
hint: Updates were rejected because the remote contains work that you do not
hint: have locally. This is usually caused by another repository pushing to
hint: the same ref. If you want to integrate the remote changes, use
hint: 'git pull' before pushing again.
hint: See the 'Note about fast-forwards' in 'git push --help' for details.
```

Instead of using git pull, run:

git pull --rebase origin main

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git pull --rebase origin main
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (3/3), 1.04 KiB | 44.00 KiB/s, done.
From https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-
 * branch            main       -> FETCH_HEAD
   1bc57ac..1497bf7  main       -> origin/main
Auto-merging README.md
CONFLICT (content): Merge conflict in README.md
error: could not apply de72be1... Local conflicting change
hint: Resolve all conflicts manually, mark them as resolved with
hint: "git add/rm <conflicted_files>", then run "git rebase --continue".
hint: You can instead skip this commit: run "git rebase --skip".
hint: To abort and get back to the state before "git rebase", run "git rebase --abort".
hint: Disable this message with "git config set advice.mergeConflict false"
Could not apply de72be1... # Local conflicting change
```

README - Notepad

File Edit Format View Help

```
This line was added locally.
This line was updated locally and remotely safely.
Another line added remotely.
Another line added locally.
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git pull --rebase origin main
Local conflicting change

[detached HEAD 009cb58] Local conflicting change
 1 file changed, 1 insertion(+), 1 deletion(-)
Successfully rebased and updated refs/heads/main.
```

Push again:

git push -u origin main

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git push -u origin main
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 529 bytes | 264.00 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/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
   1497bf7..009cb58  main -> main
branch 'main' set up to track 'origin/main'.
```

Task 3 – Managing Ignored Files with .gitignore and Removing Tracked Files

Steps

1. Create a new folder named textfiles inside your repository:

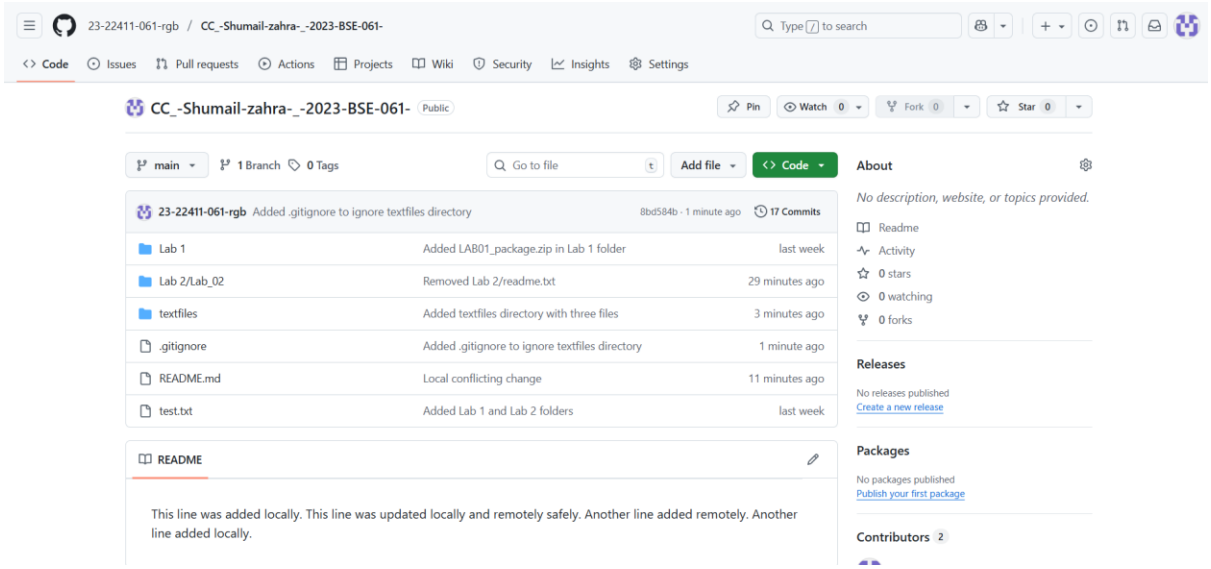
   mkdir textfiles

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ mkdir textfiles

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ echo "File A content" > textfiles/a.txt
echo "File B content" > textfiles/b.txt
echo "File C content" > textfiles/c.txt

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git add .
warning: in the working copy of 'textfiles/a.txt', LF will be replaced by CRLF the next time Git to
uches it
warning: in the working copy of 'textfiles/b.txt', LF will be replaced by CRLF the next time Git to
uches it
warning: in the working copy of 'textfiles/c.txt', LF will be replaced by CRLF the next time Git to
uches it

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "Added textfiles directory with three files"
[main 94dcca1] Added textfiles directory with three files
 3 files changed, 3 insertions(+)
 create mode 100644 textfiles/a.txt
 create mode 100644 textfiles/b.txt
 create mode 100644 textfiles/c.txt

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git push origin main
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (6/6), 597 bytes | 119.00 KiB/s, done.
Total 6 (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/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
   009cb58..94dcca1  main -> main
```

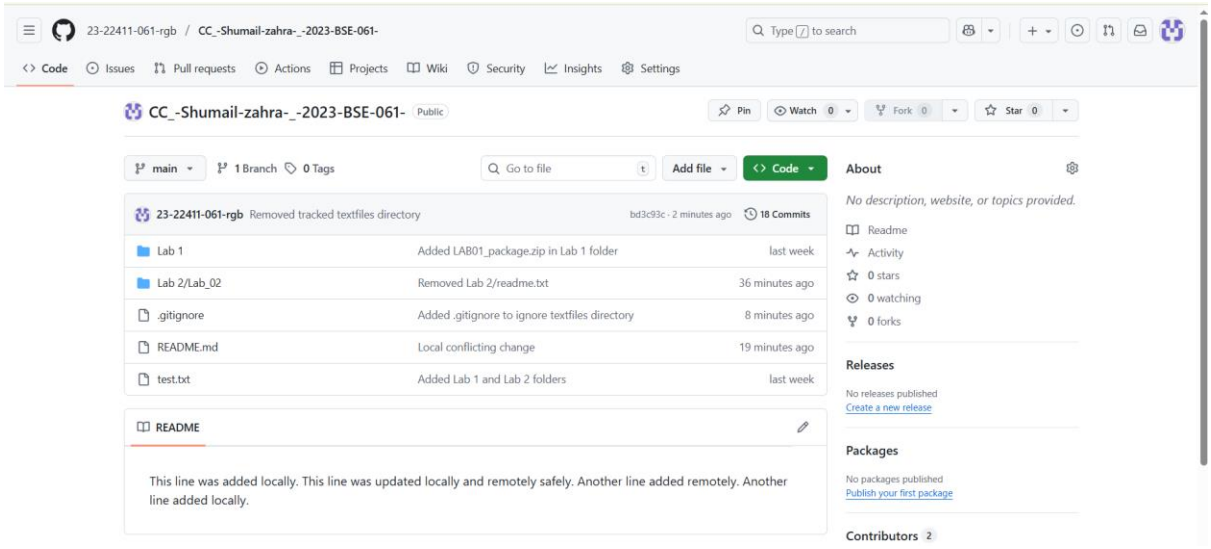
Now, create a .gitignore file in the root of your repository:

echo "textfiles/*" > .gitignore

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ echo "textfiles/*" > .gitignore

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git add .gitignore
warning: in the working copy of '.gitignore', LF will be replaced by CRLF the next time Git touches it

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "Added .gitignore to ignore textfiles directory"
[main 8bd584b] Added .gitignore to ignore textfiles directory
 1 file changed, 1 insertion(+)
 create mode 100644 .gitignore

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (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), 434 bytes | 144.00 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/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
   94dcca1..8bd584b  main -> main
```

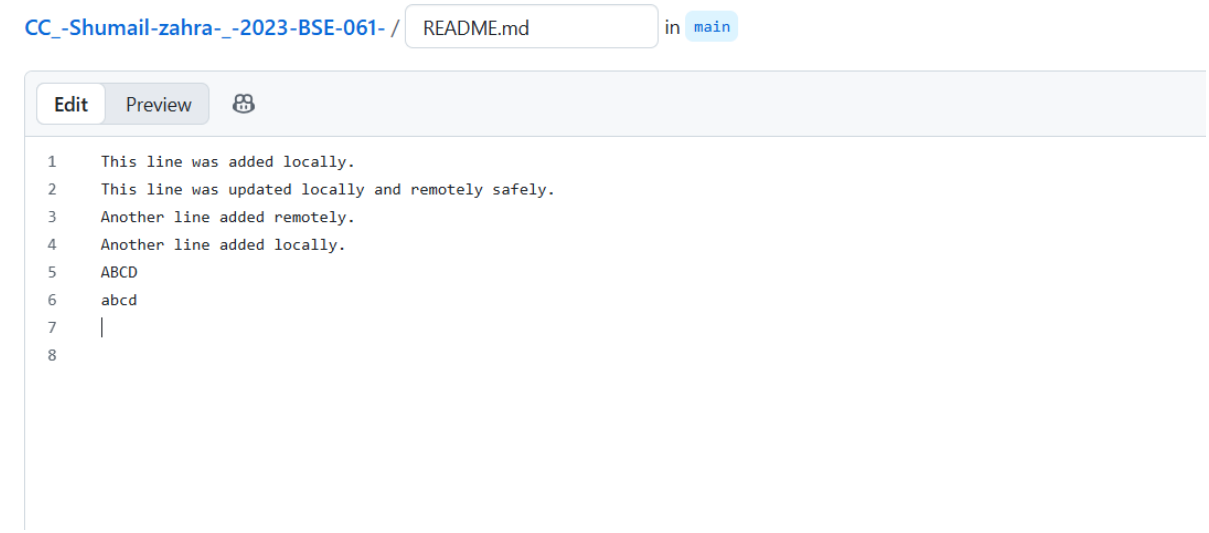



```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git rm -r --cached textfiles
rm 'textfiles/a.txt'
rm 'textfiles/b.txt'
rm 'textfiles/c.txt'

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git add .

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "Removed tracked textfiles directory"
[main bd3c93c] Removed tracked textfiles directory
 3 files changed, 3 deletions(-)
 delete mode 100644 textfiles/a.txt
 delete mode 100644 textfiles/b.txt
 delete mode 100644 textfiles/c.txt

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git push origin main
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (2/2), 359 bytes | 359.00 KiB/s, done.
Total 2 (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/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
   8bd584b..bd3c93c  main -> main
```



Task 4 – Create Temporary Changes and Use git stash

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git checkout -b feature-branch
Switched to a new branch 'feature-branch'

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (feature-branch)
$ git add README.md

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (feature-branch)
$ git commit -m "Changes the README.md file"
On branch feature-branch
nothing to commit, working tree clean
```




```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (feature-branch)
$ git stash
Saved working directory and index state WIP on feature-branch: bd3c93c Removed tracked textfiles directory

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (feature-branch)
$ git status
On branch feature-branch
nothing to commit, working tree clean
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (feature-branch)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git checkout feature-branch
Switched to branch 'feature-branch'
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (feature-branch)
$ git stash pop
On branch feature-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:   README.md

no changes added to commit (use "git add" and/or "git commit -a")
Dropped refs/stash@{0} (3a70ed90806dc3b6d8827e98f2b7c2ead906b175)
```

Task 5 – Checkout a Specific Commit Using git log

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (feature-branch)
$ git stash
Saved working directory and index state WIP on feature-branch: bd3c93c Removed tracked textfiles directory

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (feature-branch)
$ git checkout 1497bf7
Note: switching to '1497bf7'.

You are in 'detached HEAD' state. You can look around, make experimental
changes and commit them, and you can discard any commits you make in this
state without impacting any branches by switching back to a branch.

If you want to create a new branch to retain commits you create, you may
do so (now or later) by using -c with the switch command. Example:

  git switch -c <new-branch-name>

Or undo this operation with:

  git switch -

Turn off this advice by setting config variable advice.detachedHead to false

HEAD is now at 1497bf7 Remote conflicting change
```

Task 6 – Resetting Commits (Soft vs Hard Reset) (With Verification Steps)

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git add README.md

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "Added test line"
[main c48a8af] Added test line
 1 file changed, 2 insertions(+)
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git add README.md

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "Second test commit"
[main a7bdc3e] Second test commit
 1 file changed, 1 insertion(+)
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git log --oneline
a7bdc3e (HEAD -> main) Second test commit
c48a8af Added test line
bd3c93c (origin/main, feature-branch) Removed tracked textfiles directory
8bd584b Added .gitignore to ignore textfiles directory
94dcca1 Added textfiles directory with three files
009cb58 Local conflicting change
1497bf7 Remote conflicting change
1bc57ac Removed Lab 2/readme.txt
ebfbcec Local rebase test
f2eb4ce Remote rebase test
552ed40 Resolved merge conflict in README.md
7e2f837 Local update to README
8f9be55 Update README.md
4b61000 Delete Lab 2/Lab_02.zip
1c07675 Added Lab_02 in Lab 2 folder
43a791d Added lab_02.zip in Lab 2 folder
aeba7ac Added LAB01_package.zip in Lab 1 folder
05ca9c9 Added placeholder files in Lab 1 and Lab 2 folders
59974fa Added Lab 1 and Lab 2 folders
c5e2f26 Initial commit - Added Lab 1 and Lab 2 folders
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ cat README.md
This line was added locally.
This line was updated locally and remotely safely.
Another line added remotely.
Another line added locally.
# First test line for reset
# Second test line for reset
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git reset --soft HEAD~1

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git log --oneline
c48a8af (HEAD -> main) Added test line
bd3c93c (origin/main, feature-branch) Removed tracked textfiles directory
8bd584b Added .gitignore to ignore textfiles directory
94dcca1 Added textfiles directory with three files
009cb58 Local conflicting change
1497bf7 Remote conflicting change
1bc57ac Removed Lab 2/readme.txt
ebfbcec Local rebase test
f2eb4ce Remote rebase test
552ed40 Resolved merge conflict in README.md
7e2f837 Local update to README
8f9be55 Update README.md
4b61000 Delete Lab 2/Lab_02.zip
1c07675 Added Lab_02 in Lab 2 folder
43a791d Added lab_02.zip in Lab 2 folder
aeba7ac Added LAB01_package.zip in Lab 1 folder
05ca9c9 Added placeholder files in Lab 1 and Lab 2 folders
59974fa Added Lab 1 and Lab 2 folders
c5e2f26 Initial commit - Added Lab 1 and Lab 2 folders
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ cat README.md
This line was added locally.
This line was updated locally and remotely safely.
Another line added remotely.
Another line added locally.
# First test line for reset
# Second test line for reset
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git reset --hard HEAD~1
HEAD is now at c48a8af Added test line
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git log --oneline
c48a8af (HEAD -> main) Added test line
bd3c93c (origin/main, feature-branch) Removed tracked textfiles directory
8bd584b Added .gitignore to ignore textfiles directory
94dcca1 Added textfiles directory with three files
009cb58 Local conflicting change
1497bf7 Remote conflicting change
1bc57ac Removed Lab 2/readme.txt
ebfbcec Local rebase test
f2eb4ce Remote rebase test
552ed40 Resolved merge conflict in README.md
7e2f837 Local update to README
8f9be55 Update README.md
4b61000 Delete Lab 2/Lab_02.zip
1c07675 Added Lab_02 in Lab 2 folder
43a791d Added lab_02.zip in Lab 2 folder
aeba7ac Added LAB01_package.zip in Lab 1 folder
05ca9c9 Added placeholder files in Lab 1 and Lab 2 folders
59974fa Added Lab 1 and Lab 2 folders
c5e2f26 Initial commit - Added Lab 1 and Lab 2 folders
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git status
On branch main
Your branch is ahead of 'origin/main' by 1 commit.
  (use "git push" to publish your local commits)

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


Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "Second test commit"
[main 3fb84fe] Second test commit
 1 file changed, 1 insertion(+)
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git log --oneline
c48a8af (HEAD -> main) Added test line
bd3c93c (origin/main, feature-branch) Removed tracked textfiles directory
8bd584b Added .gitignore to ignore textfiles directory
94dcca1 Added textfiles directory with three files
009cb58 Local conflicting change
1497bf7 Remote conflicting change
1bc57ac Removed Lab 2/readme.txt
ebfbcec Local rebase test
f2eb4ce Remote rebase test
552ed40 Resolved merge conflict in README.md
7e2f837 Local update to README
8f9be55 Update README.md
4b61000 Delete Lab 2/Lab_02.zip
1c07675 Added Lab_02 in Lab 2 folder
43a791d Added lab_02.zip in Lab 2 folder
aeba7ac Added LAB01_package.zip in Lab 1 folder
05ca9c9 Added placeholder files in Lab 1 and Lab 2 folders
59974fa Added Lab 1 and Lab 2 folders
c5e2f26 Initial commit - Added Lab 1 and Lab 2 folders
```

README - Notepad

File Edit Format View Help

```
This line was added locally.
This line was updated locally and remotely safely.
Another line added remotely.
Another line added locally.
# First test line for reset
```

Task 7 – Amending the Last Commit

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git add .

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "Fix log message"
On branch main
Your branch is ahead of 'origin/main' by 1 commit.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
```

```
[main 31107f0] Added test line
 Date: Fri Oct 17 10:45:53 2025 +0500
 1 file changed, 2 insertions(+)
```

Task 8 – Reverting a Commit (Safe Undo on Remote Branch)

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ echo "temporary text" >> temp.txt

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git add .
warning: in the working copy of 'temp.txt', LF will be replaced by CRLF the next time Git touches it

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "Added temporary text file"
[main ffc8859] Added temporary text file
 1 file changed, 1 insertion(+)

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git push origin main
Enumerating objects: 11, done.
Counting objects: 100% (11/11), done.
Delta compression using up to 8 threads
Compressing objects: 100% (7/7), done.
Writing objects: 100% (9/9), 1.14 KiB | 194.00 KiB/s, done.
Total 9 (delta 4), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (4/4), completed with 2 local objects.
To https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
   4d982b9..ffc8859  main -> main
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git log --oneline
ffc8859 (HEAD -> main, origin/main) Added temporary text file
3e28e1d Added temporary text file
ef21c63 Added test line
4d982b9 Update README.md
bd3c93c (feature-branch) Removed tracked textfiles directory
8bd584b Added .gitignore to ignore textfiles directory
94dcca1 Added textfiles directory with three files
O09cb58 Local conflicting change
1497bf7 Remote conflicting change
1bc57ac Removed Lab 2/readme.txt
ebfbcec Local rebase test
f2eb4ce Remote rebase test
552ed40 Resolved merge conflict in README.md
7e2f837 Local update to README
8f9be55 Update README.md
4b61000 Delete Lab 2/Lab_02.zip
1c07675 Added Lab_02 in Lab 2 folder
43a791d Added lab_02.zip in Lab 2 folder
aeba7ac Added LAB01_package.zip in Lab 1 folder
05ca9c9 Added placeholder files in Lab 1 and Lab 2 folders
59974fa Added Lab 1 and Lab 2 folders
c5e2f26 Initial commit - Added Lab 1 and Lab 2 folders
```

```
[main cbefc4b] Revert "Added temporary text file"
 1 file changed, 1 deletion(-)
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git push origin main
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), 473 bytes | 236.00 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/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
   ffc8859..cbefc4b  main -> main
```

Task 9 – Force Push (With Caution)

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git checkout -b test-force
Switched to a new branch 'test-force'
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (test-force)
$ git add README.md

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (test-force)
$ git commit -m "Added force push test line"
[test-force 033dc87] Added force push test line
 1 file changed, 1 insertion(+)
```

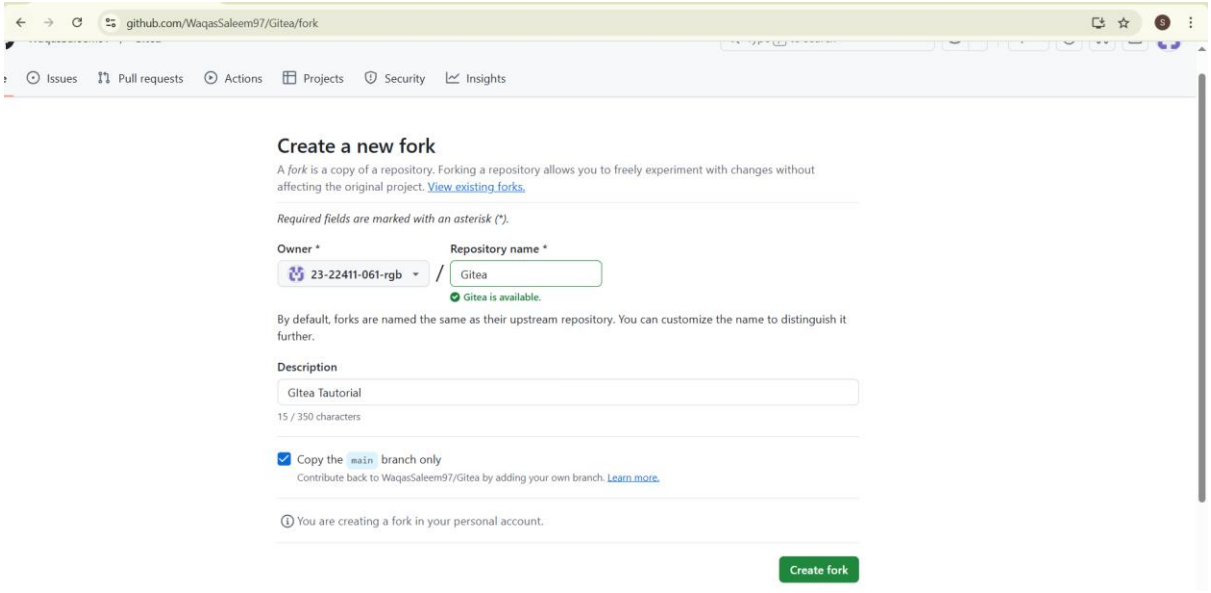
```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (test-force)
$ git push origin test-force
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 439 bytes | 219.00 KiB/s, done.
Total 3 (delta 2), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
remote:
remote: Create a pull request for 'test-force' on GitHub by visiting:
remote:      https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-/pull/new/test-force
remote:
To https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
 * [new branch]      test-force -> test-force
```

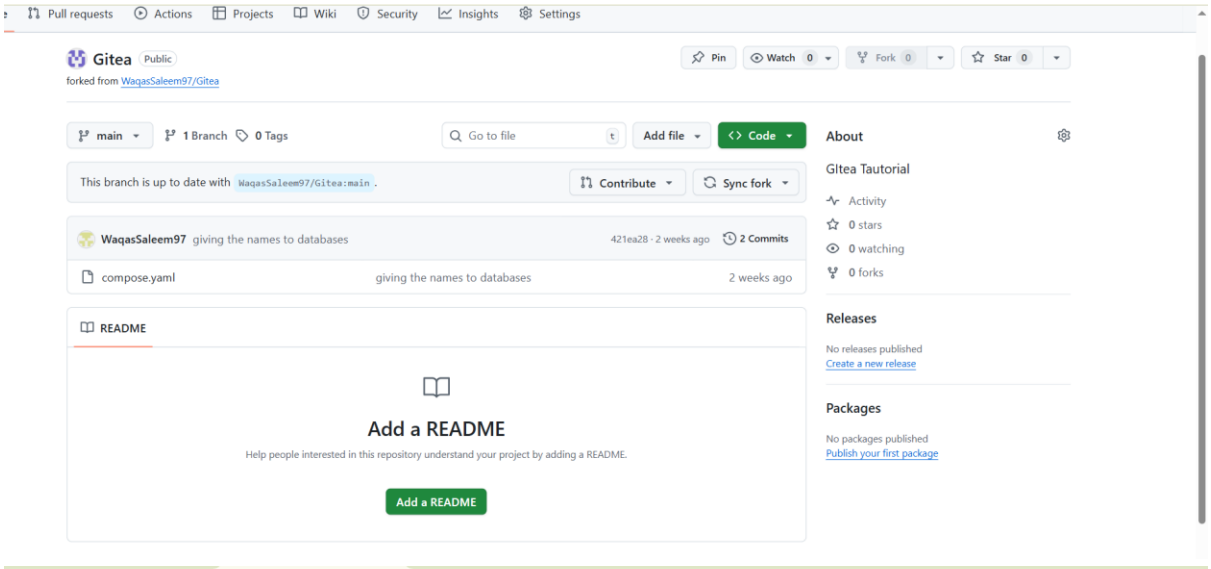
```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (test-force)
$ git reset --hard HEAD~1
HEAD is now at cbefc4b Revert "Added temporary text file"
```

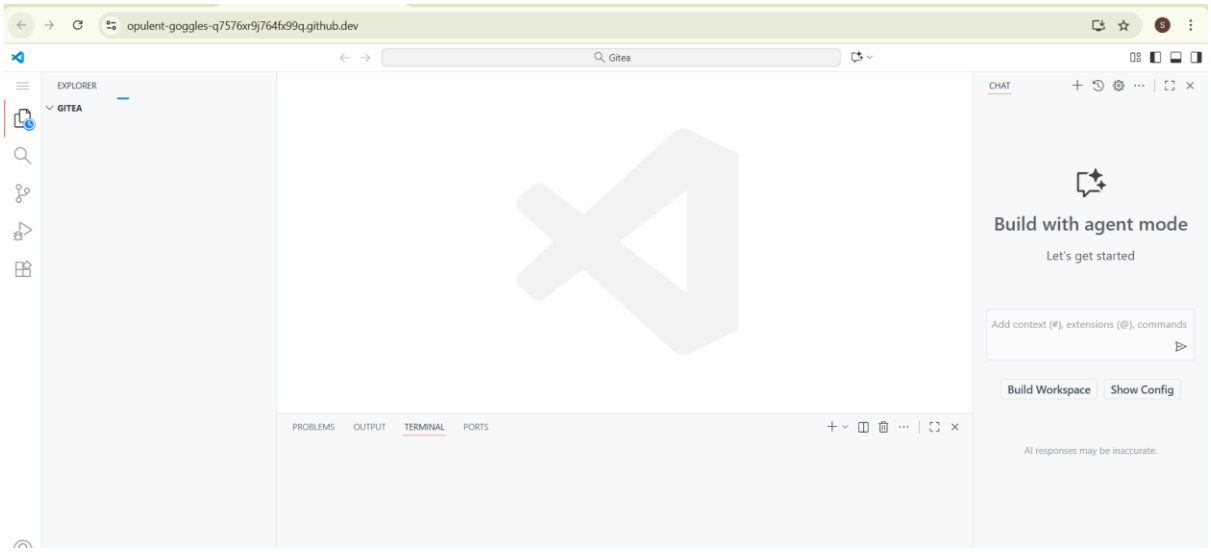
```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (test-force)
$ git push origin test-force
To https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
 ! [rejected]        test-force -> test-force (non-fast-forward)
error: failed to push some refs to 'https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git'
hint: Updates were rejected because the tip of your current branch is behind
hint: its remote counterpart. If you want to integrate the remote changes,
hint: use 'git pull' before pushing again.
hint: See the 'Note about fast-forwards' in 'git push --help' for details.
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (test-force)
$ git push origin test-force --force
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
 + 033dc87...cbefc4b test-force -> test-force (forced update)
```

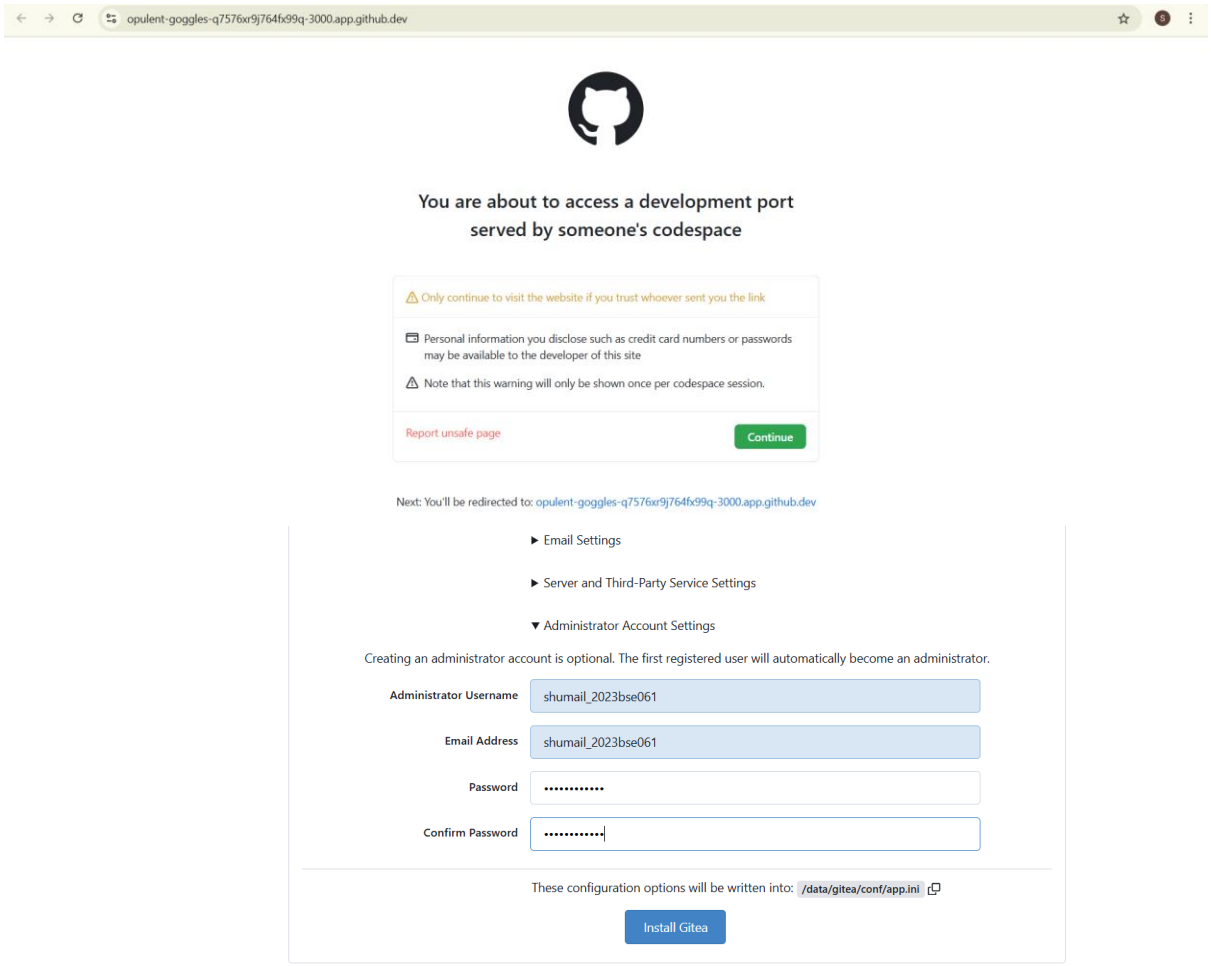
Task 10 – Running Gitea in GitHub Codespaces via Docker Compose

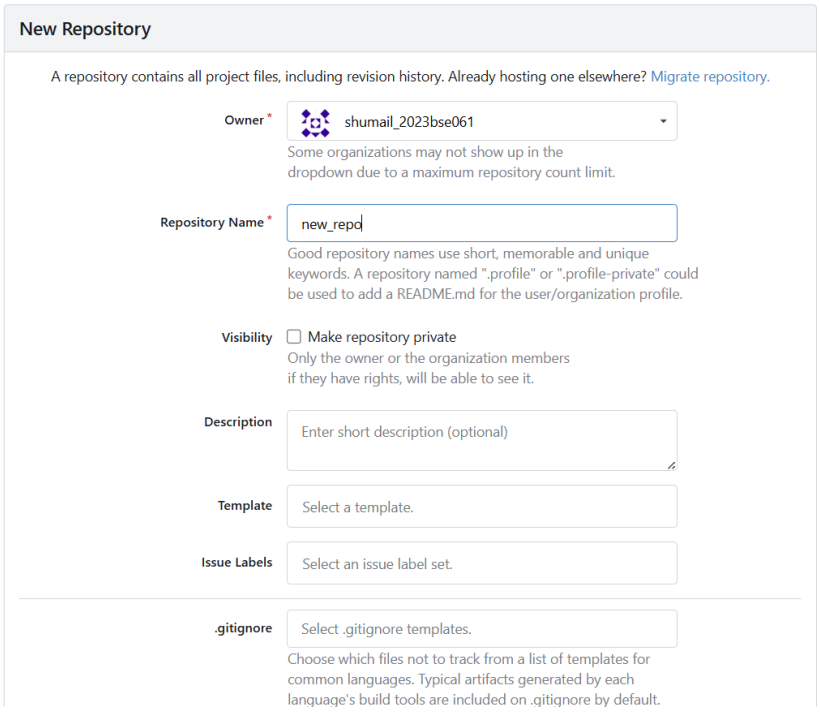


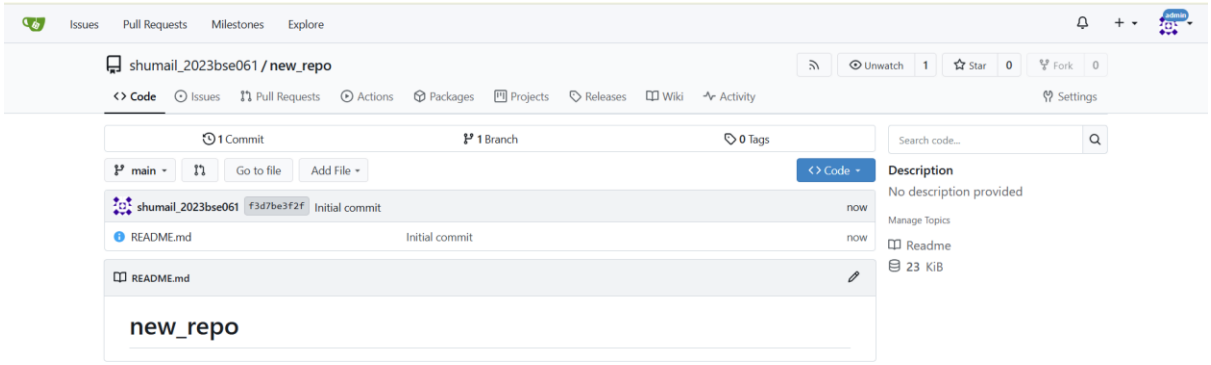




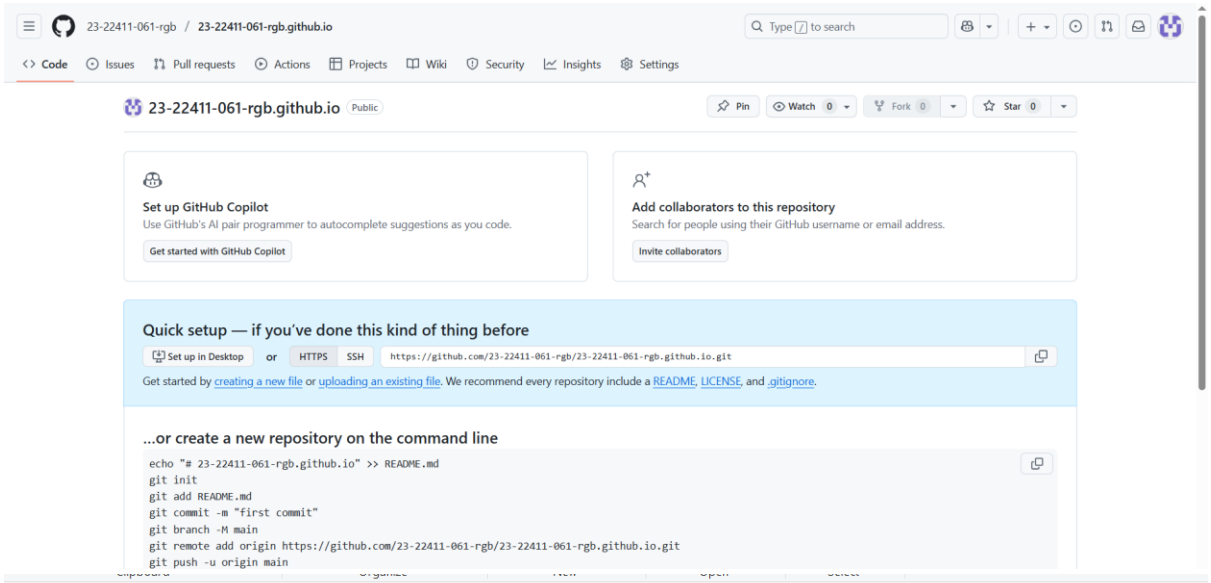

```
@23-22411-061-rgb →/workspaces/Gitea (main) $ docker compose up -d
[+] Running 19/19
 ✓ gitea Pulled
 ✓ db Pulled
[+] Running 5/5
 ✓ Network webnet           Created
 ✓ Volume "gitea_postgres"  Created
 ✓ Volume "gitea"           Created
 ✓ Container gitea_db       Started
 ✓ Container gitea          Started
@23-22411-061-rgb →/workspaces/Gitea (main) $
```

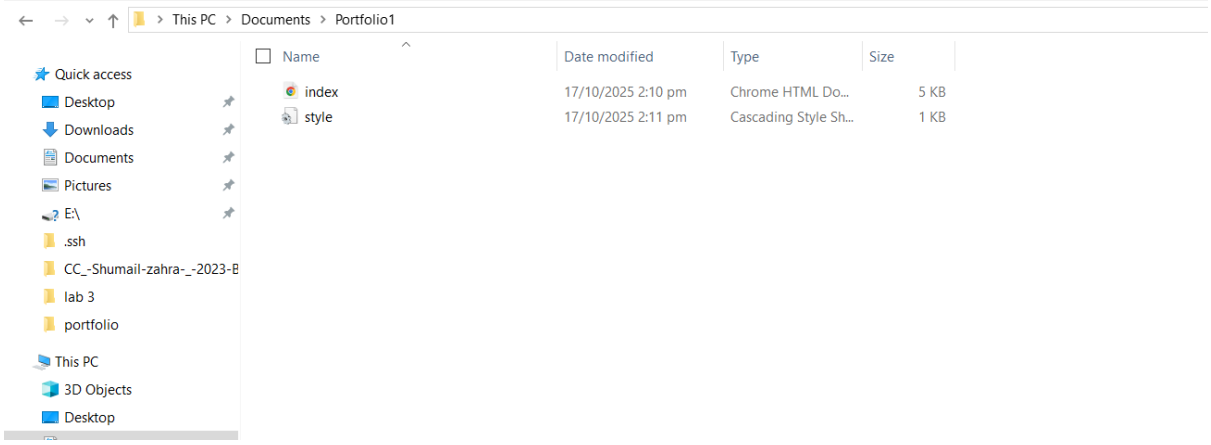

opulent-goggles-q7576xr9j764fx99q-3000.app.github.dev
You are about to access a development port served by someone's codespace
Only continue to visit the website if you trust whoever sent you the link
Personal information you disclose such as credit card numbers or passwords may be available to the developer of this site
Note that this warning will only be shown once per codespace session.
Report unsafe page
Continue
Next: You'll be redirected to: opulent-goggles-q7576xr9j764fx99q-3000.app.github.dev
▶ Email Settings
▶ Server and Third-Party Service Settings
▼ Administrator Account Settings
Creating an administrator account is optional. The first registered user will automatically become an administrator.
Administrator Username
shumail_2023bse061
Email Address
shumail_2023bse061
Password
Confirm Password
These configuration options will be written into: /data/gitea/conf/app.ini
Install Gitea


New Repository
A repository contains all project files, including revision history. Already hosting one elsewhere? Migrate repository.
Owner *
shumail_2023bse061
Some organizations may not show up in the dropdown due to a maximum repository count limit.
Repository Name *
new_repo
Good repository names use short, memorable and unique keywords. A repository named ".profile" or ".profile-private" could be used to add a README.md for the user/organization profile.
Visibility
Make repository private
Only the owner or the organization members if they have rights, will be able to see it.
Description
Enter short description (optional)
Template
Select a template.
Issue Labels
Select an issue label set.
.gitignore
Select .gitignore templates.
Choose which files not to track from a list of templates for common languages. Typical artifacts generated by each language's build tools are included on .gitignore by default.

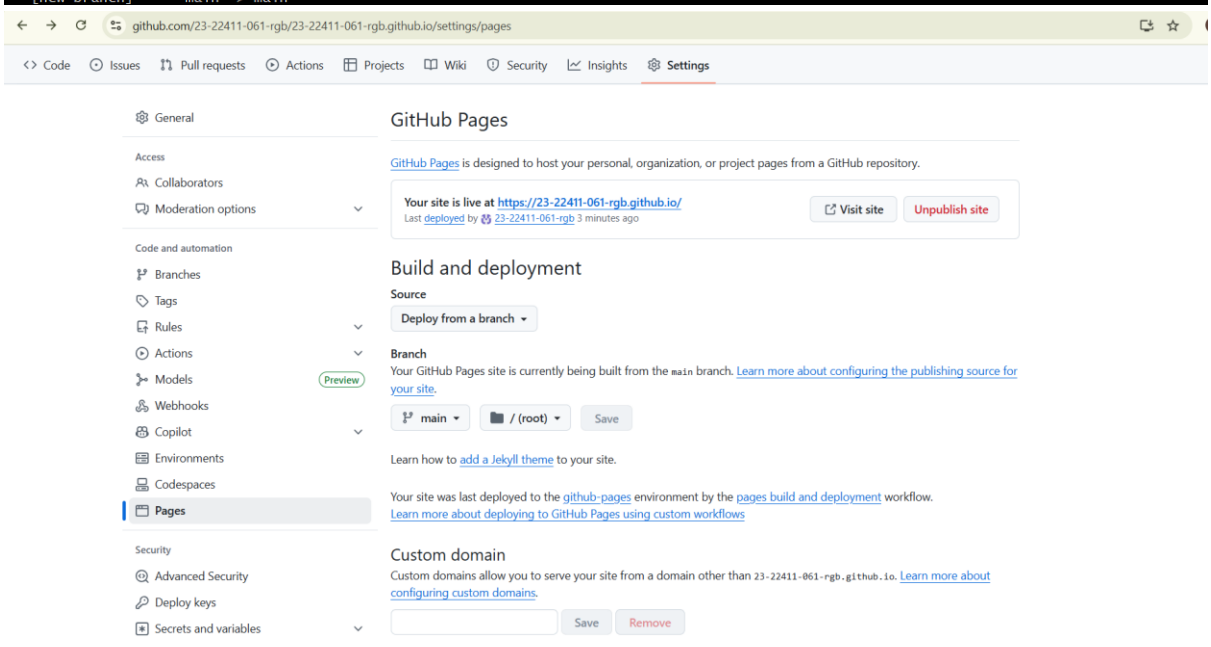


Task 11 – Creating a GitHub Pages Portfolio Site





```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (test-force)
$ git init
Reinitialized existing Git repository in C:/Users/Syed/CC_-Shumail-zahra-_-2023-BSE-061-/.git/

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (test-force)
$ git branch -M main

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git remote add origin https://github.com/23-22411-061-rgb/23-22411-061-rgb.github.io.git
error: remote origin already exists.

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git remote -v
origin  https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git (fetch)
origin  https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git (push)

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git remote set-url origin https://github.com/23-22411-061-rgb/23-22411-061-rgb.github.io.git

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git remote -v
origin  https://github.com/23-22411-061-rgb/23-22411-061-rgb.github.io.git (fetch)
origin  https://github.com/23-22411-061-rgb/23-22411-061-rgb.github.io.git (push)

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git add .

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "Add portfolio site for GitHub Pages"
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git push origin main
Enumerating objects: 171, done.
Counting objects: 100% (171/171), done.
Delta compression using up to 8 threads
Compressing objects: 100% (154/154), done.
Writing objects: 100% (171/171), 18.61 MiB | 127.05 MiB/s, done.
Total 171 (delta 18), reused 16 (delta 1), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (18/18), done.
To https://github.com/23-22411-061-rgb/23-22411-061-rgb.github.io.git
 * [new branch]      main -> main
```



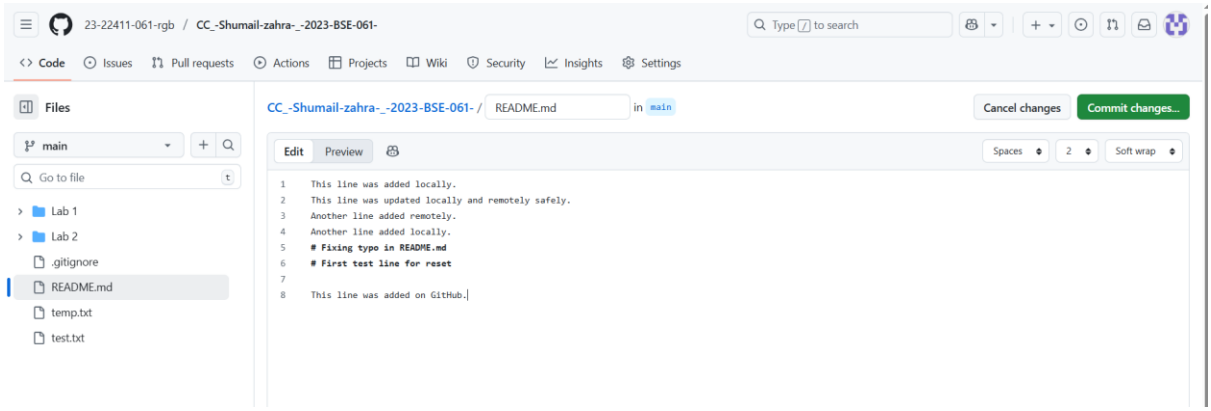
https://23-22411-061-rgb.github.io/

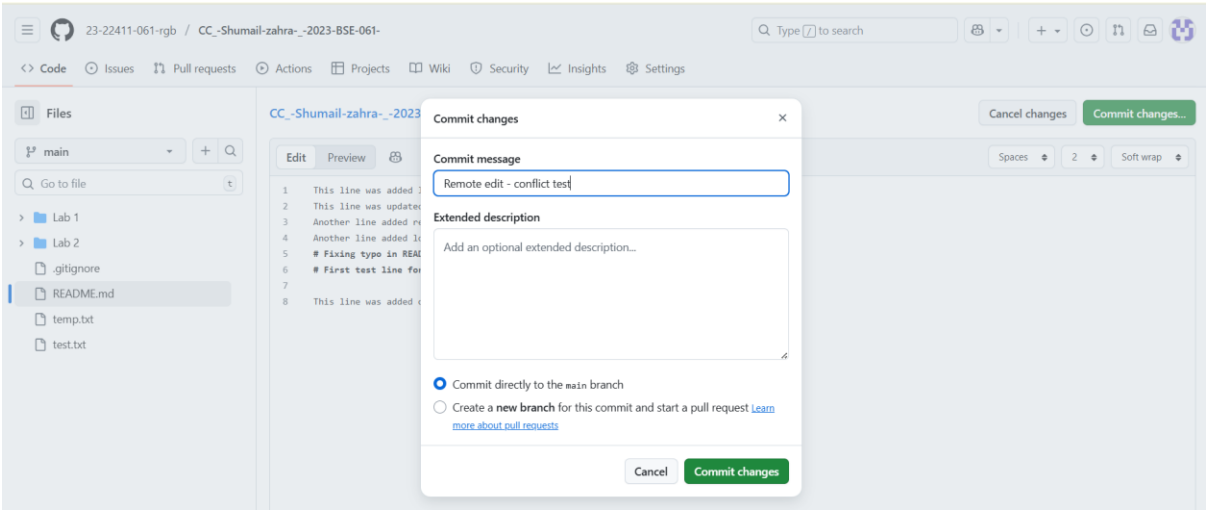
Exam Evaluation Questions

1. Local vs Remote Conflict Resolution

Steps:

1. On GitHub, edit a file (e.g., README.md) and commit the change.





2. On your local machine, edit the same file differently (Avoid Conflict) and commit.

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git add README.md

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "Local edit - conflict test"
[main 6963f03] Local edit - conflict test
 1 file changed, 1 insertion(+)

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$
```

3. Try to push your local commit and observe the error.

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git push origin main
To https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
 ! [rejected]        main -> main (fetch first)
error: failed to push some refs to 'https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git'
hint: Updates were rejected because the remote contains work that you do not
hint: have locally. This is usually caused by another repository pushing to
hint: the same ref. If you want to integrate the remote changes, use
hint: 'git pull' before pushing again.
hint: See the 'Note about fast-forwards' in 'git push --help' for details.

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$
```

4. Resolve the conflict by running git pull (merge), then push.

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git pull origin main
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 3 (delta 2), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (3/3), 951 bytes | 38.00 KiB/s, done.
From https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-
 * branch            main       -> FETCH_HEAD
 * [new branch]      main       -> origin/main
Auto-merging README.md
CONFLICT (content): Merge conflict in README.md
Automatic merge failed; fix conflicts and then commit the result.

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main|MERGING)
$
```

5. Repeat with another remote/local change, but resolve using git pull --rebase, then push.

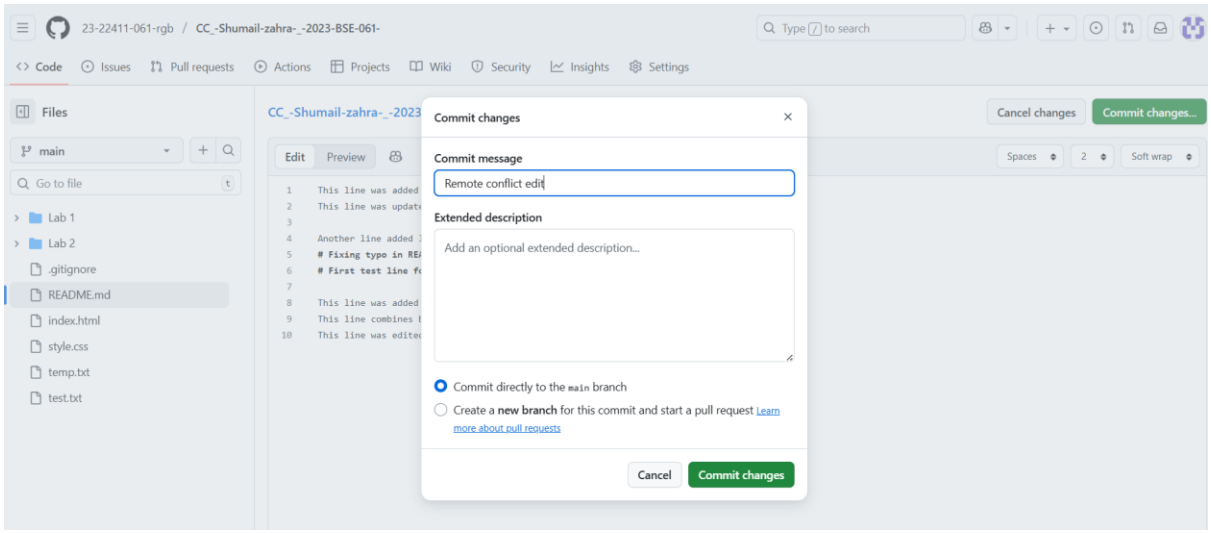
```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main|MERGING)
$ git add README.md

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main|MERGING)
$ git commit -m "Resolved merge conflict"
[main 1c03ea6] Resolved merge conflict

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git push origin main
Enumerating objects: 17, done.
Counting objects: 100% (17/17), done.
Delta compression using up to 8 threads
Compressing objects: 100% (12/12), done.
Writing objects: 100% (13/13), 6.52 KiB | 477.00 KiB/s, done.
Total 13 (delta 6), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (6/6), completed with 2 local objects.
To https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
   9c4f82b..1c03ea6  main -> main

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$
```

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git pull --rebase origin main
From https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-
 * branch            main       -> FETCH_HEAD
Already up to date.

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$
```

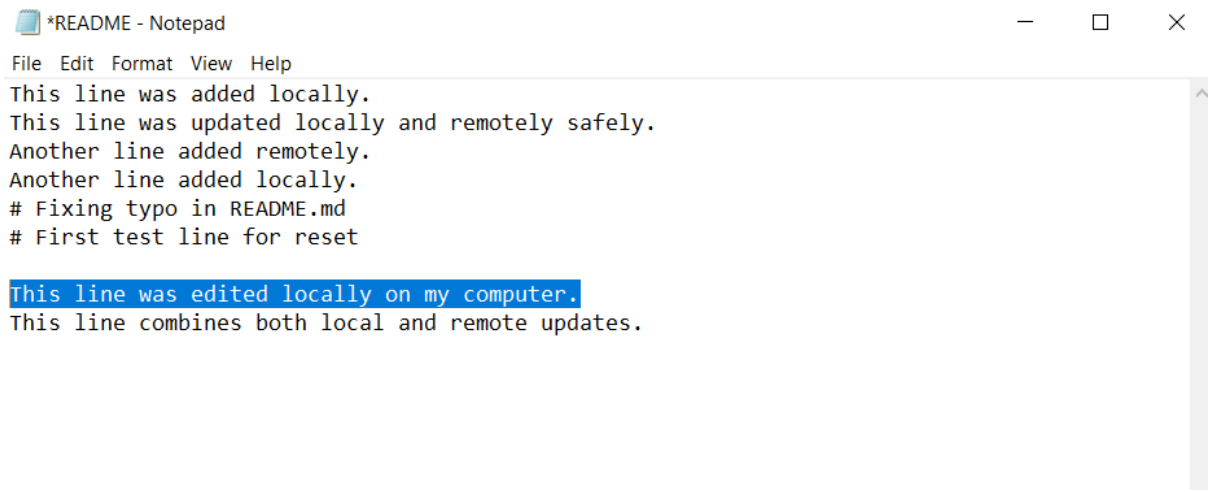
Manual Merge Conflict Handling

Steps:

1. On GitHub, change a specific line in a file and commit.



2. Locally, change the same line differently and commit.




```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git add README.md

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "Local conflicting edit"
On branch main
nothing to commit, working tree clean

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$
```

3. Try to push your local change and observe the conflict error.

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git push origin main
To https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
 ! [rejected]        main -> main (fetch first)
error: failed to push some refs to 'https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git'
hint: Updates were rejected because the remote contains work that you do not
hint: have locally. This is usually caused by another repository pushing to
hint: the same ref. If you want to integrate the remote changes, use
hint: 'git pull' before pushing again.
hint: See the 'Note about fast-forwards' in 'git push --help' for details.

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$
```

4. Use git pull --rebase to fetch changes and trigger the conflict.

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git pull --rebase origin main
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 3 (delta 2), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (3/3), 977 bytes | 75.00 KiB/s, done.
From https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-
 * branch            main       -> FETCH_HEAD
   1c03ea6..a85fbf9  main       -> origin/main
Updating 1c03ea6..a85fbf9
Fast-forward
 README.md | 5 +++--
 1 file changed, 3 insertions(+), 2 deletions(-)
```

5. Edit the conflicted file to resolve the conflict manually.

```
This line was edited locally on my computer.
This line combines both local and remote updates.
This line merges both remote and local updates successfully.
```

6. Mark the conflict resolved (git add <file>, git rebase --continue) and push.

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git add README.md

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git rebase --continue
fatal: no rebase in progress

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ ^C

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git push origin main
Everything up-to-date
```

Managing Ignored and Tracked Files

Steps:

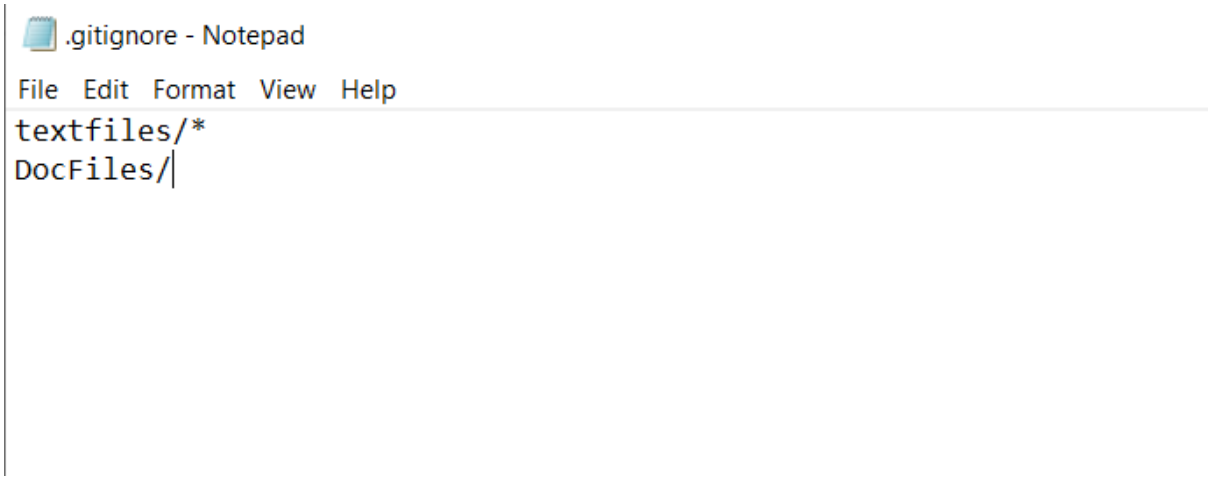
1. Create a new folder (e.g., DocFiles) and add several files inside.

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ mkdir DocFiles

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ cd DocFiles

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061-/DocFiles (main)
$ echo "This is document 1" > file1.txt
echo "This is document 2" > file2.txt

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061-/DocFiles (main)
$ cd ..

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ ls DocFiles
file1.txt  file2.txt
```

2. Commit and push the folder/files to GitHub.

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git add DocFiles
warning: in the working copy of 'DocFiles/file1.txt', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'DocFiles/file2.txt', LF will be replaced by CRLF the next time Git touches it

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "Add DocFiles folder with sample files"
[main fef676f] Add DocFiles folder with sample files
 3 files changed, 5 insertions(+), 3 deletions(-)
 create mode 100644 DocFiles/file1.txt
 create mode 100644 DocFiles/file2.txt

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git push origin main
Enumerating objects: 8, done.
Counting objects: 100% (8/8), done.
Delta compression using up to 8 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (6/6), 710 bytes | 710.00 KiB/s, done.
Total 6 (delta 2), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To https://github.com/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
   a85fbf9..fef676f  main -> main
```

3. Add the folder to your .gitignore file.
    - Screenshot as Q3_gitignore_added.png



4. Commit and push the .gitignore update.

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git add .gitignore

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "Add DocFiles to .gitignore"
[main 477591e] Add DocFiles to .gitignore
 1 file changed, 1 insertion(+)

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git push origin main
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), 426 bytes | 426.00 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/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
   fef676f..477591e  main -> main
```

5. Remove the folder from tracking using git rm -r --cached <folder>.
    - Screenshot as Q3_folder_untracked.png

```
   fef676f..477591e  main -> main

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git rm -r --cached DocFiles
rm 'DocFiles/file1.txt'
rm 'DocFiles/file2.txt'
```

6. Commit and push the change, then verify the folder is no longer tracked on GitHub.

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "Stop tracking DocFiles folder"
[main 70cc2c8] Stop tracking DocFiles folder
 2 files changed, 2 deletions(-)
 delete mode 100644 DocFiles/file1.txt
 delete mode 100644 DocFiles/file2.txt

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git push origin main
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (2/2), 356 bytes | 356.00 KiB/s, done.
Total 2 (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/23-22411-061-rgb/CC_-Shumail-zahra-_-2023-BSE-061-.git
   477591e..70cc2c8  main -> main
```

Commit History Manipulation and Recovery

Steps:

1. Make a change and commit it.

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ echo "Version 1 of file" > version.txt

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git add version.txt
warning: in the working copy of 'version.txt', LF will be replaced by CRLF the next time Git touches it

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "First commit - added version 1"
[main de253c4] First commit - added version 1
 1 file changed, 1 insertion(+)
 create mode 100644 version.txt
```

2. Make another change and commit again.

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ echo "Version 2 of file" > version.txt

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git add version.txt
warning: in the working copy of 'version.txt', LF will be replaced by CRLF the next time Git touches it

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "Second commit - updated to version 2"
[main d1d3d5a] Second commit - updated to version 2
 1 file changed, 1 insertion(+), 1 deletion(-)

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$
```

3. View your commit history.

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git log --oneline
d1d3d5a (HEAD -> main) Second commit - updated to version 2
de253c4 First commit - added version 1
7Occ2c8 (origin/main) Stop tracking DocFiles folder
477591e Add DocFiles to .gitignore
fef676f Add DocFiles folder with sample files
a85fbf9 Remote conflict edit
1c03ea6 Resolved merge conflict
6963f03 Local edit - conflict test
9c4f82b Remote edit - conflict test
dea0a25 Add CV project with index.html and style.css
806fbf6 Add index.html for GitHub Pages site
cbefc4b Revert "Added temporary text file"
ffc8859 Added temporary text file
3e28e1d Added temporary text file
ef21c63 Added test line
4d982b9 Update README.md
bd3c93c (feature-branch) Removed tracked textfiles directory
8bd584b Added .gitignore to ignore textfiles directory
94dcca1 Added textfiles directory with three files
009cb58 Local conflicting change
1497bf7 Remote conflicting change
1bc57ac Removed Lab 2/readme.txt
ebfbcec Local rebase test
f2eb4ce Remote rebase test
552ed40 Resolved merge conflict in README.md
7e2f837 Local update to README
8f9be55 Update README.md
4b61000 Delete Lab 2/Lab_02.zip
1c07675 Added Lab_02 in Lab 2 folder
43a791d Added lab_02.zip in Lab 2 folder
aeba7ac Added LAB01_package.zip in Lab 1 folder
05ca9c9 Added placeholder files in Lab 1 and Lab 2 folders
59974fa Added Lab 1 and Lab 2 folders
c5e2f26 Initial commit - Added Lab 1 and Lab 2 folders
```

4. Perform a soft reset (git reset --soft HEAD~1) and observe your file and history.
    - Screenshot as Q4_soft_reset.png

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git reset --soft HEAD~1

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git status
On branch main
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   version.txt
```

5. Make commit again.
    - Screenshot as Q4_third_commit.png

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git commit -m "Third commit after soft reset"
[main 8d47368] Third commit after soft reset
 1 file changed, 1 insertion(+), 1 deletion(-)
```

6. Perform a hard reset (git reset --hard HEAD~1) and observe the changes.
    - Screenshot as Q4_hard_reset.png

```
Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git reset --hard HEAD~1
HEAD is now at de253c4 First commit - added version 1

Syed@DESKTOP-S5OGK51 MINGW64 ~/CC_-Shumail-zahra-_-2023-BSE-061- (main)
$ git log --oneline
de253c4 (HEAD -> main) First commit - added version 1
70cc2c8 (origin/main) Stop tracking DocFiles folder
477591e Add DocFiles to .gitignore
fef676f Add DocFiles folder with sample files
a85fbf9 Remote conflict edit
1c03ea6 Resolved merge conflict
6963f03 Local edit - conflict test
9c4f82b Remote edit - conflict test
dea0a25 Add CV project with index.html and style.css
806fbf6 Add index.html for GitHub Pages site
cbefc4b Revert "Added temporary text file"
ffc8859 Added temporary text file
3e28e1d Added temporary text file
ef21c63 Added test line
4d982b9 Update README.md
bd3c93c (feature-branch) Removed tracked textfiles directory
8bd584b Added .gitignore to ignore textfiles directory
94dcca1 Added textfiles directory with three files
009cb58 Local conflicting change
1497bf7 Remote conflicting change
1bc57ac Removed Lab 2/readme.txt
ebfbcec Local rebase test
f2eb4ce Remote rebase test
552ed40 Resolved merge conflict in README.md
7e2f837 Local update to README
8f9be55 Update README.md
4b61000 Delete Lab 2/Lab_02.zip
1c07675 Added Lab_02 in Lab 2 folder
43a791d Added lab_02.zip in Lab 2 folder
aeba7ac Added LAB01_package.zip in Lab 1 folder
05ca9c9 Added placeholder files in Lab 1 and Lab 2 folders
59974fa Added Lab 1 and Lab 2 folders
c5e2f26 Initial commit - Added Lab 1 and Lab 2 folders
```