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**Roll\_No: 2023-BSE-073**

**Subject: Cloud Computing**

**Semester & Section: V-B**

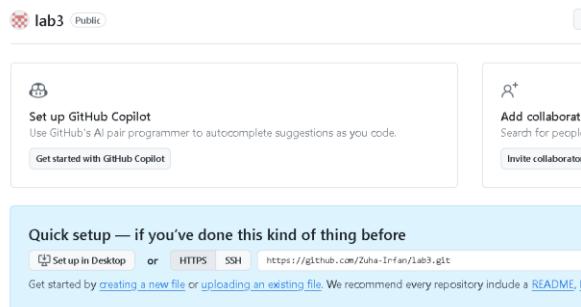
**Lab-No: 03**

## **TASK 1 – Handling Local and Remote Commit Conflicts**

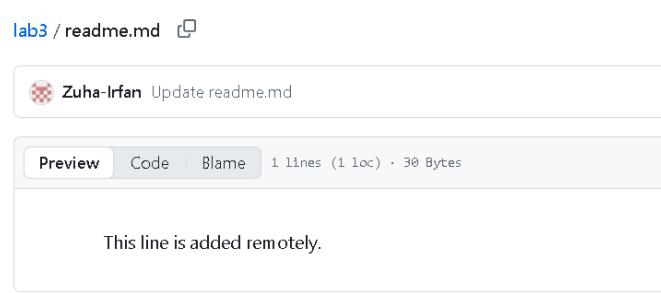
```
c Y S@Irfan-Ahmed MINGW64 ~
$ git config --global user.name "Zuha Irfan"
c Y S@Irfan-Ahmed MINGW64 ~
$ git config --global user.email "23-22411-073@se.fjwu.edu.pk"
s Y S@Irfan-Ahmed MINGW64 ~
$ mkdir Lab3
s Y S@Irfan-Ahmed MINGW64 ~
$ cd Lab3
s Y S@Irfan-Ahmed MINGW64 ~/Lab3
$ git init
Initialized empty Git repository in C:/Users/S Y S/Lab3/.git/
c Y S@Irfan-Ahmed MINGW64 ~/Lab3 (master)
$ echo "# Lab 3 - Git History and Revert Practice" > README.md
c Y S@Irfan-Ahmed MINGW64 ~/Lab3 (master)
$ git add .
warning: in the working copy of 'README.md', LF will be replaced by CRLF the next time Git touches it
c Y S@Irfan-Ahmed MINGW64 ~/Lab3 (master)
$ git commit -m "Initial commit for Lab 3"
[master (root-commit) ecd45cb] Initial commit for Lab 3
 1 file changed, 1 insertion(+)
  create mode 100644 README.md
c Y S@Irfan-Ahmed MINGW64 ~/Lab3 (master)
$ git remote add origin git@github.com:Zuha-Irfan/CC-Zuhairfan-073.git
bash: git@github.com:Zuha-Irfan/CC-Zuhairfan-073.git: No such file or directory
c Y S@Irfan-Ahmed MINGW64 ~/Lab3 (master)
$ git remote add origin git@github.com:Zuha-Irfan/CC-zuhairfan-073.git
c Y S@Irfan-Ahmed MINGW64 ~/Lab3 (master)
$ git branch -M main
c Y S@Irfan-Ahmed MINGW64 ~/Lab3 (main)
$ git push -u origin main
The authenticity of host 'github.com (20.207.73.82)' can't be established.
ED25519 key fingerprint is SHA256:+D1Y3wvv6tuJhbzp2isF/zLDA0zPMsvHdkr4uvCoqu.
This key is not known by any other names.
Are you sure you want to connect (yes/no/[fingerprint])? yes
Warning: Permanently added 'github.com (ED25519)' to the list of known hosts.
git@github.com: Permission denied (publickey).
fatal: Could not read from remote repository.

Please make sure you have the correct access rights
and the repository exists.
```

Make a remote change on GitHub



- remote\_edit.png



- local\_commit.png

```
s Y S@Irfan-Ahmed MINGW64 ~/lab3 (main|MERGING)
$ nano readme.md

s Y S@Irfan-Ahmed MINGW64 ~/lab3 (main|MERGING)
$ git add .
warning: in the working copy of 'readme.md', LF will be replaced by CRLF the
next time Git touches it
i
s Y S@Irfan-Ahmed MINGW64 ~/lab3 (main|MERGING)
$ git commit -m "commit 3"
[main 774a3f0] commit 3
```

- push\_error.png

```
s Y S@Irfan-Ahmed MINGW64 ~/lab3 (main|MERGING)
$ git push
To https://github.com/zuha-irfan/lab3.git
 ! [rejected]      main -> main (non-fast-forward)
error: failed to push some refs to 'https://github.com/zuha-irfan/lab3.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.
```

- merge\_commit.png

```
s Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git pull --no-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), 983 bytes | 32.00 KiB/s, done.
From https://github.com/zuha-irfan/lab3
 * branch      main      -> FETCH_HEAD
   774a3f0..8e31eef main      -> origin/main
Updating 774a3f0..8e31eef
Fast-forward
 readme.md | 2 ++
 1 file changed, 1 insertion(+), 1 deletion(-)
```

- push\_after\_merge.png

```
S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (main)
$ git push -u origin main
branch 'main' set up to track 'origin/main'.
Everything up-to-date
```

- rebase\_pull.png

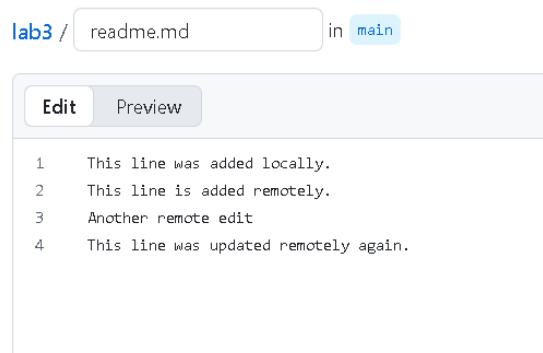
```
S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (main)
$ git pull --rebase origin main
From https://github.com/zuha-irfan/lab3
 * branch            main      -> FETCH_HEAD
Already up to date.
```

- push\_after\_rebase.png

```
S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (main)
$ git push -u origin main
branch 'main' set up to track 'origin/main'.
Everything up-to-date
```

## Task 2 – Creating and Resolving Merge Conflicts Manually

- remote\_conflict\_edit.png



Commit changes X

Commit message  
Update readme.md

Extended description  
Add an optional extended description...

Commit directly to the **main** branch  
 Create a **new branch** for this commit and start a pull request [Learn more about pull requests](#)

Cancel Commit changes

lab3 / readme.md diff ...

Zuha-Irfan Update readme.md 327229a · now History

Preview Code Blame 4 lines (4 loc) · 117 Bytes Raw Copy Download Edit ...

This line was added locally. This line is added remotely. Another remote edit This line was updated remotely again.

- local\_conflict\_edit.png

```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ nano readme.md
```

- local\_conflict\_commit.png

```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git add README.md

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git commit -m "Local conflicting change"
On branch main
Your branch is up to date with 'origin/main'.

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")
```

- conflict\_push\_error.png

```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git push -u origin main
To https://github.com/zuha-irfan/lab3.git
! [rejected]      main -> main (fetch first)
error: failed to push some refs to 'https://github.com/zuha-irfan/lab3.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.
```

- conflict\_message.png

```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (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), 1000 bytes | 62.00 KiB/s, done.
From https://github.com/zuha-irfan/lab3
 * branch            main      -> FETCH_HEAD
   8e31eef..327229a  main      -> origin/main
warning: skipped previously applied commit 39bdbc4
hint: use --reapply-cherry-picks to include skipped commits
hint: Disable this message with "git config set advice.skippedCherryPicks false"
Successfully rebased and updated refs/heads/main.
```

- resolved\_readme.png

```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ cat readme.md
This line was added locally.
This line is added remotely.
Another remote edit
This line was updated remotely again.
```

- rebase\_continue.png

```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main|REBASE 1/1)
$ nano readme.md

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main|REBASE 1/1)
$ git add .

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main|REBASE 1/1)
$ git commit -m "conflicts removed"
[detached HEAD 8cef814] conflicts removed
 1 file changed, 1 insertion(+)

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main|REBASE 1/1)
$ git rebase --continue
Successfully rebased and updated refs/heads/main.
```

- push\_after\_resolve.png

```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git push
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), 342 bytes | 342.00 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.
remote: This repository moved. Please use the new location:
remote: https://github.com/Zuha-Irfan/lab3.git
To https://github.com/zuha-irfan/lab3.git
 262973b..8cef814 main -> main
```

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

- push\_textfiles.png

```

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ mkdir textfiles

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ echo "File A content" > textfiles/a.txt

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ echo "File B content" > textfiles/b.txt

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ echo "File C content" > textfiles/c.txt

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git add .
warning: in the working copy of 'textfiles/a.txt', LF will be replaced by CRLF the next
time Git touches it
warning: in the working copy of 'textfiles/b.txt', LF will be replaced by CRLF the next
time Git touches it
warning: in the working copy of 'textfiles/c.txt', LF will be replaced by CRLF the next
time Git touches it

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git commit -m "Added textfiles directory with three files"
[main e0315eb] 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

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (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), 498 bytes | 498.00 KiB/s, done.
Total 6 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote: This repository moved. Please use the new location:
remote: https://github.com/zuhu-Irfan/lab3.git
To https://github.com/zuhu-Irfan/lab3.git
 8cef814..e0315eb main -> main

```

- gitignore\_push.png

```

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ echo "textfiles/*" > .gitignore

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git add .gitignore
warning: in the working copy of '.gitignore', LF will be replaced by CRLF the next time Git touches it

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git commit -m "Added .gitignore to ignore textfiles directory"
[main bdc0485] Added .gitignore to ignore textfiles directory
 1 file changed, 1 insertion(+)
 create mode 100644 .gitignore

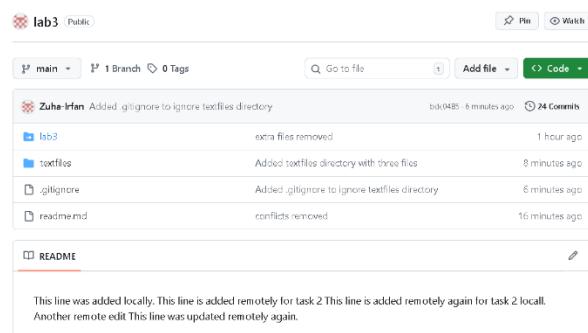
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git push origin main
fatal: unable to access 'https://github.com/zuhu-Irfan/lab3.git/': Could not resolve host: github.com

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git remote -v
origin https://github.com/zuhu-Irfan/lab3.git (fetch)
origin https://github.com/zuhu-Irfan/lab3.git (push)

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git push
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), 388 bytes | 388.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote: This repository moved. Please use the new location:
remote: https://github.com/zuhu-Irfan/lab3.git
To https://github.com/zuhu-Irfan/lab3.git
  e0315eb..bdc0485 main -> main

```

- repo\_still\_has\_textfiles.png



- rm\_cached\_push.png

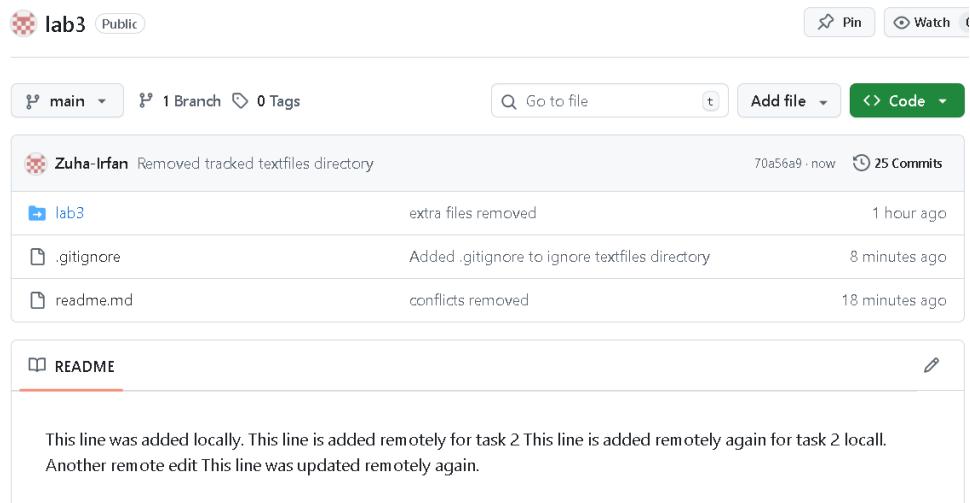
```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git rm -r --cached textfiles
rm 'textfiles/a.txt'
rm 'textfiles/b.txt'
rm 'textfiles/c.txt'

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git add .

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git commit -m "Removed tracked textfiles directory"
[main 70a56a9] 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

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git push
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), 248 bytes | 248.00 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.
remote: This repository moved. Please use the new location:
remote:   https://github.com/Zuha-Irfan/lab3.git
To https://github.com/zuha-irfan/lab3.git
 bdc0485..70a56a9 main -> main
```

- repo\_textfiles\_removed.png



## Task 4 – Create Temporary Changes and Use git stash

- modified\_readme.png

```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git checkout -b feature-branch
Switched to a new branch 'feature-branch'

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (feature-branch)
$ git add README.md

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (feature-branch)
$ git commit -m "Changes the README.md file"
On branch feature-branch
nothing to commit, working tree clean
```

- checkout\_error.png

```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (feature-branch)
$ git checkout main
error: Your local changes to the following files would be overwritten by checkout:
  readme.md
Please commit your changes or stash them before you switch branches.
Aborting
```

- stash\_command.png

```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (feature-branch)
$ git stash
Saved working directory and index state WIP on feature-branch: 96ac26a Tab 4 line added
```

- branch\_switched.png

```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (feature-branch)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
```

- back\_to\_feature.png

```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git checkout feature-branch
Switched to branch 'feature-branch'
```

- status\_clean.png

```
S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (feature-branch)
$ git status
On branch feature-branch
nothing to commit, working tree clean
```

- stash\_pop.png

```
S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (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} (ae4b074961a721c7417751cb7d6eb9d6ae11dc30)
```

## Task 5 – Checkout a Specific Commit Using git log

- log\_before\_checkout.png

```
S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (feature-branch)
$ git log --oneline
96ac26a (HEAD -> feature-branch) Tab 4 line added
70a56a9 (origin/main, origin/HEAD, main) Removed tracked textfiles directory
bdc0485 Added .gitignore to ignore textfiles directory
e0315eb Added textfiles directory with three files
8cef814 conflicts removed
262973b Update README.md
327229a Update README.md
8e31eef Update README.md
774a3f0 commit 3
dbbd4253 Update README.md
2c2beb2 conflict resolved
c7e8b7a local edit
e11b818 Update README.md
7aa9cdc file added
9543bb7 extra files removed
cf233c7 removed nested lab3
a083cfe Resolved merge conflicts
bb17484 Resolved merge conflicts
13f5fb4 Initial local commit
6246d98 Update README.md
c18b9a6 Local update to README
c15225e Second local update
2e8afff Second remote edit
7c40e83 Local update to README
3f306a8 Remote update to README
ece45cb Initial commit for Lab 3
```

- detached\_head.png

```
S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (feature-branch)
$ git checkout ece45cb
warning: unable to rmdir 'Lab3': Directory not empty
Note: switching to 'ece45cb'.

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 ece45cb Initial commit for Lab 3
```

- back\_to\_main.png

```
s Y s@Irfan-Ahmed MINGW64 ~/lab3 ((ece45cb...))
$ git checkout main
Previous HEAD position was ece45cb Initial commit for Lab 3
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
```

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

- first\_commit.png

```
s Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ nano readme.md

s Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git add .

s Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git commit -m "Added test line"
[main 5b4fd72] Added test line
 1 file changed, 1 insertion(+)
```

- second\_commit.png

```
s Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ nano readme.md

s Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git add .

s Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git commit -m "Second test commit"
[main 25654a0] Second test commit
 1 file changed, 2 insertions(+)
```

- log\_before\_reset.png

```
s Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git log --oneline
25654a0 (HEAD -> main) Second test commit
5b4fd72 Added test line
70a36a9 (origin/main, origin/HEAD) Removed tracked textfiles directory
bdc0485 Added .gitignore to ignore textfiles directory
e031e0d Added textfiles directory with three files
8cef814 conflicts removed
262973b update readme.md
327229a Update readme.md
8e31efc Update readme.md
774a3f0 commit 3
dbdd423 Update readme.md
2c2bae2 conflict resolved
c7e8b7a Local edit
e11b818 Update readme.md
7aa9cdc file added
9543b67 extra files removed
cf233c7 removed nested lab3
a083cfe Resolved merge conflicts
bb17484 Resolved merge conflicts
13ff5fb Initial local commit
6246d98 Update README.md
c1809a6 Local update to README
c15225a Second local update
2e8a1ff Second remote edit
7c40e83 Local update to README
3f306a8 Remote update to README
ece45cb Initial commit for Lab 3
```

- file\_before\_reset.png

```
S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (main)
$ nano README.md

S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (main)
```

- soft\_reset.png

```
S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (main)
$ git reset --soft HEAD~1
```

- log\_after\_soft\_reset.png

```
S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (main)
$ git log --oneline
2565da0 (HEAD -> main) Second test commit
5b4fd72 Added test line
70a36a8 (origin/main, origin/HEAD) Removed tracked textfiles directory
bdc0485 Added .gitignore to ignore textfiles directory
e0319eb Added textfiles directory with three files
8cef814 conflicts removed
262973b Update README.md
327229c Update README.md
8e31ee7 Update README.md
774aa3f commit 3
dbd4253 Update README.md
2c2beb1 conflict resolved
c7e8b7a Local edit
e11b818 Update README.md
7aa9cd8 ffiled added
9543bb7 extra files removed
cf233c7 removed nested lab3
a0833cf resolved merge conflicts
bb17484 resolved merge conflicts
13f5fb8 Initial local commit
6246d9e Update README.md
c18b9a6 Local update to README
c15225e second local update
2e8afff second remote edit
7c40e83 Local update to README
5f309a8 Remote update to README
ec495cb initial commit for Lab 3
```

- file\_after\_soft\_reset.png

```
S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (main)
$ nano README.md
```

- file\_after\_hard\_reset.png

```
S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (main)
$ git push -u origin main
Enumerating objects: 10, 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), 315 bytes | 315.00 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: This repository moved. Please use the new location:
remote: https://github.com/zuhairfan/Lab3.git
To https://github.com/zuhairfan/Lab3.git
 70a36a8..5b4fd72 main -> main
branch 'main' set up to track 'origin/main'.

S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (main)
$ git push -f origin main
Everything up-to-date

S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (main)
$ git push -u origin main
branch 'main' set up to track 'origin/main'.
Everything up-to-date

S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

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

- hard\_reset.png

```
s Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git reset --hard HEAD~1
HEAD is now at 70a56a9 Removed tracked textfiles directory
```

- log\_after\_hard\_reset.png

```
s Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git log --oneline
70a56a9 (HEAD -> main) Removed tracked textfiles directory
bdc0485 Added .gitignore to ignore textfiles directory
e0315eb Added textfiles directory with three files
8cef814 conflicts removed
262973b Update readme.md
327229a Update readme.md
8e31eeb Update readme.md
774a3f0 commit 3
dbd4253 Update readme.md
2c2beb2 conflict resolved
c7e8b7a Local edit
e11b818 Update readme.md
7aa9cdc file added
9543bb7 extra files removed
cf233c7 removed nested lab3
a083cfe Resolved merge conflicts
bb17484 Resolved merge conflicts
13f5fba Initial local commit
6246d98 Update README.md
c1899a6 Local update to README
c15225e Second local update
2e8afff Second remote edit
7c40e83 Local update to README
3f306a8 Remote update to README
ece45cb Initial commit for Lab 3
```

- file\_after\_hard\_reset.png

```
s Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ cat readme.md
This line was added locally.
This line is added remotely for task 2
This line is added remotely again for task 2 locally.
Another remote edit
This line was updated remotely again.
```

```
s Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git pull
Updating 70a56a9..5b4fd72
Fast-forward
 readme.md | 1 +
 1 file changed, 1 insertion(+)

s Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
```

## Task 7 – Amending the Last Commit

- first\_amend\_commit.png

```

S Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ nano readme.md

S Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git add .

S Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git commit -m "Fix log message"
[main ad97933] Fix log message
 1 file changed, 1 insertion(+)

```

- amend\_commit.png

:wq!:

The screenshot shows a terminal window with the following text:

```

MINGW64:/c/Users/S Y S/lab3
Fix log message

# Please enter the commit message for your changes. Lines starting
# with '#' will be ignored, and an empty message aborts the commit.
#
# Date:     Fri Oct 17 12:35:07 2025 +0500
#
# 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:
#       modified:   README.md
#
~
~
~
```

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

- commit\_temp\_file.png

```

S Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ nano temp.txt

S Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git add.
git: 'add.' is not a git command. See 'git --help'.
The most similar command is
  add

S Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git add.
warning: in the working copy of 'temp.txt', LF will be replaced by CRLF the next
time Git touches it

S Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git commit -m "Added temporary text file"
[main 8a2e919] Added temporary text file
 2 files changed, 16 insertions(+)
 create mode 100644 temp.txt
 create mode 100644 "\357\200\272"

S Y s@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git push origin main
Enumerating objects: 9, done.
Counting objects: 100% (9/9), done.
Delta compression using up to 8 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (7/7), 906 bytes | 906.00 KiB/s, done.
Total 7 (delta 2), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (2/2), completed with 1 local object.
remote: This repository moved. Please use the new location:
remote: https://github.com/zuhai-Irfan/lab3.git
To https://github.com/zuhai-Irfan/lab3.git
  5b4fd72..8a2e919  main -> main

```

- revert\_commit.png

```

S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (main)
$ git log --oneline
a972f4d Pick log message
b4d0485 Added test line
b4d0485 Added .gitignore to ignore textfiles directory
a0315cb Added textfiles directory with three files
a0315cb Local edit
262975b Update README.md
262975b Update README.md
262975b Update README.md
774e380 commit 3
db49253 Local edit
2c29eb2 conflict resolved
c7e5bb7 Local edit
a11b816 Local edit
7aa59dc filled added
9545bb7 extra files removed
c108946 Removed nested lab3
a0315cb Resolved Merge conflicts
bb11494 Resolved Merge conflicts
1145fb6 Local update to README
6244d96 Update README.md
c108946 Second local update
c108946 Second remote edit
7404e38 Local update to README
5f30068 Remote update to README
5f30068 Initial commit for Lab 3
[CHOK]
a0315cb Added textfiles directory with three files
a0315cb Local edit
262975b Update README.md
262975b Update README.md
262975b Update README.md
774e380 commit 3
db49253 Update README.md
2c29eb2 conflict resolved
c7e5bb7 Local edit
a11b816 Update README.md
7aa59dc removed nested lab3
9545bb7 extra files removed
c108946 Removed nested lab3
a0315cb Resolved Merge conflicts
bb11494 Resolved Merge conflicts
1145fb6 Local update to README
6244d96 Update README.md
c108946 Local update to README
c108946 Local update to README
2c29eb2 Second remote edit
7404e38 Local update to README
5f30068 Remote update to README
5f30068 Initial commit for Lab 3
[CHOK]
a0315cb Added textfiles directory with three files
8ee6814 conflicts removed
8ee6814 Local edit
527229b Update README.md
0e31ef7 Update README.md
7404e38 Local update to README
db49253 Update README.md
2c29eb2 conflict resolved
c7e5bb7 Local edit
a11b816 Update README.md
7aa59dc extra files removed
c108946 Removed nested lab3
a0315cb Resolved Merge conflicts
bb11494 Resolved Merge conflicts
1145fb6 Initial local commit
6244d96 Update README.md
c108946 Local update to README
c108946 Local update to README
2c29eb2 Second remote edit
7404e38 Local update to README
5f30068 Remote update to README
5f30068 Initial commit for Lab 3

```

```

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git revert ece45cb
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean

```

- revert\_push.png

```

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git push origin main
Everything up-to-date

```

## Task 9 – Force Push (With Caution)

- new\_branch.png

```

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (zuha-branch)
$ git checkout -b test-force
Switched to a new branch 'test-force'

```

- force\_commit.png

```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (test-force)
$ nano readme.md

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (test-force)
$ git add readme.md

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (test-force)
$

S Y S@Irfan-Ahmed MINGW64 ~/lab3 (test-force)
$ git push -u origin your-branch-name
fatal: unable to access 'https://github.com/zuha-irfan/lab3.git/': Failed to connect to github.com port 443 after 22178 ms: Could not connect to server
```

- push\_force\_branch.png

```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (test-force)
$ git push -u origin test-force
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote: This repository moved. Please use the new location:
remote:   https://github.com/Zuha-Irfan/lab3.git
remote:
remote: Create a pull request for 'test-force' on GitHub by visiting:
remote:   https://github.com/Zuha-Irfan/lab3/pull/new/test-force
remote:
To https://github.com/zuha-irfan/lab3.git
 * [new branch]      test-force -> test-force
branch 'test-force' set up to track 'origin/test-force'.
```

- hard\_reset\_force.png

```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (test-force)
$ git reset --hard HEAD~1
HEAD is now at e972fa4 Fix log message
```

- normal\_push.png

```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (test-force)
$ git push origin test-force
To https://github.com/zuha-irfan/lab3.git
 ! [rejected]          test-force -> test-force (non-fast-forward)
error: failed to push some refs to 'https://github.com/zuha-irfan/lab3.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.
```

- force\_push.png

```
S Y S@Irfan-Ahmed MINGW64 ~/lab3 (test-force)
$ git push origin test-force --force
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote: This repository moved. Please use the new location:
remote:   https://github.com/Zuha-Irfan/lab3.git
To https://github.com/zuha-irfan/lab3.git
 + 8a2e919...e972fa4 test-force -> test-force (forced update)
```

## Task 10 – Running Gitea in GitHub Codespaces via Docker Compose

- forked\_gitea.png

**Create a new fork**

A *fork* is a copy of a repository. Forking a repository allows you to freely experiment with changes without affecting the original project. [View existing forks](#).

Required fields are marked with an asterisk (\*).

Owner \*      Repository name \*

Zuha-Irfan / Gitea  Gitea is available.

By default, forks are named the same as their upstream repository. You can customize the name to distinguish it further.

Description

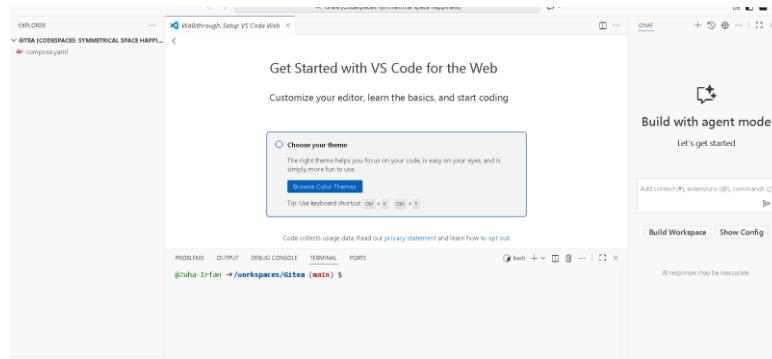
Gitea Tutorial  
15 / 350 characters

Copy the main branch only  
Contribute back to WaqasSaleem97/Gitea by adding your own branch. [Learn more](#).

① You are creating a fork in your personal account.

**Create fork**

- codespace\_loading.png



- docker\_up.png

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

- gitea\_install\_page.png

Port	Forwarded Address	Running Process	Visibility	Origin
3000	https://symmetrica...	/usr/bin/docker-proxy -proto tcp -host-ip ...	Public	Auto Forwarded

- admin\_setup.png

Register

Username \*

Email Address \*

Password \*

Confirm Password \*

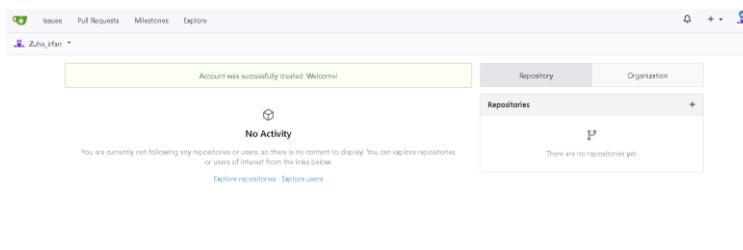
Register Account

or

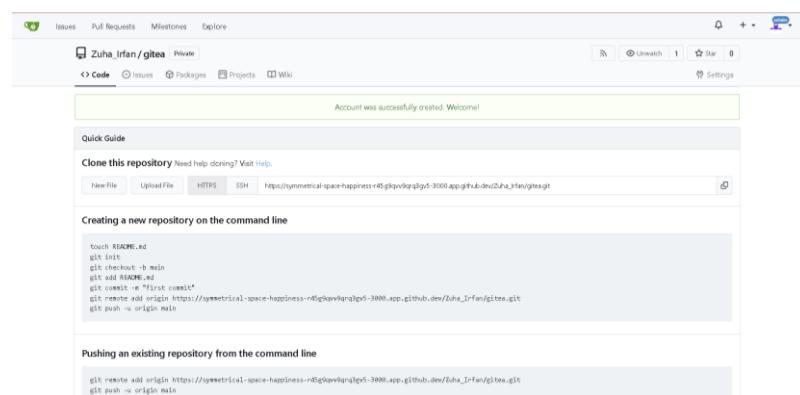
Sign in with OpenID

Already have an account? [Sign in now!](#)

- gitea\_dashboard.png



- gitea\_new\_repo.png



## Task 11 – Creating a GitHub Pages Portfolio Site

- github\_pages\_repo.png

Zuha-Irfan / Zuha-Irfan.github.io

**Code** Issues Pull requests Actions Projects Wiki Security Insights Settings

**Zuha-Irfan.github.io** Public

**Set up GitHub Copilot**  
Use GitHub's AI pair programmer to autocomplete suggestions as you code.  
[Get started with GitHub Copilot](#)

**Add collaborators to this repository**  
Search for people using their GitHub username or email address.  
[Invite collaborators](#)

**Quick setup — if you've done this kind of thing before**

Setup in Desktop or HTTPS SSH <https://github.com/Zuha-Irfan/Zuha-Irfan.github.io.git>

Get started by [creating a new file](#) or [uploading an existing file](#). We recommend every repository include a [README](#), [LICENSE](#), and [.gitignore](#).

**...or create a new repository on the command line**

```
echo "# Zuha-Irfan.github.io" >> README.md
git init
git add README.md
git commit -m "first commit"
git branch -M main
git remote add origin https://github.com/Zuha-Irfan/Zuha-Irfan.github.io.git
git push -u origin main
```

- local\_static\_site.png

Start backup > Documents > portfolio

Name	Date modified	Type	Size
index.html	10/17/2025 1:25 PM	Chrome HTML Do...	1 KB
script.js	10/17/2025 1:26 PM	JSFile	1 KB
style.css	10/17/2025 1:26 PM	CSSfile	1 KB

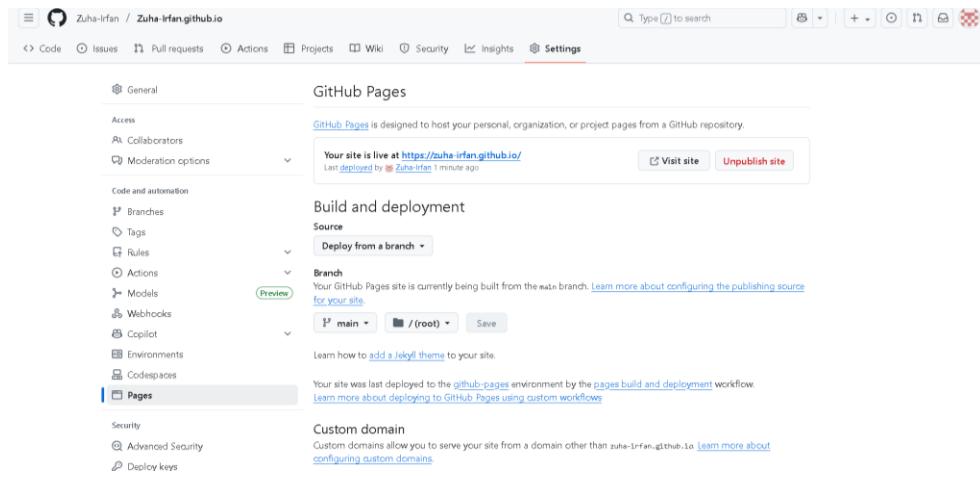
- push\_static\_site.png

```
S Y S@Irfan-Ahmed MINGW64 ~ (master)
$ cd "C:/Users/S Y S/Documents/portfolio"
S Y S@Irfan-Ahmed MINGW64 ~/Documents/portfolio (master)
$ ls
index.html script.js style.css

S Y S@Irfan-Ahmed MINGW64 ~/Documents/portfolio (master)
$ git init
Initialized empty Git repository in C:/Users/S Y S/Documents/portfolio/.git/
S Y S@Irfan-Ahmed MINGW64 ~/Documents/portfolio (master)
$ git remote add origin git@github.com:Zuha-Irfan/Zuha-Irfan.github.io.git
S Y S@Irfan-Ahmed MINGW64 ~/Documents/portfolio (master)
$ git add .
git commit -m "Add portfolio site for GitHub Pages"
[master (root-commit) d949cd6] Add portfolio site for GitHub Pages
 3 files changed, 34 insertions(+)
  create mode 100644 index.html
  create mode 100644 script.js
  create mode 100644 style.css

S Y S@Irfan-Ahmed MINGW64 ~/Documents/portfolio (master)
$ git branch -M 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% (5/5), done.
Writing objects: 100% (5/5), 821 bytes | 821.00 KiB/s, done.
Total 5 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:Zuha-Irfan/Zuha-Irfan.github.io.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.
```

- `github_pages_settings.png`



- `live_site.png`

