

Name : Zuha Irfan

Roll_No: 2023-BSE-073

Subject: Cloud Computing

Semester & Section: V-B

Lab-No: 03

TASK 1 – Handling Local and Remote Commit Conflicts

```
S Y S@Irfan-Ahmed MINGW64 ~
$ git config --global user.name "Zuha Irfan"

S 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/

S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (master)
$ echo "# Lab 3 - Git History and Revert Practice" > README.md

S 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

S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (master)
$ git commit -m "Initial commit for Lab 3"
[master (root-commit) ece45cb] Initial commit for Lab 3
1 file changed, 1 insertion(+)
 create mode 100644 README.md

S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (master)
$ git@github.com:Zuha-Irfan/CC-ZuhaIrfan-073.git
bash: git@github.com:Zuha-Irfan/CC-ZuhaIrfan-073.git: No such file or directory

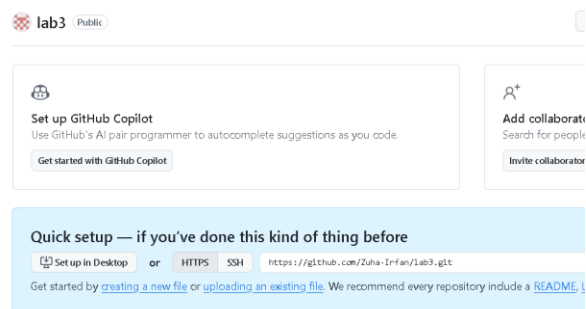
S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (master)
$ git remote add origin git@github.com:Zuha-Irfan/CC-ZuhaIrfan-073.git

S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (master)
$ git branch -M main

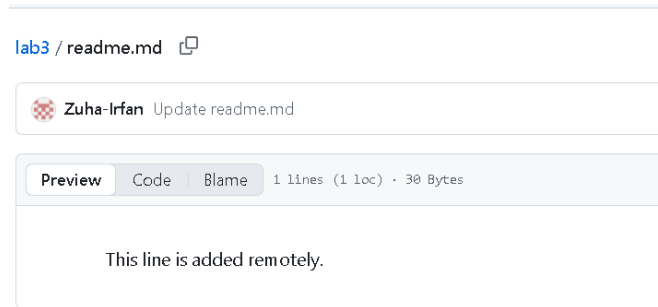
S Y S@Irfan-Ahmed MINGW64 ~/Lab3 (main)
$ git push -u origin main
The authenticity of host 'github.com [20.207.73.82]' can't be established.
ED25519 key fingerprint is SHA256:+DiY3wvvV6TUJJhbp2iSF/zLDA0zPMSVHdkR4UvCOqu.
This key is not known by any other names.
Are you sure you want to continue connecting (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

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

$ 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
$ Y S@Irfan-Ahmed MINGW64 ~/lab3 (main|MERGING)
$ git commit -m "commit 3"
[main 774a3f0] commit 3
```

- push_error.png

```
$ 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

```
$ 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

lab3 / in

Edit

Preview

```
1 This line was added locally.
2 This line is added remotely.
3 Another remote edit
4 This line was updated remotely again.
```

Commit changes

×

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

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

```

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

$ 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

```

$ 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

```

$ 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

```

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

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

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

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

$ 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

$ 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

$ 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/Zuha-Irfan/lab3.git
To https://github.com/Zuha-Irfan/lab3.git
8cef814..e0315eb  main -> main

```

- gitignore_push.png

```

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

$ 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

$ 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

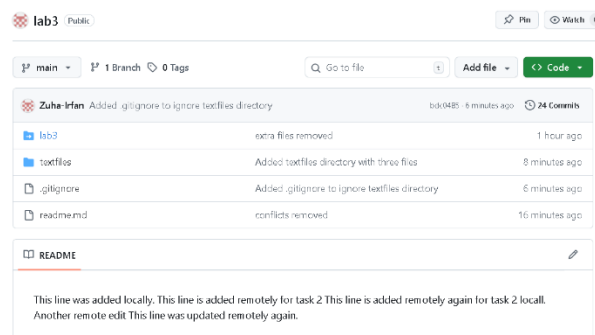
$ Y S@Irfan-Ahmed MINGW64 ~/lab3 (main)
$ git push origin main
fatal: unable to access 'https://github.com/Zuha-Irfan/lab3.git/': could not resolve host: github.com

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

$ 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/Zuha-Irfan/lab3.git
To https://github.com/Zuha-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

The screenshot shows the GitHub interface for a repository named 'lab3' (Public). The commit history table is as follows:

Commit Hash	Author	Message	Time
70a56a9	Zuha-Irfan	Removed tracked textfiles directory	now
lab3		extra files removed	1 hour ago
		Added .gitignore to ignore textfiles directory	8 minutes ago
		conflicts removed	18 minutes ago

The README file content is:

```

This line was added locally. This line is added remotely for task 2 This line is added remotely again for task 2 locall.
Another remote edit This line was updated remotely again.

```

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 lab 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) lab 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
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
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
70a56a9 (origin/main, origin/HEAD) Removed tracked textfiles directory
bdc0485 Added .gitignore to ignore textfiles directory
e0315eb Added textfiles directory with three files
8cef614 conflicts removed
262973b Update readme.md
327229a Update readme.md
8e31eeF Update readme.md
774a3f0 commit 3
dbd4253 Update readme.md
2c2beb2 conflict resolved
c7e8b7a local edit
e11b618 Update readme.md
7aa9cdc filed 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
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
```

- file_before_reset.png

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

- 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
25654a0 (HEAD -> main) Second test commit
5b4fd72 Added test line
70a56a9 (origin/main, origin/HEAD) 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
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
133f5fb 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
```

- 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: 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), 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/zuha-irfan/lab3.git
To https://github.com/zuha-irfan/lab3.git
70a56a9..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
8e31eef Update readme.md
774a3f0 commit 3
dbd4253 Update readme.md
2c2beb2 conflict resolved
c7e8b7a local edit
e11b818 Update readme.md
7aa9cdc filed 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
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
```

- 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 locall.
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!:

```

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/Zuha-Irfan/lab3.git
To https://github.com/Zuha-Irfan/lab3.git
5b4fd2..8a2e919  main -> main

```

- revert_commit.png

```
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

```

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

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

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

$ 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

```

$ 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

```

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

```

- normal_push.png

```

$ 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

```

$ 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 *

Zuha-Irfan

Repository name *

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

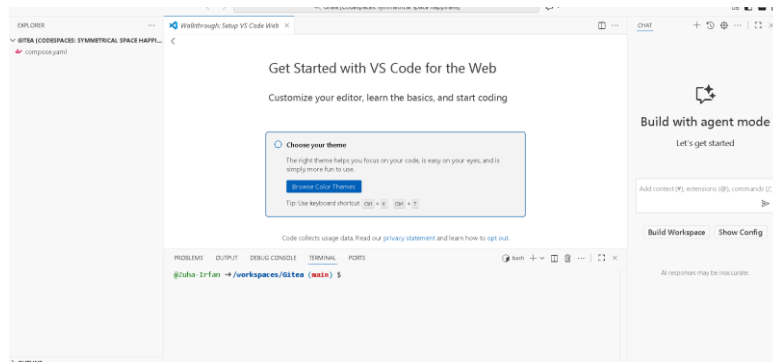
☒ Copy the `main` branch only

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

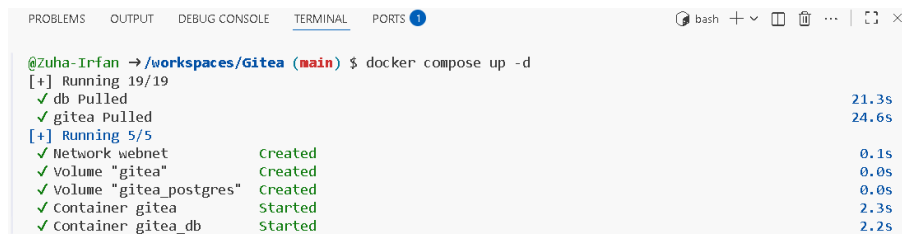
You are creating a fork in your personal account.

Create fork

- codespace_loading.png



- docker_up.png



- 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
Add Port				

- admin_setup.png

Register

Username *

Email Address *

Password *

Confirm Password *

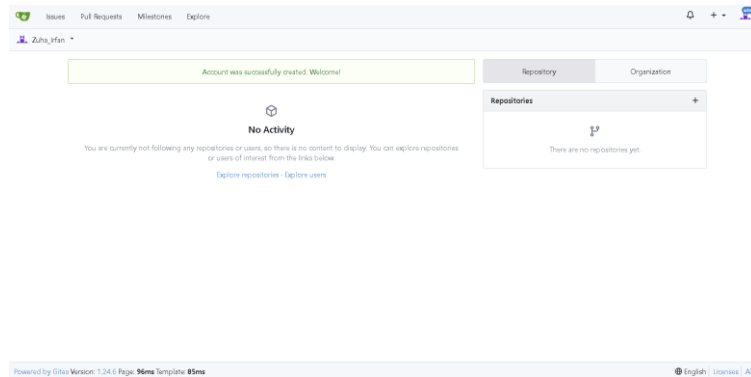
Register Account

or

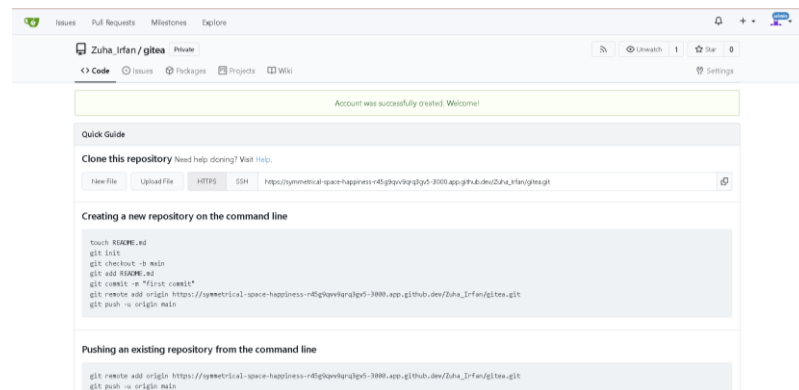
Sign in with OpenID

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

- gitea_dashboard.png

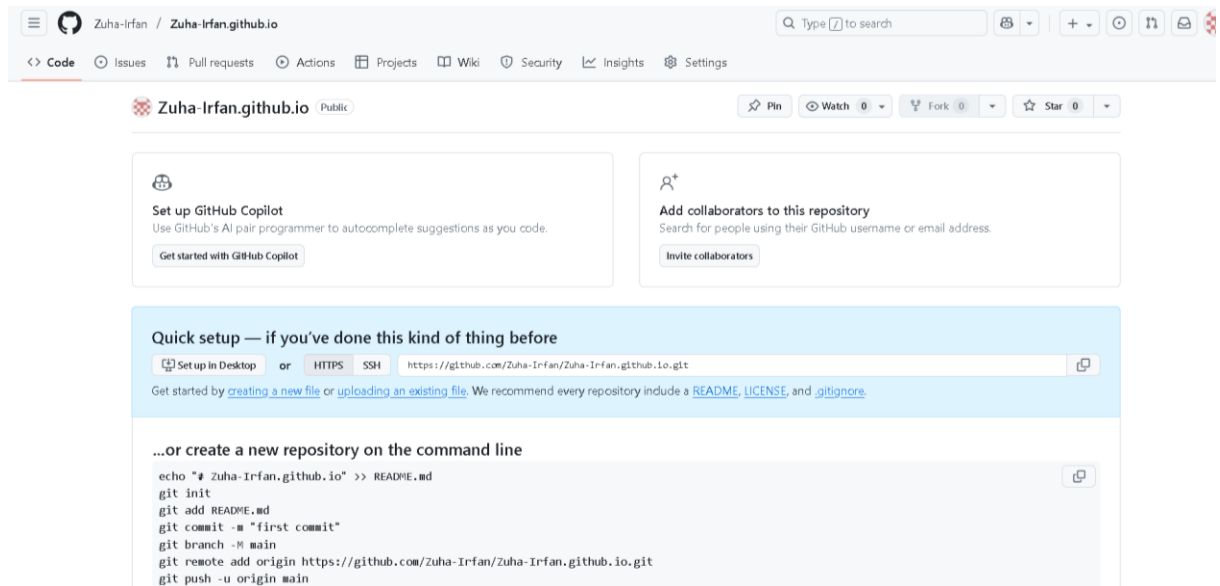


- gitea_new_repo.png

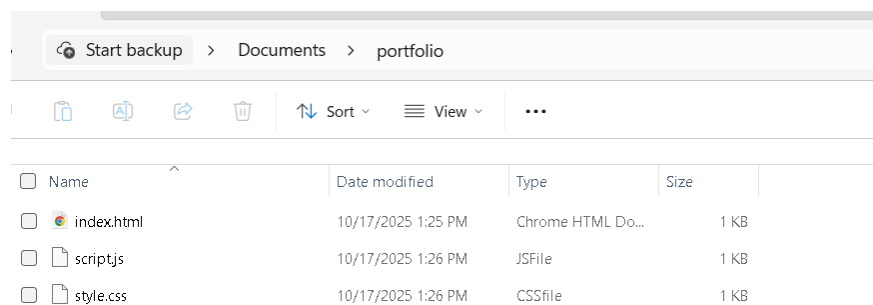


Task 11 – Creating a GitHub Pages Portfolio Site

- github_pages_repo.png



- local_static_site.png



- push_static_site.png

```
$ Y S@Irfan-Ahmed MINGW64 ~ (master)
$ cd "C:/Users/S Y S/Documents/portfolio"

$ Y S@Irfan-Ahmed MINGW64 ~/Documents/portfolio (master)
$ ls
index.html  script.js  style.css

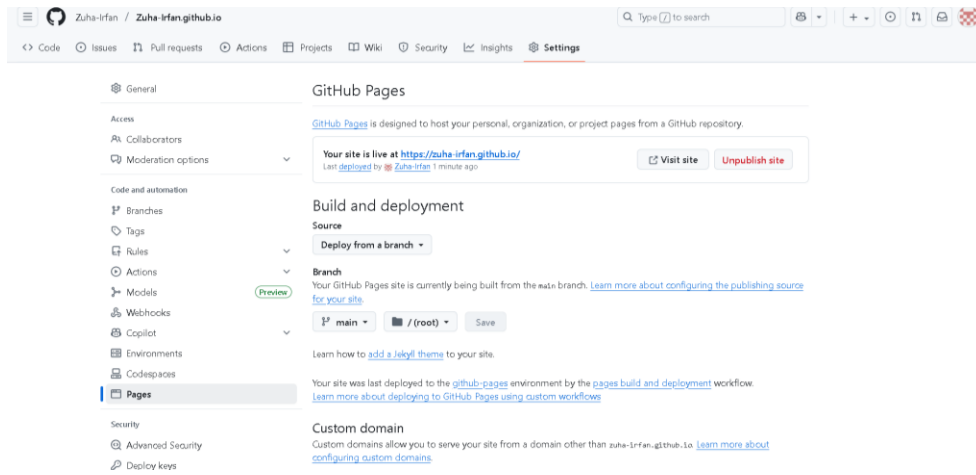
$ Y S@Irfan-Ahmed MINGW64 ~/Documents/portfolio (master)
$ git init
Initialized empty Git repository in C:/Users/S Y S/Documents/portfolio/.git/

$ Y S@Irfan-Ahmed MINGW64 ~/Documents/portfolio (master)
$ git remote add origin git@github.com:Zuha-Irfan/Zuha-Irfan.github.io.git

$ Y S@Irfan-Ahmed MINGW64 ~/Documents/portfolio (master)
$ git add .
git commit -m "Add portfolio site for GitHub Pages"
[master (root-commit) d949cde] 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

$ 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

