Name: Maira Malik

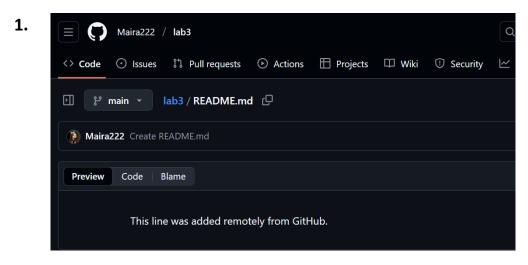
Reg.no: 2023-BSE-040

Subject: Cloud Computing

LAB#3

Task 1:

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



```
BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
       $ touch README.md
2.
       BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
       $ cat README.md
       BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
       $ nano README.md
       BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
       $ cat README.md
       this line was added locally
       BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
       $ git add README.md
       warning: in the working copy of 'README.md', LF will be rept time Git touches it
       BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
       $ git add .
       BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ git commit -m "Local update to readme"
[main 354ca58] Local update to readme
```

```
4. Sit pull --no-rebase origin main remote: Enumerating objects: 5, done. remote: Counting objects: 100% (5/5), done. remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0) Unpacking objects: 100% (3/3), 925 bytes | 42.00 KiB/s, done. From github.com:Maira222/lab3

* branch main -> FETCH_HEAD
354ca58..340fa43 main -> origin/main
Updating 354ca58..340fa43
Fast-forward
README.md | 2 +-
1 file changed, 1 insertion(+), 1 deletion(-)
```

```
5. BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main) $ git push -u origin main branch 'main' set up to track 'origin/main'. Everything up-to-date
```

```
To github.com:Maira222/lab3.git
95ef458..3fe0eb4 main -> main
branch 'main' set up to track 'origin/main'.
```

Task 2: Creating and Resolving Merge Conflicts Manually

```
It is line was updated remotely--- this line was added locally---- this is another edit this local edit
```

```
2.

BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ cat README.md

this line was updated locally at the same time this line was added locally----
this is another edit this local edit
```

```
BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ git add README.md

BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ git commit -m "local conflicting edit"
[main 43549e1] local conflicting edit
1 file changed, 1 insertion(+), 1 deletion(-)
```

```
BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ git push -u origin main
To github.com:Maira222/lab3.git
! [rejected] main -> main (fetch first)
error: failed to push some refs to 'github.com:Maira222/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.
```

```
Soss@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ git pull --rebase origin main
remote: Enumerating objects: 8, done.
remote: Counting objects: 100% (8/8), done.
remote: Compressing objects: 100% (4/4), done.
remote: Total 6 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (6/6), 1.89 KiB | 25.00 KiB/s, done.
From github.com:Maira222/lab3
* branch main -> FETCH_HEAD
3fe0eb4..614226c main -> origin/main
Auto-merging README.md
CONFLICT (content): Merge conflict in README.md
error: could not apply 43549e1... local conflicting edit
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 --at
rt".
hint: Disable this message with "git config set advice.mergeConflict false"
Could not apply 43549e1... # local conflicting edit
```

```
BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main|REBASE 1/1)
$ nano README.md

BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main|REBASE 1/1)
$ git add README.md

BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main|REBASE 1/1)
$ git commit -m "mmm"
[detached HEAD 73d7997] mmm
    1 file changed, 3 insertions(+), 1 deletion(-)

BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main|REBASE 1/1)
$ git rebase --continue
Successfully rebased and updated refs/heads/main.
```

```
BOSS@DESKTOP-7K1JVGS 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% (2/2), done.
Writing objects: 100% (3/3), 305 bytes | 76.00 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 github.com:Maira222/lab3.git
614226c..73d7997 main -> main
lbranch 'main' set up to track 'origin/main'.
```

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

```
@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
                              $ mkdir textfiles
1.
                             BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ echo "File A content" > textfiles/a.txt
                             BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ echo "File B content" > textfiles/b.txt
                            BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main) $ echo "File C content" > textfiles/c.txt
                              BOSS@DESKTOP-7K1JVGS 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
                            BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ git commit -m "added fils to directory with 3 files"
[main 43ce678] added fils to directory with 3 files
3 files changed, 3 insertions(+)
create mode 100644 textfiles/a.txt
create mode 100644 textfiles/b.txt
create mode 100644 textfiles/c.txt
                            BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ git push origin main
                            IN 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), 461 bytes | 57.00 KiB/s, done.
Total 6 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:Maira222/lab3.git
73d7997 43ce678 main -> main
                                    73d7997..43ce678 main -> main
```

```
2. BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ echo "textfiles/*" > .gitignore

BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ git add .gitignore

warning: in the working copy of '.gitignore', LF will be rep
laced by CRLF the next time Git touches it

BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ git commit -m "added .gitignore to ignore"
[main 71af1af] added .gitignore to ignore
1 file changed, 1 insertion(+)
create mode 100644 .gitignore

BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (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), 343 bytes | 85.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:Maira222/lab3.git
43ce678..71af1af main -> main
```

3. Public

Public

Public

Public

Public

Public

O Tags

Q Go

Maira222 added .gitignore to ignore

textfiles

added fils to director

gitignore

added .gitignore to

README.md

mmm

```
4. Sight rm -r --cached textfiles

rm 'textfiles/a.txt'

rm 'textfiles/b.txt'

rm 'textfiles/c.txt'

80SS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)

$ git add .

warning: in the working copy of 'gitignore', LF will be replaced by CRLF the next time Git touches it

80SS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)

$ git commit -m "removes files"

[main f3a5f6c] removes files

4 files changed, 1 insertion(+), 3 deletions(-)

create mode 100644 gitignore

delete mode 100644 textfiles/a.txt
delete mode 100644 textfiles/b.txt
delete mode 100644 textfiles/c.txt

80SS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (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.

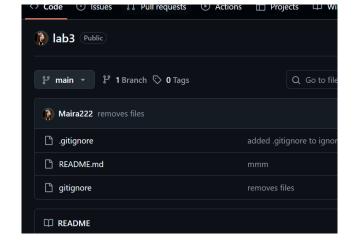
Writing objects: 100% (2/2), 238 bytes | 79.00 KiB/s, done.

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 github.com:Maira222/lab3.git

71af1af..f3a5f6c main -> main
```



5.

```
1. SOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (feature-branch)
3 nano README.md
30SS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (feature-branch)
5 git add README.md
30SS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (feature-branch)
5 git commit -m "Changes The README.md file"
[feature-branch 7628f1a] Changes The README.md file
1 file changed, 1 insertion(+), 1 deletion(-)
```

BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
\$ git checkout feature-branch
error: Your local changes to the following files would be overwri
tten by checkout:
 README.md
Please commit your changes or stash them before you switch branch
es.
Aborting

```
$ git stash
warning: in the working copy of 'README.md', LF will be replaced by CRLF the next time Git touches it Saved working directory and index state WIP on main: f3a5f6c remo ves files

BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ git checkout feature-branch
Switched to branch 'feature-branch'
```

4. BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
\$ git checkout feature-branch
Switched to branch 'feature-branch'

```
BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 ((4c8c07c...))
$ git checkout main
Previous HEAD position was 4c8c07c last commit
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ |
```

```
BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (feature-branch)
$ git status
On branch feature-branch
nothing to commit, working tree clean
```

```
POSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (feature-branch)
$ git stash pop
Auto-merging README.md
CONFLICT (content): Merge conflict in README.md
On branch feature-branch
Unmerged paths:
    (use "git restore --staged <file>..." to unstage)
    (use "git add <file>..." to mark resolution)
    both modified: README.md

no changes added to commit (use "git add" and/or "git commit -a")
The stash entry is kept in case you need it again.
```

Task 5: Checkout a Specific Commit Using git log

```
BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (feature-branch)
$ git log --oneline
7628fla (HEAD -> feature-branch) Changes The README.md file
f3a5f6c (origin/main, origin/HEAD, main) removes files
71aflaf added .gitignore to ignore
43ce678 added fils to directory with 3 files
73d7997 mmm
614226c Update README.md
800f993 Update README.md
13fe0eb4 eee
1399e92 ledit
95ef458 Update README.md
f03e5fb Update README.md
7e9c0c7 local
340fa43 Update README.md
354ca58 Local update to readme
14ca8a4 Create README.md
```

```
$ git checkout 4c8c07c'.

Note: switching to '4c8c07c'.

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 4c8c07c last commit
```

```
BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 ((4c8c07c...))
$ git checkout main
Previous HEAD position was 4c8c07c last commit
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
```

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

```
1. Soss@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ nano README.md

BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ git add .

BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ git commit -m "Added test line"
[main 4639c5a] Added test line
1 file changed, 1 insertion(+)
```

```
2. BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ git log --oneline
f20c6ba (HEAD -> main) second test commit
4639c5a Added test line
f3a5f6c (origin/main, origin/HEAD) removes files
71af1af added .gitignore to ignore
43ce678 added fils to directory with 3 files
73d7997 mmm
614226c Update README.md
800f993 Update README.md
3fe0eb4 eee
1399e92 ledit
95ef458 Update README.md
f03e5fb Update README.md
7e9c0c7 local
340fa43 Update README.md
354ca58 Local update to readme
14ca8a4 Create README.md
```

```
MINGW64:/c/Users/BOSS/lab3

GNU nano 8.5

README.md

3.

this line was updated remotely---this line was updated locally at the same this line was added locally----this is another edit this local edit heyy this is me Maira malik
```

```
BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ git reset --soft HEAD~1
```

```
SOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)

$ git log --oneline

4639c5a (HEAD -> main) Added test line

f3a5f6c (origin/main, origin/HEAD) removes files

7laflaf added .gitignore to ignore

43ce678 added fils to directory with 3 files

73d7997 mmm

514226c Update README.md

300f993 Update README.md

36e0eb4 eee

1399e92 ledit

95ef458 Update README.md

f03e5fb Update README.md

709e007 local

340fa43 Update README.md

354ca58 Local update to readme

14ca8a4 Create README.md
```

```
MINGW64:/c/Users/BOSS/lab3 — □

GNU nano 8.5 README.md

This line was updated remotely---this line was updated locally at the same time

this line was added locally----
this is another edit
this local edit
heyy this is me
Maira malik
```

```
BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (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

BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ git commit -m "Second Test commit"
[main 6688456] Second Test commit
1 file changed, 1 insertion(+), 1 deletion(-)
```

```
8. BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main) $ git reset --hard HEAD~1 HEAD is now at 4639c5a Added test line
```

```
9. BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main)
$ git log --oneline
4639c5a (HEAD -> main) Added test line
f3a5f6c (origin/main, origin/HEAD) removes files
71af1af added .gitignore to ignore
43ce678 added fils to directory with 3 files
73d7997 mmm
614226c Update README.md
800f993 Update README.md
3fe0eb4 eee
1399e92 ledit
95ef458 Update README.md
f03e5fb Update README.md
7ce9coc7 local
340fa43 Update README.md
354ca58 Local update to readme
14ca8a4 Create README.md
```

```
GNU nano 8.5

README.md

this line was updated remotely---this line was updated locally at this line was added locally----this is another edit this local edit heyy this is me
```

Task 7: Amending the Last Commit

```
BOSS@DESKTOP-7K1JVGS MINGW64 -/lab3 (main)
$ echo "temporary text" >>temp.txt

BOSS@DESKTOP-7K1JVGS MINGW64 -/lab3 (main)
$ git add.
warning: in the working copy of 'temp.txt', LF will be replaced by CRLF time Git touches it

BOSS@DESKTOP-7K1JVGS MINGW64 -/lab3 (main)
$ git commit -m "Added temp text file"
i[main 4c6698e] Added temp text file
1 file changed, 1 insertion(+)
create mode 100644 temp.txt

BOSS@DESKTOP-7K1JVGS MINGW64 -/lab3 (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% (8/8), done.
writing objects: 100% (8/8), done.
vwriting objects: 100% (8/8), done.
Total 9 (delta 3), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (3/3), completed with 1 local object.
To github.com:Maira222/lab3.git
f3a5f6c..4c6698e main -> main
```

```
3.

**BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (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), 262 bytes | 87.00 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 github.com:Maira222/lab3.git

4c6698e..5bb4583 main -> main
```

Task 8: Force Push (With Caution)

```
1. BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (main) $ git checkout -b test-force Switched to a new branch 'test-force'
```

```
BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (test-force)
$ git push origin test-force
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'test-force' on GitHub by visiting:
remote: https://github.com/Maira222/lab3/pull/new/test-force
remote:
To github.com:Maira222/lab3.git
    * [new branch] test-force -> test-force
```

```
BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (test-force)
$ git reset --hard HEAD~1
HEAD is now at 4c6698e Added temp text file
```

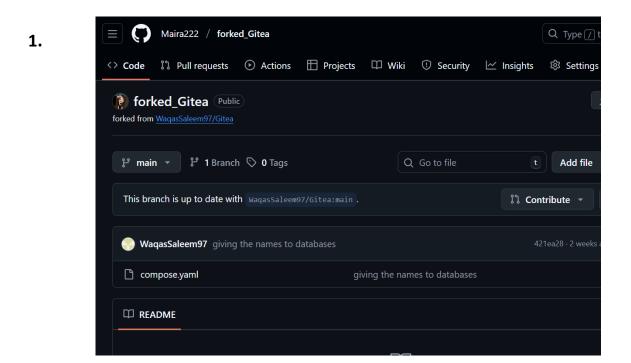
```
BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (test-force)
$ git push origin test-force
To github.com:Maira222/lab3.git
! [rejected] test-force -> test-force (non-fast-forward)
error: failed to push some refs to 'github.com:Maira222/lab3.git'
hint: Updates were rejected because the tip of your current branch 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.
BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (test-force)
```

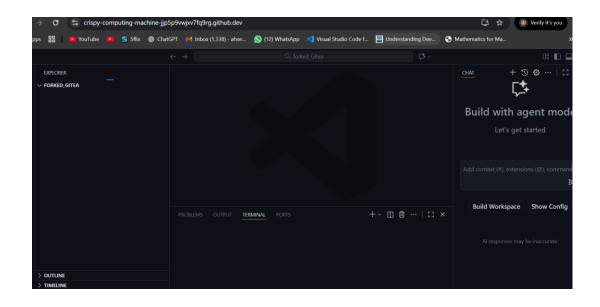
```
BOSS@DESKTOP-7K1JVGS MINGW64 ~/lab3 (test-force)

$ git push origin test-force --force
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:Maira222/lab3.git
+ 5bb4583...4c6698e test-force -> test-force (forced update)
```

Task 10: Running Gitea in GitHub Codespaces via Docker Compose

2.





```
@Maira222 →/workspaces/forked_Gitea (main) $ docker compose up -d
             [+] Running 19/19

√ db Pulled

                                                                                          21.7s
              √ gitea Pulled
                                                                                          23.8s
             [+] Running 5/5
3.

√ Network webnet

                                          Created
                                                                                           0.1s

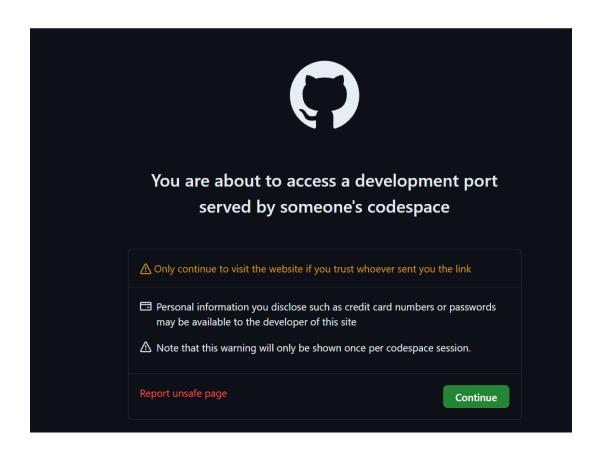
√ Volume "gitea"

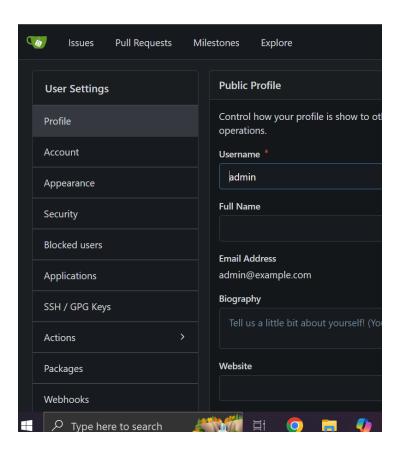
                                          Created
                                                                                           0.0s
              √ Volume "gitea_postgres"
                                                                                           0.0s
                                         Created
              ✓ Container gitea_db
                                          Started
                                                                                           2.0s

√ Container gitea

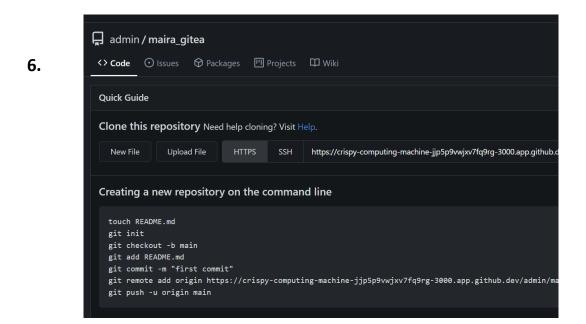
                                          Started
                                                                                           2.0s
             @Maira222 →/workspaces/forked_Gitea (main) $
```

4.

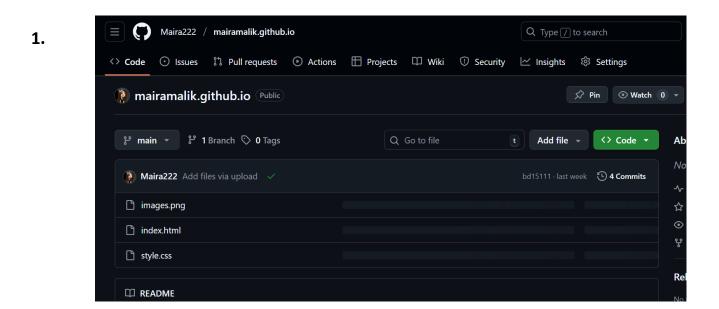




5.



Task 11: Creating a GitHub Pages Portfolio Site



MAIRA MALIK

SOFTWARE ENGINEERING STUDENT

Aspiring Software Engineer with a growing focus on Development Operations, software construction, and modern development methodologies. Experienced in UI/UX design through active contribution to the Google Developer Groups on Campus (GDGoC) community. Eager to leverage design expertise and technical knowledge to build innovative, efficient, and user-centered software solutions while continuously expanding skills in development and operations.