CLOUD COMPUTING

BSE (V-B)

<u>Submitted By:</u>

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<u>Roll No:</u>

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<u>Submitted To:</u>

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LAB 02

HANDS-ON GIT & VERSION CONTROL LAB

TASK 01

Create Private GitHub Repository

TASK 02

Connect Repository via SSH

Musfira Farooq (Musfira-Farooq)
Your personal account

Go to your personal profile

A Public profile
⚙ Account
✎ Appearance
⫪ Accessibility
⌂ Notifications

Access

▤ Billing and licensing
✉ Emails
⊘ Password and authentication
⫯ Sessions
⬚ SSH and GPG keys
⬚ Organizations

SSH keys

New SSH key

This is a list of SSH keys associated with your account. Remove any keys that you do not recognize.

Authentication keys

🔑 **my laptop SSH key**
SSH256:C/LFD/xVyrhw19TJZ5faUgY3NME3GboIpP+ZOxbGgvI
Added on Oct 2, 2025
Never used — Read/write

Delete

Check out our guide to connecting to GitHub using SSH keys or troubleshoot common SSH problems.

GPG keys

New GPG key

There are no GPG keys associated with your account.
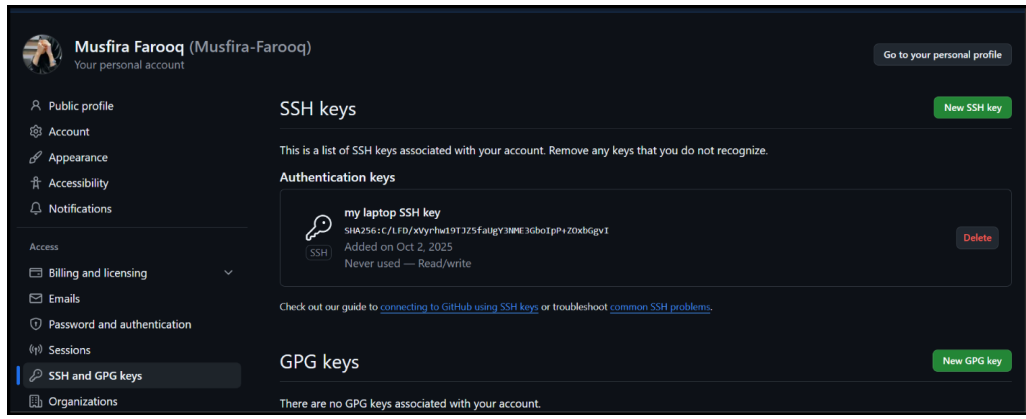
```
Musfi@DESKTOP-QVT1R8O MINGW64 ~
$ rm -rf cc-Lab02
git clone git@github.com:Musfira-Farooq/cc-Lab02.git
cd cc-Lab02
ls -a
Cloning into 'cc-Lab02'...
remote: Enumerating objects: 23, done.
remote: Counting objects: 100% (23/23), done.
remote: Compressing objects: 100% (15/15), done.
remote: Total 23 (delta 4), reused 19 (delta 1), pack-reused 0 (from 0)
Receiving objects: 100% (23/23), done.
Resolving deltas: 100% (4/4), done.
./   ../   .git/   notes.txt
```

TASK 03

Configure Git Username and Email

```
MINGW64:/c/Users/Musfi/cc-Lab02/cc-Lab02

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (main)
$ git config --global user.name "Musfira-Farooq"

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (main)
$ git config --global user.email "23-22411-045@se.fjwu.edu.pk@example.com"

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (main)
$
```

```
Musfi@DESKTOP-QVT1R80 MINGW64 ~/cc-Lab02/cc-Lab02 (main)
$ git config --list
diff.astextplain.textconv=astextplain
filter.lfs.clean=git-lfs clean -- %f
filter.lfs.smudge=git-lfs smudge -- %f
filter.lfs.process=git-lfs filter-process
filter.lfs.required=true
http.sslbackend=schannel
core.autocrlf=true
core.fscache=true
core.symlinks=false
pull.rebase=false
credential.helper=manager
credential.https://dev.azure.com.usehttppath=true
init.defaultbranch=master
core.editor="C:\Users\Musfi\AppData\Local\Programs\Microsoft VS Code\bin\code" --wait
user.name=Musfira-Farooq
user.email=23-22411-045@se.fjwu.edu.pk@example.com
core.repositoryformatversion=0
core.filemode=false
core.bare=false
core.logallrefupdates=true
core.symlinks=false
core.ignorecase=true
remote.origin.url=git@github.com:Musfira-Farooq/cc-Lab02.git
remote.origin.fetch=+refs/heads/*:refs/remotes/origin/*
branch.main.remote=origin
branch.main.merge=refs/heads/main
```

TASK 04

Explore the .git Folder

```
MINGW64:/c/Users/Musfi/cc-Lab02/cc-Lab02

Musfi@DESKTOP-QVT1R80 MINGW64 ~/cc-Lab02/cc-Lab02 (main)
$ ls -a
./   ../   .git/

Musfi@DESKTOP-QVT1R80 MINGW64 ~/cc-Lab02/cc-Lab02 (main)
$ ls -a .git
./   ../   HEAD   config   description   hooks/   info/   objects/   refs/
```

TASK 05

Local Repository Management

```
Musfi@DESKTOP-QVT1R80 MINGW64 ~/cc-Lab02/cc-Lab02 (main)
$ rm -rf .git
```

```
Musfi@DESKTOP-QVT1R80 MINGW64 ~/cc-Lab02/cc-Lab02 (main)
$ git init
Initialized empty Git repository in C:/Users/Musfi/cc-Lab02/cc-Lab02/.git/
```

```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (master)
$ echo "# Lab2 Git Practice" > README.md

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (master)
$ git add README.md
git commit -m "Initial commit"
warning: in the working copy of 'README.md', LF will be replaced by CRLF the next time Git touches it
[master (root-commit) f2128e4] Initial commit
 1 file changed, 1 insertion(+)
 create mode 100644 README.md
```

```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (master)
$ git remote add origin git@github.com:Musfira-Farooq/cc-Lab02.git

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (master)
$ git push -u origin master
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Writing objects: 100% (3/3), 255 bytes | 255.00 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:   git@github.com:Musfira-Farooq/cc-lab02.git
To github.com:Musfira-Farooq/cc-Lab02.git
 * [new branch]      master -> master
branch 'master' set up to track 'origin/master'.
```

TASK 06

File Status & Staging

```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (master)
$ echo "This is my first note" > notes.txt

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (master)
$ git status
On branch master
Your branch is up to date with 'origin/master'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        notes.txt
```

```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (master)
$ git add notes.txt
git commit -m "Add notes.txt"
warning: in the working copy of 'notes.txt', LF will be replaced by CRLF the next time Git touches it
[master 16c9d71] Add notes.txt
 1 file changed, 1 insertion(+)
 create mode 100644 notes.txt
```

```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (master)
$ echo "Adding a third line to notes.txt" >> notes.txt

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (master)
$ git status
On branch master
Your branch is up to date with 'origin/master'.

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:   notes.txt

no changes added to commit (use "git add" and/or "git commit -a")

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (master)
$ git add notes.txt
warning: in the working copy of 'notes.txt', LF will be replaced by CRLF the next time Git touches it

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (master)
$ git commit -m "Add third line to notes.txt"
[master 3fa2994] Add third line to notes.txt
 1 file changed, 1 insertion(+)

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (master)
$ git push
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 6 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 334 bytes | 334.00 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:   git@github.com:Musfira-Farooq/cc-lab02.git
To github.com:Musfira-Farooq/cc-Lab02.git
   629ffb1..3fa2994  master -> master
```
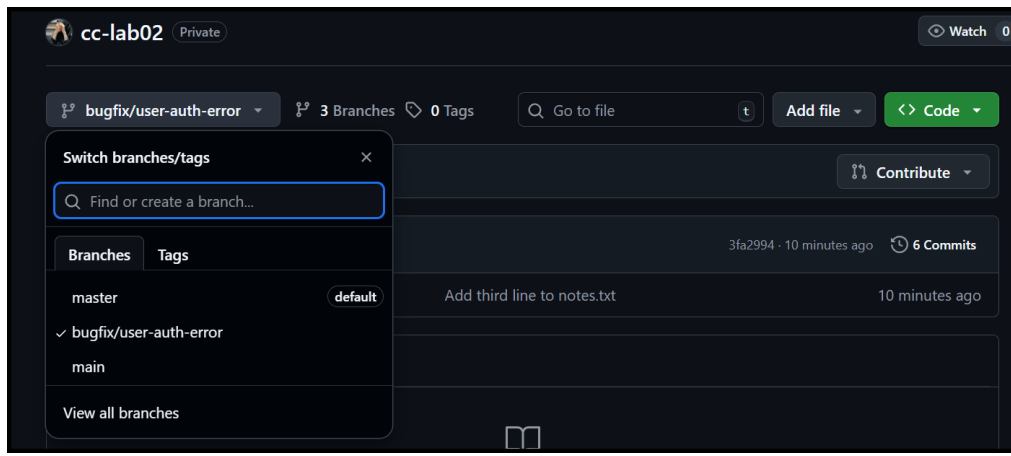
TASK 07

Branch Creation Using GitHub GUI


```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (main)
$ git fetch origin
From github.com:Musfira-Farooq/cc-Lab02
 * [new branch]      bugfix/user-auth-error -> origin/bugfix/user-auth-error

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (main)
$ git checkout bugfix/user-auth-error
branch 'bugfix/user-auth-error' set up to track 'origin/bugfix/user-auth-error'.
Switched to a new branch 'bugfix/user-auth-error'

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (bugfix/user-auth-error)
$ git branch
* bugfix/user-auth-error
  main
```

TASK 08

Branch Creation and Push Using Git Bash

```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (bugfix/user-auth-error)
$ git checkout -b feature/db-connection
Switched to a new branch 'feature/db-connection'

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (feature/db-connection)
$ git push origin feature/db-connection
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote: This repository moved. Please use the new location:
remote:   git@github.com:Musfira-Farooq/cc-lab02.git
remote:
remote: Create a pull request for 'feature/db-connection' on GitHub by visiting:
remote:      https://github.com/Musfira-Farooq/cc-lab02/pull/new/feature/db-connection
remote:
To github.com:Musfira-Farooq/cc-Lab02.git
 * [new branch]      feature/db-connection -> feature/db-connection

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (feature/db-connection)
$ git branch -a
  bugfix/user-auth-error
* feature/db-connection
  main
  remotes/origin/HEAD -> origin/master
  remotes/origin/bugfix/user-auth-error
  remotes/origin/feature/db-connection
  remotes/origin/main
  remotes/origin/master
```
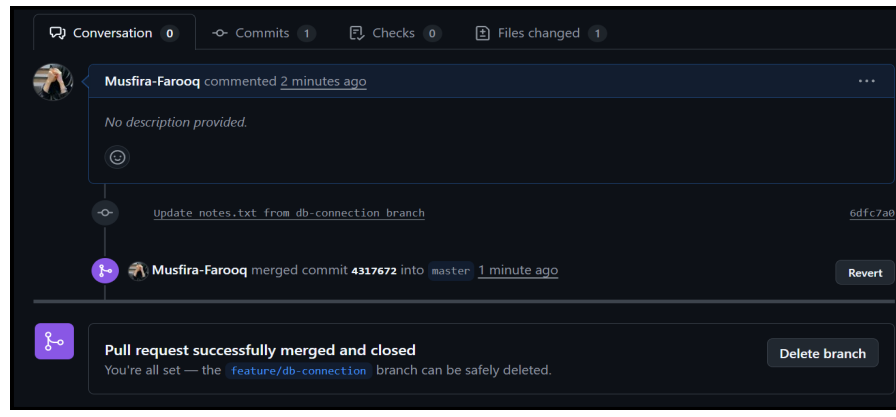
TASK 09

Branching & Merging

```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (feature/db-connection)
$ git checkout -b feature-1
Switched to a new branch 'feature-1'

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (feature-1)
$
```

```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (feature-1)
$ echo "def new_function():" > main.py
echo "    print('Hello from feature-1')" >> main.py

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02/cc-Lab02 (feature-1)
$ git add main.py
git commit -m "Add new function to main.py"
warning: in the working copy of 'main.py', LF will be replaced by CRLF the next time Git touches it
[feature-1 77d5edc] Add new function to main.py
 1 file changed, 2 insertions(+)
 create mode 100644 main.py
```
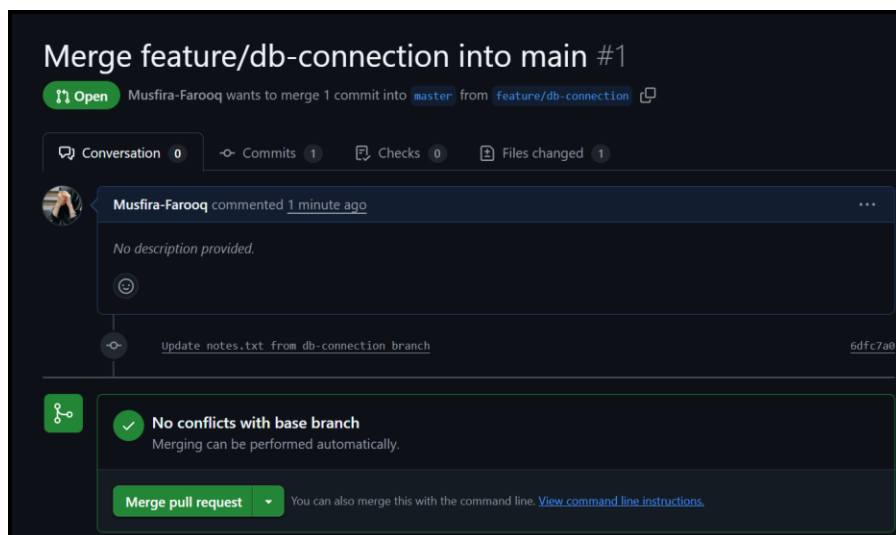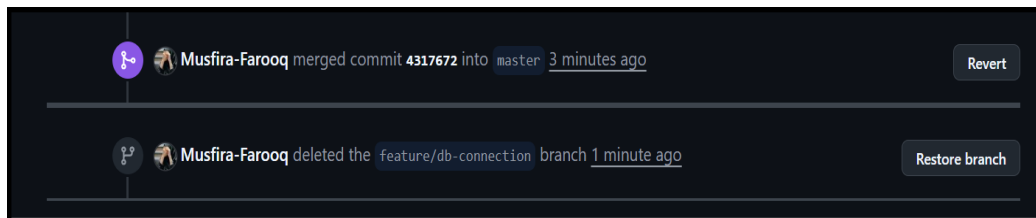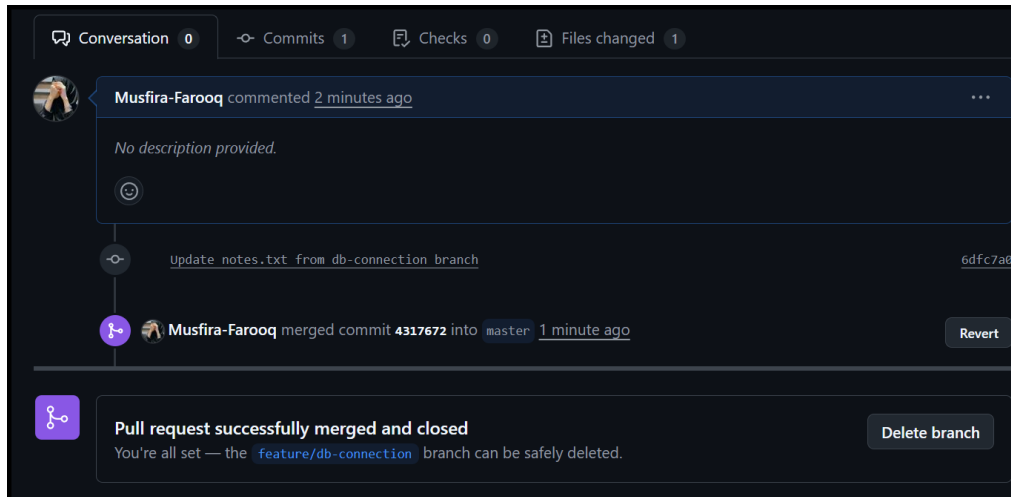
TASK 10

Pull Request and Branch Review (GitHub GUI)

TASK 11

Detailed Branch Strategy (Develop/Staging)


```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (master)
$ git checkout main
branch 'main' set up to track 'origin/main'.
Switched to a new branch 'main'

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (main)
$ git checkout -b develop
Switched to a new branch 'develop'

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (develop)
$ git push origin develop
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote: This repository moved. Please use the new location:
remote:   git@github.com:Musfira-Farooq/cc-lab02.git
remote:
remote: Create a pull request for 'develop' on GitHub by visiting:
remote:        https://github.com/Musfira-Farooq/cc-lab02/pull/new/develop
remote:
To github.com:Musfira-Farooq/cc-Lab02.git
 * [new branch]      develop -> develop

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (develop)
$ git checkout -b staging
Switched to a new branch 'staging'

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (staging)
$ git branch -a
  develop
  main
  master
* staging
  remotes/origin/HEAD -> origin/master
  remotes/origin/bugfix/user-auth-error
  remotes/origin/develop
  remotes/origin/feature-1
  remotes/origin/main
  remotes/origin/master
```

```
MINGW64:/c/Users/Musfi/cc-Lab02

$ git checkout -b feature/login-page
Switched to a new branch 'feature/login-page'

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (feature/login-page)
$ echo "print('Login feature added')" > login.py

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (feature/login-page)
$ git add login.py
warning: in the working copy of 'login.py', LF will be replaced by CRLF the next time Git touches it

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (feature/login-page)
$ git commit -m "Add login feature"
[feature/login-page 925d99e] Add login feature
 1 file changed, 1 insertion(+)
 create mode 100644 login.py

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (feature/login-page)
$ git push origin feature/login-page
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 6 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 359 bytes | 179.00 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:   git@github.com:Musfira-Farooq/cc-lab02.git
remote:
remote: Create a pull request for 'feature/login-page' on GitHub by visiting:
remote:      https://github.com/Musfira-Farooq/cc-lab02/pull/new/feature/login-page
remote:
To github.com:Musfira-Farooq/cc-Lab02.git
 * [new branch]      feature/login-page -> feature/login-page

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (feature/login-page)
$ git checkout develop
git merge feature/login-page
git push origin develop
Switched to branch 'develop'
Updating 77d5edc..925d99e
Fast-forward
 login.py | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 login.py
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote: This repository moved. Please use the new location:
remote:   git@github.com:Musfira-Farooq/cc-Lab02.git
To github.com:Musfira-Farooq/cc-Lab02.git
   77d5edc..925d99e  develop -> develop
```

```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (develop)
$ git checkout staging
git merge develop
git push origin staging
Switched to branch 'staging'
Updating 77d5edc..925d99e
Fast-forward
 login.py | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 login.py
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote: This repository moved. Please use the new location:
remote:   git@github.com:Musfira-Farooq/cc-lab02.git
remote:
remote: Create a pull request for 'staging' on GitHub by visiting:
remote:      https://github.com/Musfira-Farooq/cc-lab02/pull/new/staging
remote:
To github.com:Musfira-Farooq/cc-Lab02.git
 * [new branch]      staging -> staging

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (staging)
$ git checkout main
git merge staging
git push origin main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
Updating 77d5edc..925d99e
Fast-forward
 login.py | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 login.py
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote: This repository moved. Please use the new location:
remote:   git@github.com:Musfira-Farooq/cc-lab02.git
To github.com:Musfira-Farooq/cc-Lab02.git
   77d5edc..925d99e  main -> main
```

BONUS TASK

Simulated Team Collaboration

```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (collab)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (main)
$ git merge collab
Updating 925d99e..8f4c2b0
Fast-forward
 notes.txt | 3 +++
 1 file changed, 3 insertions(+)

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (main)
$ git push origin main
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote: This repository moved. Please use the new location:
remote:    git@github.com:Musfira-Farooq/cc-lab02.git
To github.com:Musfira-Farooq/cc-Lab02.git
   925d99e..8f4c2b0  main -> main
```

```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (collab)
$ git checkout collab2
Switched to branch 'collab2'

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (collab2)
$ # Add another line as Collaborator 2
echo "Teammate: I enjoy solving bugs!" >> notes.txt
git add notes.txt
git commit -m "Add teammate's fun fact"
git push origin collab2
warning: in the working copy of 'notes.txt', LF will be replaced by CRLF the next time Git touches it
[collab2 8f4c2b0] Add teammate's fun fact
 1 file changed, 1 insertion(+)
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 6 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 309 bytes | 154.00 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:    git@github.com:Musfira-Farooq/cc-lab02.git
To github.com:Musfira-Farooq/cc-Lab02.git
   1e7039d..8f4c2b0  collab2 -> collab2

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (collab2)
$ git checkout collab
git merge collab2
Switched to branch 'collab'
Updating 1e7039d..8f4c2b0
Fast-forward
 notes.txt | 1 +
 1 file changed, 1 insertion(+)

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (collab)
$ git add notes.txt
git commit -m "Resolve conflict and keep both contributions"
On branch collab
nothing to commit, working tree clean
```

```
remote:
remote: Create a pull request for 'collab2' on GitHub by visiting:
remote:       https://github.com/Musfira-Farooq/cc-lab02/pull/new/collab2
remote:
To github.com:Musfira-Farooq/cc-Lab02.git
 * [new branch]        collab2 -> collab2

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (collab2)
$ git checkout collab
git merge collab2
Switched to branch 'collab'
Updating c5bbdfe..1e7039d
Fast-forward
 notes.txt | 1 +
 1 file changed, 1 insertion(+)
```

```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (collab)
$ echo "Musfira: I love working with Git!" >> notes.txt

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (collab)
$ git add notes.txt
warning: in the working copy of 'notes.txt', LF will be replaced by CRLF the next time Git touches it

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (collab)
$ git commit -m "Add Musfira's fun fact"
[collab c5bbdfe] Add Musfira's fun fact
 1 file changed, 1 insertion(+)

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (collab)
$ git push origin collab
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 6 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 340 bytes | 170.00 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:   git@github.com:Musfira-Farooq/cc-lab02.git
To github.com:Musfira-Farooq/cc-Lab02.git
   925d99e..c5bbdfe  collab -> collab

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (collab)
$ git checkout -b collab2 collab
Switched to a new branch 'collab2'

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (collab2)
$ echo "Teammate: I enjoy solving bugs!" >> notes.txt
git add notes.txt
git commit -m "Add teammate's fun fact"
git push origin collab2
warning: in the working copy of 'notes.txt', LF will be replaced by CRLF the next time Git touches it
[collab2 1e7039d] Add teammate's fun fact
 1 file changed, 1 insertion(+)
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 6 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 339 bytes | 339.00 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:   git@github.com:Musfira-Farooq/cc-lab02.git
```

```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (main)
$ git checkout -b collab
Switched to a new branch 'collab'

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (collab)
$ git push origin collab
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote: This repository moved. Please use the new location:
remote:   git@github.com:Musfira-Farooq/cc-lab02.git
remote:
remote: Create a pull request for 'collab' on GitHub by visiting:
remote:       https://github.com/Musfira-Farooq/cc-lab02/pull/new/collab
remote:
To github.com:Musfira-Farooq/cc-Lab02.git
 * [new branch]        collab -> collab
```

EXAM EVALUATION QUESTIONS

Q1 – Advanced Branching & Merge Verification

```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (main)
$ git checkout -b q1-branch
Switched to a new branch 'q1-branch'

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (q1-branch)
$ echo "Q1 test line" >> notes.txt
git add notes.txt
git commit -m "Q1: Add test line"
warning: in the working copy of 'notes.txt', LF will be replaced by CRLF the next time Git touches it
[q1-branch a9b20f9] Q1: Add test line
 1 file changed, 1 insertion(+)

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (q1-branch)
$ git checkout main
git merge q1-branch
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
Updating 8f4c2b0..a9b20f9
Fast-forward
 notes.txt | 1 +
 1 file changed, 1 insertion(+)

Musfi@DESKTOP-QVT1R8O MINGW64 ~/cc-Lab02 (main)
$ git log --oneline --graph --all
* a9b20f9 (HEAD -> main, q1-branch) Q1: Add test line
* 8f4c2b0 (origin/main, origin/collab2, collab2, collab) Add teammate's fun fact
* 1e7039d Add teammate's fun fact
* c5bbdfe (origin/collab) Add Musfira's fun fact
* 925d99e (origin/staging, origin/feature/login-page, origin/develop, staging, feature/login-page, develop) Add login feature
* 77d5edc (origin/feature-1) Add new function to main.py
| * 4317672 (origin/master, origin/HEAD, master) Merge pull request #1 from Musfira-Farooq/feature/db-connection
|/|
| * 6dfc7a0 Update notes.txt from db-connection branch
|/
* 3fa2994 (origin/bugfix/user-auth-error) Add third line to notes.txt
* 629ffb1 Update notes.txt with second line
* c20bf90 Update notes.txt and fix README.md
* 52ed362 Update notes.txt with second line
* 16c9d71 Add notes.txt
* f2128e4 Initial commit
```

Q2 – Multi-Stage Workflow Simulation

```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/MultiStageRepo (staging)
$ git log --oneline --graph --all
* bca2fd8 (HEAD -> staging, feature-xyz, develop) Added Feature XYZ
* 0b7668f (master) Initial commit
```

Q3: Collaboration & Conflict Resolution

```
Musfi@DESKTOP-QVT1R8O MINGW64 ~/MultiStageRepo (collaborator2)
$ cat shared.txt
Line from Collaborator 1
Line from Collaborator 2
```