

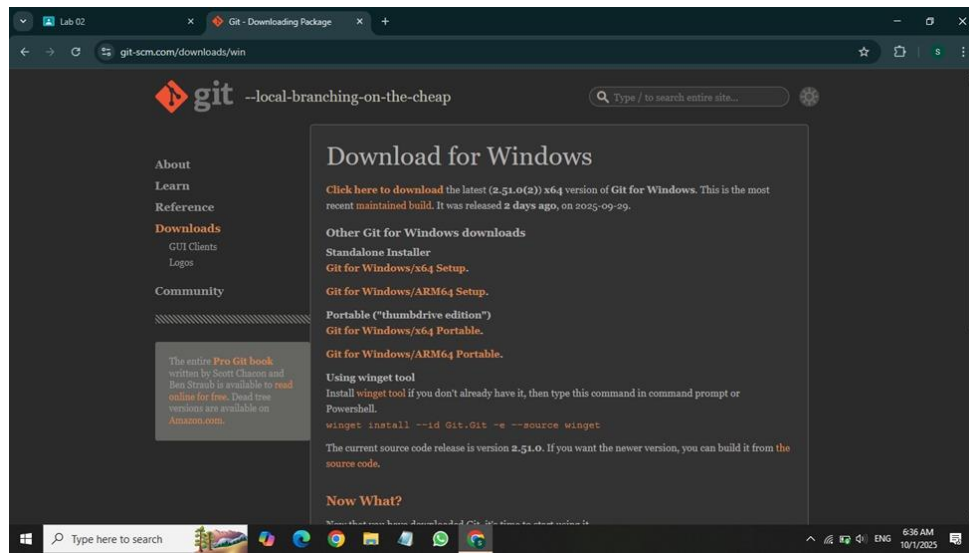
Name : Zainab Bibi

Reg. No : 2023-BSE-071

Class: BSE- 5B

Lab 02

Task : GIT Installation



```
Hp@DESKTOP-LS90FPS MINGW64 ~  
$ git --version  
git version 2.51.0.windows.2  
  
Hp@DESKTOP-LS90FPS MINGW64 ~  
$
```

Task 1: Create Private GitHub Repository

Create a new repository

Repositories contain a project's files and version history. Have a project elsewhere? [Import a repository](#).
Required fields are marked with an asterisk (*).

1 General

Owner * 23-22411-071-eng / Repository name * lab2
lab2 is available.

Great repository names are short and memorable. How about [scaling-invention?](#)

Description

0 / 350 characters

2 Configuration

Choose visibility * Private
Choose who can see and commit to this repository

Add README Off
READMEs can be used as inner descriptions. About READMEs


Task 2 :Connect Repository via SSH

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Hp> ssh-keygen -t ed25519 -C "2023-22411-071@se.fjwu.edu.pk"
Generating public/private ed25519 key pair.
Enter file in which to save the key (C:\Users\Hp\.ssh\id_ed25519):
Created directory 'C:\Users\Hp\.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in C:\Users\Hp\.ssh\id_ed25519
Your public key has been saved in C:\Users\Hp\.ssh\id_ed25519.pub
The key fingerprint is:
SHA256:JxSPG1IyAYgeO61ZLcPRb4bcunJHZ4BqGRFqQSeFrqE 2023-22411-071@se.fjwu.edu.pk
The key's randomart image is:
+--[ED25519 256]--+
|..O+...+
|oo+ .+ +
|o*+.=. o .
|.=@ *.*+
|..o.O +..S .
|o = . . oo
|o . o o
|. + o .
|E. o .
+-----[SHA256]-----+
PS C:\Users\Hp>
```

1. Adding SSH key at GitHub



23-22411-071-eng (23-22411-071-eng)
Your personal account

[Public profile](#)
[Account](#)
[Appearance](#)
[Accessibility](#)
[Notifications](#)

[Access](#)
[Billing and licensing](#)
[Emails](#)
[Password and authentication](#)
[Sessions](#)
[SSH and GPG keys](#)


[Go to your personal profile](#)

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



mysshkey

SHA256:JxSPG1IyAYgeO61ZLcPRb4bcunJHZ4BqGRFqQSeFrqE

Added on Oct 3, 2025

Never used — Read/write

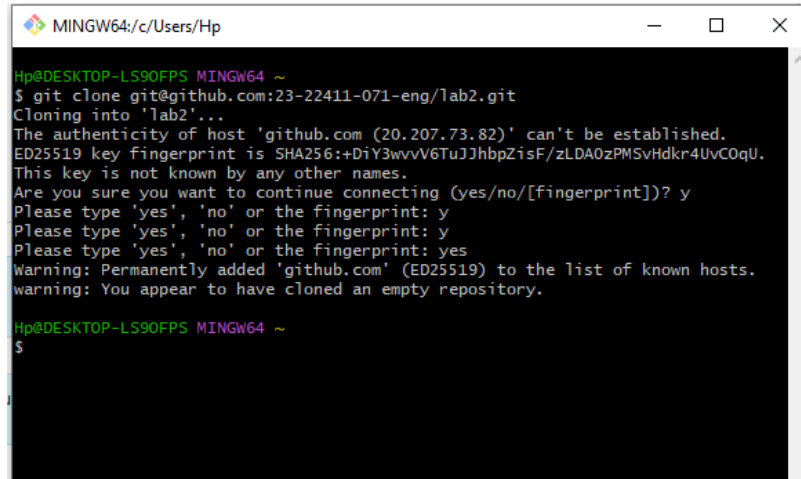
Delete

Check out our guide to [connecting to GitHub using SSH keys](#) or troubleshoot [common SSH problems](#).

GPG keys

New GPG key

2. Clone repo using SSH

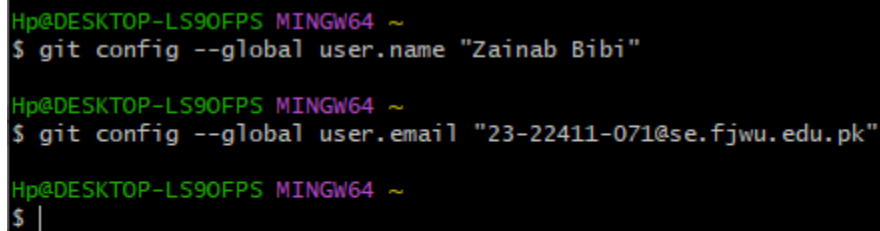


```
MINGW64; c/Users/Hp
Hp@DESKTOP-LS90FPS MINGW64 ~
$ git clone git@github.com:23-22411-071-eng/lab2.git
Cloning into 'lab2'...
The authenticity of host 'github.com (20.207.73.82)' can't be established.
ED25519 key fingerprint is SHA256:+DiY3wvV6TuJJhpZisF/zLDA0zPMSvHdkr4UvCOqU.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? y
Please type 'yes', 'no' or the fingerprint: y
Please type 'yes', 'no' or the fingerprint: y
Please type 'yes', 'no' or the fingerprint: yes
Warning: Permanently added 'github.com' (ED25519) to the list of known hosts.
Warning: You appear to have cloned an empty repository.

Hp@DESKTOP-LS90FPS MINGW64 ~
$
```

Task 3 :Configure GIT Username and Email

1. Set global config



```
Hp@DESKTOP-LS90FPS MINGW64 ~
$ git config --global user.name "Zainab Bibi"

Hp@DESKTOP-LS90FPS MINGW64 ~
$ git config --global user.email "23-22411-071@se.fjwu.edu.pk"

Hp@DESKTOP-LS90FPS MINGW64 ~
$ |
```

2. Verify

```

Hp@DESKTOP-LS90FPS MINGW64 ~
$ 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
user.name=Zainab Bibi
user.email=23-22411-071@se.fjwu.edu.pk

```

Task 4 :Explore the .git Folder

1. Go into your cloned repo
2. Explore inside

```

Hp@DESKTOP-LS90FPS MINGW64 ~
$ cd lab2

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ ls -a
./ ../ .git/

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ ls -a .git
./ ../ HEAD config description hooks/ info/ objects/ refs/

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ |

```

Task 5 :Local Repository Management

1. Delete .git

```

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ rm -rf .git

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2
$ |

```

2. Re-initialize

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2
$ git init
Initialized empty Git repository in C:/Users/Hp/lab2/.git/

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (master)
$
```

3. Add ReadME.md

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (master)
$ echo "# Lab2 Git Practice" > README.md

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (master)
$ git add README.md
warning: in the working copy of 'README.md', LF will be replaced by CRLF the next time Git touches it

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (master)
$ git commit -m "Initial commit"
[master (root-commit) fa57b63] Initial commit
1 file changed, 1 insertion(+)
create mode 100644 README.md

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (master)
$
```

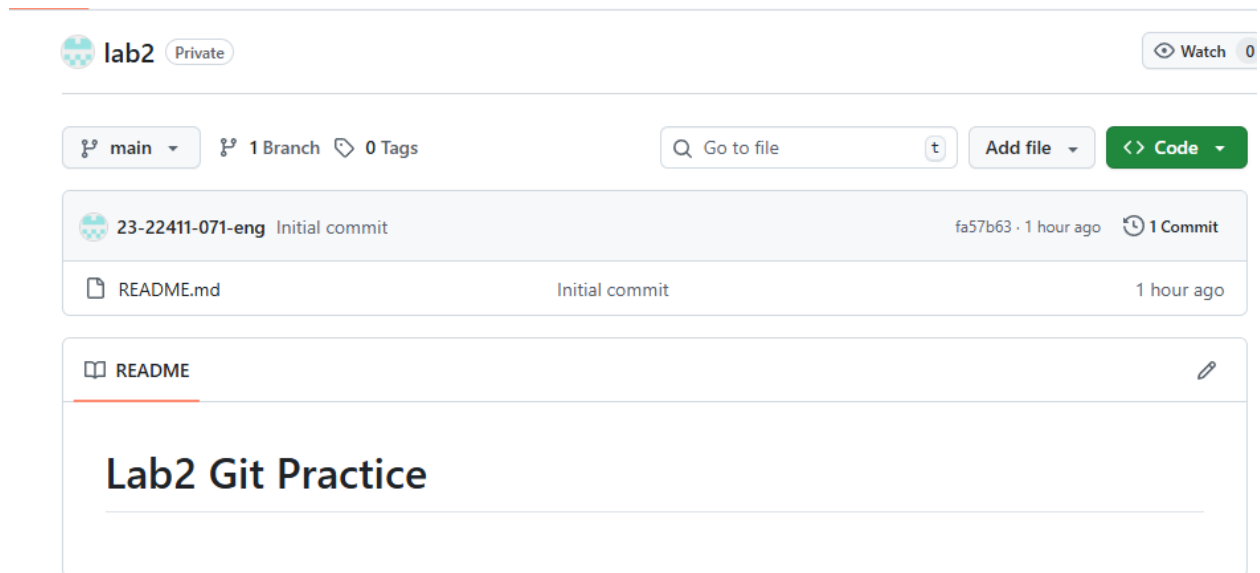
4. Connect remote & push

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (master)
$ git remote add origin git@github.com:23-22411-071-eng/Lab2.git

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (master)
$ git branch -M main

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git push -u origin main
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Writing objects: 100% (3/3), 244 bytes | 122.00 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:23-22411-071-eng/lab2.git
To github.com:23-22411-071-eng/Lab2.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$
```



Task 6 :File Status & Staging

1. Create a File

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ echo "This is my first git note" > notes.txt

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

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

nothing added to commit but untracked files present (use "git add" to track)
```

2. Stage and Commit

```

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git add notes.txt
warning: in the working copy of 'notes.txt', LF will be replaced by CRLF the next time Git touches it

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git commit -m "Add notes.txt"
[main a5e1030] Add notes.txt
1 file changed, 1 insertion(+)
create mode 100644 notes.txt

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git status
On branch main
Your branch is ahead of 'origin/main' by 1 commit.
(use "git push" to publish your local commits)

nothing to commit, working tree clean

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ |

```

3. Edit File

```

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ echo "This is my updated notes.txt" >> notes.txt

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (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 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")

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git add notes.txt
warning: in the working copy of 'notes.txt', LF will be replaced by CRLF the next time Git touches it

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git commit -m "Update notes.txt"
[main 6c249b7] Update notes.txt
1 file changed, 1 insertion(+)

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git status
On branch main
Your branch is ahead of 'origin/main' by 2 commits.
(use "git push" to publish your local commits)

nothing to commit, working tree clean


```

4. Push notes

```

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git push origin main
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 4 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (6/6), 611 bytes | 122.00 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:   git@github.com:23-22411-071-eng/lab2.git
To github.com:23-22411-071-eng/Lab2.git
   fa57b63..6c249b7  main -> main

```

 **lab2** PrivateWatch 0

main


1 Branch

0 Tags

Go to file

Add file

Code

 23-22411-071-eng Update notes.txt

6c249b7 · 5 minutes ago

3 Commits

README.md

Initial commit

2 hours ago

notes.txt


Update notes.txt

5 minutes ago

README

Lab2 Git Practice

lab2 / notes.txt

 23-22411-071-eng Update notes.txt

Code

Blame

2 lines (2 loc) · 55 Bytes

1

This is my first git note

2

This is my updated notes.txt

Task 7 : Branch Creation (GitHub GUI)

1. Create Branch

Branches

Overview Yours Active Stale All

Default

Branch	Updated
main	10 minutes ago

Your branches

Branch	Updated
bugfix/user-auth-error	4 minutes ago

Active branches

Branch	Updated
bugfix/user-auth-error	4 minutes ago

2. Pull branch to local

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git pull origin bugfix/user-auth-error
From github.com:23-22411-071-eng/Lab2
 * branch                bugfix/user-auth-error -> FETCH_HEAD
Already up to date.

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git branch
* main

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ |
```

Task 8 :Branch Creation and Push

1. Create branch
2. Push branch

```

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (bugfix/user-auth-error)
$ git checkout -b feature/db-connection
Switched to a new branch 'feature/db-connection'

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (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:23-22411-071-eng/lab2.git
remote:
remote: Create a pull request for 'feature/db-connection' on GitHub by visiting:
remote:   https://github.com/23-22411-071-eng/lab2/pull/new/feature/db-connection
remote:
To github.com:23-22411-071-eng/Lab2.git
 * [new branch]      feature/db-connection -> feature/db-connection

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/db-connection)
$



```

Branches





Overview Yours Active Stale All

Q Search branches...





Default

Branch	Updated
main 	 36 minutes ago

Your branches

Branch	Updated
feature/db-connection 	 1 minute ago
bugfix/user-auth-error 	 31 minutes ago

Active branches

Branch	Updated
feature/db-connection 	 1 minute ago
bugfix/user-auth-error 	 31 minutes ago

Task 9 :Branching & Merging

1. Create & Switch

```

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/db-connection)
$ git checkout -b feature-1
Switched to a new branch 'feature-1'

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature-1)

```

2. Edit main.py

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/db-connection)
$ git checkout -b feature-1
Switched to a new branch 'feature-1'

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature-1)
$ echo "def hello():\n    print('Hello from feature-1')" > main.py

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature-1)
$ git add main.py
warning: in the working copy of 'main.py', LF will be replaced by CRLF the next time Git touches it

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature-1)
$ git commit -m "Add new function to main.py"
[feature-1 cd03188] Add new function to main.py
1 file changed, 1 insertion(+)
create mode 100644 main.py

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature-1)
$
```

3. Merge

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature-1)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git merge feature-1
Updating 6c249b7..cd03188
Fast-forward
 main.py | 1 +
1 file changed, 1 insertion(+)
create mode 100644 main.py
```

4. Push















```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git push origin main
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 373 bytes | 46.00 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:23-22411-071-eng/lab2.git
To github.com:23-22411-071-eng/Lab2.git
6c249b7..cd03188 main -> main

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ ^[[200~git push origin feature-1~
bash: $'\E[200~git': command not found

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git push origin feature-1
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:23-22411-071-eng/lab2.git
remote:
remote: Create a pull request for 'feature-1' on GitHub by visiting:
remote: https://github.com/23-22411-071-eng/lab2/pull/new/feature-1
remote:
To github.com:23-22411-071-eng/Lab2.git
 * [new branch] feature-1 -> feature-1

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$
```






Task 10 :Pull Request

Branches	
<div>Overview Yours Active Stale All</div>	
<div>Q Search branches...</div>	
Default	
Branch	Updated
main 	 7 minutes ago
Your branches	
Branch	Updated
feature-1 	 5 minutes ago
feature/db-connection 	 25 minutes ago
bugfix/user-auth-error 	 54 minutes ago
Active branches	
Branch	Updated
feature-1 	 5 minutes ago
feature/db-connection 	 25 minutes ago
bugfix/user-auth-error 	 54 minutes ago

1. Creation

23-22411-071-eng / lab2


Q Type [Z] to search

 +    

[Code](#) [Issues](#) [Pull requests](#) [Actions](#) [Projects](#) [Wiki](#) [Security](#) [Insights](#) [Settings](#)

Filters

[Labels 9](#) [Milestones 0](#) [New pull request](#)



Welcome to pull requests!

Pull requests help you collaborate on code with other people. As pull requests are created, they'll appear here in a searchable and filterable list. To get started, you should [create a pull request](#).

```
HP@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git checkout feature/db-connection
Switched to branch 'feature/db-connection'

HP@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/db-connection)
$ echo "DB connection established" >> db.py

HP@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/db-connection)
$ git add db.py
warning: in the working copy of 'db.py', LF will be replaced by CRLF the next time Git touches it

HP@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/db-connection)
$ git commit -m "Add db connection file"
[feature/db-connection 3869d37] Add db connection file
1 file changed, 1 insertion(+)
create mode 100644 db.py

HP@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/db-connection)
$ git push origin feature/db-connection
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 347 bytes | 86.00 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:23-22411-071-eng/lab2.git
To github.com:23-22411-071-eng/lab2.git
 6c249b7..3869d37 feature/db-connection -> feature/db-connection

HP@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/db-connection)
$
```

2. Review & Merge

task10 #1

Open 23-22411-071-eng wants to merge 1 commit into `main` from `feature/db-connection`

Conversation 0 Commits 1 Checks 0 Files changed 1

23-22411-071-eng commented now ...

No description provided.

Add db connection file 3869d37

No conflicts with base branch
Merging can be performed automatically.

Merge pull request You can also merge this with the command line [View command line instructions](#).

Commit message

Merge pull request #1 from 23-22411-071-eng/feature/db-connection

Extended description

task10

This commit will be authored by 23-22411-071@se.fjwu.edu.pk.

Confirm merge Cancel

3. Delete branch on GitHub

task10 #1

Merged 23-22411-071-eng merged 1 commit into `main` from `feature/db-connection` now

Conversation 0 Commits 1 Checks 0 Files changed 1

23-22411-071-eng commented 3 minutes ago ...

No description provided.

Add db connection file 3869d37

23-22411-071-eng merged commit `df9a3d3` into `main` now Revert

Pull request successfully merged and closed
You're all set — the `feature/db-connection` branch can be safely deleted. Delete branch

task10 #1

Merged 23-22411-071-eng merged 1 commit into `main` from `feature/db-connection` 1 minute ago

Conversation 0 Commits 1 Checks 0 Files changed 1

23-22411-071-eng commented 4 minutes ago

No description provided.

Add db connection file 3869d37

23-22411-071-eng merged commit `df9a3d3` into `main` 1 minute ago Revert

23-22411-071-eng deleted the `feature/db-connection` branch now Restore branch

Task 11 :Branch Strategy

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/db-connection)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git pull origin main
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 2 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (2/2), 1.02 KiB | 65.00 KiB/s, done.
From github.com:23-22411-071-eng/Lab2
 * branch          main      -> FETCH_HEAD
   cd03188..df9a3d3 main      -> origin/main
Updating cd03188..df9a3d3
Fast-forward
 db.py | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 db.py
```

1. Create Branches

Step1:Make develop branch

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git checkout -b develop
Switched to a new branch 'develop'

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (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:23-22411-071-eng/lab2.git
remote:
remote: Create a pull request for 'develop' on GitHub by visiting:
remote:   https://github.com/23-22411-071-eng/lab2/pull/new/develop
remote:
To github.com:23-22411-071-eng/Lab2.git
 * [new branch]      develop -> develop

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (develop)
```

Step2: Make Staging branch

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (develop)
$ git checkout -b staging
Switched to a new branch 'staging'

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (staging)
$

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (staging)
$ git push origin develop
Everything up-to-date

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (staging)
$ git checkout -b staging
fatal: a branch named 'staging' already exists

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (staging)
$ git push origin staging
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:23-22411-071-eng/lab2.git
remote:
remote: Create a pull request for 'staging' on GitHub by visiting:
remote:  https://github.com/23-22411-071-eng/lab2/pull/new/staging
remote:
To github.com:23-22411-071-eng/Lab2.git
 * [new branch]      staging -> staging

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (staging)
```

Step3: Create a new feature branch

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (staging)
$ git checkout -b feature/login-page
Switched to a new branch 'feature/login-page'

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/login-page)
$ echo "print('login page feature')" > login.py

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (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

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/login-page)
$ git commit -m "Add loginpage feature"
[feature/login-page 1499eb4] Add loginpage feature
1 file changed, 1 insertion(+)
create mode 100644 login.py

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/login-page)
$ git push origin feature/login-page
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 311 bytes | 155.00 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:  git@github.com:23-22411-071-eng/lab2.git
remote:
remote: Create a pull request for 'feature/login-page' on GitHub by visiting:
remote:  https://github.com/23-22411-071-eng/lab2/pull/new/feature/login-page
remote:
To github.com:23-22411-071-eng/Lab2.git
 * [new branch]      feature/login-page -> feature/login-page
```

Step 4: Merge feature/login-page -> develop

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/login-page)
$ git checkout develop
Switched to branch 'develop'

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (develop)
$ git merge feature/login
merge: feature/login - not something we can merge

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (develop)
$ git push origin develop
Everything up-to-date
```

Step 5: Merge develop -> staging

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (develop)
$ git checkout staging
Switched to branch 'staging'

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (staging)
$ git merge develop
Already up to date.

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (staging)
$ git push origin staging
Everything up-to-date

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (staging)
$
```

Step 6: Merge staging -> main

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (staging)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git merge staging
Already up to date.

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git push origin main
Everything up-to-date

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$
```


Bonus Task :Simulated team collaboration

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (collab)
$ ^[[200~git pull origin collab
bash: $'\E[200~git': command not found

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (collab)
$ git pull origin collab
From github.com:23-22411-071-eng/Lab2
 * branch      collab      -> FETCH_HEAD
Already up to date.

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (collab)
$

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (collab)
$ echo "Name: Zainab - Fun Fact: I love moon" >> notes.txt

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (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

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (collab)
$ git commit -m "Add Zainab's fun fact"
[collab 02b5367] Add Zainab's fun fact
1 file changed, 1 insertion(+)

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (collab)
$ git push origin collab
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 347 bytes | 173.00 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:   git@github.com:23-22411-071-eng/lab2.git
To github.com:23-22411-071-eng/Lab2.git
    df9a3d3..02b5367  collab -> collab

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (collab)
$ |
```

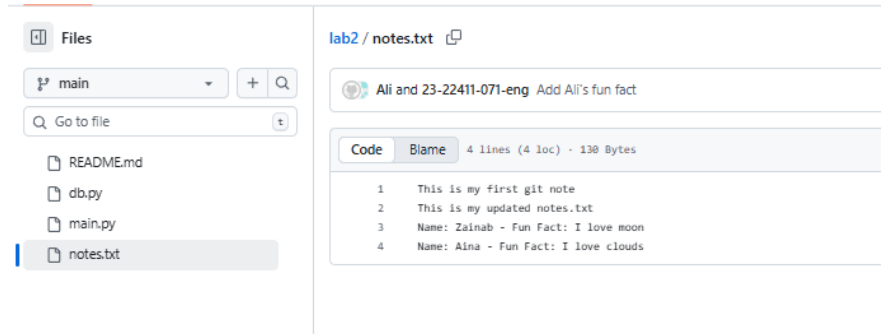
```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (collab)
$ git log --oneline
a490861 (HEAD -> collab, origin/collab) Add Ali's fun fact
02b5367 Add Zainab's fun fact
df9a3d3 (origin/staging, origin/main, origin/develop, origin/HEAD, staging, main, develop) Merge pull request #1 from 23-22411-071-eng/feature/db-connection
3869d37 (origin/feature/db-connection, feature/db-connection) Add db connection file
cd03188 (origin/feature-1, feature-1) Add new function to main.py
6c249b7 (origin/bugfix/user-auth-error, bugfix/user-auth-error) Update notes.txt
a5e1030 Add notes.txt
fa57b63 Initial commit
```

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (collab)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git pull origin main
From github.com:23-22411-071-eng/Lab2
 * branch      main      -> FETCH_HEAD
Already up to date.

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git merge collab
Updating df9a3d3..a490861
Fast-forward
 notes.txt | 2 ++
1 file changed, 2 insertions(+)

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (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:23-22411-071-eng/lab2.git
To github.com:23-22411-071-eng/Lab2.git
    df9a3d3..a490861  main -> main
```



Task 12 :Code review workflow

Create a pull request/merge request:

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git checkout -b feature/code-review
Switched to a new branch 'feature/code-review'

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/code-review)
$ echo "Added line for code review demo" >> notes.txt

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/code-review)
$ git add notes.txt
warning: in the working copy of 'notes.txt', LF will be replaced by CRLF the next time Git touches

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/code-review)
$ git commit -m "Add line for code review demo"
[feature/code-review 26f4e97] Add line for code review demo
1 file changed, 1 insertion(+)

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/code-review)
$ git push origin feature/code-review
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 333 bytes | 111.00 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:23-22411-071-eng/lab2.git
remote:
remote: Create a pull request for 'feature/code-review' on GitHub by visiting:
remote:   https://github.com/23-22411-071-eng/lab2/pull/new/feature/code-review
remote:
To github.com:23-22411-071-eng/Lab2.git
 * [new branch]      feature/code-review -> feature/code-review
```

Open a pull request

Create a new pull request by comparing changes across two branches. If you need to, you can also [compare across forks](#). [Learn more about diff.co](#)

base: main

compare: feature/code-review

✓ Able to merge. These branches can be automatically merged.

Add a title

Update notes.txt for review practice

Add a description

Write

Preview

H B I

Added a new line in notes.txt to test the code review workflow.
This change is part of Task 12 for practicing Pull Requests, assigning reviewers, and merging after feedback

Markdown is supported


Paste, drop, or click to add files


Create pull request


Assign a Reviewer:

Update notes.txt for review practice #2

 Open 23-22411-071-eng wants to merge 1 commit into `main` from `feature/code-review` 

 Conversation 0

 Commits 1

 Checks 0

 Files changed 1

+1 -0 




23-22411-071-eng commented 19 minutes ago

Added a new line in notes.txt to test the code review workflow.
This change is part of Task 12 for practicing Pull Requests, assigning reviewers, and merging after feedback.



Reviewers

 zainabbibi1

Still in progress? [Convert to draft](#)

Assignees



Reviewer Actions:

Finish your review

Write

Preview

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☰



🔗

@

📎

↩

looks good

 Markdown is supported  Paste, drop, or click to add files

☐ Comment

Submit general feedback without explicit approval.

☒ Approve

Submit feedback and approve merging these changes.

☐ Request changes

Submit feedback that must be addressed before merging.

Submit review

Finish your review

Write

Preview

H

B

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<>

🔗

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☷

☰



🔗

@

📎

↩

plz do some changes

 Markdown is supported  Paste, drop, or click to add files

☐ Comment

Submit general feedback without explicit approval.

☐ Approve

Submit feedback and approve merging these changes.

☒ Request changes

Submit feedback that must be addressed before merging.

Submit review

Author Actions:

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/code-review)
$ echo "Added extra explanation as per reviewer feedback." >> notes.txt


Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/code-review)
$ git add notes.txt
warning: in the working copy of 'notes.txt', LF will be replaced by CRLF the next time Git touches it

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/code-review)
$ git commit -m "Updated notes after reviewer feedback"
[feature/code-review 47c00c5] Updated notes after reviewer feedback
1 file changed, 1 insertion(+)

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/code-review)
$ git push origin feature/code-review
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 355 bytes | 177.00 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:23-22411-071-eng/lab2.git
To github.com:23-22411-071-eng/Lab2.git
   26f4e97..47c00c5  feature/code-review -> feature/code-review

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/code-review)
$
```

Merge the PR:



Commit message

Merge pull request #2 from 23-22411-071-eng/feature/code-review


Extended description

Update notes.txt for review practice

This commit will be authored by 23-22411-071@se.fjwu.edu.pk.

Confirm merge


Cancel



Pull request successfully merged and closed

You're all set — the [feature/code-review](#) branch can be safely deleted.











Delete branch



Add a comment


Write

Preview

H B I          

Add your comment here...

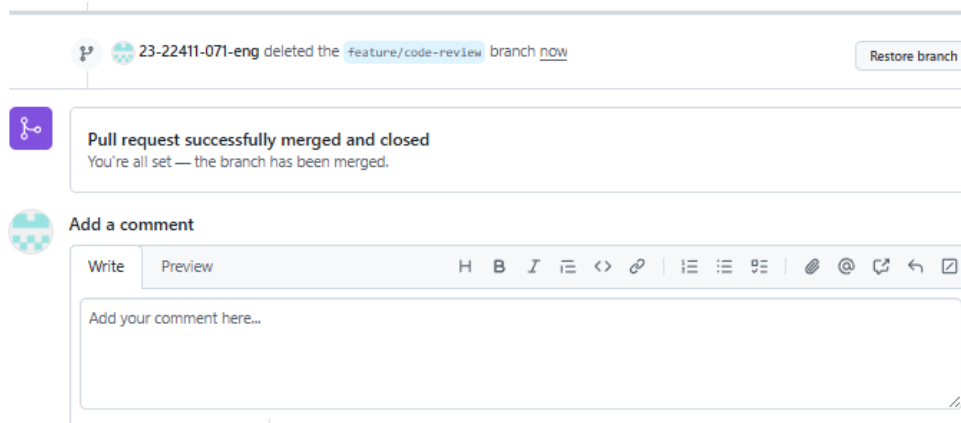
Markdown is supported

 Paste, drop, or click to add files

Comment

Remember, contributions to this repository should follow our [GitHub Community Guidelines](#).

Branch Handling after Merge:



Task 13 : Branch cleanup best practices

Delete Remote Branch After Merge:

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git push origin --delete collab
remote: This repository moved. Please use the new location:
remote:  git@github.com:23-22411-071-eng/lab2.git
To github.com:23-22411-071-eng/Lab2.git
- [deleted]          collab
```

Update Local Repository:

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git checkout main
Already on 'main'
Your branch is up to date with 'origin/main'.

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git pull origin main
From github.com:23-22411-071-eng/Lab2
 * branch          main      -> FETCH_HEAD
Already up to date.

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git branch -d feature/code-review
Deleted branch feature/code-review (was 47c00c5).

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git branch
  bugfix/user-auth-error
  collab
  develop
  feature-1
  feature/db-connection
  feature/login-page
* main
  staging
```

Exam Evaluation Questions

1. Advance branching and merge verification:

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git checkout -b Q1_test_branch
Switched to a new branch 'Q1_test_branch'
```

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (Q1_test_branch)
$ echo "Q1 test change" >> notes.txt

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (Q1_test_branch)
$ git add notes.txt
warning: in the working copy of 'notes.txt', LF will be replaced by CRLF the next time Git touches it

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (Q1_test_branch)
$ git commit -m "Q1 small change in notes.txt"
[Q1_test_branch b09e125] Q1 small change in notes.txt
1 file changed, 1 insertion(+)

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (Q1_test_branch)
$ |
```

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (Q1_test_branch)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git merge Q1_test_branch
Updating 88caeba..b09e125
Fast-forward
 notes.txt | 1 +
1 file changed, 1 insertion(+)
```

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git log --oneline --graph --all
* b09e125 (HEAD -> main, Q1_test_branch) Q1 small change in notes.txt
* 88caeba (origin/main, origin/HEAD) Merge pull request #2 from 23-22411-071-eng/feature/code-review
|
| * 47c00c5 (origin/feature/code-review) Updated notes after reviewer feedback
| * 26f4e97 Add line for code review demo
|/
* a490861 (collab) Add Ali's fun fact
* 02b5367 Add Zainab's fun fact
| * 1499eb4 (origin/feature/login-page, feature/login-page) Add loginpage feature
|/
* df9a3d3 (origin/staging, origin/develop, staging, develop) Merge pull request #1 from 23-22411-071-eng/feature/db-connection
|
| * 3869d37 (origin/feature/db-connection, feature/db-connection) Add db connection file
* | cd03188 (origin/feature-1, feature-1) Add new function to main.py
|/
* 6c249b7 (origin/bugfix/user-auth-error, bugfix/user-auth-error) Update notes.txt
* a5e1030 Add notes.txt
* fa57b63 Initial commit

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$
```

2. Multi-stage workflow simulation:

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git checkout main
Already on 'main'
Your branch is ahead of 'origin/main' by 1 commit.
(use "git push" to publish your local commits)

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git checkout -b develop
fatal: a branch named 'develop' already exists

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git checkout main
Already on 'main'
Your branch is ahead of 'origin/main' by 1 commit.
(use "git push" to publish your local commits)

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git checkout -b staging
fatal: a branch named 'staging' already exists
```

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git checkout develop
Switched to branch 'develop'

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (develop)
$ git checkout -b feature/Q2_feature
Switched to a new branch 'feature/Q2_feature'
```

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/Q2_feature)
$ echo "Feature branch update for Q2" >> notes.txt

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/Q2_feature)
$ git add notes.txt
warning: in the working copy of 'notes.txt', LF will be replaced by CRLF the next time Git touches it

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/Q2_feature)
$ git commit -m "Feature branch commit for Q2"
[feature/Q2_feature ca5eb9b] Feature branch commit for Q2
1 file changed, 1 insertion(+)

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/Q2_feature)
$ |
```

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (feature/Q2_feature)
$ git checkout develop
Switched to branch 'develop'

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (develop)
$ git merge feature/Q2_feature
Updating df9a3d3..ca5eb9b
Fast-forward
 notes.txt | 1 +
1 file changed, 1 insertion(+)

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (develop)
$ |
```

```

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (develop)
$ git checkout staging
Switched to branch 'staging'

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (staging)
$ git merge develop
Updating df9a3d3..ca5eb9b
Fast-forward
 notes.txt | 1 +
 1 file changed, 1 insertion(+)

```

```

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (staging)
$ git checkout main
Switched to branch 'main'
Your branch is ahead of 'origin/main' by 1 commit.
(use "git push" to publish your local commits)

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main)
$ git merge staging
Auto-merging notes.txt
CONFLICT (content): Merge conflict in notes.txt
Automatic merge failed; fix conflicts and then commit the result.

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main|MERGING)
$ |

```

```

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main|MERGING)
$ git log --oneline --graph --all
* ca5eb9b (staging, feature/Q2_feature, develop) Feature branch commit for Q2
* b09e125 (HEAD -> main, Q1_test_branch) Q1 small change in notes.txt
* 88caeba (origin/main, origin/HEAD) Merge pull request #2 from 23-22411-071-eng/feature/code-review
|
| \
|  * 47c00c5 (origin/feature/code-review) Updated notes after reviewer feedback
|  * 26f4e97 Add line for code review demo
|  /
| /
| * a490861 (collab) Add Ali's fun fact
| * 02b5367 Add Zainab's fun fact
| /
| * 1499eb4 (origin/feature/login-page, feature/login-page) Add loginpage feature
| \
| \ df9a3d3 (origin/staging, origin/develop) Merge pull request #1 from 23-22411-071-eng/feature/db-connection
|  /
|  * 3869d37 (origin/feature/db-connection, feature/db-connection) Add db connection file
|  | cd03188 (origin/feature-1, feature-1) Add new function to main.py
|  /
| * 6c249b7 (origin/bugfix/user-auth-error, bugfix/user-auth-error) Update notes.txt
| * a5e1030 Add notes.txt
| * fa57b63 Initial commit

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main|MERGING)
$ cat notes.txt
This is my first git note
This is my updated notes.txt
<<<<<< HEAD
Name: Zainab - Fun Fact: I love moon
Name: Aina - Fun Fact: I love clouds
Added line for code review demo
Added extra explanation as per reviewer feedback.
Q1 test change
=====
Feature branch update for Q2
>>>>>> staging

```


3. Collaboration and conflict resolution:

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (main|MERGING)
$ git checkout -b Q3_branch_A
Switched to a new branch 'Q3_branch_A'

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (Q3_branch_A)
$ echo "Contributor A line" >> notes.txt

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (Q3_branch_A)
$ git add notes.txt
warning: in the working copy of 'notes.txt', LF will be replaced by CRLF the next time Git touches it

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (Q3_branch_A)
$ git commit -m "Contributor A changes"
[Q3_branch_A 7409440] Contributor A changes
1 file changed, 5 insertions(+)

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (Q3_branch_A)
$ git push origin Q3_branch_A
Enumerating objects: 8, done.
Counting objects: 100% (8/8), done.
Delta compression using up to 4 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (6/6), 671 bytes | 167.00 KiB/s, done.
Total 6 (delta 4), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (4/4), completed with 2 local objects.
remote: This repository moved. Please use the new location:
remote: git@github.com:23-22411-071-eng/lab2.git
remote:
remote: Create a pull request for 'Q3_branch_A' on GitHub by visiting:
remote: https://github.com/23-22411-071-eng/lab2/pull/new/Q3_branch_A
remote:
To github.com:23-22411-071-eng/Lab2.git
 * [new branch]      Q3_branch_A -> Q3_branch_A
```

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (Q3_branch_A)
$ git checkout -b Q3_branch_B
Switched to a new branch 'Q3_branch_B'

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (Q3_branch_B)
$ echo "Contributor B line" >> notes.txt

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (Q3_branch_B)
$ git add notes.txt
warning: in the working copy of 'notes.txt', LF will be replaced by CRLF the next time Git touches it

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (Q3_branch_B)
$ git commit -m "Contributor B changes"
[Q3_branch_B 0e5b6fa] Contributor B changes
1 file changed, 1 insertion(+)

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (Q3_branch_B)
$ git push origin Q3_branch_B
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 316 bytes | 158.00 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:23-22411-071-eng/lab2.git
remote:
remote: Create a pull request for 'Q3_branch_B' on GitHub by visiting:
remote: https://github.com/23-22411-071-eng/lab2/pull/new/Q3_branch_B
remote:
To github.com:23-22411-071-eng/Lab2.git
 * [new branch]      Q3_branch_B -> Q3_branch_B
```

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (Q3_branch_B)
$ git checkout Q3_branch_A
Switched to branch 'Q3_branch_A'

Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (Q3_branch_A)
$ git merge Q3_branch_B
Updating 7409440..0e5b6fa
Fast-forward
 notes.txt | 1 +
 1 file changed, 1 insertion(+)
```

```
Hp@DESKTOP-LS90FPS MINGW64 ~/lab2 (Q3_branch_A)
$ cat notes.txt
This is my first git note
This is my updated notes.txt
<<<<<<< HEAD
Name: Zainab - Fun Fact: I love moon
Name: Aina - Fun Fact: I love clouds
Added line for code review demo
Added extra explanation as per reviewer feedback.
Q1 test change
=====
Feature branch update for Q2
>>>>>>> staging
Contributor A line
Contributor B line
```