1. **Git-HOL**

**LAB 3**

## ****1. Branching in Git****

**Definition**:  
A branch in Git is like a **parallel line of development**.  
It allows you to work on a feature, fix a bug, or experiment without affecting the main code (usually main or master).

**Why use it**:

Isolates work from the main branch

Allows multiple people to work on different features simultaneously

Keeps the main branch stable

**Common commands**:

git branch feature-login # Create branch

git checkout feature-login # Switch to branch

git checkout -b feature-login # Create and switch

git branch # List branches

## ****2. Merging in Git****

**Definition**:  
Merging combines changes from one branch into another (usually into main).

**How it works**:

Move to the target branch (e.g., main)

Merge the source branch into it

**Command**:

git checkout main

git merge feature-login

**Possible merge types**:

**Fast-forward merge**: If no commits have been made in the target branch, Git just moves the pointer forward.

**3-way merge**: If both branches have changes, Git combines them and may require conflict resolution.

## ****3. Creating a Branch Request in GitLab****

In GitLab, "branch request" isn’t an official term — it usually means **creating a branch in the remote repository**.

### ****Steps****:

**From local Git**:

git checkout -b feature-login

git push origin feature-login

**From GitLab UI**:

Open your project in GitLab

Go to **Repository → Branches**

Click **New branch**

Name the branch (e.g., feature-login)

Choose the source branch (usually main)

Click **Create branch**

**4. Creating a Merge Request in GitLab**

Merge requests (MRs) in GitLab are used to **propose merging your branch into another branch**.

### ****Steps****:

**Push your branch** to GitLab:

git push origin feature-login

Go to your project in GitLab.

GitLab will often show a banner: "Merge request can be created for branch feature-login" — click it.  
Or manually:

Go to **Merge Requests**

Click **New merge request**

Select:

**Source branch**: feature-login

**Target branch**: main (or whichever branch you want to merge into)

Add:

Title (short summary of change)

Description (details, screenshots, related issues)

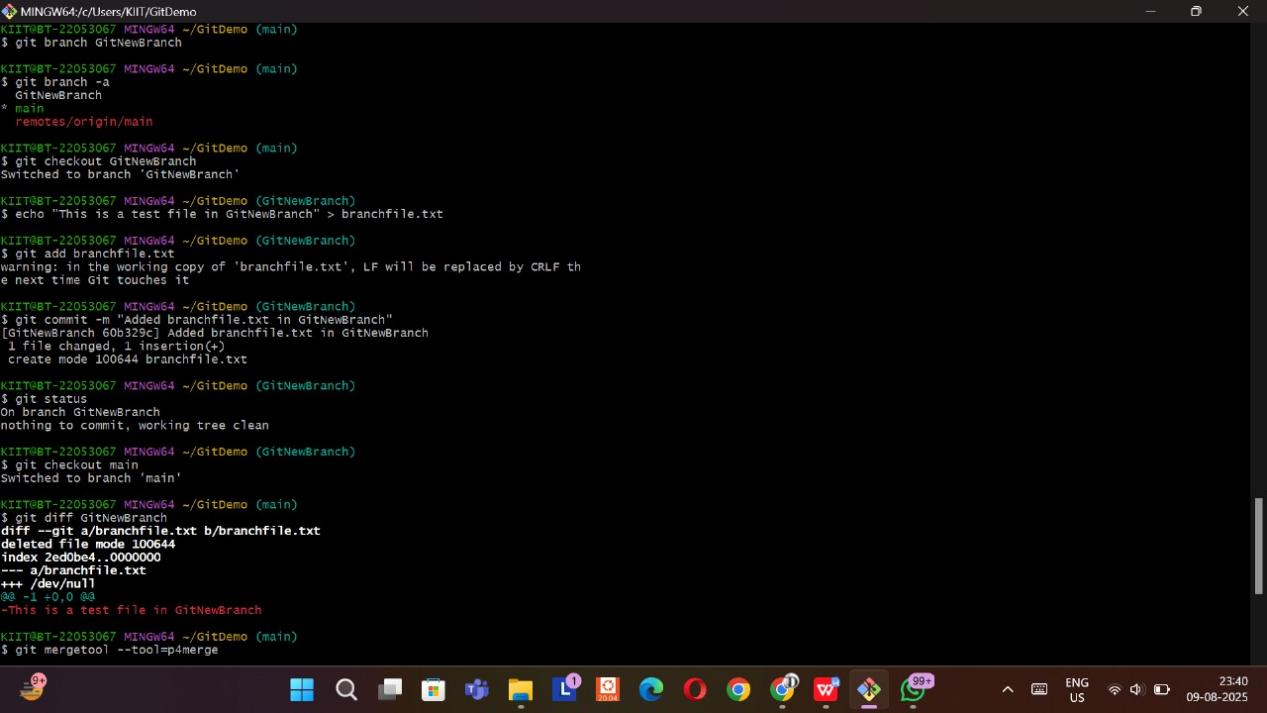
Assign reviewers if needed.

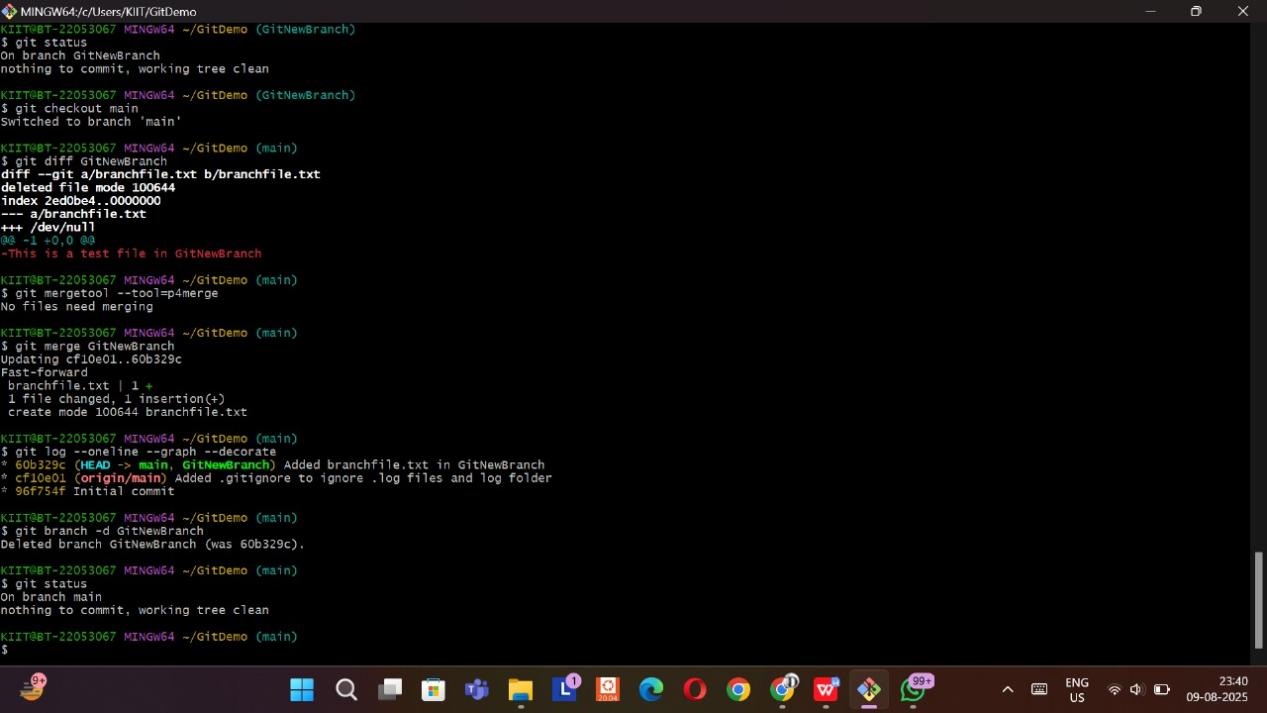
Click **Create merge request**.

Reviewers can approve or request changes.

Once approved, click **Merge**.

**Output:**

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