Laboratory 3: Documentation of Git Commands

Command: git init

This command initializes a new Git repository inside the folder where my project files are stored. After running this, Git starts tracking changes in that folder. In other words, it tells Git: “Begin monitoring this folder and prepare it for version control.” Without this step, the other Git commands would not work because the folder is not yet recognized as a repository.

Command: git add .

The git add . command adds all files in the current folder to the staging area. The staging area is like a waiting room where files are prepared before they are officially saved in the repository. Using the dot (.) means I am adding every file at once, instead of adding them one by one.

Command: git commit -m "First upload for Laboratory 3"

Committing is the process of saving the changes permanently in the local repository. The -m flag allows me to include a short message that describes what I did, in this case: “First upload for Laboratory 3.” Writing a clear commit message is important so that I (and others) can easily understand the purpose of that particular save point.

Command: git branch -M main

By default, Git may name the first branch as master. However, GitHub now uses main as the standard default branch name. This command renames the current branch to main. Doing this makes sure that when I push my work to GitHub, it matches the repository’s main branch and avoids conflicts later.

Command: git remote add origin https://github.com/username/repository.git

This command connects my local repository (the one on my computer) to the remote repository (the one hosted on GitHub). The word origin is just a default nickname for the URL of the GitHub repository. After this step, Git knows where to send my files whenever I push them online.

Command: git push -u origin main

This command uploads my commits from the local machine to the GitHub repository. push means sending the commits online. origin refers to the remote repository linked earlier. main specifies the branch to upload to. The -u flag sets origin main as the default so that in the future, I can simply type git push without repeating the whole command.

Command: git log --oneline

This command displays a simplified history of commits made in the repository. Each commit is shown with a short ID and the commit message. It’s very useful when I want to quickly check what changes have been recorded and when.