

Lab 8

Advanced Git & GitHub

(Collaborators, Integrating with VS Code and Forking)

Objective

Introduces advanced Git and GitHub topics, including:

- Adding and managing **collaborators** for a repository.
- Integrating Git and GitHub with Visual Studio Code (**VS Code**) using extensions.
- **Forking** a repository and contributing to the original project.

Collaborators

What are Collaborators?

Collaborators are people who can access, contribute to, and manage a GitHub repository. Adding collaborators facilitates teamwork on a shared project.

Steps to Add Collaborators:

- Open your repository on GitHub.
- Go to the **Settings** tab.
- Click on Collaborators and Teams under "**Access**".
- Click Invite a Collaborator, then search for your teammate's GitHub **username** or **email**.
- Once invited, the collaborator will receive an email to accept the invitation.

Integrating Git with VS Code

Why Use VS Code for Git?

VS Code's Git extension simplifies Git commands with a **user-friendly** interface for staging, committing, and pushing changes.

Setting Up Git Integration in VS Code:

1. Install Git Extension:

- Open VS Code.
- Go to the Extensions view (Ctrl+Shift+X).
- Search for and install the **GitHub Pull Requests** and **Issues** extension.

2. Clone a Repository in VS Code:

- Open VS Code and go to the Source Control view (Ctrl+Shift+G).
- Click Clone Repository and paste the repository URL.
- Choose a folder to clone the repository into.

3. Perform Git Operations:

- Stage changes: Click the + next to modified files.
- Commit changes: Add a commit message and click the checkmark.
- Push changes: Click the Publish Branch or Sync Changes button.

Forking a Repository

What is Forking?

Forking creates a copy of someone else's repository in your GitHub account. It allows you to make changes independently without affecting the original repository.

Steps to Fork and Contribute:

1. Fork the Repository:

- Navigate to the repository you want to fork on GitHub.
- Click the Fork button in the upper-right corner.

2. Clone the Forked Repository:

- Clone your forked repository to your local machine:
- `git clone https://github.com/your-username/repository-name.git`

3. Make Changes Locally:

- Create a branch for your changes:
- **`git checkout -b my-feature-branch`**
- Make changes, commit them, and push them to your fork:
- `git push origin my-feature-branch`

4. Submit a Pull Request:

- Go to your forked repository on GitHub.
- Click Compare & Pull Request.
- Add a description and submit the pull request.

Summary

- Managing **access** to your repository.
- Simplifying Git **workflows** using the VS Code Git **extension**.
- Contributing to **open-source projects** or other repositories.

Additional Resources

- [GitHub Collaborators Documentation](#)
- [Git in VS Code](#)
- [GitHub Forking Guide](#)

Hands-On Exercises Summary

Collaborators

- Add a teammate as a collaborator.
- Have them push a change, and you review and merge it.

VS Code Integration

- Set up Git integration in VS Code.
- Clone your repository, make changes, and push them using the VS Code interface.

Forking

- Fork a repository, make a change, and submit a pull request to the original repository.