

Lab Manual 1: Software Configuration Management with Git

Objective

- To understand version control concepts using Git.
- To create, manage, and upload a C++ project to GitHub.

Prerequisites

- Installed Git and GitHub account.
- Basic C++ program.

Concepts

Git is a distributed version control system widely used in professional software engineering. It helps track changes, collaborate with teams, and maintain code history.

Lab Tasks

1. Install Git and configure it with your GitHub account.
2. Create a simple C++ program (e.g., “Hello World” or factorial).
3. Initialize a Git repository in your project folder.
4. Commit the code and push it to a new GitHub repository.
5. Write a lab report documenting all commands used with screenshots.

Procedure

1. Install Git from git-scm.com.
2. Configure:
3. `git config --global user.name "Your Name"`
4. `git config --global user.email "your@email.com"`
5. Create a new folder → add your main.cpp.
6. Run:
7. `git init`

8. `git add .`
9. `git commit -m "Initial commit"`
10. `git branch -M main`
11. `git remote add origin https://github.com/username/repo.git`
12. `git push -u origin main`
13. Verify code is uploaded.

Expected Submission

- GitHub repository link.
- Lab report with commands + screenshots.

Evaluation

- Git commands (40%)
- Successful push to GitHub (30%)
- Report quality (30%)