

# Day 1: Git Basics and Local Repository Management

## Session 1: Introduction to Version Control and Git Basics

- Overview of version control and Git
- Importance of version control in software development
- Downloading and installing Git
- Basic Linux commands for the command line interface

## Session 2: Setting Up and Initializing a Git Repository

- Initializing a Git repository
- Making and staging the first change
- Committing changes
- Adding and removing changes from the staging area

## Session 3: Exploring Git History and Branching Basics

- Viewing project history
- Making multiple commits
- Removing a commit from the project history
- Introduction to branching and its use

## Session 4: Working with Branches

- Creating and switching to a new branch
- Merging a branch to the main branch
- Pushing changes to the remote repository
- Stashing changes for later use

# Day 2: GitHub Collaboration, Pull Requests, and Open Source

## Session 5: GitHub Setup and Remote Repositories

- Starting GitHub and creating a new repository
- Connecting a remote repository to a local repository
- Pushing local changes to the remote repository

## Session 6: Collaborating with Existing Projects and Introduction to Open Source

- Forking a project on GitHub
- Cloning a forked project to the local machine
- Adding an upstream remote and syncing changes
- Introduction to open source, its principles, and benefits

## Session 7: Pull Requests, Project Collaboration, and Contributing to Open Source

- Understanding the concept of pull requests
- Creating a pull request from a feature branch
- Merging a pull request and resolving conflicts
- Making contributions to open-source projects

# **Day 3: Advanced Git Topics, Best Practices, and Final Project**

## Session 8: Advanced Git Commands

- Squashing commits
- Using the Rebase command
- Resetting changes with the hard flag

## Session 9: Handling Merge Conflicts and Best Practices

- Understanding merge conflicts
- Resolving merge conflicts manually
- Best practices for avoiding and handling conflicts

## Session 10: Final Project, Recap, and Further Open Source Exploration

- Applying learned concepts to a final project
- Q&A session for any remaining questions
- Encouraging participants to explore more open-source projects
- Instructions for further practice and exploration