

# Document Title: Git&Github Learning Roadmap

## 1. **Start:**

- Begin with the interest in learning version control with Git and GitHub.

## 2. **Understanding Version Control:**

- Learn the basics of version control and why it is essential in software development.

## 3. **Git Basics:**

- Install Git on your local machine.
- Learn basic Git commands (init, clone, add, commit, status).

## 4. **Branching and Merging:**

- Understand branching and merging in Git.
- Learn about branches, creating branches, switching branches, and merging changes.

## 5. **Remotes and GitHub:**

- Create a GitHub account.
- Connect your local repository to a remote repository on GitHub.
- Learn basic commands related to remotes (push, pull, fetch).

## 6. **Collaboration Workflow:**

- Understand the basics of collaboration with Git and GitHub.
- Fork repositories, make changes, and submit pull requests.

## 7. **Git Ignore:**

- Learn how to use **.gitignore** to exclude files from version control.

## 8. **Git Revert and Reset:**

- Understand how to revert and reset changes in Git.

## 9. **Git Tagging:**

- Learn how to use tags to mark important points in your project's history.

#### **10. Git Hooks:**

- Explore Git hooks and how to use them for custom actions.

#### **11. Advanced Branching:**

- Learn advanced branching strategies (feature branching, release branching).

#### **12. Conflict Resolution:**

- Understand how to resolve conflicts that may arise during merging.

#### **13. GitHub Actions (Optional):**

- Explore GitHub Actions for continuous integration and continuous deployment (CI/CD).

#### **14. Git Submodules (Optional):**

- Learn about Git submodules for managing external dependencies.

#### **15. Git Workflows (Optional):**

- Explore different Git workflows (Gitflow, GitHub flow).

#### **16. Git Stash:**

- Learn how to use **git stash** for temporarily saving changes.

#### **17. Git Bisect:**

- Understand how to use **git bisect** for binary search to find bugs.

#### **18. Git Cherry-Pick:**

- Learn how to use **git cherry-pick** to apply specific commits.

#### **19. Git LFS (Large File Storage) (Optional):**

- Explore Git LFS for managing large files in your repositories.

#### **20. GitHub Security Features:**

- Familiarize yourself with GitHub security features like code scanning and Dependabot.

#### **21. Documentation:**

- Understand the importance of good commit messages and documentation.

## **22. Git Best Practices:**

- Learn and adopt best practices for using Git in real-world projects.

## **23. Continuous Learning:**

- Stay updated with new features and best practices in Git and GitHub.

## **24. End:**

- You've successfully navigated the Git and GitHub roadmap!