# Git and GitHub tutorial

1. Introduction to Git and GitHub

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it is a distributed version control system that helps track changes in source code during software development. GitHub is a cloud-based platform that hosts Git repositories and facilitates collaboration among developers.

2. Installing Git

Download Git from https://git-scm.com/ and follow the installation steps for your OS.  
 Check installation:  
 git --version

3. Git Configuration

Set your username and email:  
 git config --global user.name “Rahul Kumar"  
 git config --global user.email “rahulprasad6598@gmail.com”  
View config settings:  
 git config --list1

4. Creating a Git Repository

Initialize a new repository:  
 git init

5. Cloning a Repository

Clone an existing repository from GitHub:  
 git clone https://github.com/username/repository.git

6. Basic Git Commands

Check repository status:  
 git status  
Add files to staging area:  
 git add filename  
 git add .  
Commit changes:  
 git commit -m "Commit message"  
View commit history:  
 git log

7. Working with Branches

Create a new branch:  
 git branch branch-name  
Switch to a branch:  
 git checkout branch-name  
Create and switch:  
 git checkout -b branch-name  
Merge branches:  
 git merge branch-name

8. Pushing and Pulling from GitHub

Push changes to GitHub:  
 git push origin branch-name  
Pull changes from GitHub:  
 git pull origin branch-name

9. Forking and Pull Requests

Fork a repository using GitHub UI.  
Make changes and push to your fork.  
Create a Pull Request on GitHub to propose changes.

10. Additional Git Commands

Undo changes in file:  
 git checkout -- filename  
Remove file from staging:  
 git reset filename  
Stash changes:  
 git stash  
Apply stashed changes:  
 git stash apply

11. Conclusion

Git and GitHub are essential tools for version control and collaboration. Practice these commands to become proficient.

12. All Git Commands in One Place

git --version  
git config --global user.name "Your Name"  
git config --global user.email "your.email@example.com"  
git config --list  
git init  
git clone https://github.com/username/repository.git  
git status  
git add filename  
git add .  
git commit -m "Commit message"  
git log  
git branch branch-name  
git checkout branch-name  
git checkout -b branch-name  
git merge branch-name  
git push origin branch-name  
git pull origin branch-name  
git checkout -- filename  
git reset filename  
git stash  
git stash apply  
git remote -v  
git remote add origin <https://github.com/username/repo.git>

git remote remove origin  
git tag v1.0  
git tag -a v1.0 -m "Version 1.0"  
git push origin v1.0  
git tag  
git revert commit\_hash  
git reset --soft HEAD~1  
git reset --mixed HEAD~1  
git reset --hard HEAD~1  
git rebase main  
git rebase -i HEAD~n  
git add conflicted\_file  
git commit  
git merge --continue  
git submodule add https://github.com/username/repo.git path/to/submodule  
git submodule init  
git submodule update  
git bisect start

git bisect bad  
git bisect good commit\_hash