Git

Kiran Vasudev[1]

[1]Hochschule Bonn-Rhein-Sieg

March 13, 2018

Outline

Introduction

- Most widely used Version Control System(VCS)
- Takes snapshots of the system.

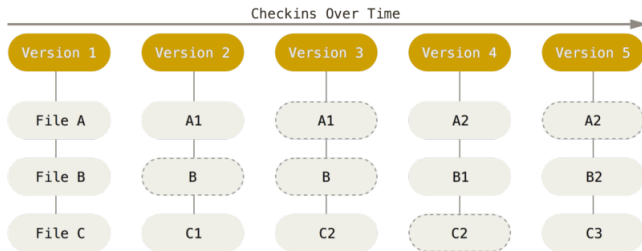
Figure: Different versions in the form of snapshots[1]

Main states of a Git repository

- Working directory
- Staging Area
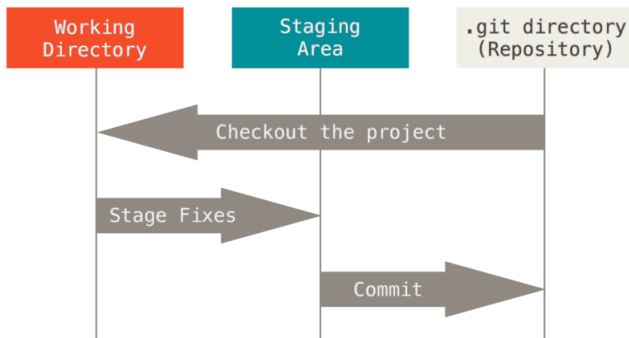- .git directory (repository)

Figure: Working directory, staging area and the .git directory[1]

States of files in your working directory
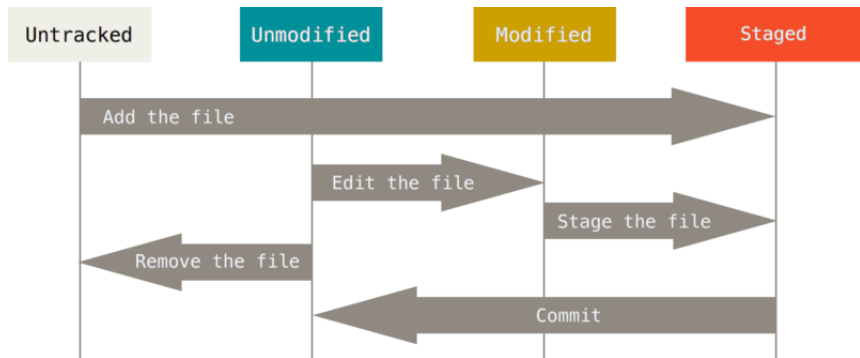
- ▶ Files can either be tracked or untracked.

Figure: Lifecycle of the status of files[2]

Some important commands I

First time git setup:

- **git config –global user.name "user-name"**
- **git config –global user.email "email-id"**

Basics:

- **git clone** ⟨remote_location⟩ ⟨clone_name⟩
  Clones a repository into a new directory
- **git init**
  Initializes folder to be recognized as a git folder
- **git add** ⟨f_name⟩
  Adds the file to the stage
- **git status**
  To list out the status of files and folders
- **git commit -m "message here"**
  Commits the file to the repository
- **git tag** ⟨tag_name⟩
  Used to tag a commit

Some important commands II

- **git log**
  Lists the recent commit history
- **git branch**
  Lists the available branches. Can also be used to create a new branch
  with the argument ⟨branch_name⟩
- **git checkout** ⟨b_name⟩
  Switches to another branch

Distributed Git:

- **git remote add** ⟨remote_name⟩ ⟨remote_location⟩
  Remotes are used to track repositories
- **git remote -v**
  Lists all the remotes
- **git fetch** ⟨ target_branch ⟩
  Gathers commits from target branch and stores them in your local
  repository but does not merge them with the current branch
- **git push** ⟨remote_name⟩ ⟨branch_name⟩
  Pushes local changes to the remote

Some important commands III

- **git merge** ⟨ b_name ⟩
  Merges two development histories together
- **git pull** ⟨repository_name⟩
  Does a git fetch and then a merge

Lets get our hands dirty !

References

📄 Git basics

📄 Recording changes in Git