Git

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Outline

Introduction

Main states of a Git repository

States of files in your working directory

Some important commands

References

Introduction

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

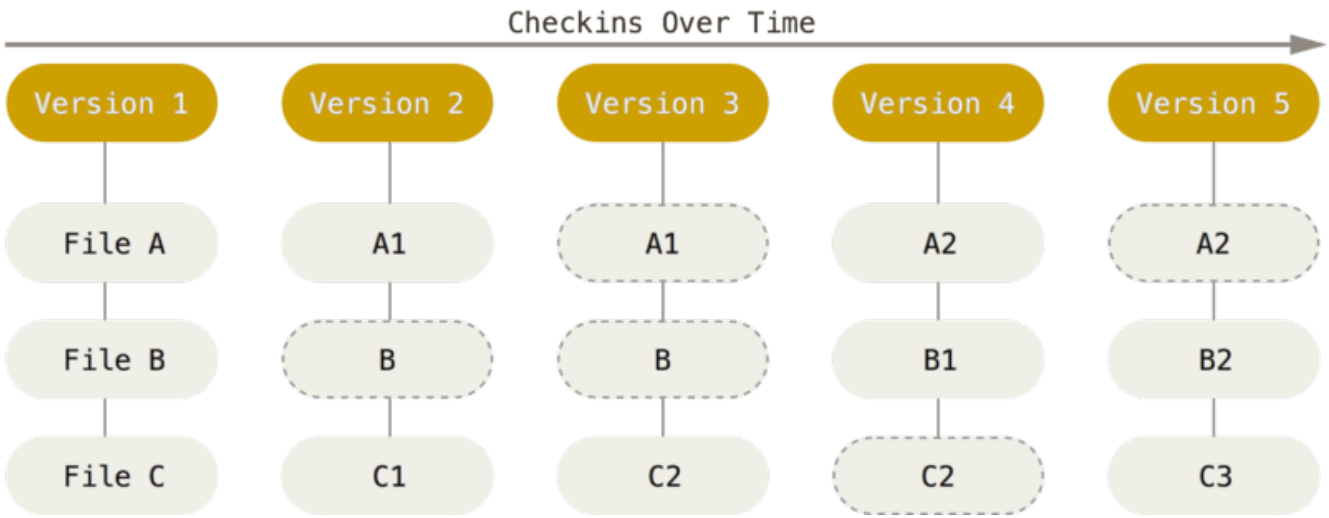

Figure: Different versions in the form of snapshots[1]

Main states of a Git repository

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

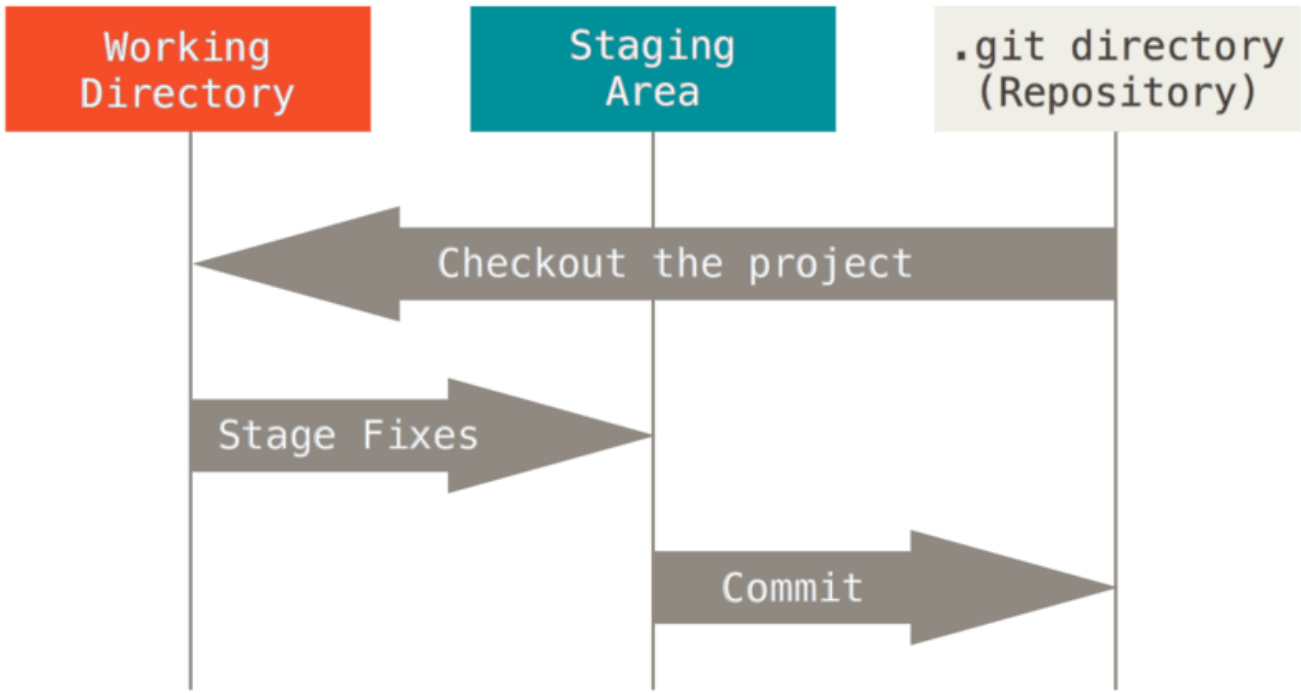

Figure: Working directory, staging area and the .git directory[1]

States of files in your working directory

- Files can either be tracked or untracked.

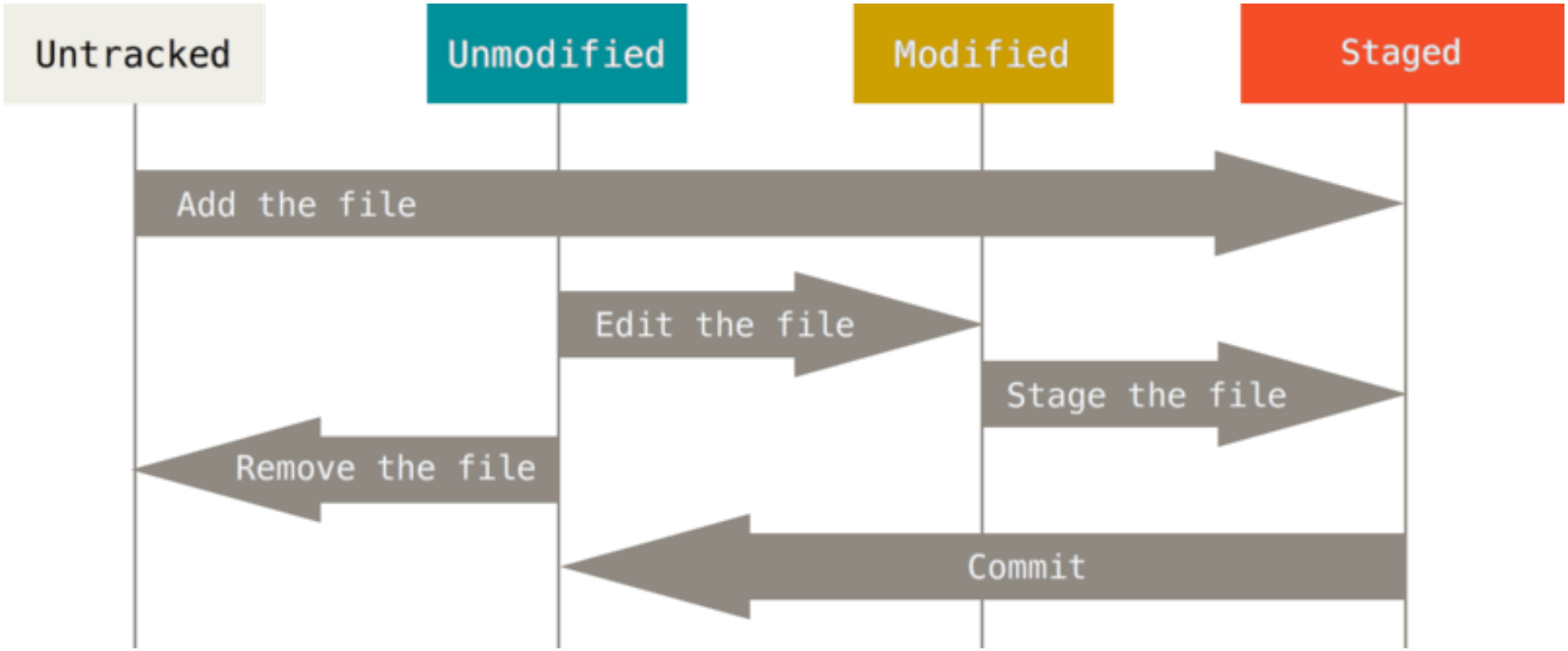

Figure: Lifecycle of the status of files[2]

Some important commands I

Initializing

- **git config –global user.name "user-name"**
- **git config –global user.email "email-id"**
- **git init**
  Initializes folder to be recognized as a git folder

Cloning

- **git clone** ⟨remote_location⟩ ⟨clone_name⟩
  Clones a repository into a new directory
- **git pull** ⟨repository_name⟩
  Does a git fetch and then a merge
- **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

Some important commands II

Tracking/removing files

- **git add** ⟨f_name⟩
  Adds the file to the stage
- **git rm** ⟨f_name⟩
  Removes the file from the working tree
- **git mv** ⟨f_name⟩
  Moves/renames the file in the working tree

Committing changes

- **git commit -m "message here"**
  Commits the file to the repository

Checking file status

- **git status**
  To list out the status of files and folders
- **git diff**
  Shows changes between commits

Some important commands III

Tagging

- **git tag** ⟨tag_name⟩
  Used to tag a commit

Branching

- **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
- **git merge** ⟨ b_name ⟩
  Merges two development histories together

Viewing commit history

- **git log**
  Lists the recent commit history

Some important commands IV

Working with remotes

- **git remote add** ⟨remote_name⟩ ⟨remote_location⟩
  Remotes are used to track repositories
- **git remote -v**
  Lists all the remotes
- **git push** ⟨remote_name⟩ ⟨branch_name⟩
  Pushes local changes to the remote

Lets get our hands dirty !

References


Git basics


Recording changes in Git