



L OVELY
P ROFESSIONAL
U NIVERSITY

Transforming Education Transforming India

Orientation to Computing-I

L T P : 2 0 0

Unit-6 (Version Control)

- Overview of Git and Github
- Install git and Create a GitHub account
- Create a local git repository
- Add a new file to the repository
- Creating a commit
- Creation of a new branch
- Git Commands

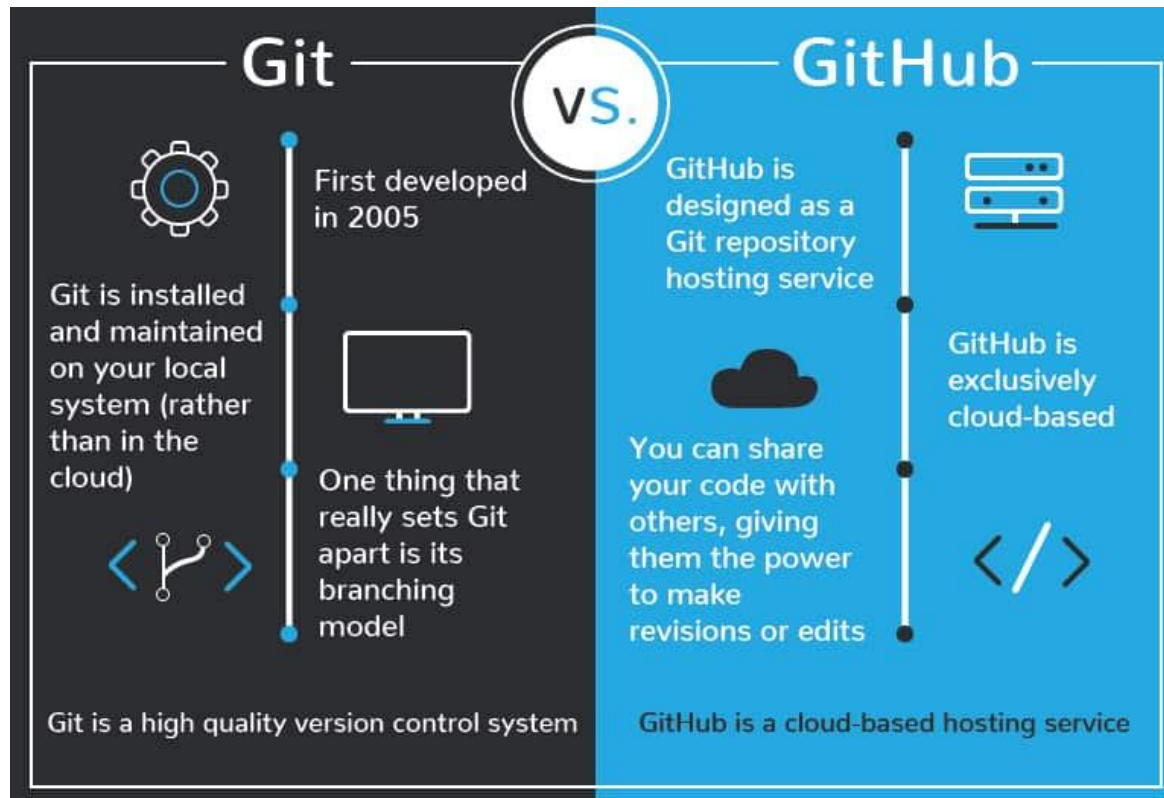
What is Git and GitHub?

Git: Git is a distributed version control system for tracking changes in source code during software development. It is designed for coordinating work among programmers, but it can be used to track changes in any set of files. Its goals include speed, data integrity, and support for distributed, non-linear workflows.

GitHub: GitHub is a web-based Git repository hosting service, which offers all of the distributed revision control and source code management (SCM) functionality of Git as well as adding its own features.



Diff. between Git and GitHub?



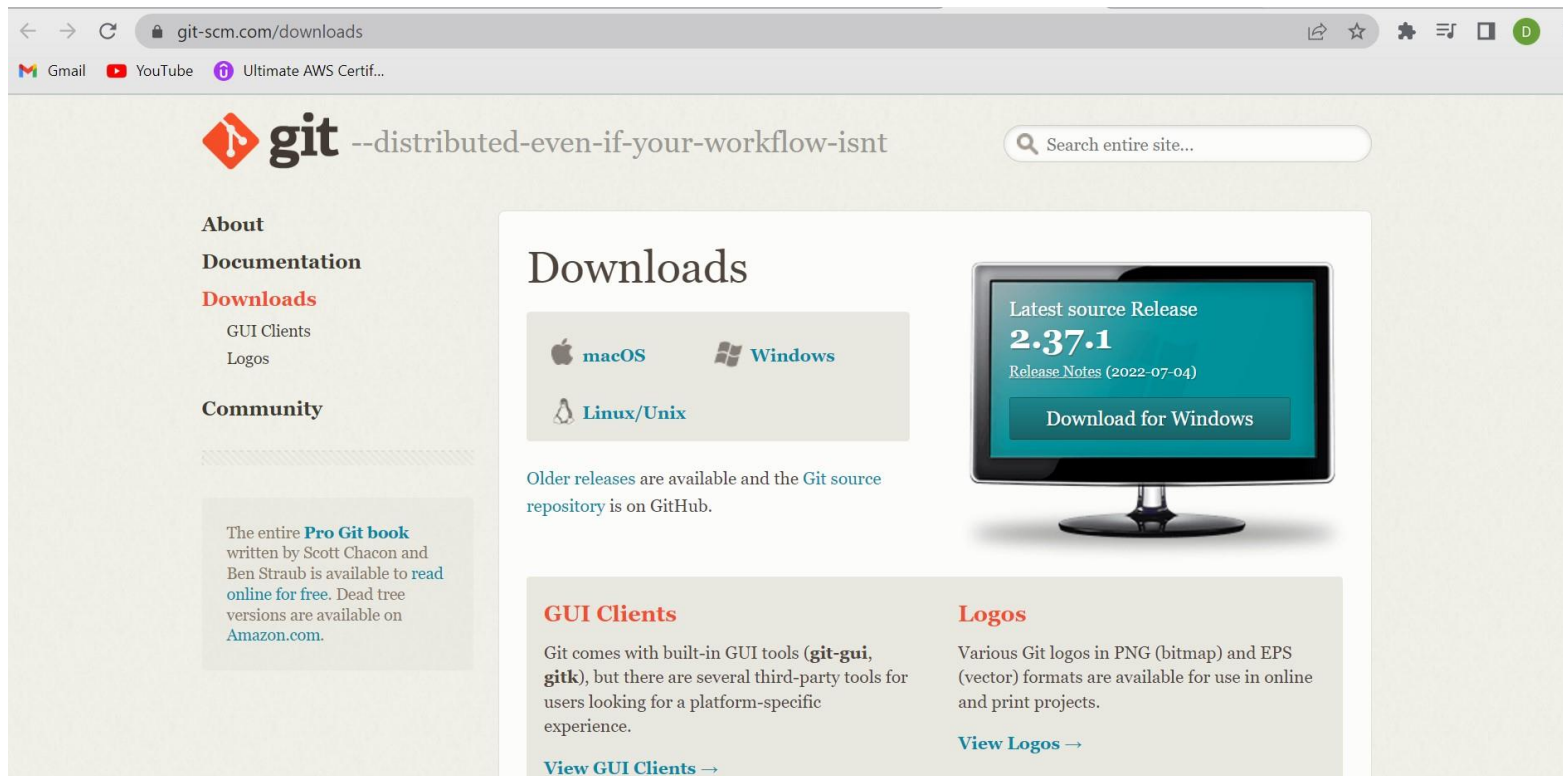
Diff. between Git and GitHub?

Git vs. GitHub comparison	
GIT	GITHUB
Installed locally	Hosted in the cloud
First released in 2005	Company launched in 2008
Maintained by The Linux Foundation	Purchased in 2018 by Microsoft
Focused on version control and code sharing	Focused on centralized source code hosting
Primarily a command-line tool	Administered through the web
Provides a desktop interface named Git Gui	Desktop interface named GitHub Desktop
No user management features	Built-in user management
Minimal external tool configuration features	Active marketplace for tool integration
Competes with Mercurial, Subversion, IBM, Rational Team Concert and ClearCase	Competes with Atlassian Bitbucket and GitLab
Open source licensed	Includes a free tier and pay-for-use tiers

© 2018 TECHTARGET. ALL RIGHTS RESERVED. TechTarget

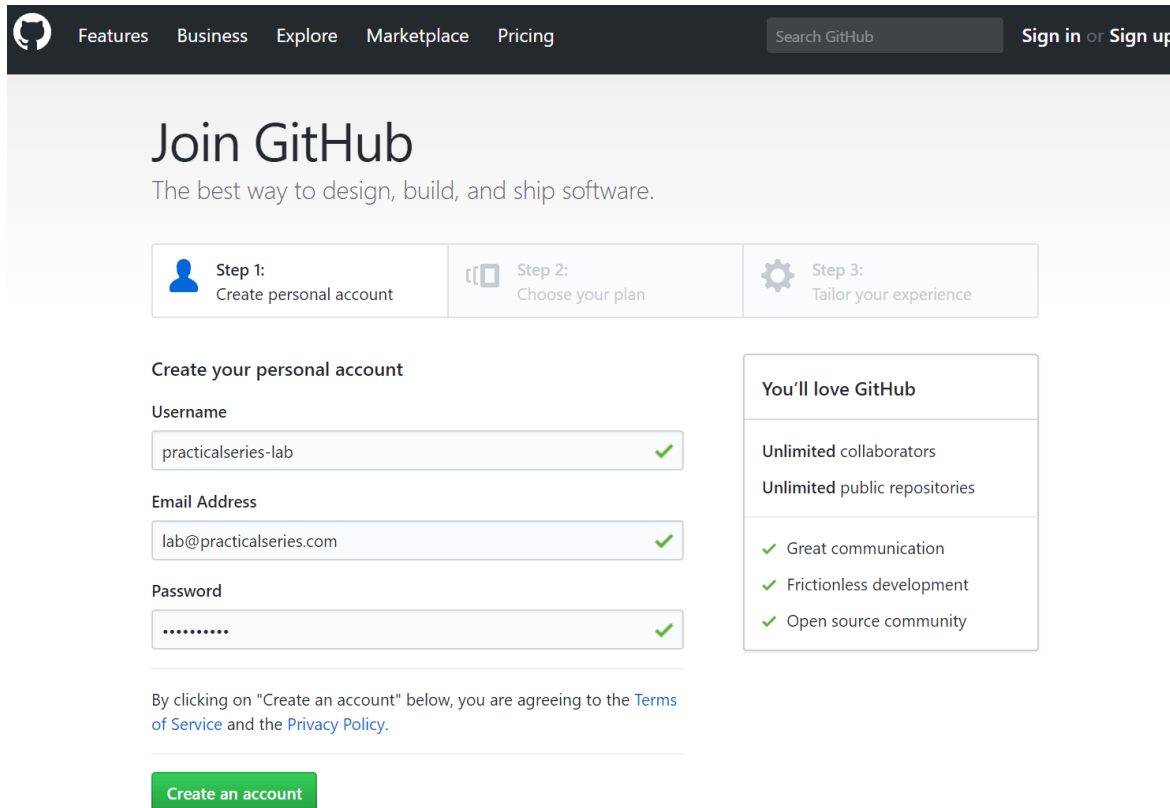
Install Git

<https://git-scm.com/downloads>

A screenshot of the Git website's download page. The browser address bar shows 'git-scm.com/downloads'. The page features the Git logo and tagline '--distributed-even-if-your-workflow-isnt'. A sidebar on the left contains links for 'About', 'Documentation', 'Downloads' (highlighted), 'GUI Clients', 'Logos', and 'Community'. The main content area is titled 'Downloads' and includes links for macOS, Windows, and Linux/Unix. A monitor graphic displays the 'Latest source Release 2.37.1' and a 'Download for Windows' button. Below the download links, there is a note about older releases and the Git source repository being on GitHub. At the bottom, there are sections for 'GUI Clients' and 'Logos', each with a 'View' link and an arrow.

Create GitHub Account


<https://github.com/>


A screenshot of the GitHub 'Join GitHub' page. The page has a dark header with navigation links: Features, Business, Explore, Marketplace, Pricing, a search bar, and 'Sign in or Sign up'. The main content area is light gray and titled 'Join GitHub' with the tagline 'The best way to design, build, and ship software.' Below this are three steps: Step 1: Create personal account (active), Step 2: Choose your plan, and Step 3: Tailor your experience. The 'Create your personal account' section includes input fields for Username (practicalseries-lab), Email Address (lab@practicalseries.com), and Password (masked with dots), each with a green checkmark. To the right, a box titled 'You'll love GitHub' lists benefits: Unlimited collaborators, Unlimited public repositories, Great communication, Frictionless development, and Open source community. At the bottom, a green button says 'Create an account' after a disclaimer about terms and privacy policy.


Features Business Explore Marketplace Pricing Search GitHub Sign in or Sign up

Join GitHub

The best way to design, build, and ship software.

 Step 1:
Create personal account

 Step 2:
Choose your plan

 Step 3:
Tailor your experience

Create your personal account

Username

practicalseries-lab ✓

Email Address

lab@practicalseries.com ✓

Password

..... ✓

By clicking on "Create an account" below, you are agreeing to the [Terms of Service](#) and the [Privacy Policy](#).

Create an account

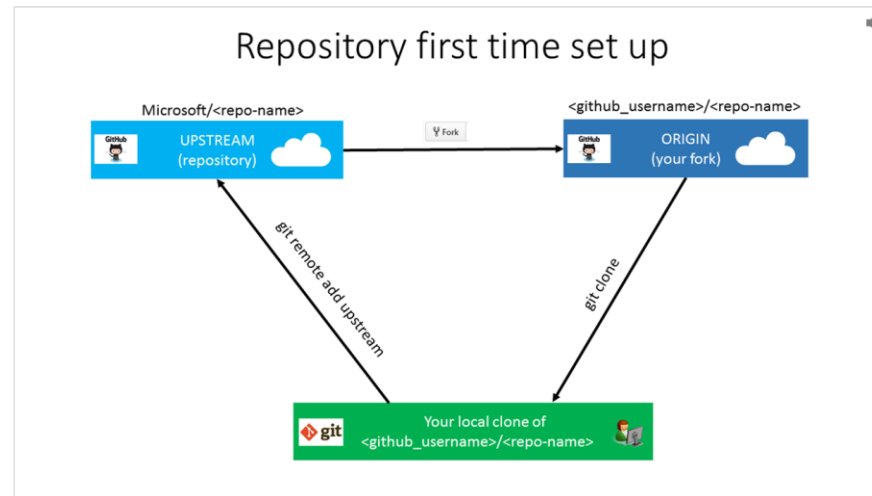
You'll love GitHub

- Unlimited collaborators
- Unlimited public repositories
- ✓ Great communication
- ✓ Frictionless development
- ✓ Open source community

Create a local git repository

Start a new git repository

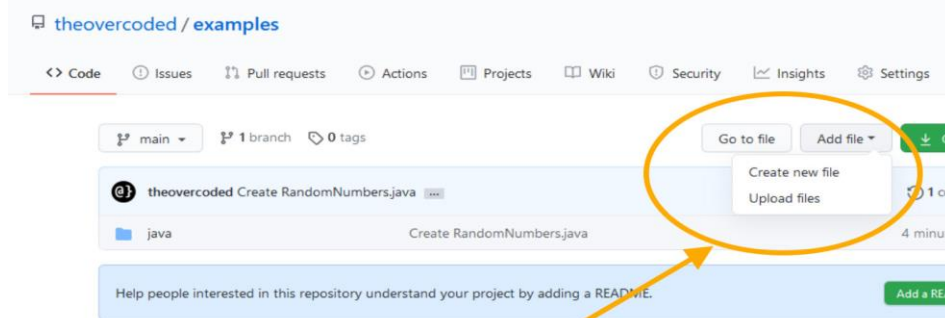
- Create a directory to contain the project.
- Go into the new directory.
- Type git init .
- Write some code.
- Type git add to add the files (see the typical use page).
- Type git commit .



Add a new file to the repository

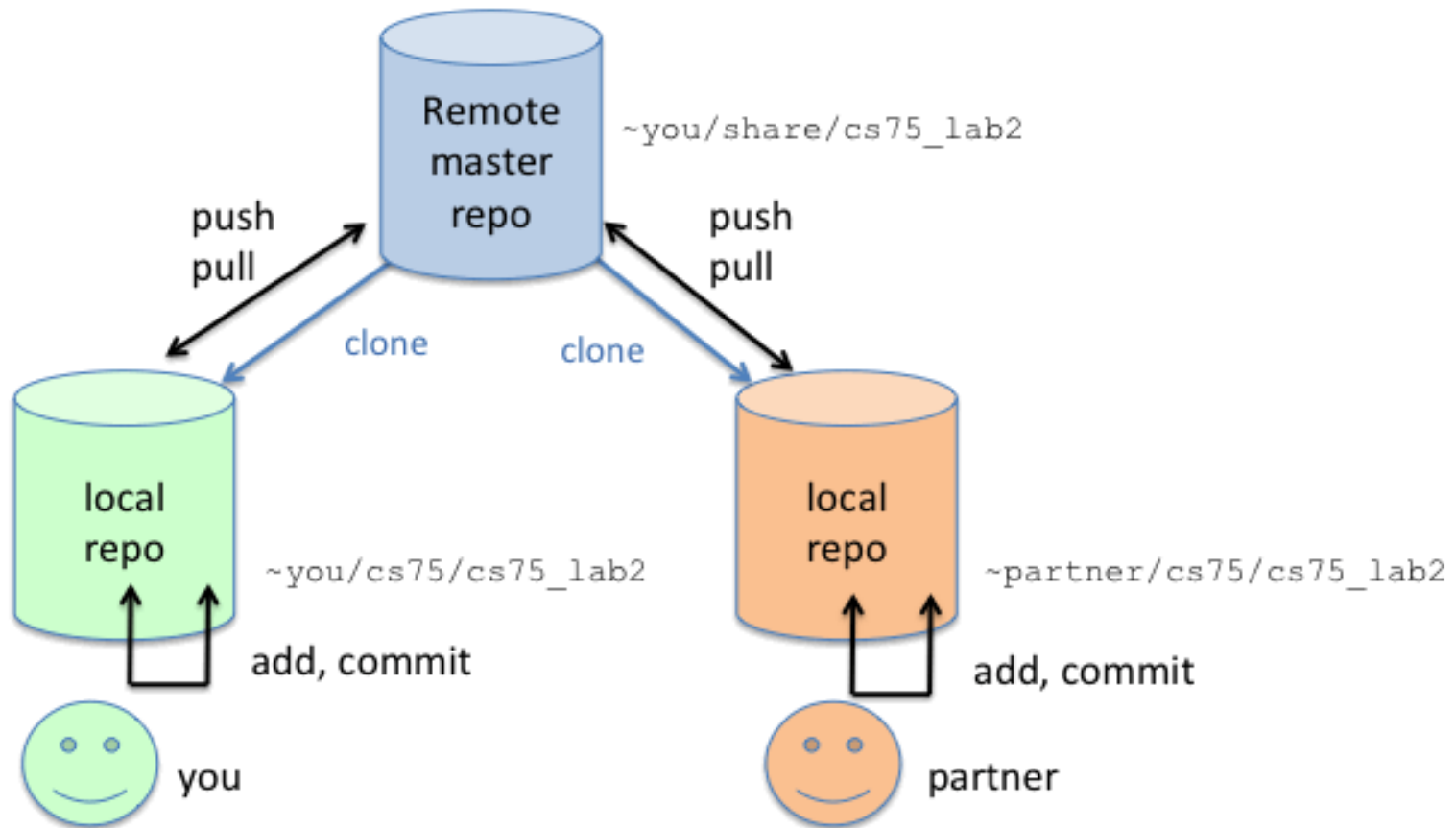
Create your new files or edit existing files in your local project directory.

- Enter `git add --all` at the command line prompt in your local project directory to add the files or changes to the repository.
- Enter `git status` to see the changes to be committed.



in repos with existing files and folders, click the "Add File" > "Create new File" button to get started

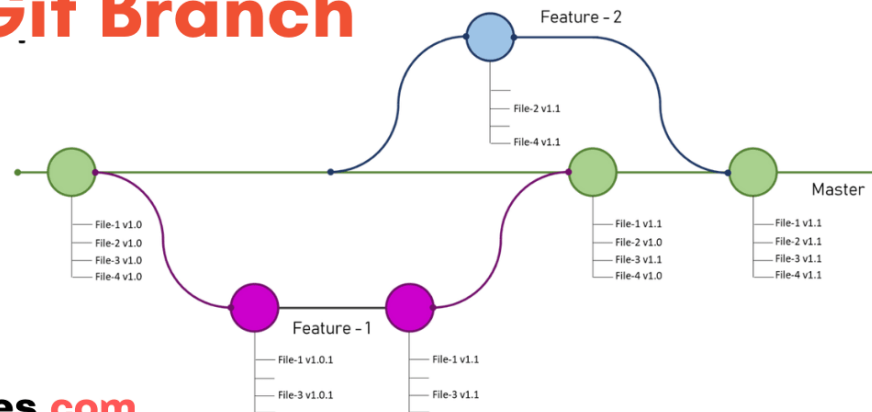
Creating a Commit



Creation of a new branch

The git branch command can be used to create a new branch. When you want to start a new feature, you create a new branch off main using git branch new_branch . Once created you can then use git checkout new_branch to switch to that branch.

How To Create a Git Branch

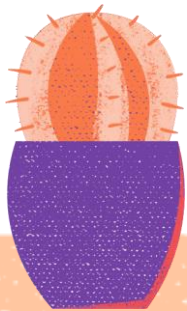
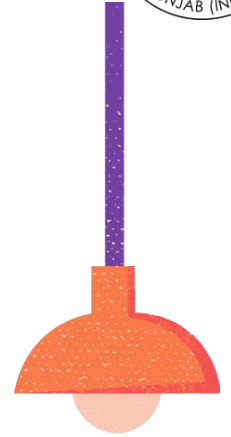


JunosNotes.com

A cluster of five orange sparkles of varying sizes is located in the upper left corner of the slide.

Git Commands

Learn the concept of
controlling, forking,
building repositories



Git Commands

Introduce yourself to Git

```
$ git config --global user.name {given name}
```

```
$ git config --global user.email {given email}
```


Git Commands

A stack of three books with purple, red, and black covers.

Run your code editor
\$ code.

A cup of coffee with a purple band and a red lid.A simple office chair with a yellow seat and a black base.A yellow marker with a black cap.

Git Commands

A stack of three books with purple, red, and black covers.

Initialize empty Git repository
\$ git init

A cup of coffee with a purple sleeve and a red lid.A small orange chair with a black base and red wheels.A pencil with a black eraser and a blue body.

Git Commands

A stack of three books with purple, red, and black covers.

Adding the work to staging area
\$ git add {filename}

A yellow cup with a purple band and a red lid.A yellow office chair with a black base and red wheels.A yellow pencil with a black eraser and a black band.

Git Commands

A stack of three books with purple, red, and black covers.A cup of coffee with a purple sleeve and a red lid.A simple orange chair with a black base and red wheels.A yellow pencil with a black eraser and a pink band.

Committing from stage to final
\$ git commit

Git Commands

A stack of three rolls of tape. The top roll is purple with white vertical stripes. The middle roll is solid red. The bottom roll is black with white diagonal stripes.

add new file to repository
\$ touch {file name}

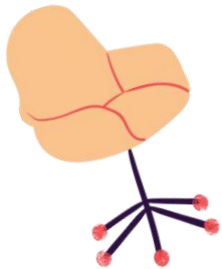
A cup of ice cream with a light brown cone, a purple band around the middle, and a red and orange ice cream scoop on top.A small, stylized orange chair with a rounded back and four thin legs, each ending in a small red wheel.A yellow highlighter with a black cap and a black eraser tip.

Git Commands



If you want all files to be added to
staging area

\$ git add -A

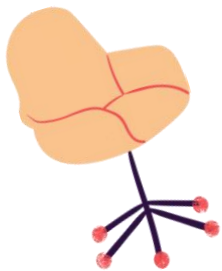


Git Commands



Adding comments while inserting
commits

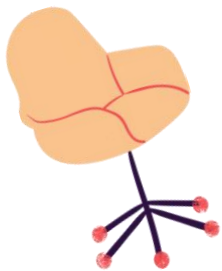
```
$ git commit -m "your comment"
```



Git Commands



Undo the work done by mistake in
staging area from a file
\$ git checkout {filename}



Git Commands

A stack of three rolls of tape. The top roll is purple with white vertical stripes. The middle roll is solid red. The bottom roll is black with white diagonal stripes.

Recovery for multiple files
altogether

\$ git checkout -f

A small, stylized orange cup with a purple band around its middle. It appears to contain red liquid or contents.A small, stylized orange chair with a black base and four legs. It has a simple, rounded backrest.A large, orange rectangular area with diagonal stripes, representing a chalkboard or screen. It has a thick orange border and a small white circle at the bottom center, possibly a eraser or a light reflection.

Git Commands

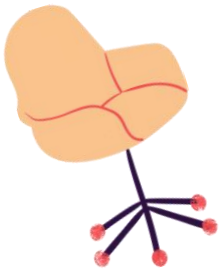


Check for complete logs

\$ git log

Check for complete logs but with
numbered steps

\$ git log -p -{mention no of steps}



Git Commands




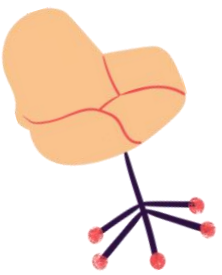

To check for changes in file
\$ git diff

Git Commands

A stack of three books with purple, red, and black covers is positioned to the left of the central text area.

Auto commit all files in staging
area

```
$ git commit -a -m "Comment"
```

A cup of coffee with a purple sleeve and a red lid is positioned to the right of the central text area.A small, stylized orange chair with a black base is positioned to the left of the central text area.A pencil with a black eraser and a blue body is positioned to the right of the central text area.

Git Commands

A stack of three books with purple, red, and black covers is positioned to the left of the central text area.A cup of coffee with a purple band and a red lid is positioned to the right of the central text area.

Removing files
`$ git rm {filename}`

A small, stylized orange chair with a black base is located at the bottom left of the slide.A large, stylized orange pencil with a black eraser is positioned at the bottom right of the slide.

Git Commands



Branching into repository

`$ git branch {branch name}`

Switching to new branch

`$ git checkout {branchname}`

