



# Introduction to Git and GitHub

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**Website** - <http://www.theeasyconcepts.com/>

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# What should you expect Today?

- **Theory + Practical**
- Git and GitHub
- Distributed Version Control System
- Advantages of Git
- Setting Up Git on Your System
- Creating Repository on GitHub
- Make changes on Local system
- Push changes to GitHub



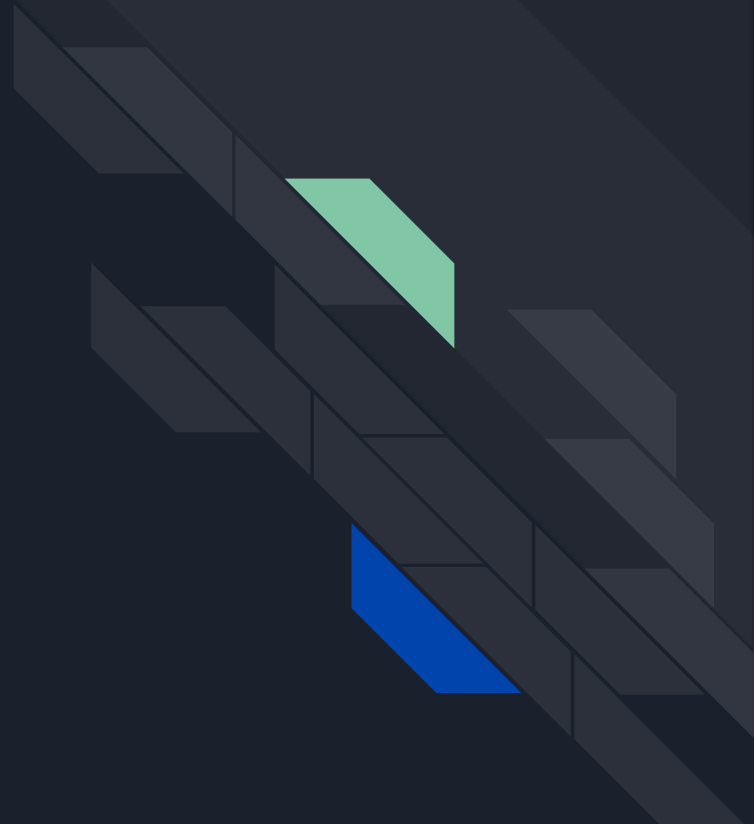
# Theory



# What is Git?



git

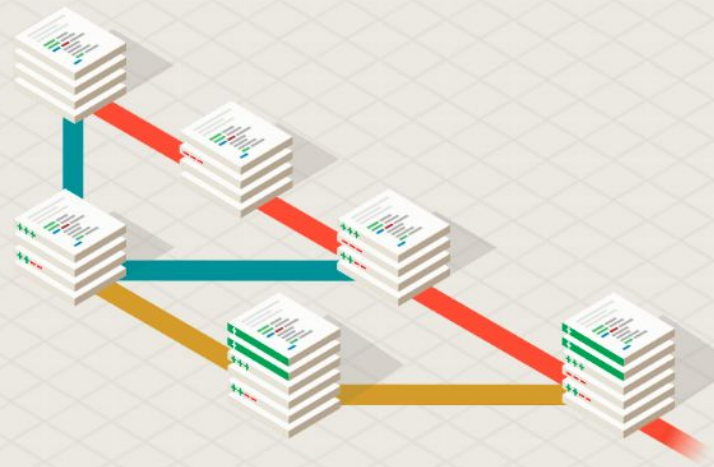




 Search entire site...

Git is a **free and open source** distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

Git is **easy to learn** and has a **tiny footprint with lightning fast performance**. It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like **cheap local branching**, convenient **staging areas**, and **multiple workflows**.

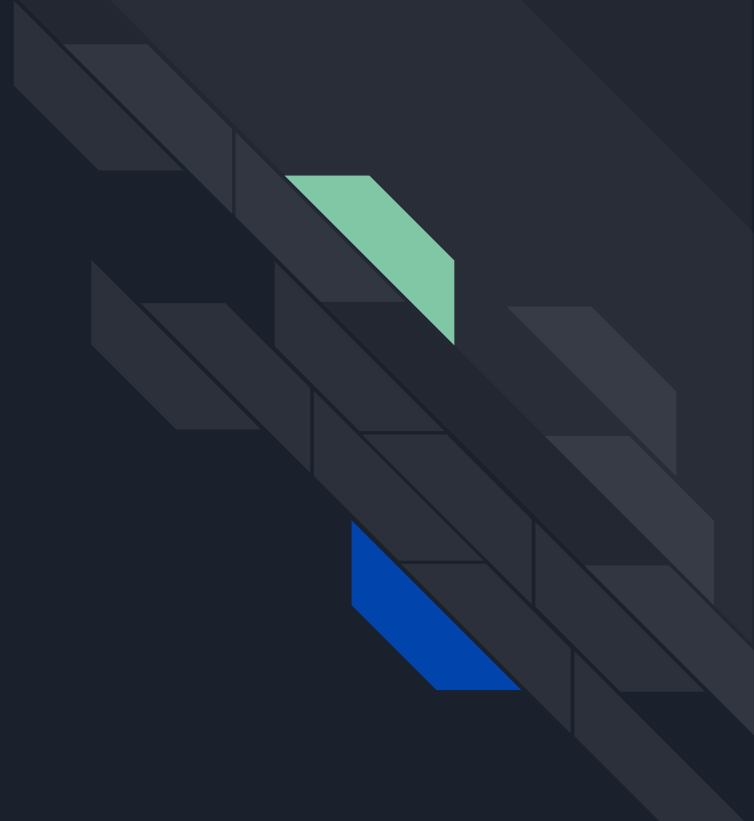




# Version Control System

Tracking and managing changes to  
software code

# What is GitHub?





# GitHub



- GitHub is a **code hosting** platform for **version control** and **collaboration**.
- It lets you and others **work together on projects from anywhere**.
- GitHub uses Git.

# Alternatives to GitHub



**GitHub**



**GitLab**



**GitBucket**

About

Documentation

Downloads

GUI Clients

Logos

Community

The entire [Pro Git book](#) written by Scott Chacon and Ben Straub is available to [read online for free](#). Dead tree versions are available on [Amazon.com](#).

## Downloads



macOS



Windows



Linux/Unix



Older releases are available and the [Git source repository](#) is on GitHub.

### GUI Clients

Git comes with built-in GUI tools (**git-gui**, **gitk**), but there are several third-party tools for users looking for a platform-specific experience.

[View GUI Clients →](#)

### Logos

Various Git logos in PNG (bitmap) and EPS (vector) formats are available for use in online and print projects.

[View Logos →](#)

### Git via Git

If you already have Git installed, you can get the latest development version via Git itself:

```
git clone https://github.com/git/git
```

You can also always browse the current contents of the git repository using the [web interface](#).

# How To Install Git?

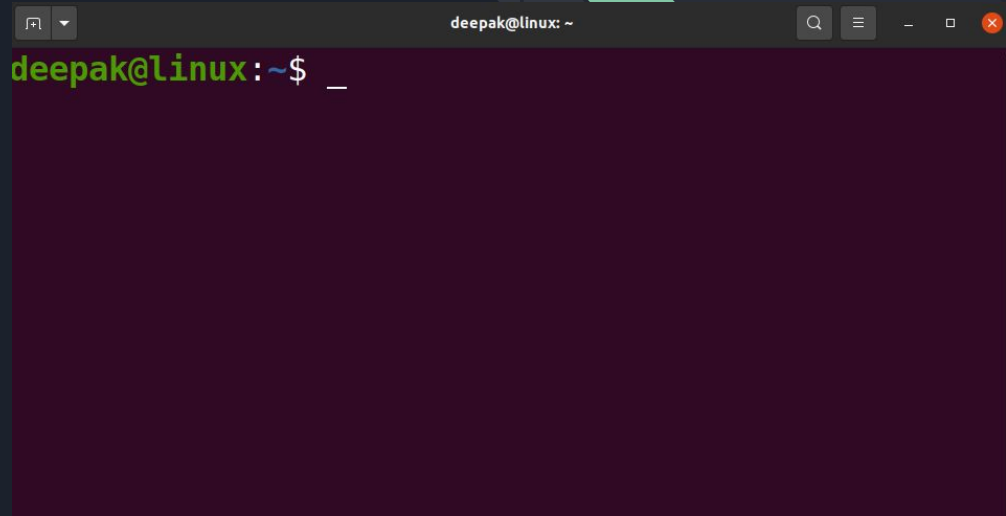
<https://git-scm.com/downloads>

```
apt-get install git  
git --version
```



## Terminal And Git Bash

Git Bash will allow you to use  
Linux commands on Windows





# Prerequisites for Using Git Commands



- Make sure that you know basic Linux commands and working on Terminal

# Basic Linux Commands

- pwd
- ls
- cd
- mkdir
- rmdir
- rm
- touch
- man
- help
- echo
- cat
- nano
- sudo
- apt-get
- chmod
- cp
- mv



# Git Commands

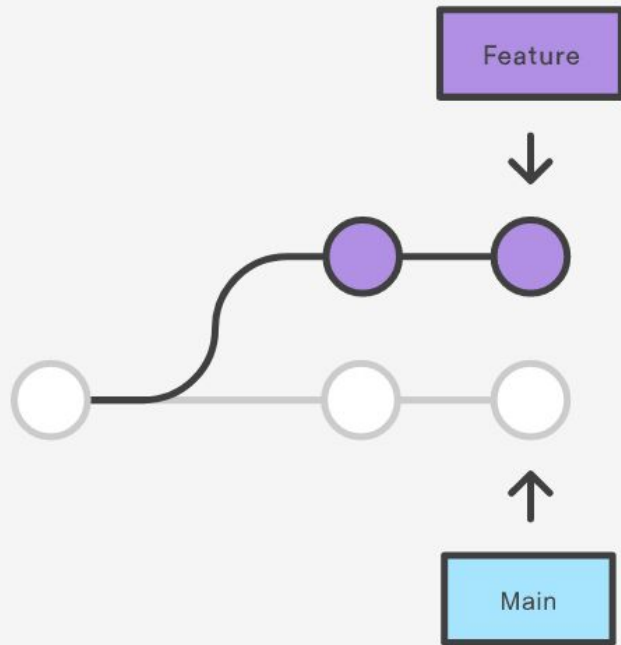
- `git config`
- `git init`
- `git clone`
- `git add`
- `git commit`
- `git diff`
- `git reset`
- `git status`
- `git rm`
- `git log`
- `git show`
- `git tag`
- `git branch`
- `git checkout`
- `git merge`
- `git remote`
- `git push`
- `git pull`
- `git stash`



# Advantages of Git

- **Feature Branch Workflow**

- Provide an isolated environment for every change to your codebase.
- When a developer wants to start working on something—they create a new branch.
- This ensures that the main branch always contains production-quality code.

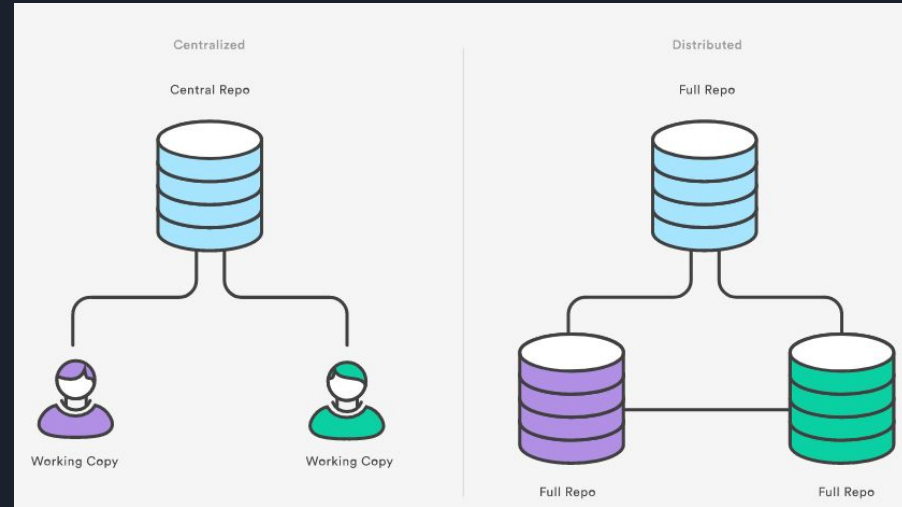




# Advantages of Git

- **Distributed Development**

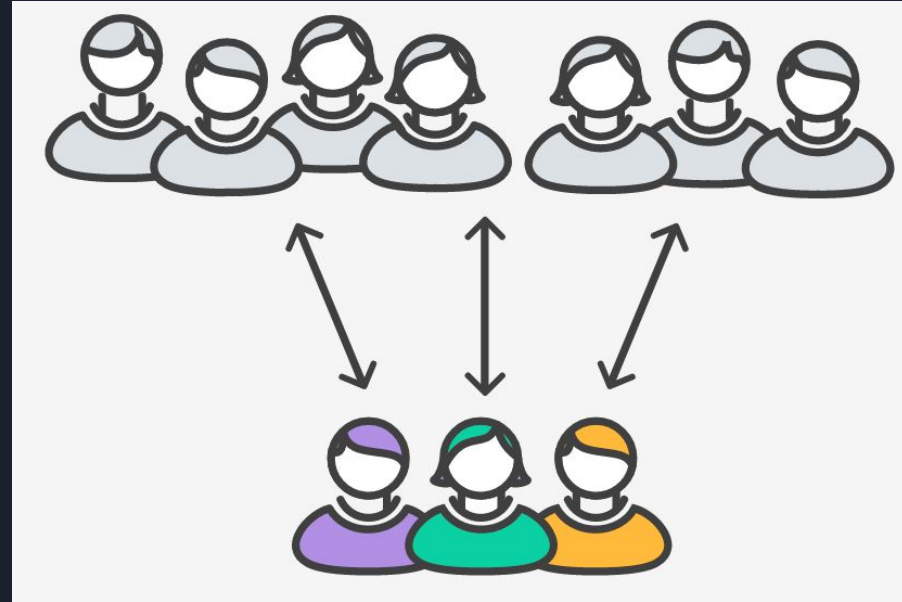
- **Centralized** - Each developer gets a working copy that points back to a single central repository
- **Distributed** - Each developer gets their own local repository, complete with a full history of commits.



# Advantages of Git

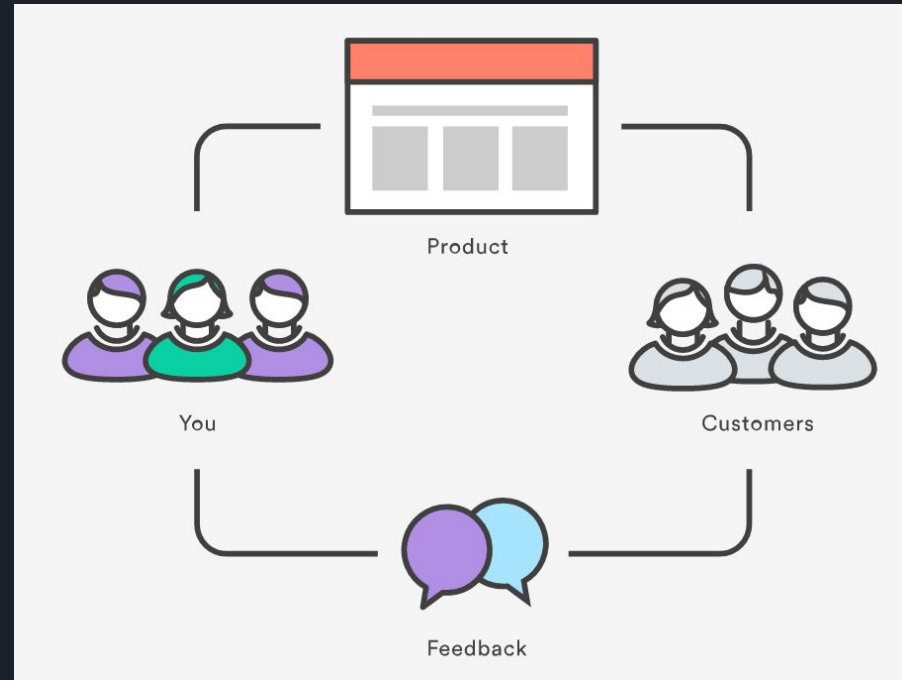
- **Community**

- Git is very popular among open source projects.
- It's easy to leverage 3rd-party libraries and encourage others to fork your own open source code.



# Advantages of Git

- **Faster Release Cycles**
  - Facilitate an agile workflow where developers are encouraged to share smaller changes more frequently.



# Practical



# Configuration



- `git config --global user.name`
- `git config --global user.email`

## Configuring Name and Email

- `git config --global user.name deepakuniyal`
- `git config --global user.email deepakuniyal@github.com`

# Text Editors



Visual Studio Code

git init

*git clone*

An abstract graphic on the right side of the image, consisting of a series of dark gray, 3D rectangular blocks arranged in a diagonal line from the top right towards the bottom left. Two blocks are highlighted: a light green one near the top and a blue one near the bottom.

code .  
git status

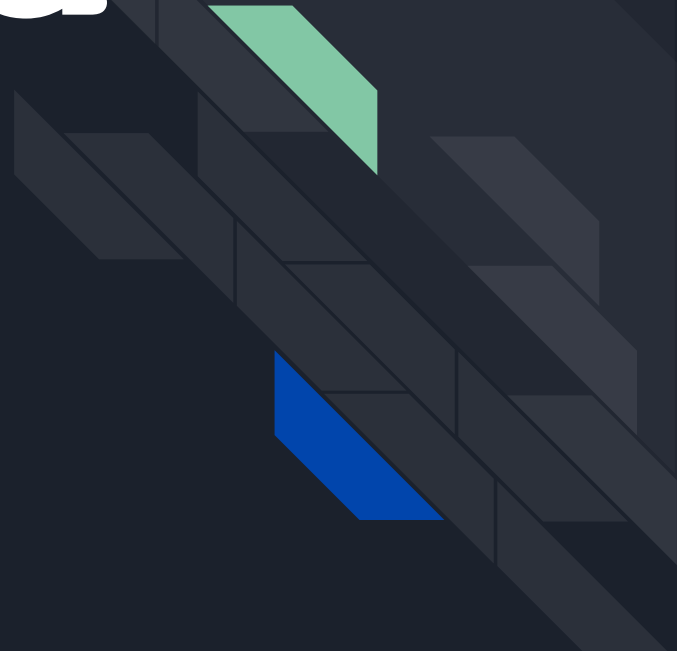
The background features a series of dark gray, three-dimensional rectangular planes that recede into the distance, creating a sense of depth. A bright green parallelogram is positioned on one of the upper planes, and a bright blue parallelogram is on a lower plane, both adding a pop of color to the monochromatic scheme.



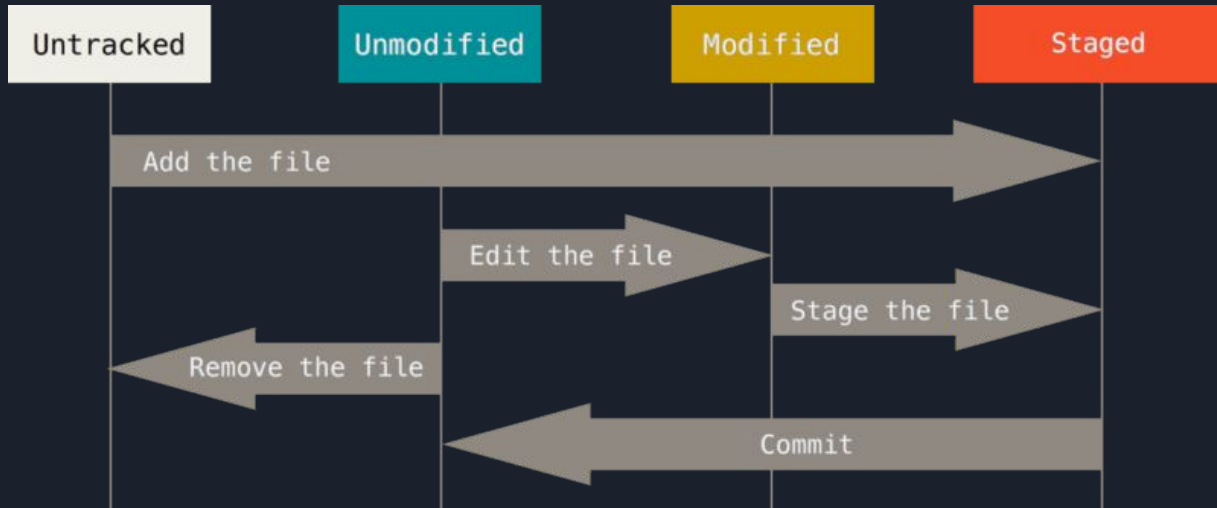
readme .md

The background features a series of dark gray, three-dimensional rectangular planes that recede into the distance, creating a sense of depth. A bright green parallelogram is positioned on one of the upper planes, and a bright blue parallelogram is on a lower plane, both adding a pop of color to the monochromatic scheme.

Untracked  
files?



# Git Basics - Recording Changes to the Repository



# Staging Area

```
git add .
```

```
git add filename
```

```
git restore --staged fileName
```



.gitignore





# git commit

```
git commit -m "commit message"
```



```
git checkout fileName
```

```
git checkout -f
```

```
git checkout br
```

git log

git log -n

git log -p -n





`git diff`

*Working - last commit*

`git diff --staged`

*Staged - last commit*

```
git commit -a -m "commit message"
```

Skip Staging Area

Fails if file is untracked

Remote URLs

```
git remote -v
```

```
git remote set-url origin URL
```

An abstract background featuring several dark gray, three-dimensional rectangular planes that intersect and recede into the distance, creating a sense of depth. A bright green parallelogram is positioned in the upper right area, and a bright blue parallelogram is located below it, further to the right. The overall color palette is dark and monochromatic, with the green and blue shapes providing a focal point.

# Branches

```
git branch fb
```

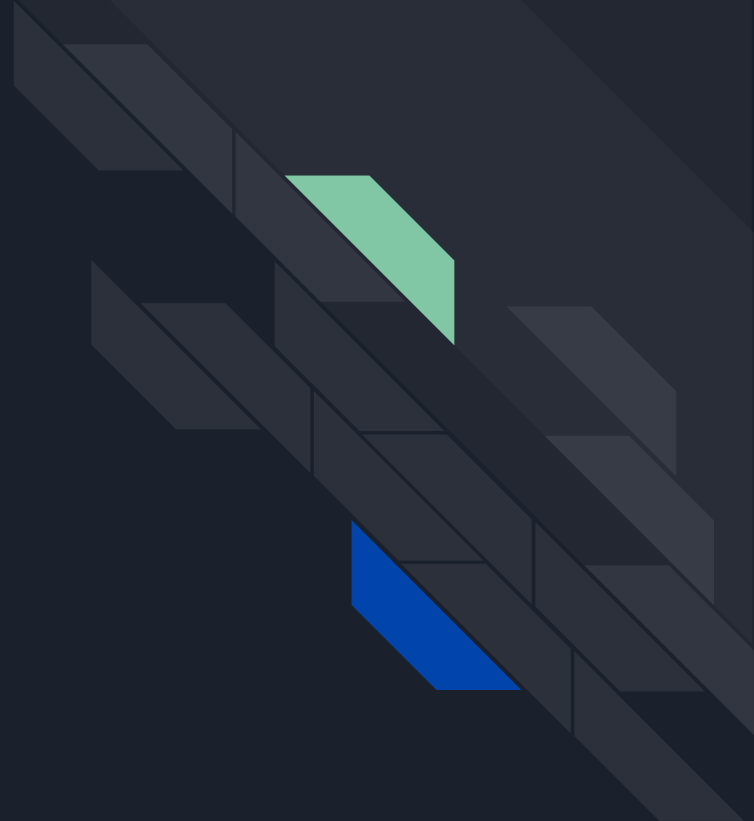
```
git branch
```

```
git checkout fb
```

```
git checkout -b fb
```

```
git merge fb
```

```
git branch -d fb
```





# References

- <https://git-scm.com/>
- <https://www.atlassian.com/git/tutorials/why-git>

*Thank You*

