

# GIT BASIC

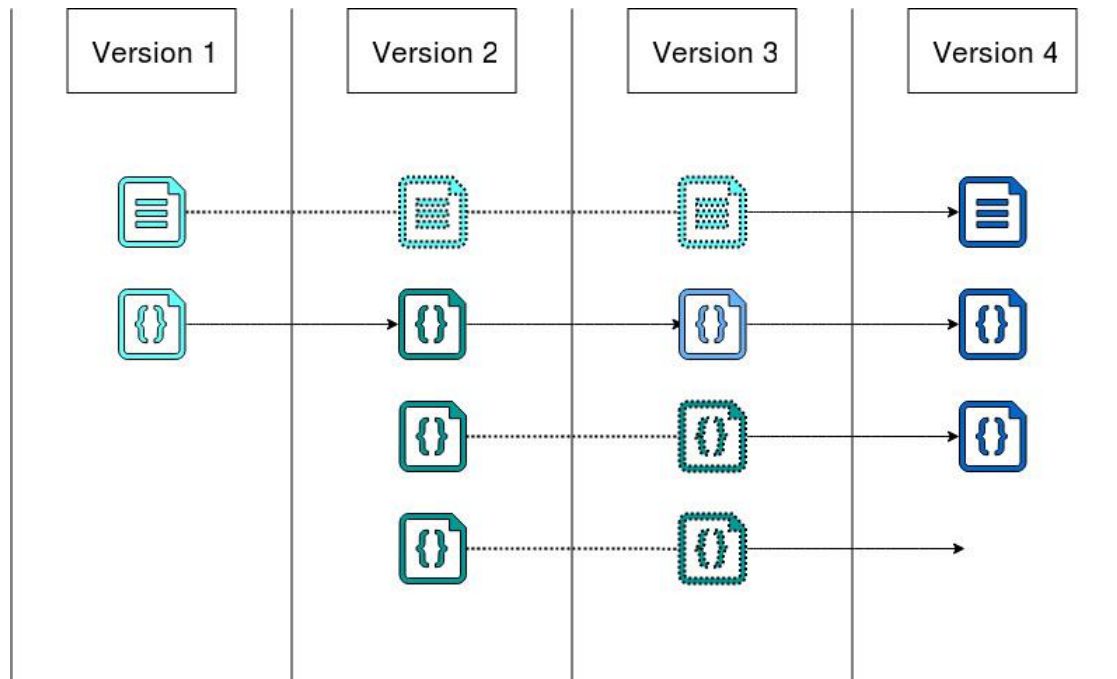
*Nov 4th 2019*

# Agenda

- What is Git and how does it works
- Setup and tooling
- Demo
- Exercise

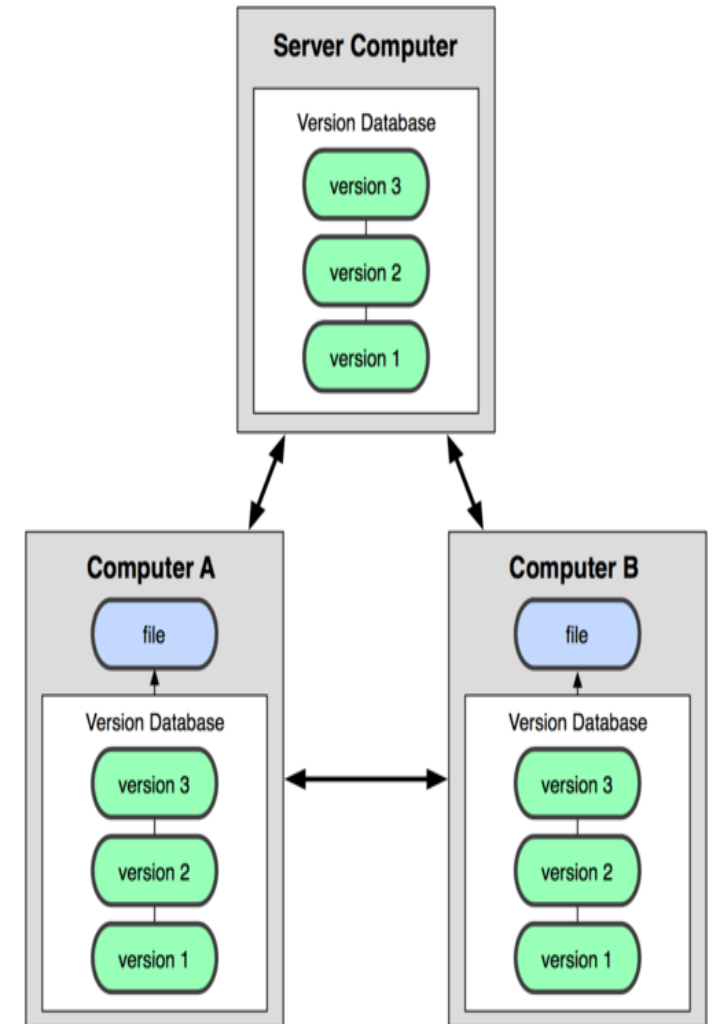
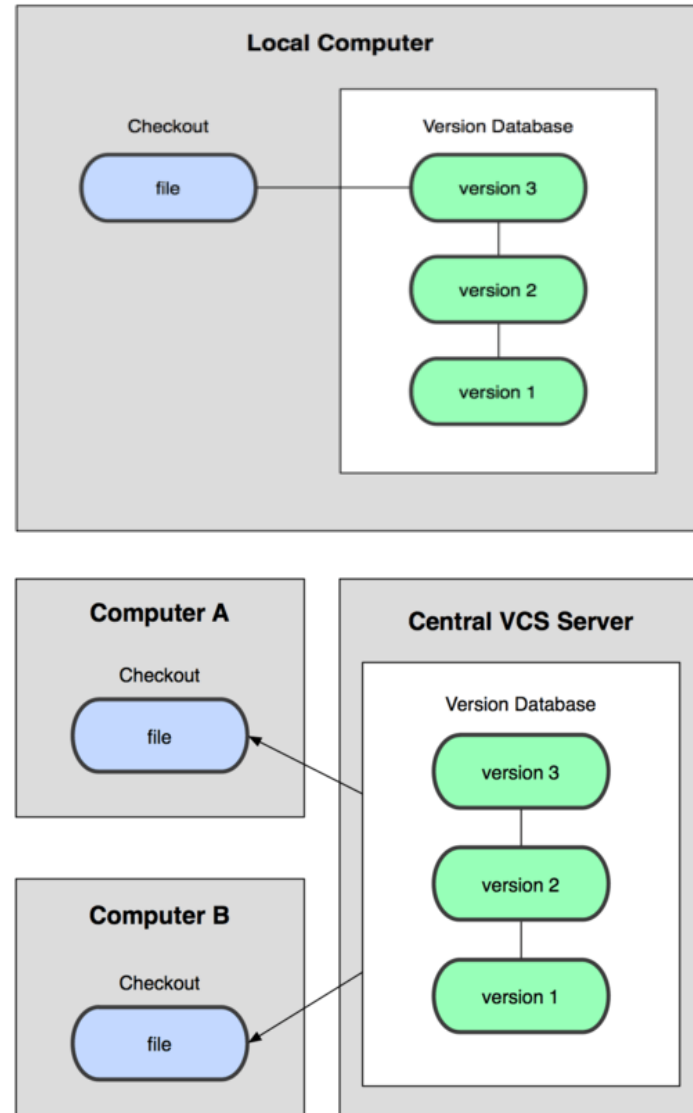
# What is Git?

- Version Control system (VCS)
  - Software that allows the user
    - to make change to files over times
    - To revert back the changes over time (one or more files)



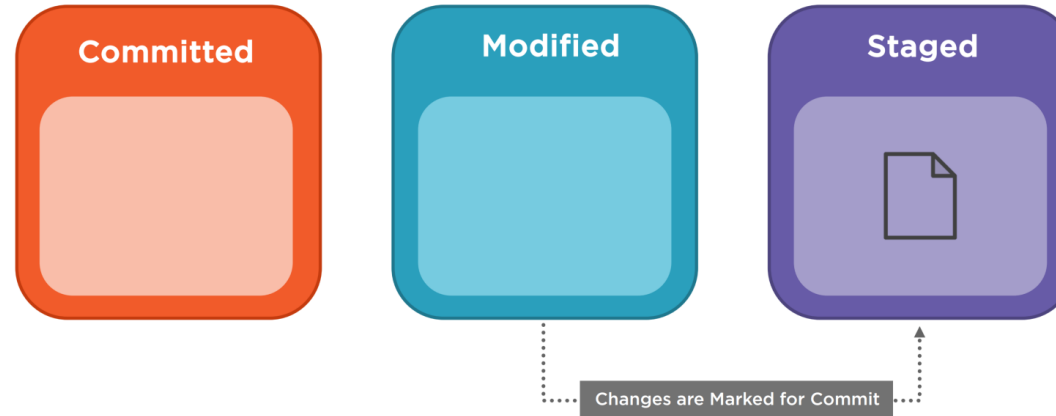
# Git is Distributed

- Local
- Centralized
- Distributed

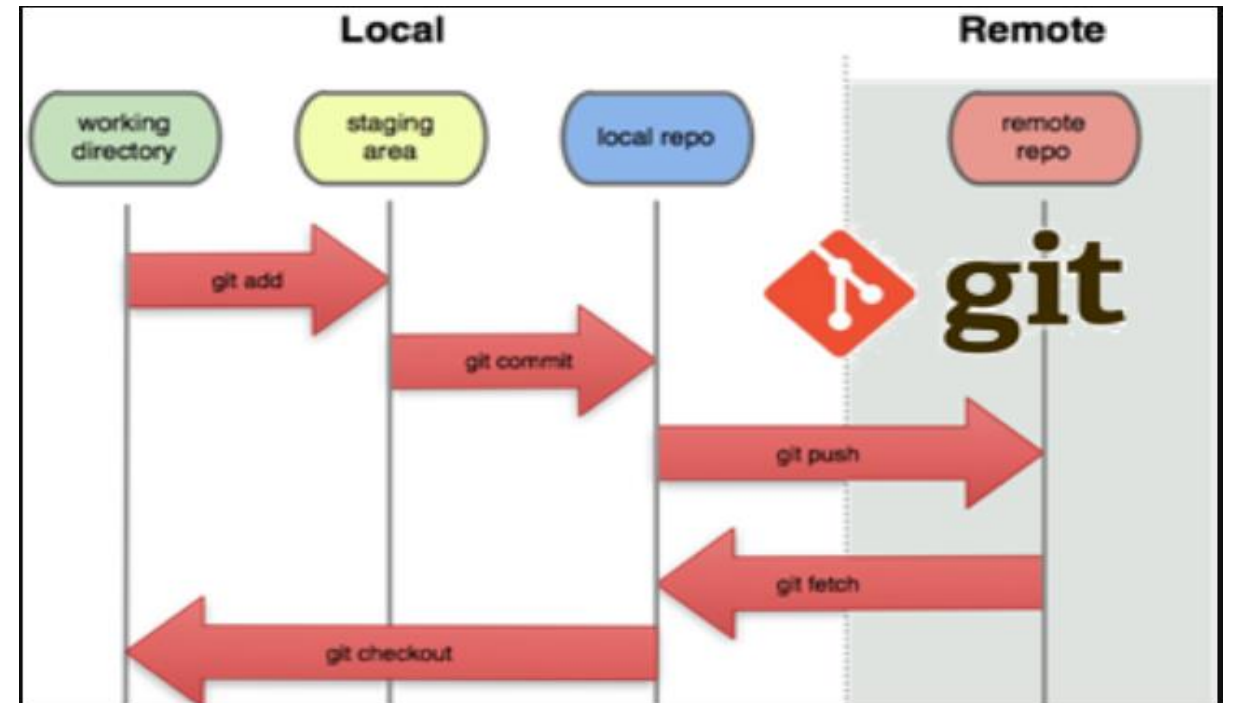


# What is Git?

- Files : 3 main stages :
  - Committed
  - Modified
  - Staged



- Project : 3 main states
  - Working-directory
  - Staging-area
  - .git repo



# GitHub

- Online cloud-like
- Web-based git-repository hosting service
- Allow collaboration with others/team-mate and open source
- Is it the only one?
- HTTPS/SSH for authentication

# Basic commands for Everyday Use

- Git help
  - Git add <>
  - Git commit
  - Git push
  - Git pull
  - Git log
- 
- Git branch
  - Git merge
  - Git stash
  - Git reset

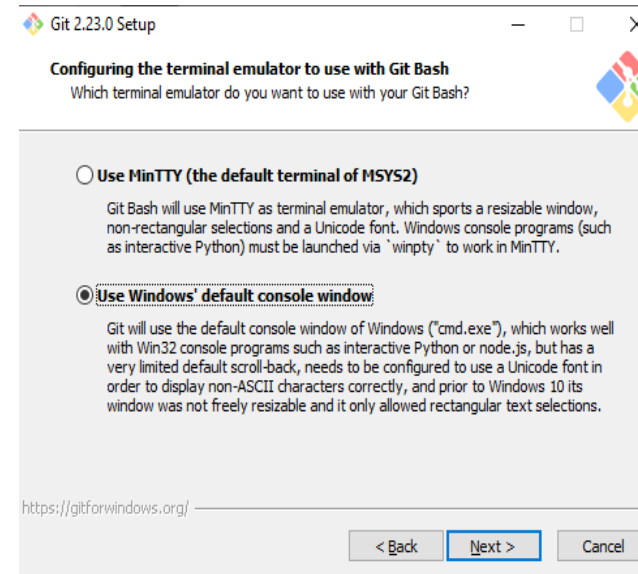
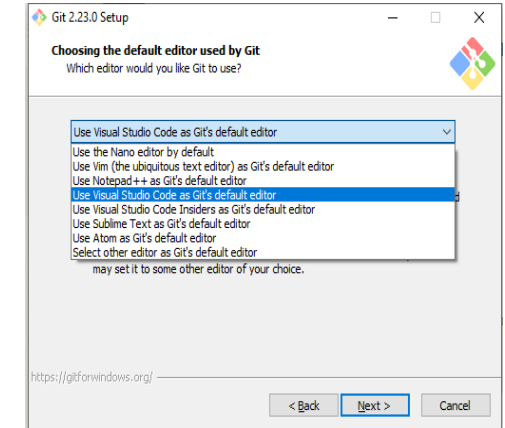
# Basic Tools for Everyday Use

- VS code
- PowerShell
- Git
- WinMerge
- Post-git



# Setup - Git


- <https://git-scm.com/> (2.23.0) 64-bit
- Free book is available
- Select Vscode as default editor



# Setup - winMerge

- <https://winmerge.org/downloads/?lang=en>
- WinMerge-2.16.4-x64-Setup.exe

winmerge.org/downloads/?lang=en



You will see the difference...

Home Documentation Downloads Screenshots Source

## Download WinMerge

The easiest way to install WinMerge is to download and run the Installer. Read the [on](#)

### WinMerge 2.16.4

The current WinMerge version is **2.16.4** and was released at **2019-07-28**. For detailed [notes](#).

| Download                                      | Size     | Type        | Format |
|---|----------|-------------|--------|
| <a href="#">WinMerge-2.16.4-Setup.exe</a>     | 5.51 MB  | Installer   | EXE    |
| <a href="#">WinMerge-2.16.4-x64-Setup.exe</a> | 6.86 MB  | Installer   | EXE    |
| <a href="#">winmerge-2.16.4-exe.zip</a>       | 6.83 MB  | Binaries    | ZIP    |
| <a href="#">winmerge-2.16.4-x64-exe.zip</a>   | 7.62 MB  | Binaries    | ZIP    |
| <a href="#">winmerge-2.16.4-full-src.7z</a>   | 10.65 MB | Source Code | 7z     |

# Setup - Post-git

- Provides Extra information
- Set-ExecutionPolicy RemoteSigned
- Install Nuget provider : Install-PackageProvider -Name NuGet -Force
- Install PowerShellGet : Install-Module -Name PowerShellGet -Force
- Import-Module posh-git

```
Administrator: posh-git ~ Robot2019 [master]
D:\temp\repos\Robot2019 [master =>] git log -3
commit ce9ff905dfc9e34bb72307b735e838640bd9f6df (HEAD -> master, origin/master, origin/HEAD)
Author: Allen <alljiang@hotmail.com>
Date: Mon Oct 21 18:04:30 2019 -0500

Changes

commit 8ed3f2e02653478f8828a62f284bf826dc09f045
Author: Allen <alljiang@hotmail.com>
Date: Sat Jun 15 14:50:16 2019 -0500

Post world

commit 7203fbd1b5eb061c9c497978e7eee5d7ec7641d6
Author: Allen <alljiang@hotmail.com>
Date: Thu Apr 18 14:51:35 2019 -0500

auto update
D:\temp\repos\Robot2019 [master =>] _
```

```
Administrator: Windows PowerShell
PS C:\repos> git clone https://github.com/mark-wong-50523/first-repo.git
Cloning into 'first-repo'...
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (4/4), done.
PS C:\repos> cd .\first-repo\
PS C:\repos\first-repo> start .
PS C:\repos\first-repo> dir

Directory: C:\repos\first-repo

Mode                LastWriteTime         Length Name
----                -
-a----             11/3/2019   5:13 PM             301 .gitignore
-a----             11/3/2019   5:14 PM              14 1.txt
-a----             11/3/2019   5:13 PM              43 README.md

PS C:\repos\first-repo> git status
On branch master
Your branch is up to date with 'origin/master'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        1.txt

nothing added to commit but untracked files present (use "git add" to track)
PS C:\repos\first-repo> git add .
PS C:\repos\first-repo> git commit -m "add a new file"

*** Please tell me who you are.

Run

  git config --global user.email "you@example.com"
  git config --global user.name "Your Name"

to set your account's default identity.
Omit --global to set the identity only in this repository.

fatal: unable to auto-detect email address (got 'mark@mark-pc.(none)')
PS C:\repos\first-repo> git config --global user.email "markwong50523@gmail.com"
PS C:\repos\first-repo> git config --global user.name "Mark Wong"
PS C:\repos\first-repo>
```

# Demo

- Create new files
  - Add file to Staging area
  - Commit changes
  - Push to Remote Repo
- Modifies same file and add new files
  - Add both files to staging area
  - Commit changes
- Push a Local Repository to GitHub
- Create Branch
- Diff the changes
- Roll-back to pervious commits

# Exercise

- (in separate slide)